

The Influence of Financial Literacy on Family Property Income

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ABSTRACT

The 14th Five-Year Plan and 2035 vision proposed to increase the property income of Chinese residents through various reasonable and legal means. As the basic unit of economic development in urban and rural areas, family income is of great importance. Improving household income is the key to win the overall well-off society, and financial literacy is an important factor affecting family income. The analysis is based on the 2019 China Household Finance Survey (CHFS) data. The results show that financial literacy has an obvious effect on the level of family property income in our country. Mechanism analysis shows that household participation in financial market plays an intermediary role in the process of financial literacy affecting property income. Heterogeneity analysis shows that the impact of financial literacy on property income is significantly greater for cities.

KEYWORDS: *financial literacy; Property income; Financial market participation*

1. Background

The income mainly includes labor income, business income, property income and transfer income. In recent years, with the development of economy, the property income of people in our country has been rising steadily. The proportion of property income in total income is also increasing gradually, and it becomes an important source of family income. Increasing residents' property income is an important way to consolidate the achievements of poverty alleviation and realize the upward income mobility of low-income groups [1]. At the same time, the proportion of property income can be used to measure a country's marketization and the degree of national economic development of the key index.

Financial literacy, as an indicator to measure the family's mastery of financial knowledge, proficiency in the application of financial skills and the rationality of investment decisions, has been paid more and more attention by the country and government in recent years [2]. However, the Consumer Financial Literacy Survey and Analysis Report (2021), by objectively empowering variables and calculating the consumer financial literacy index, shows that the national consumer financial literacy index is 66.81, 2.04

higher than that in 2019. It can be seen that the financial literacy of Chinese residents has been improved, but it is generally low, and further development and progress are needed. The level of financial literacy will have an important impact on the financial investment decisions of the whole family.

To sum up, property income plays an important role in enriching family income sources, improving family's ability to resist risks and improving family welfare. At the same time, the comprehensive reform of the domestic capital market, the development of global financing and the emergence of various investment products have created opportunities for Chinese households to earn property income [3]. However, relatively low financial literacy may act as a barrier to further growth in Chinese household property income. In this paper, we take the family as the research object, take financial literacy as the entry point, and property income as the research scope, to specifically study how financial literacy affects family property income, and explore its potential mechanism in more detail, and conduct heterogeneity analysis.

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2. Literature review

Tao Weirong believes that financial literacy is an important factor affecting the family income of urban and rural residents, and proves through empirical research that financial literacy has a positive effect on the total family income, wage income and property income, and a negative impact on the family transfer income [4]. Rooij et al. 's research shows that financial literacy can promote family financial market participation to a certain extent and increase family income [5]. Hu Zhen et al. proved that financial literacy can affect family decision-making, and higher financial literacy is conducive to family wealth accumulation [6]. Conversely, a lower level of financial literacy will increase the probability of family financial decision-making errors, resulting in individual wealth loss [7]. Yin Zhichao also found that financial literacy has a significant positive impact on household wealth accumulation, and it plays a greater role in promoting the wealth of families with low wealth value than those with high wealth value, thus helping to narrow the wealth gap between families. Therefore, it encourages the strengthening of financial knowledge education and training, and speeds up the popularization of financial knowledge [8]. Therefore, this paper believes that financial literacy has an important impact on residents' property income, and the specific effects and influencing mechanism still need to be further explored.

3. Research hypotheses and data sources

3.1. Research hypothesis

Based on the above analysis, the following hypotheses are proposed:

Hypothesis 1: Financial literacy has a positive impact on households' access to property income.

Hypothesis 2: Financial literacy increases the probability of financial market participation, which has a positive impact on property income.

3.2. Data sources

This paper mainly uses data from the 2019 China Household Finance Survey (CHFS) released by the China Financial Survey and Research Center of Southwestern University of Finance and Economics, which covers 29 provinces and 355 districts and counties in China, and is highly representative. The questionnaire includes the personal situation of family members, family assets, family debts and family income and expenditure, etc., which provides more comprehensive family financial information and data needed for this study. Since the research object of this paper is families, sample data of families are adopted, and samples with household heads younger than 18 years old, outliers and missing values are excluded.

3.3. Model

In order to investigate the impact of financial literacy on household property income, the regression equation constructed in this paper is as follows:

$$\text{Lnincome} = \beta_0 + \beta_1 \text{LIT}_i + \beta_2 X_i + \varepsilon_i \quad (1)$$

Lnincome represent the logarithm of household property income and X_i represent control variables like gender.

3.4. Variable setting

3.4.1. Property income

The explained variable is resident property income. In this paper, it is defined as whether there is property income. Property income is the sum of house rental income, shop rental income, cultivated land transfer income, homestead rental income and financial asset income. This paper adopts the comprehensive data of questionnaire property income.

