

The Impact of Financial Literacy on Family Venture Capital -- Analysis Based on 2019 CHFS Data

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Abstract. The improvement of economic level has accumulated residents' wealth, and the rapid development of the financial market has also provided a large number of participation opportunities for residents' families. However, in reality, the participation of Chinese households in the financial market is not optimistic, and their financial literacy level may be one of the factors affecting their participation in the financial market. This article explores the relationship between financial literacy and household risk asset investment participation and investment depth by using CHFS2019 data. Through probit and tobit models, we found that there is a strong positive relationship between financial literacy level and household risk asset investment participation and investment depth. At the same time, this article further tests the research conclusions through instrumental variable method and robustness analysis. Finally, based on the research findings, this article provides suggestions to the government, financial institutions, and resident households, with the aim of benefiting Chinese resident households in terms of financial market participation and investment depth.

Keywords: Financial Literacy; Family Venture Capital; participation; depth.

1. Introduction

Since 1978, China's economy has maintained rapid and stable growth, with GDP and per capita GDP ranging from 362.4 billion yuan and 400 yuan in the early stages of reform and opening up to 114367 billion yuan and 81000 yuan in 2021. The rapid development of this economy has also brought about a significant increase in household income, and effective asset allocation and wealth management have become problems faced by many households. On the other hand, the development of China's financial market, especially the relaxation of financial market regulation, has led to more intense competition among financial institutions, and a large number of new financial instruments have also emerged. This also provides multiple options for household financial asset allocation.

However, according to the 2018 China Urban Household Wealth and Health Report, the proportion of financial assets to total household assets in China in 2017 was only 11.8%. During the same period, the financial assets of American households accounted for 42.6% of their total assets; The proportion of financial assets in households such as Japan, Singapore, Switzerland, the UK, Canada, and France is also much higher than that in China, at 61.1%, 56%, 54.4%, 52.2%, 48.6%, and 39.8%, respectively. Meanwhile, according to the 2022 China Household Wealth Index Research Report, the average returns on household investment and wealth management from 2020 to 2022 were 2.3%, 2.8%, and 1.75%, respectively; The proportion of households with negative cumulative returns throughout 2022 is 22.3%. With the rapid development of the Chinese economy, continuous improvement of the financial market, and the emergence of a large number of new financial instruments, on the one hand, why is the overall investment return rate of Chinese households so low? On the other hand, why is the participation of Chinese households in risky assets so low? Some even call it the mystery of "limited participation" in the Chinese resident stock market.

The factors that affect the allocation of household financial assets are multifaceted. Firstly, the external environment will affect the allocation of household financial assets, and the willingness to allocate household assets will change with changes in the external environment. According to the 2022 Research Report on the Chinese Family Wealth Index, during the epidemic phase in early 2020

and the relatively weak economic outlook in the first half of 2022, changes in the external environment led to an increase in uncertainty, resulting in a significant decrease in households' willingness to allocate financial assets at that time; When confidence recovers, households' willingness to allocate various assets gradually increases. Secondly, in terms of internal environment, taking the family population structure as an example, if there are elderly and children in the family that need to be taken care of, then the family is more likely to allocate its assets to risk-free or low-risk assets, and not invest or invest a small amount in high-risk assets. However, in any case, the effective allocation of family financial assets is a highly specialized issue, which involves balancing returns and risks, constructing a scientific investment portfolio by reasonably planning family investable assets and future income, in order to solve a series of problems such as family elderly care, education, medical care, and accident risk protection, in order to obtain satisfactory returns and eliminate uncertainty of family risks. And this puts forward certain requirements for the financial literacy level of families. The formation and improvement of financial literacy require a certain level of professional learning and long-term practice and experience accumulation, that is, people need to be exposed to financial products, learn financial knowledge, and participate in the financial industry. On the surface, on the one hand, it is due to the rapid increase in income brought by the dividend of rapid economic growth that households seek a way out for a large amount of "excess" funds; On the other hand, the continuous improvement and development of the financial market provide a variety of financial products to choose from. However, unlike the rapidly growing income levels in the short term and the constantly increasing new financial products, if the financial literacy level of the vast number of households in the process of institutional and economic transformation does not keep up with the speed of income growth, they will be unable to distinguish and choose complex and diverse financial products. This may be one of the main reasons for the low overall investment return of Chinese households and their low participation in risky assets.

