

FACTORS INFLUENCING FINANCIAL LITERACY OF THE POOR IN RURAL AREAS: EMPIRICAL RESEARCH WITH THE CASE OF VIETNAM

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ABSTRACT

This paper aims to investigate the impact levels of factors on the financial literacy of the poor in rural area, using as a case an emerging country such as Vietnam. Qualitative and quantitative methods have been employed with primary data from 512 questionnaire respondents and 12-expert in-depth interviews. The result has shown that internal factors, including financial knowledge, financial behavior and financial attitude, are the reflective models affecting financial literacy, in which knowledge about savings and financial investment has the most significant influence. The study also tested that, among demographic factors, age, income, and education level positively impact financial literacy, while gender has no significant effect. Based on the findings, recommendations are proposed to shape the saving habits of the poor in rural areas and form financial attitude and financial behavior.

Keywords: education level, financial literacy, income, the poor, rural areas

DOI: <http://dx.doi.org/10.15549/jeecar.v9i4.735>

INTRODUCTION

During the 1980s and 1990s, the Washington Consensus - a set of economic policy recommendations for developing countries, and Latin America in particular - developed a view of financial inclusion and access to financial services, enabling individuals to invest or make better use of services in the market, thereby helping to promote the development of the free economy. This view offers a way to encourage finance from both the supply and demand sides. For the supply side, in addition to mainly

developing financial institutions, there is also a process of developing financial services and self-training in the process of economic development for people (such as using a new service or introducing a training program) to provide human resources for these organizations. For the demand side, to make transactions in the financial market, it is essential to increase individual income, increase exposure to information technology and increase aspects related to an understanding of accessing financial services, thereby providing appropriate attitudes and behaviors toward finance. Thus, the

authors will approach the research direction from the demand side of financial services.

The development of human capital goes hand in hand with sustainable economic growth. As Schultz (1961) noted, material capital, e.g., land, machinery, etc., cannot be used effectively without a human element. And to develop human capital, it also is necessary to develop financial literacy. Studies (Atkinson & Messy, 2012; OECD, 2013, 2015) have shown that financial literacy positively impacts poverty reduction by increasing income, however, there is no empirical evidence for this issue in rural areas in developing countries. In addition, the problems related to the poor and poverty alleviation in a developing country such as Vietnam have been approached from many aspects, such as policy and microfinance (Nguyen, Le, Ngo, & Nguyen, 2017), and from a financial inclusion perspective. But while it is necessary to disseminate knowledge to poor people about financial services and how to use them to reduce poverty, it should be noted that the poor in rural areas have minimal access to financial services, and their attitudes and behavior towards these services are highly ambiguous. There also is evidence that the influence of perspectives on behavior is irrelevant for the poor in countries that are transitioning from a centrally planned economy to a market-based one and which have cultures that, like Vietnam, are deeply influenced by Confucianism and Buddhism (Mai, Smith, & Cao, 2009; Tran, Nguyen, Van Vu, & Doan, 2017). Stemming from such views, we maintain that, to dramatically increase financial literacy for the poor in rural areas in emerging countries such as Vietnam, the main issue is to consider the factors that reflect on financial literacy and assess the impact of age, gender, income and education level on the financial literacy of the poor in rural areas.

LITERATURE REVIEW

Financial literacy

Noctor, Stoney, and Stradling (1992) defined financial literacy “as the ability to make wise judgments and make effective decisions regarding the use and management of money. Meanwhile, Schagen and Lines (1996) argued that financial literacy is expressed through knowledge about finance, thereby allowing the effective and responsible management of

financial matters and, as a result, further developing the attitude aspect of the subject. According to the OECD (2013) and Lusardi and Mitchell (2014), however, this view is vague and makes assessing all aspects of the problem difficult.

Willis (2008) defined financial literacy as the ability to use knowledge and skills to effectively manage an individual's financial resources for lifelong financial security. This view is also supported by Lusardi and Tufano (2015), who argued that financial literacy is the ability to absorb economic information and make decisions about financial planning, wealth accumulation, retirement planning and debt. Financial literacy thus includes three aspects - attitude, behavior, and knowledge - and so, in this study, financial literacy reflects financial knowledge, attitudes, and behaviors to make financial decisions and improve wealth.

