Analysis of factors affecting the ability to access Bank loans of Agricutural cooperatives in Mekong Delta, Viet Nam

Ha Hong NGUYEN [1], Thao Xuan Hoang Nguyen [2]

Abstract

The objective of this study is to propose to improve the accessibility to bank capital of Agricultural cooperatives operating in 05 provinces of the Mekong Delta: An Giang Province, Tra Vinh province, Ben Tre province, province. Soc Trang and Vinh Long province. The authors collect primary data from 150 Agricultural cooperatives operating in Mekong Delta, Viet Nam. Based on previous related research models, the authors use Binary Logistic regression analysis method to analyze the factors that affect the cooperative's ability to access bank loans in the Mekong Delta. Research results show that there are 09 factors affecting the ability to access bank loans, including: Education level; Number of years of operation; Field of activity; Revenue growth rate; Authorized capital; Collateral; Profit; Application of science and technology; Public relationship. From the research results, the authors propose solutions to improve the access to bank loans of Agricultural cooperatives in the future.

Keywords: *Factors, access to bank capital, Agricultural cooperatives, solutions, Mekong Delta*

Introduction

Collective Economy or cooperatives play an important role in the socio-economic development of the country in general and socio-economic development in the Mekong Delta in particular. According to the Ministry of Agriculture and Rural Development, by the end of 2022, the Mekong Delta has 2,615 agricultural cooperatives and 20 agricultural cooperative unions, accounting for 13.4% of the total number of agricultural cooperatives nationwide. This is the region with the largest percentage of cooperatives participating in the association of product consumption for members in the country *(Vietnam Cooperative Alliance, 2023)*. The activities of cooperatives have had positive changes under the new model of cooperatives, tending to develop multi-sectors, multi-specialties, general business, in order to better serve the needs of members, contribute to solving jobs for workers in rural areas, actively contributing to the local socio-economic development as well as the construction of new rural areas in the area.

[1] First Author and Corresponding Author. Associate Professor, School Economics and Law, Tra Vinh University, Vietnam. ORCID ID: 0000-0001-7404-0599. [Postal Address: 126th, Nguyen Thien Thanh Street, Ward 5, Tra Vinh City, Tra Vinh Province, 940000, Vietnam], Tel: +84.294.3855246, Email: hongha@tvu.edu.vn or: honghaicbtv@yahoo.com.vn

[2] 2 Second Author. Master, Faculty of Agriculture and Fisheries, Tra Vinh University, Vietnam, Email: nguyenhoangxuanthao@tvu.edu.vn

However, the operation of agricultural cooperatives still reveals many limitations such as: small scale of operation; inadequate services and facilities; lack of capital to expand production and business,... (Vietnam Cooperative Alliance, 2023). State support for cooperatives in management, development and implementation of production and business strategies is still limited. State management staff on cooperatives from central to local levels are lacking and weak. Lack of qualified experts to advise cooperatives…

In the past time, credit policies for the collective economic sector (especially agricultural cooperatives) have been expanded by the State in order to create more favorable conditions for this type to access bank capital for development. develop, innovate and improve operational efficiency. Accordingly, the banking industry in the Mekong Delta has actively coordinated with the Departments and branches to implement mechanisms, policies and solutions to develop credit for cooperatives, support agricultural cooperatives to access loans according to the requirements of the Ministry of Finance. guidelines and policies of the Government.

However, up to now, most agricultural cooperatives still have difficulties in accessing bank loans, outstanding loans for cooperatives are still limited, the number of cooperatives accessing bank capital in 2022 is quite low. of the total number of cooperatives operating in the area (about 2.45%) (State Bank of Vietnam,, 2022). Therefore, increasing access to bank capital for agricultural cooperatives for production and business activities is an urgent issue.

2. Literature Review

Kira and He (2012) collected data from 163 Tanzanian companies, used logistic regression model to analyze factors affecting credit access of SMEs. The research results show that the geographical location of the business, the industry, the size of the business (number of employees), the number of years of operation and the collateral assets affect access to credit. of small and medium enterprises.

Essien & Arene (2014) collected data from 96 agribusinesses based on formal credit access through the use of structured questionnaires. Using the logit model to examine the factors that have a significant influence on the credit access of businesses in the region. The results show that the factors affecting formal credit access are education level, number of years of operation, enterprise size and collateral.

Gichuki, Njeru and Tirimba (2014) argue that the main challenges preventing SMEs from accessing credit facilities are high repayment costs, strict collateral requirements, processing fees, credit and short repayment period.