Based on the above analysis, this study attempts to investigate the impact of residents' financial literacy level on their household risk asset allocation; Taking into account the differences in economic development levels between regions, urban and rural areas, and the differences in residents' perceptions of their own financial literacy, the specific impact differences of the above factors were analyzed through categorical regression.

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2. Empirical analysis

2.1. Data and Variable

2.1.1 Data sources

The data used in this article is from the 2019 China Household Finance Survey (CHFS), which covered 29 provinces nationwide and ultimately obtained information on 34643 households. The data is representative of both national and provincial levels.

The survey questionnaire consists of seven parts. The first part is the demographic characteristics of the surveyed households (individuals), including information on family members' gender, age, work, etc; The second part is about assets and liabilities, including production and operation assets, real estate, financial assets, credit card liabilities, credit demand, etc. The third part is about insurance and security, including data on social security and commercial insurance of the surveyed households (individuals); The fourth part is expenditure and income, specifically divided into consumer expenditure, transfer expenditure, transfer income, and other income and expenditure situations; The fifth part is financial knowledge, grassroots governance, and subjective evaluation, including the financial knowledge and risk attitude of the surveyed households (individuals), satisfaction with the effectiveness of basic public services, poverty alleviation projects, and economic expectations; The sixth part is about the education of family members; The seventh part is the end of the visit section, which records the address, contact information, acceptable follow-up forms, and frequency of the surveyed households (individuals).

2.1.2 Dependent variables

(1) Venture capital participation in Inv

The participation variable in venture capital is a measure of whether the respondent participates in venture capital. CHFS2019 conducted a survey on the types and values of assets held by the surveyed households. Based on the relevant asset categories surveyed in the questionnaire, we define the public market stocks, non-public market stocks, bonds, funds, internet wealth management products, financial wealth management products, etc. held by the surveyed households as risk assets. If the respondent holds any one or more of them, it is considered as participating in venture capital. In this case, the value of the venture capital participation variable is 1; Otherwise, the value is 0.

(2) Depth of venture capital

The depth of venture capital refers to the proportion of risky assets held by the surveyed household to their total household assets. The higher the proportion, the deeper the household's participation in venture capital investment. Among them, the total assets and risk asset value data of the surveyed households come from two sub databases of CHFS data. This article matches the two databases to calculate the depth variable of household risk asset investment. The minimum value of the risk asset investment depth variable is 0, and the maximum value is 1.

2.1.3 Independent variables

(1) Financial literacy Fin

The definition of financial literacy in this article is the sum of residents' understanding of their level of financial knowledge and their level of financial knowledge mastery. Specifically, this article measures the financial literacy of respondents based on the seven questions in the questionnaire that can reflect their financial literacy, as shown in Table X earlier. The specific scoring criteria are as follows: for questions h3101 and d9203, options 1-5 are assigned 1, 0.75, 0.5, 0.25, and 0 points respectively; For questions h3105, h3106, h3112, h3113, and e3005dg, if the respondents choose the correct option, a score of 1 will be given, and for all other options, a score of 0 will be given. After obtaining the scores for all questions, sum them up to obtain the score level representing the respondents' financial literacy. Then, this article uses the direct aggregation method to measure the financial literacy of the surveyed households, and uses the financial literacy of the household head as a representative of the family's financial literacy level.