Manifestations of financial literacy

Financial literacy is reflected through 3 main factors, which, as stated above, are financial knowledge, financial attitude, and financial behavior, precisely:

Financial knowledge

In the scope of this study, financial literacy is understood as the theoretical and practical knowledge necessary for an individual to make effective financial decisions. Potrich, Vieira, and Kirch (2015) argued that financial literacy helps develop positive economic attitudes, i.e., financial attitudes can change by improving people's financial literacy. Zhan (2006) analyzed and showed that increasing financial knowledge means increasing financial literacy.

Financial attitude

Financial attitudes are an individual's thoughts or beliefs about financial matters that influence the individual's behavior and decision-making. An individual's attitude towards financial behavior is influenced by their expectations of behavioral outcomes (Mai & Tambyah, 2011). On the other hand, behavioral beliefs combine personal financial behavior and individual measures of those potential outcomes. Therefore, behavioral beliefs, one of the components of financial attitudes, can be used to change a person's financial behavior (Atkinson & Messy, 2012; OECD, 2013).

Financial behavior

Financial behavior is the subject's effects on the fluctuations of the surrounding economy. Hilgert, Hogarth, and Beverly (2003) have shown that knowledge has no value without practical experience, and experience creates a bridge between knowledge and ability, thereby influencing an individual's money management. To take a closer look at this relationship, Lusardi and Mitchell (2014) found a positive association between the two variables. This result also is supported by other authors such as Zhan (2006), Scheresberg (2013) and Brown and Graf (2013). Financial behavior, however, often is divided into saving behavior (such as when poor individuals try to save their cash or place deposits in microfinance institutions), and investment behavior (in the form of using money in different activities in the economy).

Factors affecting people's financial literacy

Finance literacy is also affected by demographic factors such as income, education, age and gender, specifically:

Income

Income is one of the factors affecting financial literacy that is mentioned frequently in research, including in the research branch of human capital, endogenous growth models and theories of sustainable livelihoods. In their studies on financial literacy, Lusardi and Tufano (2015) showed that financial literacy has a positive relationship with income. This view is similar to De Clercq, Van Leeuwen, Van Den Noortgate, De Bolle, and De Fruyt (2009), Meier and Sprenger (2013), and Hastings and Mitchell (2020). Therefore, we propose the following hypothesis:

H1: Income has a positive effect on financial literacy

Education

Rebelo (1991) and Moock, Patrinos, and Venkataraman (2003) stated that a person's educational attainment is defined as the highest

grade completed in the national education system they have attended. Lusardi, Michaud, and Mitchell (2017) also agreed with the above when testing that the more educated people are, the higher their score on financial literacy. In this research, we divide education into five levels: literacy; elementary/middle school; high school; intermediate and vocational schools; and colleges and universities. We thus propose a second hypothesis:

H2: Education has a positive effect on financial literacy

Age

Lusardi and Mitchell (2007) contended that there are differences in the behavior and outcomes of planning and spending among young and middle-aged people. Scheresberg (2013), however, argued that there is no difference in financial literacy scores. While the view on the impact of age on financial literacy is still inconsistent and controversial in the studies, within the scope of the study, we propose the following hypothesis:

H3: Age has an impact on financial literacy

Gender

Lusardi et al. (2017) suggested a difference in financial literacy scores between women and men. Specifically, women often have lower financial literacy than men in most cases. Furthermore, women give unspecified answers to financial problems. Morgan and Trinh (2017) Van Hon and Khuong Ninh (2020) argued that the gender factor has less influence than other countries (in Vietnam, the sex coefficient is only half as compared to 30 OECD countries in 2016), which suggests that the impact of gender on financial literacy depends on each region and country due to differences in thinking and customs. The fourth hypothesis follows:

H4: Gender has an impact on financial literacy

The research model used in this study is shown below:

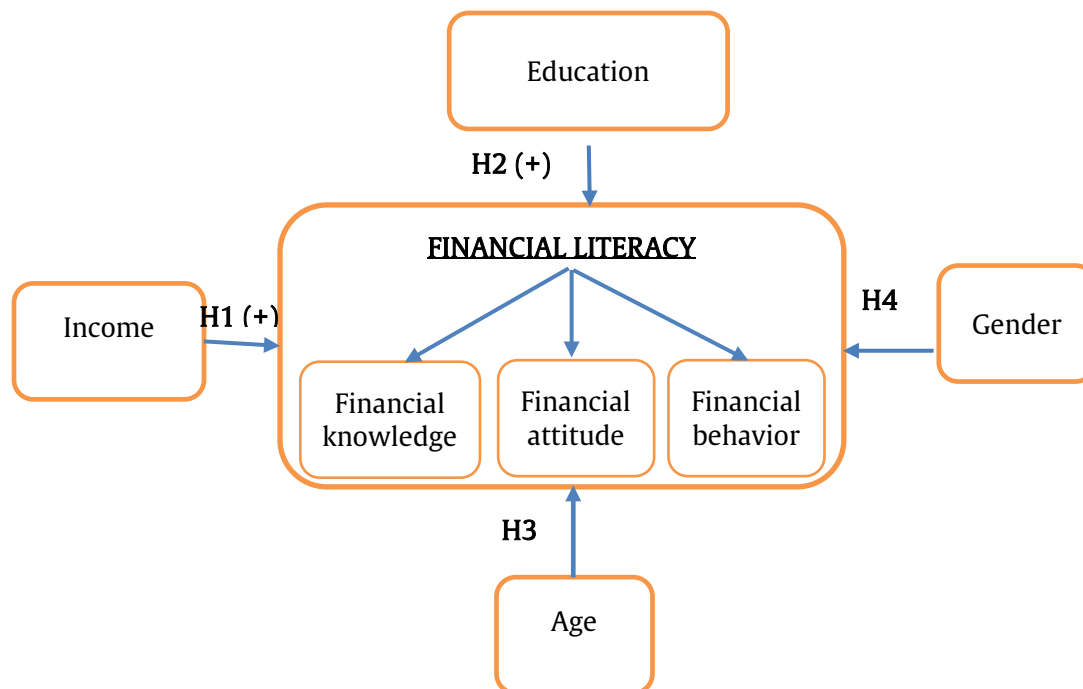


Figure 1. Model of factors affecting financial literacy

Source: compiled by authors

METHODOLOGY

Qualitative research

Qualitative research was carried out to provide the most accurate measurements and select the factors affecting the financial literacy of the poor in rural Vietnam in the research model and make necessary adjustments. In-depth interviews were conducted from September of 2020 to October 2020 with 12 experts, including three in general finance, three in personal finance, two in microfinance, one in public finance, one in education, and two in the field of quantification. Each interview lasted from 25 - 45 minutes and was conducted at the office, coffee shop or private home for confidentiality and to receive the sharing of experts. The expert opinions were transcribed within 24 hours.

The qualitative results after the in-depth interviews showed that: (1) Measuring financial literacy is most reflected through three factors: financial knowledge, financial attitude and financial behavior. (2) The factors affecting financial literacy include age, gender, education and income. Additionally, it is possible to consider the issue of financial literacy that can positively impact the income of each citizen.

Building questionnaires and scales

This research has referenced previous studies and, notably, OECD (2015) to build all scales and has adjusted them to suit the poor in a rural country such as Vietnam after qualitative research was conducted. A Likert scale with five levels (with 1 is strongly disagree to 5 is strongly agree) was applied to Financial Knowledge, Financial Attitude, and Financial Behavior.

The Financial Knowledge scale consists of 7 observed variables, the Financial Attitude scale includes 5 observed variables, and the Financial Behavior scale has 9 observed variables. After the preliminary quantitative study, one experimental variable (K4 – see annex 2) was removed from the model due to its statistical insignificance. The final official scale, then, includes Financial Knowledge (6 observed variables), Financial Behavior (9 observed variables) and Financial Attitude (5 observed variables) (for more detail, see Annex 1 and Annex 2). The financial literacy score was calculated by averaging the scores of the scales after adjusting the data in the forward-swap direction for several observations.

Research sample

We have used random sampling from many rural areas in different provinces within Vietnam for

our research; the samples selected must be from poor households from November of 2020 to December of 2020. Of the 512 observations, 61.5% were female (315 people) and 38.5% (197 people) were male. As for age groups, The 26–40-year-olds accounted for 42%, with the next largest, 35.2%, from 41–55 year old. Most respondents are in the agricultural (39.6%) and industrial (25.4%) sectors, with 30.7% having a main income from 3–5 million VND per month, and 23.4% having a main income of 1–3 million

VND. The rest are those with income of 1 million VND or less. Most of the interviewees are the main laborers in the family, and because the number of dependents ranged from 1–3 people they are considered to be in poor households. This ratio has a large difference between males and females.