3.4.2. Financial literacy

Financial literacy is the core explanatory variable of this paper. In this paper, Yin Zhichao [9], Zhang Ji et al. [10] and Meng Hongwei et al. [11] have adopted the construction method of financial literacy, and adopted the iterative principal factor method in factor analysis method to take the variance contribution rate after factor rotation as the weight to construct the comprehensive index of financial literacy. According to the actual needs and the contents of the 2019 survey questionnaire of CHFS, data of 6 questions including financial literacy were selected to construct the core explanatory variables. The detailed values are as follows:

1. High-return projects are usually accompanied by high risks. Do you think this statement is correct? Correct answers are given a value of 1 and incorrect answers are given a value of 0.
2. Does your family have a stock account at present? The answer is 1, no 0.
3. Does your family have a fund account at present? The answer is 1, no 0.
4. Does your family have a bond account at present? The answer is 1, no 0.
5. Assuming that the annual interest rate of the bank is 4%, if I deposit 100 yuan for one year, how much principal and interest will I get after one year? Answers are given a value of 1 for correct answers and 0 for incorrect answers.
6. Assuming that the annual interest rate of the bank is 5% and the inflation rate is 3%, what will happen to the things you can buy after depositing 100 yuan in the bank for one year? Answers are given a value of 1 for correct answers and 0 for incorrect answers.

Firstly, KMO test was conducted for 6 variables to check the correlation between variables and determine whether it is suitable for factor analysis. The test result was that the comprehensive KMO value of 6 variables was equal to 0.604, indicating that it is suitable for factor analysis. Secondly, the iterative principal factor method is used for factor analysis, and the result of factor analysis is shown in

Table 1. Finally, three influencing factors with eigenvalues greater than 1 were selected, and the values of factor 1, factor 2 and factor 3 were used to construct the score of family financial literacy. Finally, the financial literacy index is calculated according to the factor loading, and the index is normalized to 0-1.

Table 1 Factor analysis results

Factor	Variance	Proportion	Cumulative
Factor1	1.46049	0.2434	0.2434
Factor2	1.19708	0.1995	0.4429
Factor3	1.01822	0.1697	0.6126
$X^2=9603.27$		P=0	

3.4.3. Household financial market participation

The question is asked differently from database to database, so the meaning of the metrics used for this variable is not exactly the same across different databases. This paper refers to the definition of household financial market participation by Wu Weixing [12], and uses "whether you participate in the stock market" as the index of household financial market participation. If the answer "yes" is 1, the answer "no" is 0. Since stock is the most common financial product in household financial market participation, the participation rate of stock market can be used as an approximate indicator of household financial market participation.

3.4.4. Control Variables

The control variables were divided into household head characteristic variables, family characteristic variables and regional characteristic variables. The characteristic variables of the household head include the gender, age, education level and marital status of the household head. Family characteristic variables mainly include the number of family members, total family income, total family assets and total household consumption expenditure. The regional characteristic variable selected whether the surveyed households were located in rural or urban areas and their distribution areas.

Table 2 Variable description

	dimension	variable	Variable interpretation
Explained variable	Income	Household property income, take the logarithm	Actual income (yuan)
		Do you think it is true that high profit projects are usually accompanied by high risk	Right =1, wrong =0
		Currently, do you have a stock account in your family	Yes =1, no =0
		Currently, does your family have a fund account	Yes =1, no =0
		Currently, do you have a bond account in your home	Yes =1, no =0
Explanatory variable	Financial literacy	Suppose that the annual interest rate of the bank is 4%, if I deposit 100 yuan for one year, how much principal and interest will I get after one year	Right =1, wrong =0
		Suppose the annual interest rate is 5% and the inflation rate is 3%. What happens to what you can buy if you put 100 yuan in the bank for a year	Right =1, wrong =0
Control variable	Householder characteristics	Gender	male=1, female=0
		Age	Actual age (years) No primary school=1, primary and middle school level=2, high school and technical secondary school,

		Edu	vocational high school =3, junior college, vocational high school and bachelor's degree=4, graduate and above =5
		Marriage	Married and remarried =1, rest=0
Family characteristics		Household size	Actual head count
		Total household assets, take the logarithm	Actual assets (yuan)
		Total household consumption expenditure, take logarithm	Actual consumption(yuan)
Regional feature		Whether the surveyed households live in rural areas or urban areas The geographical distribution of the surveyed households	Rural =1, urban =0 East =1, central =2, West =3, Northeast =4

4. Empirical analysis

4.1. Descriptive analysis

It mainly makes a descriptive analysis of the indicators to be used. Table 3 describes the sample number, maximum value, minimum value, average value and standard deviation of the variables used in this paper, as shown in the following table:

Table 3 Descriptive description of variables

VARIABLES	Obs	Mean	Std. Dev.	Min	Max
LITi	32,034	0.0429271	0.0764416	0	1
lnincome	25,944	4.419432	3.255495	0	13.35688
gender	32,034	0.7524817	0.4315771	0	1
age	32,024	56.37316	13.63728	18	101
edu	32,034	2.165137	1.032703	1	4
health	32,034	3.256134	1.002345	1	5
marriage	32,034	0.8469751	0.3600171	0	1
party	32,034	0.1836486	0.3872034	0	1
familynumber	16,593	3.024408	1.514497	1	15
lnasset	32,034	12.74019	1.754753	0	21.465
lnconsump	32,034	10.84628	0.890001	7.080868	15.46824
rural	32,034	0.3518137	0.4775437	0	1
region	32,034	2.13726	1.040729	1	4

As can be seen from the table, the mean value of financial literacy is 0.04, indicating that the overall level of financial literacy is low. Property income only considers families with an income of more than 0 yuan. Demographic data shows that, from the aspect of gender, nearly 70% of the respondents are female, which is more than men. The average age is 56 years old, the education level is relatively low, the health level is average, and up to 80% are married. Household data show that the average size of the sample family is three people, with a wide gap in assets and consumption.

4.2. Regression analysis

This paper shows the influence of financial literacy on household property income by gradually adding control variables, as shown in Table 4. It can be seen from the empirical results that the significance level of family financial literacy at 1% improves family property income, that is, the higher the level of financial literacy, the higher the family's acceptance of financial investment products, the clearer the cognition of investment risk than that of families with low financial knowledge, and the easier it is to obtain higher property income through reasonable financial management and investment, which verifies hypothesis 1.

In terms of control variables, gender has no significant effect on property income in terms of personal characteristics of household head. There is a U-shaped pattern between the age of the head of the household and the property income of the household, possibly because the middle-aged are more experienced than the young and have more energy to follow the movements of the financial markets than the elderly. Education level, health status and marital status all have significant positive effects on family property income. In terms of family characteristics, family size and family economic conditions are important factors affecting property income. Property income is a kind of capital income. More capital is involved in the financial market, so it is more likely to obtain more property income. In terms of family and regional characteristics, families located in the eastern region have higher property income, mainly because the eastern region has a higher level of economic development, its financial market is more fully developed than that of the western region, residents have more diversified investment channels, providing more possibilities for residents to invest, and effectively promoting the improvement of family property income.

Table 4 Influence of financial literacy on household property income (OLS)

VARIABLES	(1) ln income	(2) ln income	(3) ln income	(4) ln income
LIT	0.133*** (0.003)	0.107*** (0.003)	0.076*** (0.004)	0.075*** (0.004)
gender		-0.042 (0.046)	0.080 (0.061)	0.051 (0.061)
age		0.025** (0.009)	-0.008 (0.012)	-0.004 (0.012)
age2		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
edu		0.481*** (0.022)	0.076* (0.031)	0.086** (0.031)
health		0.340*** (0.020)	0.178*** (0.027)	0.173*** (0.027)
marriage		0.525*** (0.058)	0.211** (0.078)	0.210** (0.078)
party		0.164** (0.051)	0.084 (0.068)	0.104 (0.068)
family number			-0.150*** (0.019)	-0.151*** (0.020)
ln asset			0.631*** (0.019)	0.611*** (0.019)
ln consump			0.237*** (0.037)	0.233*** (0.038)
rural				0.050 (0.063)
region				-0.171*** (0.025)
Constant	3.834*** (0.023)	0.021 (0.280)	-7.588*** (0.507)	-6.986*** (0.527)
Observations	25,944	25,938	13,664	13,664
R-squared	0.091	0.130	0.203	0.206

*** p<0.001, ** p<0.01, * p<0.05

4.3. Mechanism analysis

In order to further explore the mechanism role played by financial market participation as an intermediary variable, the mediating effect between financial literacy and property income is verified based on the above model. The results are shown in Table 5.

Table 5 Test results of mediating effect of financial market participation

VARIABLES	(1)	(2)	(3)
	ln income	ln income	ln income
LIT	0.0747*** (19.96)	0.0200*** (100.13)	0.0698*** (15.36)
Market			0.283*** (1.91)
Constant	-6.986*** (-13.26)	-0.244*** (-8.47)	-6.920*** (-13.11)
Control	Yes	Yes	Yes
R2	0.21	0.44	0.21

***p<0.001, **p<0.01, *p<0.05

In Table 5, column (1) shows that financial literacy significantly increases household property income; Column (2) indicates that financial literacy has a significant impact on financial market participation; Column (3) shows that under the combined effect of financial literacy and financial market participation, household property income still increases. However, compared with column (1), the estimated coefficient decreases from 0.0747 to 0.0698, but is still significant at 1%, indicating that financial market participation plays an intermediary effect in the relationship between financial literacy and household property income. In conclusion, financial literacy influences household property income by promoting household participation in financial markets. Therefore, hypothesis 2 is verified.