2.1.4 Control variables

Referring to previous literature research, this article mainly selected control variables from the following three aspects: at the level of individual characteristics, gender, age, education, marital status, health status, and risk preference of the head of household were selected as control variables; At the household level, we selected the nature of household registration, total household population, number of houses owned, total household assets, and happiness as the control variables; At the regional level, the per capita disposable income of the province (or autonomous region), the location of the surveyed household, and the city where they are located were selected as the control variables. Moreover, logarithmmization is performed on some control variables to eliminate the influence of inverse variance. The names, symbols, and meanings of variables are shown in Table1.

Table1. Variable Definition Table

Variable name	symbol	Meaning of variables
Gender	Sex	1 for males and 0 for females
Age	Age	Age of the surveyed household head
Education	Edu	Values range from 1 to 9, corresponding to never attended school, primary school, junior high school, high school, technical/vocational high school, college/vocational college, undergraduate, master's, and doctoral students, respectively
Marriage	Wed	Married=1, otherwise=0
health condition	Hel	Values range from 1 to 5, corresponding to very good, good, average, bad, and very bad respectively
Nature of household registration	RPR	Rural household registration is 1, urban household registration is 0
Total household population	Num	Number of households
Owning housing	Hou	1 for households with housing, 0 for households without housing
Total household assets	Asset	Natural logarithm of total household assets
Happiness	Hap	According to "Questionnaire question H3514: Overall, do you feel happy now", 1 represents the highest level of happiness, and 5 represents the lowest level of happiness
Risk appetite	Riskap	According to questionnaire question H3104: If you have an investment fund, which type of project would you be willing to invest in? "1 represents high risk and high return, and 5 represents unwillingness to take any risks
Per capita disposable income in the region	APCDI	Match based on per capita disposable income in the province (autonomous region) where the household is located
Area	Area	1 in the eastern region, 2 in the central region, and 3 in the western region
City	City	1 for first tier and new first tier cities, 2 for second tier cities, and 3 for third tier cities and below

2.1.5 Empirical model

(1) The dependent variable of family venture capital participation, Inv , is 0-1 variable. Therefore, a Probit model is constructed to analyze the impact of financial literacy on family venture capital participation. The Probit model is:

$$Y_i = 1(\alpha_i Fin_i + \beta_i X_i + \mu_i > 0) \quad (1)$$

Among them, $\mu_i \sim N(0, 6^2)$; If Y_i equals 1, it indicates that the respondent has participated in venture capital, and if Y_i equals 0, it indicates that they have not participated in venture capital; Fin_i is the independent variable of financial literacy; X represents the control variable; μ_i is a random perturbation term.

(2) The depth of risk investment in the dependent variable is the proportion of risk assets to total household assets. Considering that some households do not have risky asset investments, this variable is a truncated variable. Based on this, this article further uses the Tobit model to analyze the impact of financial literacy on the depth of venture capital. The Tobit model is:

$$Y_i = \alpha_i Fin_i + \beta_i X_i + \varepsilon_i, Y_i = \max(0, y_i) \quad (2)$$

Among them, $\mu_i \sim N(0, 6^2)$; Y_i represents the proportion of risky assets to total household assets, Y_i represents the observed value of the proportion of risk assets to total assets between (0, 1); Fin_i is the independent variable of financial literacy; X represents the control variable; ε_i is a random perturbation term.

