Available Online: 27 July 2026 DOI: 10.54254/2977-5701/2026.35710

The impact of financial literacy on farmers' entrepreneurship

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Abstract. This study uses survey data collected from southern China, a region characterized by relatively high levels of entrepreneurial activity, as its research sample. Drawing on the indicator framework developed in the *Consumer Financial Literacy Survey and Analysis Report* issued by the People's Bank of China, it constructs an evaluation system for financial literacy from two dimensions: financial knowledge and financial behavior. Based on this framework, the study examines the relationship between financial literacy and farmers' entrepreneurship from three perspectives: entrepreneurial choice, entrepreneurial revenue, and entrepreneurial scale. The findings indicate a strong positive correlation between financial literacy and entrepreneurial behavior among farmers. Dimension-specific analyses further reveal that both financial knowledge and financial behavior are significantly and positively associated with farmers' entrepreneurial activities. Statistical analysis of the relationship between financial literacy and entrepreneurial revenue shows that farmers with higher levels of financial literacy generally achieve greater entrepreneurial profits. However, once financial literacy exceeds a certain threshold, further improvements in financial literacy are associated with a decline in entrepreneurial profitability. This phenomenon may be attributable to the greater risk preference of farmers with higher levels of financial literacy, which may reduce the stability of their business operations. In addition, financial literacy is found to be strongly and positively correlated with entrepreneurial scale, indicating that farmers with higher levels of financial literacy tend to operate larger entrepreneurial ventures.

Keywords: financial literacy, financial knowledge, financial behavior, farmers' entrepreneurship

1. Introduction

1.1. Research background

China's long-standing urban–rural dual economic structure has given rise to a segmented financial system that separates urban and rural areas, resulting in pronounced financial exclusion in rural regions. Rural households often face difficulties in obtaining formal credit and participating in investment and wealth management activities, thereby limiting the growth of their property income. With the advancement of large-scale land transfer and agricultural modernization, a considerable amount of rural labor has been released from agricultural production. After accumulating capital and business experience through migrant employment,

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many rural workers have returned to their hometowns to start businesses, making rural entrepreneurship an emerging trend. During the implementation of China's poverty alleviation campaign and the Rural Revitalization Strategy, commercial banks introduced a variety of agriculture-related financial products, including rural credit loans and industrial cooperative loans, providing financial support for entrepreneurial activities among farmers. Nevertheless, inadequate financial literacy among rural households has become an intrinsic constraint on entrepreneurial development. Southern coastal regions and southwestern provinces, characterized by large-scale labor migration and a strong entrepreneurial culture, provide representative settings for studying farmers' entrepreneurial behavior. Investigating the impact of financial literacy on farmers' entrepreneurship can therefore offer valuable evidence for alleviating financing constraints and improving the rural inclusive financial system.

1.2. Definition of key concepts

Financial Literacy: Financial literacy refers to farmers' mastery of financial knowledge and the extent to which they actively participate in financial markets through financial behaviors.

Farmers' Entrepreneurship: This study adopts the definition of farmers' entrepreneurship proposed by Jifei Wei [1]. Farmers' entrepreneurship refers to commercial and economic activities undertaken by rural households that integrate urban and rural resources while utilizing their own skills, capital, and other resources with the objective of increasing wealth. Such entrepreneurial activities include not only the establishment of new businesses or organizations but also the expansion of existing production and business operations.

Farmers' entrepreneurial behavior is measured from the perspective of entrepreneurial intention—namely, whether farmers are willing to engage in entrepreneurship and whether they actually choose to undertake entrepreneurial activities. Entrepreneurial performance is evaluated using two indicators: entrepreneurial revenue and entrepreneurial scale.