Mohamed (2003) and Gan et al. (2007) using a logit model to determine the factors affecting household access to microcredit in two countries Zanzibar and in the Philippines. Factors affecting access to credit include age, education level, gender, income, and awareness of the availability of microcredit. Mohamed (2003) concludes that information about credit sources has the strongest

and positive influence on the ability of households to access microcredit in Zanzibar. Gan et al. (2007) concluded that young farmers and fishermen are less likely to access credit in the Philippines.

Bui Van Trinh and Truong Thi Phuong Thao (2014) show that the ability to access formal credit of shrimp farming households depends on the following factors: household income, working time (production experience) output), the household's loan interest rate, the distance from where the household lives to the district center, the number of times the household has loan transactions with credit institutions, and the number of credit institutions in the locality. In which, the distance factor from the place where the household lives to the district center has a negative correlation (-), the remaining factors have a positive correlation (+) with the household's ability to access formal credit. shrimp farming in Tra Vinh province. Consistent with the research of Dang Thanh Son (2012) and Le Khuong Ninh and Pham Van Duong (2011),

Huynh Bich Nhu (2017) said that there are 6 factors affecting SMEs' ability to access bank loans, including: revenue growth rate; Type of business; The field of production and business; Operating time of the business; Collateral property; Profit is consistent with the study of Nguyen Hong Ha, Huynh Thi Ngoc Tuyen and Do Cong Binh (2013) and Nguyen Quoc Nghi (2010).

Nguyen Thi Phuong Nga (2018) studying the current situation and solutions to access formal credit of agricultural cooperatives in Bac Kan province, using descriptive statistics and comparative methods to analyze data. Research results show that agricultural cooperatives find it difficult to access bank capital due to the following reasons: from agricultural cooperatives due to collateral; lack of investment projects, effective production and business plans, in addition, there are reasons from credit institutions and state agencies.

Ong Chi Tam (2020) studies the ability to borrow capital and the amount of loan from the bank of agricultural cooperatives in Tra Vinh province, proposes some solutions to improve access to credit capital. banking use of agricultural cooperatives in Tra Vinh province; using random sampling method, surveying 35 agricultural cooperatives, using descriptive statistics method to analyze data. The research results show that the lack of collateral when borrowing is the cause affecting the access to bank credit of agricultural cooperatives similar to Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016),

Phan Dinh Khoi (2013) studying the factors affecting formal and informal credit access of households in the Mekong Delta, surveying households in the sample selected from 15 hamlets in 13 communes. communes of 13 provinces in the Mekong Delta, using Tobit model to estimate. The results show that land ownership, formal interest rates, and informal lending terms are important factors affecting informal lending. Factors affecting access to microcredit include working for local authorities, loan team members, poor household records, education level, skilled labor and inter-communal roads consistent with the study of Tran Ai Ket and Huynh Trung Thoi (2013),

Nguyen Hong Ha (2017) studying the factors affecting the sustainable development of agricultural

cooperatives in the Mekong Delta, using multivariable regression to find the factors affecting the performance business of cooperatives through a survey of 80 agricultural cooperatives in 3 provinces of Tra Vinh, Ben Tre and Soc Trang in the Mekong Delta. The results show that the number of employees, business capital, association with input enterprises, and product consumption affect the business performance of agricultural cooperatives.

The research results of domestic and foreign authors show that, depending on the actual conditions and research objectives, the authors approach the factors affecting credit access. In general, there are three main groups of influencing factors: (1) related to human factors, the authors believe that education level, age, and gender have a strong impact on the ability to access credit. use; (2) factors of financial resources such as property value, land area, income level, asset structure analyzed by the authors as having a stronger impact than other factors; (3) In addition, occupational factors, economic status, and social relationships also affect the loan.

3. Methodology

On the basis of inheriting the research results of related empirical studies that have been introduced and consulted with experts, adjusted in accordance with local realities, the proposed variables are included in the list. model is as follows:

$$Y= \beta_0 + \beta_1 X_1 + \ldots + + \varepsilon_i \, \beta_i X_i$$

In there:

Y is the cooperative's ability to access bank loans as measured by two values of 0 and 1 (1 is accessible and 0 is not accessible).

X variables are independent variables (explanatory variables). These variables are defined and explained in detail in Table 1.