3. Empirical Process and Results

3.1. Main Regression Analysis

Table2 presents the empirical results obtained by analyzing the impact of financial literacy on household venture capital participation and depth using probit and tobit models. Column (1) studies the impact of financial literacy on household venture capital participation. Among them, the marginal effect of independent variable financial literacy is 0.2440, which is significant at the 1% level. This indicates that when financial literacy improves by one unit, the probability of households participating in venture capital will increase by 24.4%. This result indicates that improving financial literacy has a positive impact on the participation of households in venture capital investment. At the same time, from the perspective of control variables, the marginal utility of the head of household gender on household venture capital investment participation is 0.1157, which is significant at the 1% level. This indicates that when the head of household gender is male, the probability of household participation in venture capital investment will decrease by 11.57%; This may be related to women's greater decision-making power over family wealth. In terms of the age of the head of household, the marginal effect is -0.0055, which is significant at the 1% level. This indicates that as the age of the head of household increases, the probability of households participating in venture capital investment will decrease; As the head of household ages, especially from young to elderly, their requirements for asset stability will gradually exceed their requirements for asset profitability, that is, "stability comes first". On the one hand, due to their age, their competitiveness in the labor market gradually decreases, and their ability to obtain labor income decreases. Secondly, in the face of a decline in physical function, their expenditure on health may also increase; On the other hand, as the head of a family, he/she bears the responsibility of taking care of the entire family, which is also a disadvantageous factor for his/her family's participation in venture capital. Overall, as people age, especially household heads who gradually enter the elderly stage, their probability of participating in venture capital will decrease. In terms of the education level of the head of household, as the education level increases, the probability of households participating in venture capital investment also increases. The marginal effect of each stage of education on household venture capital participation is 0.0622. In the evaluation of financial literacy, financial knowledge accounts for a considerable proportion, and education level is also a measure of family knowledge level. It is not difficult to

understand that there is a certain connection between financial knowledge and education level, resulting in the overlap between financial literacy and education level. Therefore, the higher the education level of households, the higher the probability of their families participating in venture capital investment. In terms of physical health, the marginal effect of health factors on household participation in venture capital investment is -0.0322, indicating that as the degree of physical health decreases, the probability of households participating in venture capital investment will also decrease. The poorer their physical health, the higher their expenses for medical treatment, medication, and other aspects will increase. At the same time, the decrease in their physical health will also reduce their ability to obtain labor remuneration, and thus, their probability of participating in venture capital investment will also decrease. In terms of household registration nature, compared to urban household registration, the probability of households with rural household registration participating in venture capital investment will decrease by 15.03%. Compared to urban households, rural households may face a worse economic environment and have limited access to financial knowledge, resulting in a lower probability of participating in venture capital investment. In terms of total household population, as the total household population increases, the probability of participating in venture capital investment also increases. As the total population of a family increases, the level of social interaction in the family will be higher, and the level of social interaction often has a strong positive correlation with the participation of venture capital investment. Therefore, as the total population of a family increases, the probability of participating in venture capital investment increases. In terms of whether to own a property or not, compared to households who own a property, households who do not own a property have a 41.82% higher probability of participating in venture capital investments. According to previous research by scholars, owning property by households can have a "crowding out effect" on financial market participation, meaning that owning property reduces the likelihood of households participating in risky assets. In terms of total household assets, as the total household assets increase, the likelihood of participating in venture capital investment also increases, with a marginal effect of 0.2714. The increase in total household assets means an increase in disposable resources for households, making them more likely to invest their funds in risky assets. From the perspective of risk preference, households with lower risk preferences have a lower probability of participating in venture capital investments, which is another validation of the mechanism analysis mentioned earlier. In terms of per capita disposable income in the region, the marginal effect is 0.1788, which is significant at the 1% level, indicating that the higher the per capita disposable income in the region, the higher the likelihood of households participating in venture capital investment. The higher the disposable income of a region, the more developed its economy is, and the better its business and financial environment is. A good and convenient investment environment increases the likelihood of households participating in venture capital investment. From a regional perspective, the likelihood of households in the eastern region participating in venture capital investment is higher than in the central region and even higher than in the western region. Moreover, in terms of cities, the marginal effect is -0.0503, which is significant at the 1% level, indicating that the probability of households participating in venture capital investment in first tier and new first tier cities is higher than that in second tier cities, and even higher than that in third tier and below cities. City classification is often divided based on factors such as economic development level. According to the previous analysis, external factors are also important factors affecting household participation in venture capital investment. Therefore, as the city level decreases, the likelihood of households participating in venture capital investment also decreases.