1.3. Theoretical analysis of financial literacy and farmers' entrepreneurial behavior

Financial literacy reflects an individual's mastery of financial knowledge and the ability to effectively manage financial assets by utilizing available financial information. It is closely associated with decision-making in areas such as investment and risk management. Individuals with higher levels of financial literacy generally possess more comprehensive knowledge of credit markets and stronger awareness of financing opportunities. They are also more familiar with financial markets and better able to identify investment opportunities through policy interpretation. Consequently, they can obtain financing at lower costs and alleviate the financing constraints that inhibit entrepreneurial activities.

Existing studies have likewise demonstrated the positive effect of financial literacy on entrepreneurship. On the one hand, direct evidence suggests that, among urban households, higher levels of financial knowledge and greater attention to financial information significantly increase the probability of starting a business [2]. Among rural households, higher financial literacy is associated with stronger entrepreneurial motivation and a greater likelihood of engaging in entrepreneurial activities [3]. On the other hand, financial literacy can indirectly promote entrepreneurship by reinforcing the effects of other factors. Rural residents who have lost their land involuntarily but possess higher levels of financial knowledge are more likely to obtain capital and information advantages, thereby increasing their entrepreneurial opportunities [4]. Financial literacy also enhances the utilization of social capital, while the demonstration effect of entrepreneurship among relatives and friends can substantially strengthen farmers' entrepreneurial motivation [5]. Based on the above analysis, the following hypotheses are proposed:

H1: Farmers' financial literacy is positively associated with the likelihood of engaging in entrepreneurial activities.

H2: Farmers' financial literacy is positively associated with their entrepreneurial intention.

1.4. Theoretical analysis of financial literacy and farmers' entrepreneurial performance

Entrepreneurship is an economic activity that requires entrepreneurs to process large amounts of information and allocate resources efficiently throughout the business process. In general, individuals with higher levels of financial literacy are better equipped to make entrepreneurial decisions by drawing on their financial knowledge, thereby making decisions that are more conducive to business development and generating greater profits. Entrepreneurial profit can be viewed as the product of unit profit and business scale. Holding unit profit constant, larger business scale generally leads to higher total profits. For newly established enterprises, entrepreneurs with higher financial literacy tend to operate businesses on a larger scale because financial literacy improves household financial capacity and alleviates credit constraints, thereby satisfying entrepreneurs' liquidity needs and increasing the amount of initial start-up capital. For growing enterprises, higher financial literacy enhances entrepreneurs' confidence in expanding production capacity and increasing employment. As a result, entrepreneurs with stronger financial literacy are generally more inclined to enlarge the scale of their businesses in pursuit of higher operating profits.

Previous studies have shown that, after accounting for the endogeneity between financial literacy and entrepreneurial performance, financial literacy exerts a significant positive effect on entrepreneurial performance [6]. Households with higher levels of financial literacy are less likely to incur losses in entrepreneurial activities [7]. Financial literacy education within entrepreneurial teams helps entrepreneurs acquire essential financial knowledge and skills, thereby establishing a solid foundation for team development and improving entrepreneurial performance [8]. Furthermore, financial literacy can promote business expansion by improving access to formal credit [9]. Accordingly, the following hypotheses are proposed:

H3: Farmers' financial literacy is positively associated with entrepreneurial revenue.

H4: Farmers' financial literacy is positively associated with entrepreneurial scale.

2. Descriptive statistical analysis of farmers' financial literacy and entrepreneurial activities

2.1. Data description

To examine the impact of financial literacy on farmers' entrepreneurial activities while highlighting the relevant influencing factors, this study selected samples from southern China, where entrepreneurial participation among rural households is relatively high. The primary provinces included in the survey are Sichuan, Zhejiang, Jiangsu, Chongqing, Guizhou, Guangdong, Guangxi, Fujian, and Yunnan (Table 1). The analysis retained respondents aged between 18 and 70 years. After removing observations with missing values for the variables used in the study, a final sample of 261 respondents was included in the empirical analysis. In terms of regional distribution, the entrepreneurial participation rate among rural households in southern China was 23.7%. The rate reached as high as 32.3% in southwestern China, substantially exceeding both the national average of 14.2% and the rate of 10.0% observed in northern China. These results indicate that the selected sample is highly representative of farmers' entrepreneurial activities.