Table 1: Meaning of independent variables and expectation of signs

No	Variable name (Variable code)	Interpretation of meaning of variable	Unit	Expectation sign	The basis of variable selection
1	Age (X1)	Age of Director of Agricultural Cooperative	Years old	(+)	Mohamed (2003) and Gan et al. (2007), Kira and He (2012), Nguyen Quoc Nghi (2010), Le Khuong Ninh and Pham Van Duong (2011), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016)
2	Gender (X2)	Dummy variable, take value 1 if male, value 0 if female	Male or Female	(+)	Essien & Arene (2014), Kira and He (2012), Le Khuong Ninh and Pham Van Duong (2011), Phan Dinh Khoi

No	Variable name (Variable code)	Interpretation of meaning of variable	Unit	Expectation sign	The basis of variable selection
					(2013), Vuong Quoc Duy (2015), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016)
3	Education (X3)	Education level of the director of agricultural cooperatives	school level	(+)	Essien & Arene (2014), Gan et al. (2007), Nguyen Quoc Nghi (2010), Le Khuong Ninh and Pham Van Duong (2011), Phan Dinh Khoi (2013), Tran Ai Ket and Huynh Trung Thoi (2013), Vuong Quoc Duy (2015), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016)
4	Number of members (X4)	Number of members participating in agricultural cooperatives	People	(+)	Mohamed (2003) and Gan et al. (2007), Nguyen Quoc Nghi (2010), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016), Kira and He (2012), Essien & Arene (2014)
5	Number of years operation (X5)	Number of years of production and business activities of agricultural cooperatives	Years	(+)	Essien & Arene (2014), Nguyen Quoc Nghi (2010), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016), Kira and He (2012)
6	Field of activity (X6)	Areas of operation of agricultural cooperatives	production or service business	(+)	Mohamed (2003) and Gan et al. (2007), Kira and He (2012), Nguyen Quoc Nghi (2010), Huynh Bich Nhu (2017)
7	Revenue growth (X7)	This year's revenue growth rate compared to the previous year of agricultural cooperatives	%	(+)	Kira and He (2012), Nguyen Quoc Nghi (2010), Huynh Bich Nhu (2017), Nguyen Hong Ha, Huynh Thi Ngoc Tuyen and Do Cong Binh (2013), Nguyen Hong Ha (2017)
8	Charter capital (X8)	Chartered capital of agricultural cooperatives	Million VND	(+)	Expert survey
9	Collateral (X9)	Total value of assets of agricultural cooperatives that	Million VND	(+)	Gichuki, Njeru and Tirimba (2014), Le Khuong Ninh

No	Variable name (Variable code)	Interpretation of meaning of variable	Unit	Expectation sign	The basis of variable selection
		can be mortgaged or pledged			and Pham Van Duong (2011), Dang Thanh Son (2012), Nguyen Hong Ha, Huynh Thi Ngoc Tuyen and Do Cong Binh (2013), Kira and He (2012)
10	Profit (X10)	Annual profit of agricultural cooperatives	Million VND/year	(+)	Huynh Bich Nhu (2017), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016), Huynh Bich Nhu (2017), Nguyen Hong Ha (2017)
11	Application of science and technology (X11)	Agricultural cooperatives that apply science and technology to production and business.	Dummy variable, is 1 if there is application of science and technology in production, is 0 otherwise	(+)	Huynh Bich Nhu (2017), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016), Huynh Bich Nhu (2017), Nguyen Hong Ha (2017)
12	Social Relations (X12)	Dummy variable is 1 if the Agricultural cooperative director has relatives or friends working in state agencies at all levels (commune, district, province or central) or at local credit institutions, 0 otherwise.	1 or 0	(+)	Le Khuong Ninh and Pham Van Duong (2011), Tran Ai Ket and Huynh Trung Thoi (2013), Nguyen Van Vu An, Pham Phi Hung and Bui Hoang Nam (2016), Nguyen Quoc Nghi (2010)
13	Y	Access to bank loans of agricultural cooperatives; take the value 1 as accessible and 0 as inaccessible	1 or 0	(+)/(-)	Synthesis of summary studies

(Source: Author's compilation, 2023)

Based on the list of agricultural cooperatives in the Mekong Delta provided by the Vietnam Cooperative Alliance of regional provinces, the author conducted direct interviews with 150 cooperatives *(Hoang Trong and Chu Nguyen Mong Ngoc (2008),* with operating time from 01 year or more with the official survey questionnaire already designed.The purpose of using Binary Logistic regression model is to identify and evaluate the level of impact of each influencing factor. The information collected from the survey results will be analyzed using SPSS 20 software.