Column (2) studies the impact of financial literacy on the depth of family venture capital. The regression coefficient of the independent variable financial literacy on the depth of family venture capital is 0.0301, which is significant at the 1% level. This indicates that financial literacy has a significant positive impact on the depth of family venture capital investment. The higher the level of financial literacy of a family, the higher the proportion of risky assets they invest in the total assets of the family. In terms of controlling variables, the regression coefficient of the gender of the head of household is also significantly positive, indicating that the gender of the head of household being

male will also provide a certain positive impact on the depth of household venture capital investment; Based on the regression results of the probit model, it can be seen that having a male head of household not only increases the probability of household venture capital investment, but also increases the depth of household venture capital investment. In terms of education level, the higher the education level of a household head, the greater the depth of their family's venture capital investment. The higher the level of education, the more extensive their knowledge and the more likely they are to learn about or have a more accurate understanding of risky financial assets, which will further increase their investment in risky financial assets. From the perspective of health level, the lower the health level, the more medical expenses it may have, resulting in less funds for venture capital investment. In terms of household registration nature, the regression results show that the depth of venture capital investment in urban households is higher than that in rural households. Compared to rural households, urban households are often wealthier, and therefore their investment depth in risky assets is often higher. In terms of family size, the regression coefficient between family size and the depth of venture capital investment is 0.0031, which is significant at the 1% significance level. The larger the household population, the higher its income generating ability. Compared to its increased rigid expenditure, its disposable income will become higher, thus the depth of venture capital investment will also be higher. Similarly, in terms of the impact of owning a property on the depth of investment in risky assets, the regression coefficient is significantly positive, indicating that the "crowding out effect" is not only reflected in investment participation, but also in investment depth. The regression coefficient of total household assets is also significantly positive. The higher the total assets of a household, the higher their attention to asset profitability, which is more likely to increase their depth of investment in risky assets. In terms of risk preference, households with a preference for lower risk and lower returns will also have a lower depth of risk asset investment. In terms of regional factors, the regression coefficients of per capita disposable income and urban level in the region are significant, and both indicate that the more developed the regional economy, the better the economic environment, and the deeper the risk asset investment of households.

Table 2. Main Regression Results Table

	(1)	(2)
Fin	0.2440*** (0.008)	0.0301*** (0.001)
Sex	-0.1157*** (0.023)	0.0145*** (0.003)
Age	-0.0055*** (0.001)	-0.0000 (0.000)
Edu	0.0622*** (0.007)	0.0077*** (0.001)
Wed	0.0166 (0.031)	0.0052 (0.004)
Hel	-0.0322** (0.011)	-0.0043** (0.001)
RPR	-0.1503*** (0.027)	-0.0227*** (0.004)
Num	0.0571*** (0.007)	0.0031** (0.001)
Hou	0.4182*** (0.040)	0.0994*** (0.005)
Asset	0.2714*** (0.010)	0.0300*** (0.001)
Hap	0.0222 (0.012)	0.0021 (0.002)
Riskap	-0.0957*** (0.009)	-0.0127*** (0.001)
APCDI	0.1788*** (0.044)	0.0141* (0.006)

Area	-0.0263 (0.015)	-0.0026 (0.002)
City	-0.0503*** (0.014)	-0.0046** (0.002)
_cons	-5.8413*** (0.478)	-0.5980*** (0.061)
LR chi2(15)	8759.24	7616.20
Pseudo R2	0.2916	0.5732
Obs	34420	34420

Note: (1) Clustering robustness standard error in parentheses;

(2) The corresponding significance levels for ***, **, * are 1%, 5%, and 10%, respectively.

3.2. Endogeneity testing

In the existing research, some researchers chose "the highest level of education among parents" as the instrumental variable for financial literacy. Meanwhile, some scholars have chosen the average level of financial literacy in the same community as the instrumental variable for family financial literacy to address endogeneity issues, while others have chosen the provincial average level of financial literacy as the instrumental variable for family financial literacy. Here, this article selects the average financial literacy level of the city where the family is located as a tool variable to address potential endogeneity issues. The average financial literacy of the city where the sample is located is related to its own financial literacy, but not to its participation in venture capital investment and depth of investment.