Table 1 describes the composition of the financial literacy of the poor in rural Vietnam.

Table 1. Descriptive statistics of the components of financial literacy

	Coding	N	Min	Max	Mean	SD
Financial Attitude (A)	A1	512	1	5	3.79	0.889
	A2	512	1	5	3.24	0.962
	A3	512	1	5	3.57	0.834
	A4	512	1	5	3.8	1.193
	A5	512	1	5	3.5	1.109
					3.58	0.232
Financial Behavior (B)	B1	512	1	5	3.79	0.917
	B2	512	1	5	3.87	0.974
	B3	512	1	5	3.59	0.887
	B4	512	1	5	3.75	0.999
	B5	512	1	5	3.59	0.995
	B6	512	1	5	3.58	1.002
	B7	512	1	5	3.49	1.02
	B8	512	1	5	3.77	1
	B9	512	1	5	4.01	0.907
					3.72	0.166
Financial Knowledge (K)	K1	512	1	5	3.81	0.941
	K2	512	1	5	4.1	0.878
	K3	512	1	5	3.89	1.026
	K4	512	1	5	3.8	1.062
	K5	512	1	5	3.97	1.081
	K6	512	1	5	3.65	1.114
	K7	512	1	5	3.95	0.97
					3.88	145

RESULTS

Evaluating the factors reflecting financial literacy

Financial literacy is measured by three main components: financial knowledge, financial

attitudes, and financial behavior. SEM analysis was used to examine the effectiveness of measuring these financial literacy components. Figure 2 shows the results of the model. The result of testing the suitability of the model

indicates that the model is quite suitable for the analysis (CMIN/DF < 3, GFI, TLI, CFI > 0.9 and RMSEA). < 0.08).