4. Research results and discussion

Performing Binary Logistic regression with the dependent variable being the access to bank capital

of of agricultural cooperatives and 12 independent variables including: age, gender, education, number of members, number of years for operation, field of activity, revenue growth, charter capital, collateral, profits, application of science and technology, social relations that get the results as in Table 2 after test the model fit and test the significance of the regression coefficients in the model as follows

Table 2: Regression results of the research model:

Variable	B	Standard error	Wald	Sig.	Exp(B)
Age (X1)	-0,674	0,178	14,338	0,852[ns]	0,510
Gender (X2)	-0,593	0,262	5,123	0,281[ns]	0,553
Education (X3)	1,029	0,609	2,855	**0,033****	2,798
Number of members (X4)	0,544	0,218	6,227	0,302[ns]	1,723
Number of years for operation	0,389	0,483	0,649	*0,061**	1,476
Field of activity *(X6)*	0,402	0,288	1,948	*0,073**	1,495
Revenue growth (X7)	1,895	1,112	2,904	**0,018****	6,653
Charter capital (X8)	0,409	0,813	0,253	**0,023****	1,505
Collateral (X9)	2,998	3,380	0,787	**0,001*****	20,045
Profits (X10)	2,051	0,813	6,364	**0,021****	7,776
Application of science and	0,777	1,147	0,459	**0,016****	2,175
Social relations (X12)	1,717	1,535	1,251	**0,011****	5,568
Constant	-4,739	2,384	3,951	**0,002**	0,009
Number of Obs					150
-2 Log likelihood					23,450[a]
Cox & Snell R Square					0,570
Nagelkerke R Square					0,869

(Note: ***, **, * are 1%, 5% and 1% significance levels; ns: non statistical)

(Source: Extracted results from SPSS).

Binary Logistic regression results identify the factors affecting the access to capital of cooperatives in the survey sample consisting of 06 independent variables that are statistically significant at the 5% level of significance, including: education, Revenue growth, charter capital, profit, application of science and technology, social relations. The collateral variable is significant at 1% significance level and there are 02 variables including: number of years for operation and the field of activity are statistically significant at the 10% significance level. All variables have a positive regression coefficient, which means that an increase of one unit of this variable will increase the cooperative's ability to access bank capital, other factors being constant. Thus, the regression coefficients have the right sign with the initial expectation.

To better explain the impact of each influencing factor, we use the results of the regression coefficient column (B) and the column (Exp(B)=eB) to calculate the probability that the probability changes when the probability changes. initially 10%, 20%, 30%, 40%, 50% respectively.

From this equation, where P0 is the initial probability, P1 is the probability when the independent variable increases by 1 unit in the condition that other factors are constant, P1 is calculated by the formula:

$$P_1 = \frac{P_0 \times e^B}{1 - P_0(1 - e^B)}$$

Table 3: Estimation of access to capital according to the impact of each factor:

Variables	B	Exp(B)	Estimated access to capital when The independent variables changes by 1 unit				
			10%	20%	30%	40%	50%
X3	1,029	2,798	0,2372	0,4116	0,5453	0,6510	0,7367
X5	0,389	1,476	0,1409	0,2695	0,3874	0,4959	0,5960
X6	0,402	1,495	0,1424	0,2720	0,3905	0,4991	0,5992
X7	1,895	6,653	0,4250	0,6245	0,7403	0,8160	0,8693
X8	0,409	1,505	0,1433	0,2734	0,3921	0,5009	0,6008
X9	2,998	20,045	0,6901	0,8336	0,8957	0,9304	0,9525
X10	2,051	7,776	0,4635	0,6603	0,7692	0,8383	0,8860
X11	0,777	2,175	0,1946	0,3522	0,4824	0,5918	0,6850
X12	1,717	5,568	0,3822	0,5819	0,7047	0,7878	0,8477

(Source: Author's calculations)

According to Hoang Trong and Chu Nguyen Mong Ngoc (2008) with a binary dependent variable, a procedure to predict the probability that the event Y=1 (access to capital) occurs in principle if the prediction probability is greater than 0 ,5, then the prediction result will say "yes" to the event (ie access to capital), otherwise, the prediction result will be "no" (ie no access to capital). Therefore, with an initial probability of 50%, the impact of influencing factors will be clearly shown, so the

author will use an initial probability of 50% to analyze the accessibility to capital.

5. Policy implications to improve access to bank capital of cooperatives in the future

5.1. For the factor of years of operation

The results of the analysis show that the number of years of operation or the duration of operation of agricultural cooperatives has an effect on the cooperative's ability to access capital. Statistical results show that most agricultural cooperatives in the area are newly established cooperatives (operating from 1 to 5 years), accounting for 67.9%. The operating time of agricultural cooperatives is positively correlated with the ability to access bank loans, so newly established cooperatives need to build a reputation in the market to be appreciated by banks and consider lending equally with cooperatives that have been around for a long time and need more effort, do not operate with expectation or dependence on the support policy of the State. In the operation, it is advisable to find reputable partners, having long-term credit relationships with banks for transactions, through which the cooperative will build a relationship with the bank.