Table 1. Number of questionnaires and farmers' entrepreneurial rates by region

Region	Number of Questionnaires	Farmers' Entrepreneurial Rate
National	1,701	14.2%
Northern China	1,221	10%
Southern China	221	23.7%
Southeastern China	162	17.2%
Southwestern China	91	32.3%
Henan	663	5%

2.2. Financial literacy indicator system

For each knowledge question, respondents who answered "Don't know" or provided an incorrect answer were assigned a score of 0, whereas respondents who answered correctly were assigned a score of 1. The definitions and scoring criteria for each indicator are presented below (Table 2).

Table 2. Financial literacy indicator system

	Indicator	Measurement Item	Scoring Method
Financial Knowledge	Ability to correctly calculate interest	Suppose you deposit RMB 100 in a bank with an annual interest rate of 2%. After five years, how much money will be in your account?	A response of "Exactly equal to" is scored 1; otherwise 0.
	Ability to correctly understand inflation	If the annual bank interest rate is 10% while prices increase by 12%, after one year your savings will be able to purchase...?	A response of "Less" is scored 1; otherwise 0.
	Ability to correctly calculate exchange rates	If the exchange rate is USD 1 = RMB 6, how many U.S. dollars is RMB 600 equivalent to?	A response of "100" is scored 1; otherwise 0.
	Ability to correctly identify differences in financial risk	Which of the following financial products provides a fixed return?	A response of "Bonds" is scored 1; otherwise 0.
Financial Behavior	Risk preference	Suppose you win a promotional lottery organized by a merchant, and you are offered four prize options. Which would you choose?	Immediate prize = 1; Draw for RMB 50,000 = 2; Draw for RMB 100,000 = 3; Draw for RMB 1,000,000 = 4.
	Knowledge of formal credit	Degree of understanding of bank loan requirements and application procedures	Scored from 1 to 5, representing increasing levels of understanding.
	Ownership of a savings account	Do you have a savings account at a bank?	Yes = 1; No = 0.

Table 2. Continued

Financial Behavior	Use of digital payment services	Have you ever used online banking on a computer for fund transfers?	Yes = 1; No = 0.
		Have you ever used mobile banking for fund transfers?	Yes = 1; No = 0.
		Have you ever used Alipay?	Yes = 1; No = 0.
		Have you ever used WeChat Pay?	Yes = 1; No = 0.
		Have you ever used any electronic wallet products?	Yes = 1; No = 0.
	Investment in financial products	Which financial products has your household invested in?	No investment = 0; Any investment = 1.
		What is the primary way your household keeps its savings?	—

3. Correlation analysis between financial literacy and farmers' entrepreneurship

3.1. Correlation between financial literacy and farmers' entrepreneurial intention

To examine the relationship between financial literacy and farmers' entrepreneurial intention, a scatter plot was constructed. The results indicate that entrepreneurial intention initially declines slightly as financial literacy increases, followed by a relatively rapid upward trend. Among respondents with the highest levels of financial literacy, the proportion expressing entrepreneurial intention reached 13%, suggesting that higher financial literacy encourages individuals to pursue self-employment and entrepreneurial activities. A fitted trend line further illustrates a clear upward relationship between financial literacy and entrepreneurial intention (Figure 1).