By using the average financial literacy of the city where the family is located as an instrumental variable, this article obtains the following regression results. Among them, the regression results of independent variable financial literacy are still significant. Meanwhile, the regression results of most control variables are also significant. In addition, this article also conducted a weak instrumental variable test, and the results are shown in Table3. The above results all indicate that after considering the possible endogeneity, the research conclusion of this article still holds.

Table 3. Table of instrumental variable regression results

	(1)	(2)
Fin	0.6572*** (0.081)	0.0733*** (0.010)
Controls	Yes	Yes
First stage estimated F-value	1465.42	1465.42
Tool variable t-value (z-value)	20.08	20.08
wald test	28.01	18.78
Obs	34420	34420

3.3. Robustness analysis

To verify the reliability of the above regression results, this article uses principal component analysis to re measure the independent variable of financial literacy. By conducting principal component analysis on seven problems under the direct aggregation method and selecting factors with cumulative variance contribution rates greater than 85%, this paper extracted five factors, and then obtained the regression results under the principal component analysis method. Table4 presents the regression results of financial literacy on household risk asset investment participation and investment depth under the principal component analysis method. Column (1) shows the regression results of financial literacy under the principal component analysis method on household risk asset investment participation, and Column (2) shows the regression results of financial literacy under the principal component analysis method on household risk asset investment depth. Among them, in terms of participation in household venture capital investment, the regression coefficient decreased

from 0.2440 to 0.1689; In terms of depth of investment in household risk assets, the regression coefficient decreased from 0.0301 to 0.0219. The regression results of independent variable financial literacy, although slightly lower than the regression coefficient values under the total score method, still maintain a high degree of significance. In terms of control variables, except for a decrease in the significance level of individual control variables, most control variables only show slight changes in the size of the regression coefficient, and the relationship between them and the explained variable is consistent with the results obtained by the score aggregation method. This indicates that the research conclusion of this article has a certain degree of robustness.

Table 4. Table of PCA method regression results

	(1)	(2)
PCA-Fin	0.1689*** (0.010)	0.0219*** (0.001)
Controls	Yes	Yes
LR chi2(15)	7947.41	6828.88
Pseudo R2	0.2628	0.5139
Obs	34420	34420

3.4. Quantile regression

To verify the impact of household financial literacy on household risk asset participation and investment depth under different levels of financial literacy, this article divides the sample into five groups based on the level of financial literacy. Among them, the financial literacy scores corresponding to bottom20%, 20% -40%, 40% -60%, 60% -80%, and 80% -100% are 0-1.4, 1.4-2.8, 2.8-4.2, 4.2, 5.6, and 5.6-7.0, respectively, and conducts segmented regression to explore the different levels of financial literacy, The impact of financial literacy on the participation and depth of family venture capital investment.

Table5 and Table6 respectively report the regression results of the impact of financial literacy on household risk asset investment participation and investment depth under different levels of financial literacy. In terms of the impact of financial literacy on household venture capital investment participation, in the lowest percentile array of Bottom20%, the maximum marginal effect is 0.2516; This indicates that the process of financial literacy from scratch has the most significant impact on the participation of households in venture capital investment. In the remaining four groups, with the improvement of family financial literacy level, the marginal effect on family risk asset participation is gradually increasing, indicating that with the improvement of financial literacy level, the probability of family participation in risk asset investment is increasing.

In addition, in terms of the impact of financial literacy on the depth of household venture capital investment, the impact of financial literacy on the depth of venture capital investment is significantly positive, with the highest marginal effect being 0.0403 and the lowest being 0.0263. Firstly, in all groups, the impact of financial literacy on the depth of household venture capital investment is significantly positive; Secondly, the lowest value appears in the Top 20% group, indicating that for families with the highest level of financial literacy, their financial literacy has the smallest impact on the depth of family risk asset investment; Thirdly, for families with the lowest financial literacy, the impact of their financial literacy on the depth of family venture capital investment is 0.0297; For families with low, medium, and high scores in financial literacy, the impact of financial literacy on the depth of family risk asset investment is gradually increasing; However, when the level of financial literacy reaches its highest level, its impact on the depth of household venture capital investment decreases. Overall, the impact of financial literacy on the depth of family venture capital investment shows a trend of first increasing and then decreasing, which is similar to the research conclusions of Luo Wenying and others. The reason for this trend may be that in the high level of financial literacy group, the negative impact of risk aversion is greater, that is, with the improvement of financial

literacy level, the negative effect of risk attitude on the depth of household venture capital investment is increasing.