5.2. For the element of the field of activity

The analysis results show that the field of operation of agricultural cooperatives affects the ability to access capital of cooperatives, agricultural cooperatives that both produce and provide services have easier access to bank capital. . Therefore, cooperatives need to properly identify their operational goals and develop the most feasible business plan in accordance with the capital scale. Agricultural cooperatives need to be flexible and agile in development planning to make the best use of preferential policies and support from the State and create prestige and trust in the bank.

5.3. About charter capital

In order to increase access to bank capital for investment, production and business, agricultural cooperatives need to consider increasing their charter capital. There are many ways to increase the charter capital of the cooperative, first of all, the agricultural cooperatives themselves must generate resources from the capital contribution of the members. Because through the survey, some members have not contributed capital as originally agreed with the cooperative. Cooperatives can raise more capital from the number of available members by increasing the minimum capital contribution of members or by mobilizing more capital contributions from members with strong financial resources, but ensuring that each member's capital contribution does not exceed the maximum amount of contributed capital as prescribed (not more than 20%/chartered capital of the cooperative). In addition to mobilizing capital from members, the cooperative can admit new members to increase its charter capital and at the same time the scale of operation of the cooperative is increased thanks to the increase in the number of members.

5.4. About revenue growth

Agricultural cooperatives consider growing operating revenues to increase access to capital. This is a solution that requires agricultural cooperatives to make efforts in production and business to operate more efficiently. Maintaining stability and growth in production and business is an advantage for agricultural cooperatives to easily access bank loans. A cooperative with a good business situation, of course, receives a loan with a lower interest rate. Cooperative lending is always assessed by banks as having a high level of risk, even many banks do not want to lend to cooperatives because they are afraid of risks. Therefore, before receiving capital from the bank, the cooperative itself should balance its production and business plan, keeping the cooperative's business activities growing and efficient.

5.5. Collateral

In order to increase collateral, agricultural cooperatives should invest costs to convert property ownership from individuals to ownership of the cooperative so that it is convenient to use as collateral for the cooperative's bank loans. When investing in fixed assets, cooperatives focus on assets with high liquidity.

In addition, cooperatives can seek mortgage loans with goods, receivables, loans secured by assets formed in the future. With these loans, the loan conditions as well as the management and supervision of the bank will be tighter. collateral is also more.

In order to access loans from banks, agricultural cooperatives must prove their financial capacity, be able to repay loans, and be transparent in their finances to create trust from banks. Because in addition to mortgage loans, some banks also provide unsecured loans if customers or cooperatives can prove the effectiveness of projects, production and business models. However, for this form of unsecured loans, the bank's conditions are more stringent.

5.6. For profit

In order to increase profits, agricultural cooperatives develop a sound and reasonable strategy and business plan, suitable to the actual situation of the cooperative as well as to the market demand. The right strategy and business plan allows the cooperative to shape its future direction. When the appropriate strategy and business plan allows agricultural cooperatives to make the most of the resources for production and business and increase the efficiency of the cooperative's operations. This means that access to bank loans will be higher and easier.

5.7. For factors applying science and technology

Agricultural cooperatives focus on investing in upgrading factories, equipping machinery and equipment, developing packaging, packing... towards a production model following the product value chain from production of input materials. , to processing, packaging and consumption of products and meets high requirements of domestic and export markets. In addition, it is necessary

to supplement working capital to invest in modern production lines, promote production and business, register trademarks and products so that the bank appreciates the cooperative's activities, thereby investing boldly. Cooperatives will have easier access to capital. Cooperatives need to apply technology in promoting the image of the cooperative such as building their own website.

5.8. For the social relation factor

Agricutural Cooperatives need to develop professional relationships with commercial banks, such as strengthening payment activities through banks, having a spirit of cooperation and maintaining credibility with banks, strengthening community relationships with localities and other cooperatives. Cooperatives should participate in meetings and seminars organized by localities and departments in order to capture information on linkages in production, form production models according to the value chain that actively participate in displaying and promoting products at fairs, participating in the program to connect banks and businesses and cooperatives. Through social relationships, cooperatives easily learn the mechanisms, policies and laws of the State for their business activities, market information as well as information about credit easily.

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