4.4. Heterogeneity analysis

Social environment and other aspects that may affect household wealth are income. Based on the literature review and the above analysis results, this paper analyzes the heterogeneity of family financial literacy from the perspective of urban and rural areas.

Table 6 Heterogeneity analysis of financial literacy

	urban and rural	
	urban	Rural area
LIT	0.0756*** (19.07)	0.0645*** (5.05)
Control	Yes	Yes
Constant	9912	3752

***p<0.001, **p<0.01, *p<0.05

According to the results in Table 6, the impact of financial literacy on urban residents is significantly greater than that of rural residents. The possible reasons are that the rural financial system is not perfect, the development of the financial market is not perfect, the main channel for rural residents to obtain financial property income is the bank deposit channel, the choice of financial products and investment channels is single, which seriously restricts the increase of property income. In conclusion, due to the lagging development of rural financial environment and land system, the impact of financial literacy on property income of rural residents is less than that of urban residents.

4.5. Robustness test

In this paper, the financial knowledge variables calculated by the score summing method are analyzed for robustness, and the test results are shown in Table 7. It can be found that financial knowledge is positively correlated with urban household property income on the whole, and the correlation and significance of other control variables are basically unchanged, so the empirical analysis in this paper can be considered robust.

Table 7 Robustness test of financial literacy

VARIABLES	(1) ln income	(2) ln income	(3) ln income	(4) ln income
LIT	0.965*** (0.019)	0.763*** (0.021)	0.518*** (0.028)	0.510*** (0.028)
gender		-0.064 (0.046)	0.074 (0.061)	0.043 (0.061)
age		0.032*** (0.010)	-0.003 (0.012)	0.000 (0.012)
age2		-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
edu		0.473*** (0.022)	0.066* (0.031)	0.078* (0.031)
health		0.339*** (0.020)	0.178*** (0.027)	0.173*** (0.027)
marriage		0.525*** (0.058)	0.206** (0.078)	0.205** (0.078)
party		0.176*** (0.051)	0.092 (0.068)	0.112 (0.068)
familynumber			-0.156*** (0.019)	-0.157*** (0.020)
lnasset			0.640*** (0.019)	0.619*** (0.019)
lnconsump			0.241*** (0.037)	0.238*** (0.038)
rural				0.060 (0.063)
region				-0.176*** (0.025)
Constant	4.379*** (0.019)	0.274 (0.282)	-7.527*** (0.510)	-6.920*** (0.529)
Observations	25,944	25,938	13,664	13,664
R-squared	0.086	0.124	0.200	0.202

*** p<0.001, ** p<0.01, * p<0.05

5. Conclusion analysis and policy suggestions

Based on 2019 data from the China Household Finance Survey (CHFS), this study examines the impact of financial literacy on household property income. The conclusion is as follows: overall, the level of financial literacy is low. The regression results show that financial literacy can significantly improve family property income. The results show that household financial market participation plays an intermediary role in the process of financial literacy affecting property income. Heterogeneity analysis shows that the impact of financial literacy on residents' property income is different between urban and rural areas, and the impact on urban residents is significantly greater.

According to the above conclusions, the following countermeasures are proposed:

First of all, we should improve people's financial literacy and increase their understanding of financial investment. Governments should use mass media

such as television, radio and the Internet to organize financial education campaigns among the population. Among them, we should focus on improving people's financial knowledge level and investment awareness. In terms of educational content, various forms of financial education should be implemented, focusing on strengthening financial risk education to help people understand financial risks.

Second, deepen the reform of the financial market. In order to promote the healthy development of the financial market, effectively protect the interests of investors and thus enhance the investment confidence of citizens, reform the financial market, promote the innovation of financial products, broaden the channels for households to participate in the financial market, and provide more opportunities for obtaining property income. In the future, while promoting financial development, attention should be paid to popularizing basic financial knowledge to the public, which is conducive to promoting families'

participation in the financial market and improving property income, so as to improve the welfare level of families.

Finally, differentiated popular content is developed according to different population characteristics. Specifically speaking, more practical and targeted publicity content should be developed based on the differences in acceptance ability and financial needs, so that all types of people can have access to their own financial knowledge and skills. For example, for the elderly group with low education in rural areas, more attention should be paid to the content of stable investment and financial fraud prevention.

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