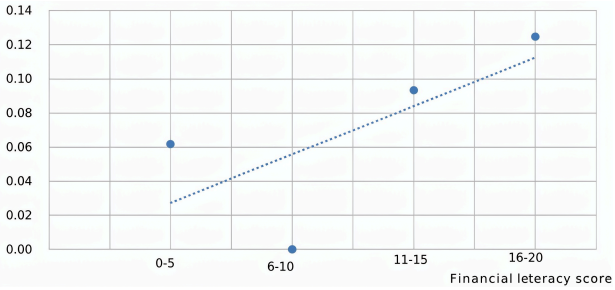

Figure 1. Relationship between financial literacy scores and farmers' entrepreneurial intention

3.2. Correlation between financial literacy and farmers' entrepreneurial participation

The overall distribution of financial literacy scores ranged from 2 to 19. To facilitate analysis, respondents were grouped into four categories with five-point intervals: 0–5, 5–10, 10–15, and 15–20. The numbers of respondents who had already started businesses and those who expressed entrepreneurial intention were then calculated for each group. The grouped statistics reveal that the proportion of entrepreneurs increases steadily with improvements in financial literacy (Table 3). Among respondents with financial literacy scores of 15–20,

the entrepreneurship rate reached 50%, indicating a strong positive association between financial literacy and entrepreneurial participation.

Table 3. Relationship between financial literacy and farmers' entrepreneurial participation

Financial Literacy Score	Total Respondents	Entrepreneurs	Respondents with Entrepreneurial Intention	Entrepreneurship Rate	Entrepreneurial Intention Rate
0–5	16	1	1	6.25%	6.25%
5–10	103	8	0	7.77%	0.00%
10–15	118	20	11	16.95%	9.32%
15–20	24	12	3	50.00%	12.50%

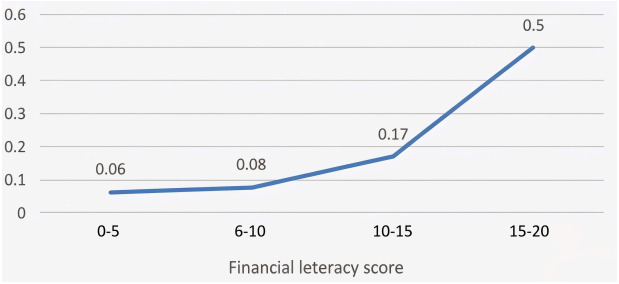

Figure 2. Relationship between financial literacy and farmers' entrepreneurial participation

A line chart illustrating the relationship across different levels of financial literacy shows that respondents scoring 15–20 exhibit a particularly high entrepreneurship rate. In contrast, entrepreneurial intention remains below 15% across all financial literacy groups, suggesting that improvements in financial literacy have only a limited effect on entrepreneurial intention itself (Figure 2). These findings imply that higher financial literacy may be more effective in transforming entrepreneurial intention into actual entrepreneurial behavior.

3.3. Analysis of entrepreneurial intention and entrepreneurial participation by dimensions of financial literacy

Financial literacy was further examined from its two constituent dimensions—financial knowledge and financial behavior. The results indicate that improvements in both dimensions are associated with increases in both entrepreneurial participation and entrepreneurial intention. However, the increase in entrepreneurial participation is substantially greater than that in entrepreneurial intention. As financial behavior scores increase, the entrepreneurship rate rises from 6.06% to 31.11%, while the entrepreneurial intention rate increases from 3.03% to 11.11%. Similarly, as financial knowledge scores improve, the entrepreneurship rate increases from 8.33% to 43.33%, whereas the entrepreneurial intention rate rises from 4.17% to 10.89% (Tables 4 and 5).

Table 4. Relationship between financial behavior and farmers' entrepreneurship

Financial Behavior Score	Total Respondents	Entrepreneurs	Respondents with Entrepreneurial Intention	Entrepreneurship Rate	Entrepreneurial Intention Rate
0–3	33	2	1	6.06%	3.03%
3–6	182	24	9	13.19%	4.95%
6–9	45	14	5	31.11%	11.11%

Table 5. Relationship between financial knowledge and farmers' entrepreneurship

Financial Behavior Score	Total Respondents	Entrepreneurs	Respondents with Entrepreneurial Intention	Entrepreneurship Rate	Entrepreneurial Intention Rate
0–3	24	2	1	8.33%	4.17%
3–6	105	9	0	8.57%	0.00%
6–9	101	17	11	16.83%	10.89%
Above 9	30	13	3	43.33%	10.00%