Table 5. Quantile regression-Inv

	Bottom 20%	20%-40%	40%-60%	60%-80%	Top20%
Fin	0.2516*** (0.009)	0.2118*** (0.019)	0.2340*** (0.030)	0.2365*** (0.053)	0.2374*** (0.055)
Controls	Yes	Yes	Yes	Yes	Yes
LR chi2	6183.35	1426.46	710.89	241.74	188.39
Pseudo R2	0.2870	0.2853	0.3280	0.3552	0.3520
Obs	23985	6339	2528	1083	472

Table 6. Quantile regression-Depth

	Bottom 20%	20%-40%	40%-60%	60%-80%	Top20%
Fin	0.2516*** (0.009)	0.2118*** (0.019)	0.2340*** (0.030)	0.2365*** (0.053)	0.2374*** (0.055)
Controls	Yes	Yes	Yes	Yes	Yes
LR chi2	6183.35	1426.46	710.89	241.74	188.39
Pseudo R2	0.2870	0.2853	0.3280	0.3552	0.3520
Obs	23985	6339	2528	1083	472

3.5. Summary

This chapter verifies through empirical analysis that financial literacy has a positive impact on household risk asset investment participation and investment depth; Secondly, by using the "financial literacy level of the surveyed household's city" as the instrumental variable, the possible endogeneity issues in the model were addressed. The results showed that, after considering endogeneity, the research conclusion of this article is still significant. Finally, this section further analyzes the robustness of the research conclusions. Firstly, in terms of measuring financial literacy, this article uses principal component analysis to re measure the level of financial literacy, and repeats the empirical process mentioned earlier. The results are still significant; Secondly, for the measurement of household risk assets, this article introduces the value-added real estate - store assets held by households, regains the variables of household risk asset investment participation and investment depth, and repeats the previous empirical process, with significant results; Thirdly, this article verifies the impact of financial literacy levels on the participation and depth of household risky assets under different levels of financial literacy through group regression. The regression results show that the most effective use of financial literacy is significantly positive in all groups, and in terms of the depth of household risky asset investment, it is possible that risk attitude factors suppress the impact of financial literacy on the depth of household risky asset investment.

4. Research conclusions and policy recommendations

4.1. Main research conclusions

The research topic of this article is the impact of financial literacy on household venture capital. Based on current research, this article further analyzes the impact mechanism of financial literacy on household venture capital investment and proposes research hypotheses. In the empirical analysis section, firstly, this article proves through probit and tobit models that the improvement of financial literacy will have a significant positive impact on household risk asset investment participation and investment depth. The instrumental variable method is used to solve the possible endogeneity problems in the model, and principal component analysis is used to re measure financial literacy, taking into account the value-added real estate shops held by households in risk assets, The robustness

of the research results was further enhanced through the above two methods. At the same time, this article analyzed the differences in the impact of financial literacy on household risk asset investment participation and investment depth among households with different levels of financial literacy through quantile regression. Secondly, in the heterogeneity analysis section, this article considers the following four aspects: firstly, the situation of housing holdings. For surveyed households holding different quantities of housing, empirical analysis has found that housing assets will occupy a large amount of household funds, thereby significantly inhibiting the participation and depth of household venture capital investment. Secondly, the impact of risk appetite. For surveyed households with different risk preferences, the impact of their financial literacy on household risk asset investment participation and investment depth may be different. Through the analysis in this section, it is found that in terms of participation in venture capital investment, the impact of financial literacy on household venture capital investment shows a fluctuating downward trend as risk preference decreases; In terms of the depth of venture capital investment, for surveyed households willing to take on certain risks, as their risk preference increases, the impact of financial literacy on the depth of household venture capital investment also shows an increasing trend. Thirdly, urban and urban-rural differences. Through empirical research, this article finds that financial literacy has a greater impact on the participation and depth of venture capital investment of urban households; Moreover, with the decline of urban level, the inter group differences in the impact of financial literacy on the investment depth of household venture capital investment participation are decreasing. Fourthly, there are cognitive differences in financial literacy. Through analysis, this article found that financial literacy has the greatest impact on the rational group's participation in household risk asset investment, while the impact of investment depth is the smallest.