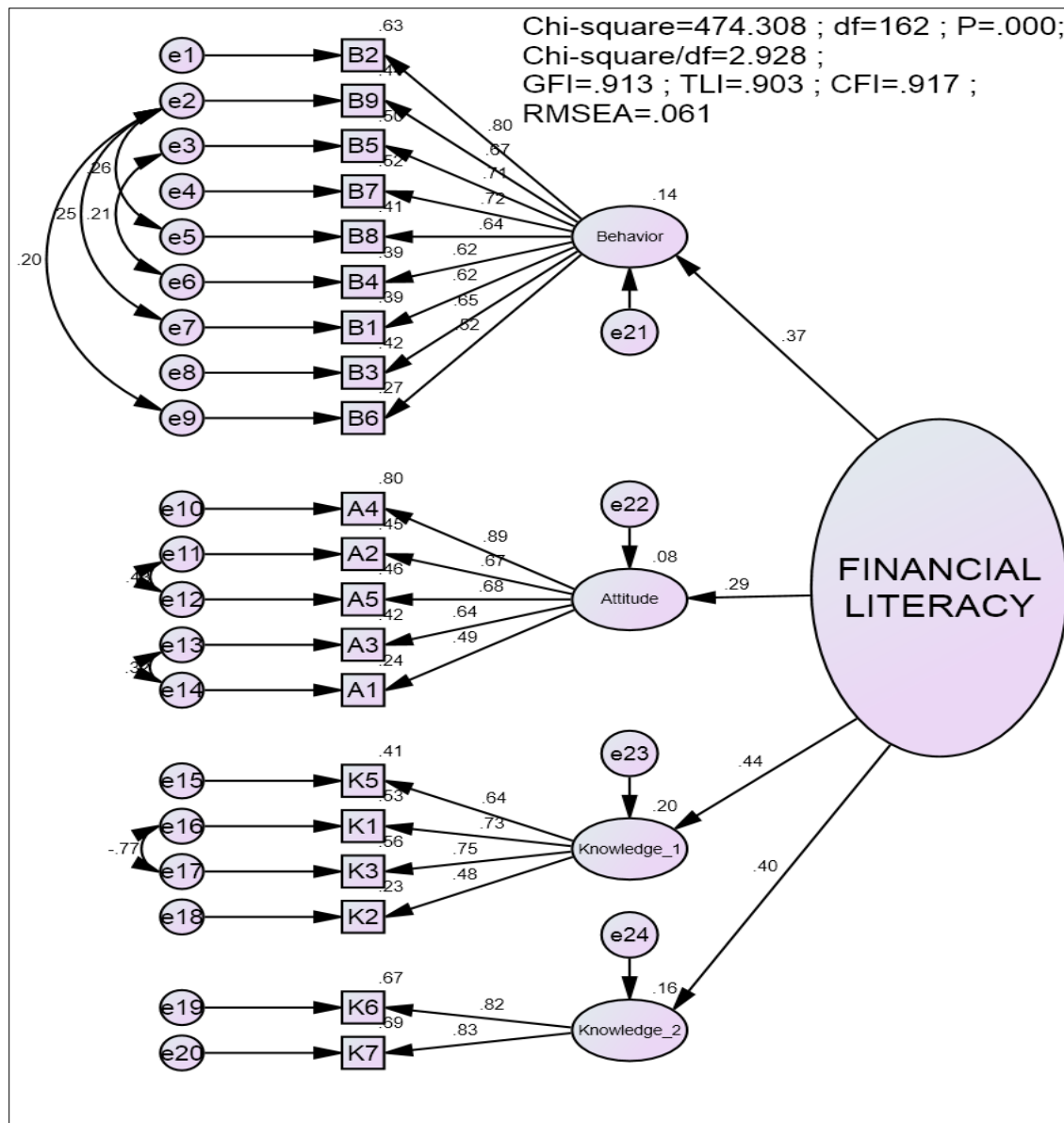


Figure 2. Analysis results of factors reflecting financial literacy

Source: Authors' calculation

With a KMO coefficient = 0.806 > 0.5, Confirmatory Factor Analysis (CFA) results are accepted in the model. After the model results became available, the initial three factors were determined theoretically with Varimax rotation for the results of 4 components. The variables measuring the factor "Financial knowledge" are not grouped into a total factor but are separated into two component factors. Also, based on the

model results, the variable "Financial knowledge" is separated into two components with theoretical significance. In the group of factors measuring financial literacy, the factor Knowledge_1 (the group factors of interest rates, inflation and savings in financial knowledge) has the most critical influence. The importance of the remaining elements is Knowledge_2 (group of factors on investment and hedging in finance),

Financial Behavior and finally, Financial Attitude. The results of CFA show that the research model should change.

The analysis results show that the factor “financial literacy” will be directly reflected by four components: (i) Financial behavior (9 indicators), (ii) Financial attitude (5 indicators), (iii) issues related to inflation and interest rates are incorporated in financial knowledge 1 (4 observed variables), and (iv) issues related to investment and risk are aggregated in financial knowledge. Primary 2 (2 observed variables). All statistics have “Load Factor” > 0.5, which shows that the model is suitable, economically significant, and explains the total variable.

The model results show that the total variance extracted reaches 57.44, which means that the observed variables in the model can explain 57.44% of the variation of the component variables. All factors have satisfactory reliability coefficients ($CR > 0.5$). The coefficients $CR > 0.8$ show the very high co-directionality of the observed variables in the same element.

Convergence value: the Average Variance Extracted coefficients (AVE) extended from 42.2% to 69.1%, demonstrating that variation in observed variables can explain more than 42% of the interpretation of the latent variable. Although not greater than 0.5, these values are still within an acceptable range according to Hair, Hult, Ringle, and Sarstedt (2016).

Discriminant value: Analyzing the above six factors, MSV values are smaller than AVE values, showing that the observed variable values reach discriminant values.

As a result, the factors Financial Knowledge, Financial Attitude, and Financial Behavior reflect the financial literacy of the poor in rural areas of Vietnam. The higher a person's Financial Knowledge and the more positive are financial

attitudes and behaviors, the higher the financial literacy score and vice versa. This shows that financial knowledge has become more critical in rural areas of Vietnam than ever. Improving financial knowledge helps people understand, calculate, and consider how to use finance. Understanding savings issues play an essential role for each financial institution and delves into people's saving habits to have appropriate financial policies. Only then can people's consumption and investment activities be affected, influencing their attitudes and behavior.

The impact of factors on financial literacy

As analyzed above, running the SEM model to examine the impact of 4 factors - income, gender, age, and education - has shown that the factor Gender has almost no effect on financial literacy (see Figure 3). This regression coefficient is not statistically significant; therefore, this impact factor has been removed from the impact assessment model for financial literacy in the final analytical model section.