3.4. Correlation between financial literacy and entrepreneurial revenue

Based on the operating profits reported by entrepreneurs, entrepreneurial revenue was classified into six categories: negative, RMB 0–50,000, RMB 50,000–100,000, RMB 100,000–150,000, RMB 150,000–200,000, and RMB 200,000 or above. Financial literacy scores were then grouped accordingly for descriptive analysis (Table 6). An analysis of average operating profits across different financial literacy groups reveals an inverted U-shaped relationship between financial literacy and entrepreneurial revenue. The average operating profits of entrepreneurs with financial literacy scores of 0–5, 5–10, 10–15, and 15–20 are RMB 40,000, RMB 109,000, RMB 798,640, and RMB 477,780, respectively. These findings are not fully consistent with the proposed hypothesis. Further examination shows that entrepreneurs in the 15–20 financial literacy group experienced substantially greater losses than those in other groups. Considerable variation exists within this group: while the most successful entrepreneurs reported operating profits of RMB 5 million, the poorest-performing respondent incurred a loss of RMB 1 million in 2021. This suggests that individuals with higher levels of financial literacy may exhibit stronger risk preferences, resulting in lower operational stability and consequently more volatile entrepreneurial performance.

Table 6. Operating profit by financial literacy level

Financial Literacy Score	Sample Size	Percentage of Employees by Operating Profit Tier							Average Operating Profit (10,000 RMB)
		Negative	RMB 0–50k	RMB 50k–100k	RMB 100k–150k	RMB 150k–200k	≥ RMB 200k	Total	
0–5	1	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	4.000
5–10	5	0.00%	20.00%	40.00%	0.00%	20.00%	20.00%	100.00%	10.900
10–15	12	8.33%	41.67%	16.67%	0.00%	0.00%	33.33%	100.00%	79.864
15–20	9	33.33%	44.44%	0.00%	11.11%	0.00%	11.11%	100.00%	47.778

3.5. Correlation between financial literacy and entrepreneurial scale

In general, business expansion is accompanied by an increase in organizational size and the number of employees. However, start-up firms are often relatively small, with few or even no employees. Consequently, the number of employees alone does not adequately reflect the scale of such enterprises. Registered capital, by contrast, is closely associated with the initial size of a business and therefore serves as a more appropriate indicator of entrepreneurial scale. Accordingly, this study measures business scale using both the number of employees and registered capital. To reduce differences in magnitude across variables, registered capital was transformed using the following logarithmic function: $F = Log(f/10000 + 1)$, where f denotes registered

capital (in RMB). The number of employees and the transformed registered capital were assigned weights of 60% and 40%, respectively, and their weighted average was used to represent enterprise size. The results show a clear positive relationship between financial literacy and entrepreneurial scale. As financial literacy increases from the lowest to the highest level, the enterprise scale index rises from 0.1204 to 3.3665, indicating that entrepreneurs with higher financial literacy generally operate larger businesses (Table 7).

Table 7. Financial literacy and entrepreneurial scale

Financial Literacy Score	Average Number of Employees	f: Average Registered Capital (10,000 RMB)	$F = log(f/10,000 + 1)$	Enterprise Scale Index
0–5	0.0000	1.0000	0.3010	0.1204
5–10	0.3750	8.1250	0.9602	0.6091
10–15	2.6750	100.0000	2.0043	2.4067
15–20	4.4583	52.5417	1.7287	3.3665

4. Conclusion

This study examines the relationship between financial literacy and farmers' entrepreneurship from four perspectives: entrepreneurial participation, entrepreneurial intention, entrepreneurial revenue, and entrepreneurial scale.