4.2. Policy recommendations

4.2.1 Suggestions for government policies

Given that financial literacy does have a significant impact on household risk asset investment, government agencies should increase their attention to residents' financial literacy to enhance the overall level of financial literacy among Chinese residents. On the one hand, for young people of appropriate age, further strengthening the education content in economic and financial aspects through the process of academic education, such as providing compulsory or elective economic and financial courses at various school levels for students to learn. Mastering a certain level of economic and financial knowledge is an essential part of a person's life, and the economic and financial knowledge learned from life is often too one-sided and messy. Through systematic course learning and mastering systematic knowledge, it can have a lasting and profound impact on their future financial planning, asset investment, and other aspects of life. Secondly, in terms of investor education, we will further utilize existing financial institutions such as banks and securities companies to conduct investor education activities through various financial outlets, and consider using regulatory agency personnel as mentors to increase residents' participation rate. Finally, for residents in different regions and cities, their financial literacy level and required financial knowledge focus may also differ. The government should provide more targeted investor education activities based on understanding the needs of residents.

4.2.2 Suggestions for Financial Institutions

Financial institutions, as a bridge between relevant government departments and households, play an important role in improving the financial literacy of households. For financial institutions, they should be aware of their investor education responsibilities and integrate investor education into their daily business activities. At the same time, they should also carry out diversified investor education activities, and do a good job of investor education from multiple perspectives and depths through multi-point efforts. Secondly, among different risky financial assets, the proportion of investment in financial and wealth management products is the highest, which is a double-edged sword for financial institutions, especially banks. Firstly, this indicates that households are still more involved in the risky

financial market through bank wealth management products, and marketing various products will undoubtedly bring development opportunities to banks; Secondly, for banks, if their products cannot meet the diverse needs of investors, they may face problems such as customer churn. Therefore, they need to strengthen their product development capabilities, innovate through the old, and meet the needs of investors with a wide range of financial products and product combinations, which is conducive to their long-term development.

4.2.3 Suggestions for Resident Families

For resident families, improving their financial literacy is beneficial for them to better participate in the financial market, including risky financial assets, and also greatly benefit them in choosing financial products. Therefore, in the process of improving financial literacy, they should actively participate and learn. As the saying goes, "Teaching people and fishing is better than teaching people and fishing. In terms of family finance, their financial literacy is the "fishing gear". Good financial literacy is the basis for residents' families to make decisions when facing various complex financial products. Residents with higher financial literacy are more likely to improve their efficiency in choosing financial products and make rational investments. In addition, with the rapid development of the Internet and the further enrichment of internet finance knowledge, residents can access various financial information without leaving their homes. Residents can use this emerging channel to improve their financial literacy. At the same time, facing the increasingly complex financial environment, residents' families should also enhance their awareness of prevention and not blindly follow in the process of participating in the financial market and improving their financial literacy. They should try to obtain and understand relevant information from formal financial institutions, and identify the authenticity of the information.

4.3. Future research prospects

Due to limitations in space and effort, this article only conducted relevant research using CHFS2019 data and drew relevant conclusions. However, the formation and improvement of financial literacy is a relatively long-term process. Therefore, if recent CHFS data can be comprehensively utilized and the time span can be further expanded, it will further supplement the relevant research conclusions of this article and enrich household finance research.

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