The normalized regression coefficient of the independent variables displays that, with the level of 0.32, income is the factor that has the greatest influence on the financial literacy of the poor in rural Vietnam. The next influencing factors are age and education level, respectively (with magnitude 0.18 and 0.13). Chi-square / df = 2.861 < 3, GFI = 0.902, CFI = 0.906, RMSEA coefficient = 0.060 < 0.08, so it can be said that the model is acceptable. A P_value < 0.05 shows that the independent variables in the model are statistically significant and all affect financial literacy.

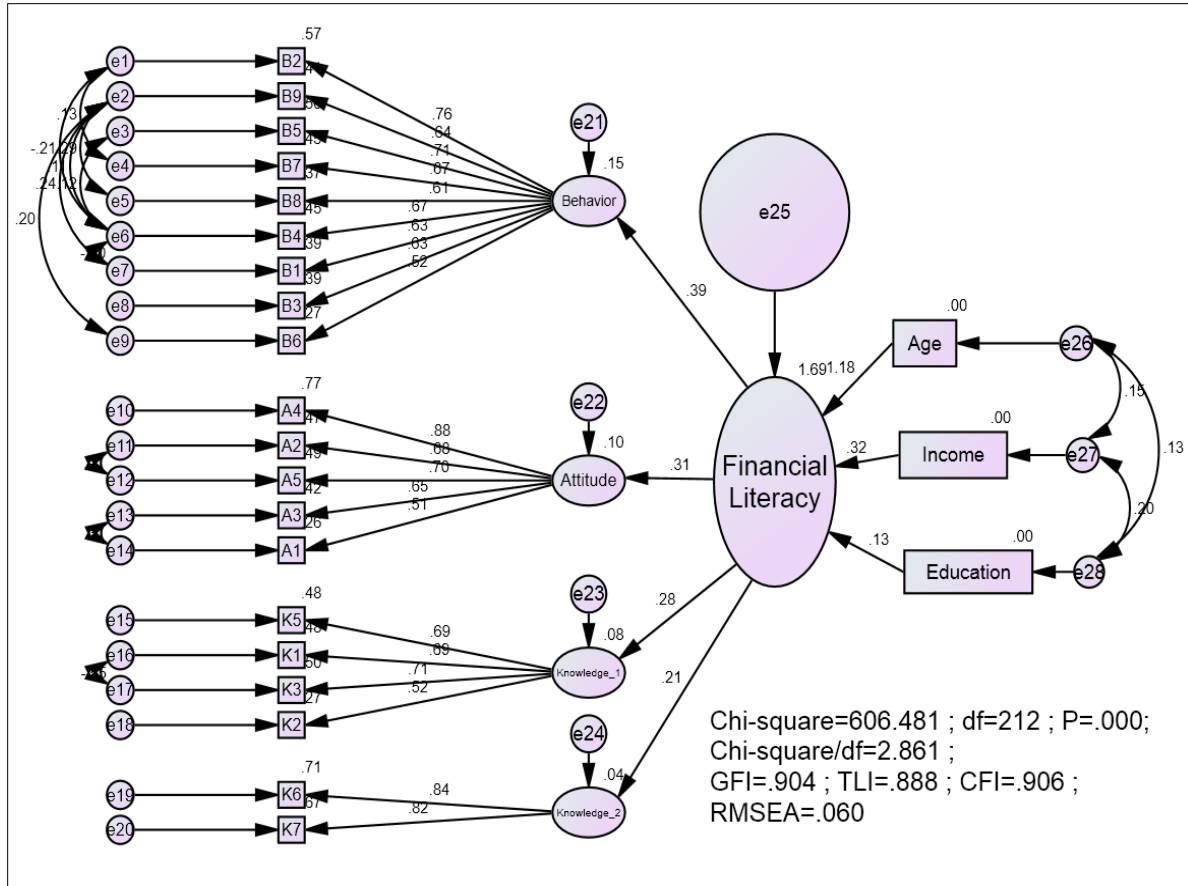


Figure 3. Results of estimated regression coefficient analysis
 Source: Authors' calculation

DISCUSSION AND RECOMMENDATIONS

Evaluation of factors that reflect financial literacy

First, Financial Knowledge

The results from the model show that the compatibility coefficients of the two knowledge groups, 1 and 2, for financial literacy are 0.44 and 0.40, respectively, and the corresponding coefficient Sig = 0.000 < 0.05. Therefore, financial knowledge is one factor that positively affects financial literacy in rural areas of Vietnam. (Which is consistent with results found in Scheresberg (2013)). According to the results of the model, financial knowledge is divided into two separate groups, namely financial knowledge 1, which reflects an understanding of interest rates, inflation, and savings (the profitability of deposits), and financial knowledge 2, which demonstrates an understanding of investment and hazard prevention (e.g., where to deposit or invest), both of which have an impact on financial literacy.