4.1. Farmers with higher levels of financial literacy are more likely to engage in entrepreneurial activities

Among respondents with financial literacy scores ranging from 15 to 20, the proportion of entrepreneurs reached 50%. The proportion of respondents expressing entrepreneurial intention initially declined as financial literacy increased but subsequently exhibited an upward trend. Overall, higher levels of financial literacy are associated with both a higher rate of entrepreneurial participation and a greater proportion of individuals expressing entrepreneurial intention. Furthermore, separate analyses of the two dimensions of financial literacy—financial knowledge and financial behavior—indicate that both are strongly and positively associated with farmers' entrepreneurial activities. However, their effects differ across levels of financial literacy. Financial knowledge exhibits a stronger association with entrepreneurship at relatively low levels, whereas financial behavior demonstrates a stronger relationship with entrepreneurial participation at higher levels.

4.2. Entrepreneurial revenue initially increases and then declines as financial literacy improves

The empirical results indicate that entrepreneurs with higher levels of financial literacy generally achieve substantially greater operating revenues than those with lower levels of financial literacy. However, when financial literacy reaches a relatively high level, entrepreneurial profitability tends to decline, possibly because greater financial literacy is accompanied by stronger risk preferences and reduced operational stability. Specifically, the average operating profits of entrepreneurs with financial literacy scores of 10–15 and 15–20 are RMB 798,640 and RMB 477,780, respectively, whereas the corresponding figures for entrepreneurs with scores of 0–5 and 5–10 are only RMB 40,000 and RMB 109,000. The substantial differences among these groups suggest that, although financial literacy generally enhances entrepreneurial performance, excessively

high levels of financial literacy may encourage greater risk-taking, resulting in more volatile business outcomes.

4.3. Farmers with higher levels of financial literacy tend to operate larger businesses

Using a weighted composite indicator based on the number of employees and registered capital, this study measures entrepreneurial scale and compares it across different levels of financial literacy. The enterprise scale index increases steadily with financial literacy, with average values of 0.1204, 0.6091, 2.4067, and 3.3665 for successive financial literacy groups. These findings indicate a clear positive relationship between financial literacy and entrepreneurial scale, suggesting that farmers with stronger financial literacy are more likely to establish and operate larger business ventures.

References

[1] Wei, J. (2010). *Research on farmers' entrepreneurship under the new economic conditions* (Doctoral dissertation, Northwest A&F University).

[2] Yang, M., & Xiong, F. (2008). An analysis of firm size measurement for high-tech enterprises. *Science of Science and Management of Science and Technology*, (1), 164–169.

[3] Su, L., & Kong, R. (2019). Financial literacy, entrepreneurship training, and farmers' entrepreneurial decisions. *Journal of South China Agricultural University (Social Science Edition), 18*(3), 53–66.

[4] Sun, G., Li, Q., & Yang, Y. (2019). The impact of financial knowledge on entrepreneurial behavior among farmers passively displaced by land expropriation: Evidence based on the IV-Heckman model. *China Rural Survey*, (3), 124–144.

[5] Qin, J., Luan, J., & Chen, A. (2022). How does financial literacy affect farmers' entrepreneurship? An analysis based on credit constraints. *Journal of Yunnan Agricultural University (Social Sciences), 16*(5), 98–108.

[6] Zhang, Z., Shu, H., & Liu, R. (2021). The mechanism through which farmers' financial literacy affects entrepreneurial performance. *Journal of Southwest University (Social Sciences Edition), 47*(4), 117–128, 229.

[7] Zhang, Y., Liu, Y., & Han, G. (2020). Household financial literacy and entrepreneurial returns. *Finance and Economy*, (8), 4–12.

[8] Zhu, H. (2017). The practice of the New York Public Library in supporting mass entrepreneurship. *Library Development*, (11), 18–23.

[9] Xiang, Z., & Zhang, D. (2020). Credit accessibility and the expansion of farmers' entrepreneurial scale. *Soft Science, 34*(9), 134–139.