Therefore, it is necessary to establish the habit of saving and calculating the rates of return for the poor, as improving financial knowledge will have a particular influence on the financial attitudes and behavior of the poor, which will raise people's financial literacy.

Second, Financial Attitude

The more positive the financial attitude, the higher the financial literacy. Specifically, when the poor in Vietnam's rural areas have certain understanding or are disseminated economic knowledge (such as the calculation of interest rates on savings deposits, money to be paid on loans, etc.), the more accurately and positively that person can understand, have and invest savings. This group of views is also supported by Benjamin and Brandt (2004) and Nguyen et al. (2017) who noted that the majority of the poor in rural areas have an attitude of saving rather than spending. Thus, it can be seen that people raise their level of financial literacy thanks to

enhancing financial attitudes through different forms.

Third, Financial Behavior

Financial behavior has a positive impact on financial literacy. This result is supported by the studies of Hilgert et al. (2003), Atkinson and Messy (2012), and OECD (2013, 2015). Specifically, the more accurately the subject invests, saves, and spends, the more precise and positive his understanding and attitude towards the economy is.

The impact of demographic factors on financial literacy

Education

Education (and education level) has a positive effect on financial literacy. This result agrees with the research group of Brown and Graf (2013), Lusardi et al. (2017), and Morgan and Trinh (2017). However, this result is contrary to Atkinson and Messy (2012) and Lusardi and Tufano (2015), who concluded that the person who have high education often have low financial literacy. It can be seen that the higher the education level, the better the financial literacy.

Income

Financial literacy tends to increase in the same direction as income. This is similar to the conclusion made by Lusardi and Tufano (2015). Despite the insignificant difference, the increasing trend of financial literacy is visible. For the model test results, Sig value = $0.002 < 0.05$ and VIF value = 1.065, which means that income has an impact on financial literacy. The standardized Beta coefficient of this factor is 0.118, the second strongest impact in the group of impact factors. The unnormalized Beta coefficient in the model is $0.038 > 0$, showing that income positively influences financial literacy. This is also the result of studies from De Clercq et al. (2009), Monticone (2010), Meier and Sprenger (2013), Hastings and Mitchell (2020), and Potrich et al. (2015). Explaining this hypothesis, people with higher incomes (among

the poor in Vietnam's rural areas) are able to save and invest and understand financial indicators and practices and their attitude towards financial matters.

Age

The findings show that the older the age, the higher the financial literacy, which is supported by the study result of Lusardi and Mitchell (2011). Since the rural poor are more likely to make financial decisions based on previous experience, the elderly tend to have more experience in financial knowledge and attitudes towards financial issues. Therefore, the older the age, the higher the financial literacy¹.

Policy implications

Policy implications in this study include a group of policies on financial knowledge, financial attitudes and financial behavior. Specifically:

Financial knowledge

First, to develop programs and policies to improve the financial literacy of the poor in the rural areas of developing countries. The results of our empirical research show that, with an impact level of 0.053, income has the most significant influence on financial literacy. Therefore, the national financial education strategy should focus on poor people living in any and all poor rural areas.

Second, the Vietnamese government should organize training programs to train human resources. Specifically, each province should have leaders and experts trained in financial literacy and who are aware of the importance of financial literacy to the national economy, thereby improving financial literacy in their province and local areas of their region. This therefore implies that a framework for a financial literacy training program for provinces and localities, with flexible changes based on each section and locality, should be proposed.

Financial attitude

Financial attitude is a critical issue in shaping financial behavior. Therefore, to promote issues

¹ Some authors, such as Mai et al. (2009), Mai & Tambyah (2011), and Tran et al. (2017) have seen similar results for countries influenced by Confucianism and Buddhism, in which the emphasis on community is very high, so the trends in spending and saving are influenced by a community nature (which is influenced by

elders). In addition, previous studies have shown that people in rural areas who live under the influence of the experienced elderly or reputable people affect financial literacy in general. Therefore, measures to improve financial literacy can be through the elderly population.

related to financial attitudes, the following can be done:

First, promote information and communication about the importance of improving financial literacy for people, especially people (and especially poor people) in rural areas. Policymakers should encourage the power of visual and audio media directly through banners and radio systems, with concise, easy-to-understand messages, and further expand modern communication channels on financial information and financial news. In addition, this local communication can also give people the opportunity to have closer access to new financial products, thereby improving financial knowledge and changing people's attitudes towards these products.

Second, focus on efficiency and ease of use when building financial programs and products, and also focus on diversifying financial services and products for subjects with different financial literacy levels in rural areas.

Financial behavior

First, interest payments can be made in short terms (monthly or weekly) for lending to poor households, and loans must be made in groups/teams.

Second, localities should have a loan support plan with preferential loan packages, stimulating local economic development especially in localities where agricultural production, industry and craft villages are developed. This also creates conditions for people to access legal loans in a more diversified, convenient, and straightforward way, limiting access to illegal credit sources. This activity will promote the positive financial behavior of people in accessing legal capital.

Third, more attention should be paid to the development of activities related to financial technology, especially in rural areas. The benefits of financial management in supporting people are undeniable. Technology is simplifying the financial sector, giving consumers more choices. Accordingly, financial transactions or activities such as money transfers, investment, personal payments, bank loans, etc., can all be done via smart mobile devices.

Consequently

This paper shows that financial knowledge – separated into knowledge about saving and knowledge about investment – has the most

significant impact on the financial literacy of the poor in rural areas. Another finding is that gender is not statistically significant for financial literacy. The study, however, is limited somewhat because the two-way impact between income and financial literacy has not been evaluated, nor influences regions. These, though, can be addressed in future studies.

ACKNOWLEDGEMENT

This paper has been supported by National Economics University, Vietnam

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ANNEXES

Annex 1: Items in the model and coding

Coding	Meaning
A1	Saving a portion of my income for plans is within my power.
A2	I have to use most of my money to buy and sell goods and food for my family.
A3	I find planned spending very easy.
A4	I am willing to lend money (even at high-interest rates) for my daily expenses.
A5	Even if I can't save, I find that the current job of spending is appropriate.
A6	I find it challenging to save for future spending.
B1	I often compare prices when making a purchase.
B2	I regularly leave a portion of my monthly earnings for urgent future needs.
B3	I have long-term cash storage plans in the house.
B4	I always correctly determine the total amount I have to pay when taking out a loan.
B5	I often decide to spend money based on pre-existing intentions such as donations or buying and selling essential goods.
B6	Rarely do I have to borrow money to buy goods or make a donation.
B7	I usually save money for expenses that must be paid in more than one year, such as children's school fees, debt repayments, etc.
B8	When I earn more money, I also save more money.
B9	Before I shop or contribute something, I usually check to see if I can afford it.
K1	When the currency depreciates (inflation increases), how will you spend the money every day for food, sleep, etc.?
K2	Suppose you borrow \$44.000 ² from the bank; after one year, you have to pay all \$46.000. So what is the interest rate that the bank charges you?
K3	Suppose you have \$44.000, send it to deposit to enjoy 5% interest per year. After two years, you go to the bank to withdraw money. How much money will you receive?
K4	A TV for \$4.000. Store A: \$450 discount. Store B: 10% off. Which store do you choose to buy at?
K5	Assume that the interest rate on bank deposits is 6%/year, and the currency depreciates (inflation) is 10%/year. After one year, what is this money worth compared to now?
K6	How likely are you to lose your money when you use your money to lend to many people or invest in many accounts (with interest required)?
K7	Suppose you have \$100 today and your friend has \$100 after three years. In terms of real value, who gets more (In the absence of inflation)?

² 1 USD = 22.700 VND

Annex 2: Results of Cronbach's Alpha test of knowledge transformation resource scale when item K4 is removed

Reliability Statistics

Cronbach's Alpha	N of Items
.705	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
K1	22.24	13.766	.487	.651
K2	22.21	15.187	.317	.696
K3	22.48	12.244	.593	.616
K4	22.43	16.953	.081	.757
K5	21.63	14.058	.623	.626
K6	22.04	14.008	.517	.645
K7	21.73	15.903	.383	.681

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