FINANCIAL LITERACY IN RURAL AREAS: EXPERIMENTAL EVIDENCE FROM VIETNAM

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Abstract

This research is conducted in rural regions of Vietnam. The objective of the research is (1) to analyze the impact of demographic factors on the financial literacy of inhabitants in such regions; (2) to analyze the impact of the financial literacy on the income of rural dwellers in Vietnam; (3) to provide policy proposals for relevant organizations in improving the financial literacy in this area. We have used primary data sources from online and offline questionnaires. Through the quantitive model and analysis, the research team recheck the theory and analyze the meaning. Thus, we give appropriate policy implications in rural areas of Vietnam.

Keyword: Financial literacy, income, rural areas, Viet Nam

1. Introduction

Recently, financial inclusion is seen as an essential part of sustainable economic growth, financial growth and poverty reduction. Hence, financial inclusion is a priority for countries (World Bank - WB, 2015). According to Grohmann (2017), financial literacy is one of the important aspects and influences considerably on the overall financial situation. The experience from the 2008 financial crisis demonstrated that the ability to make financial decisions is very important for personal financial development, and can create micro and macroeconomic stability (Lusardi & Tufano, 2009). Therefore, the development of financial literacy is of great significance in terms of economic growth, rich–poor gap reduction, and development of policies to improve people's incomes.

Measuring the impact of financial literacy on income in rural areas contributes significantly to the adjustment and the enhancement of the effectiveness of government policies in this area. According to Klapper et al. (2015), financial literacy is one of the internal factors affecting the income of individuals through financial planning, making positive financial decisions and identifying risks. In recent years, the Government has paid more attention to the economic development and the improvement of income in these areas, as specifically as Decision No. 1600 / QD-TTg (2016) on the National Target Program, new rural construction in the period of 2016-2020, Circular No. 30/2015 / TT-BTC guiding in detail the estimation, payment and settlement of assisting enterprises to invest in agriculture and rural areas, the agreement with the Asian Development Bank - ADB about the 165 million USD loan, supports the project in rural areas, etc. However, the income gap between urban and rural areas after nearly 10 years from 2008 to 2017 only decreased from 2.1 to 1.8 times. The research about the impact of financial literacy on income contributes to reorient the income development policies of rural people through the increase of financial literacy.

Another view shows that financial literacy has a positive impact on poverty reduction through increasing personal income (Atkinson & Messy, 2012; OECD, 2013). However, there is no practical evidence on this issue. In addition, related issues towards the poor and poverty reduction in Vietnam have been approached in many perspectives: policies (Nguyen, 2009), micro-financial access (Le et al., 2017), financial inclusion... These researches have solved the aspect of gradually disseminating knowledge to people about financial services, using financial services and contributing to the achievement of the millennium goals on hunger elimination and poverty reduction. However, it is necessary to note that the poor in rural areas have very limited access to these services, the attitude and behaviors of using these services are of vague roles. On the other hand, Fishbein & Ajzen (1975) claims that the distance between the intention and behavior is closest, but this is not suitable for the poor - especially in countries with culture strongly influenced by Confucianism and Buddhism like Vietnam. Therefore, this research aims to provide the practical evidences of the determinants of financial literacy in the rural areas of Vietnam as well as the impact of financial literacy on income and give certain policy implications.

2. Literature review

2.1 Definition and formation of Financial literacy

Financial literacy is a notion defined in many different ways. Noctor et al. (1992) define financial literacy as the ability to make informed judgements and to take effective decisions regarding the use and management of money. Developed from this definition, Schagen & Lines

(1996) show that a financially literate person got many benefits from attitude and capability such as money management, knowledge about financial institutions.

According to Vitt et al. (2000), financial literacy include the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy. This finding is also reported in later studies, such as Mason & Wilson (2000), Lusardi & Mitchell (2013).

In another way, Holzmann (2010) point out that financial literacy in some countries is understood as an issue of concern and analysis, its content has moved from financial knowledge and understanding to include financial skills and competences, attitudes and behaviors. ..., OECD (2013) and Sekar & Gowri (2015) define financial literacy as the combination of financial awareness, knowledge, attitude and behavior necessary to make sound financial decisions and ultimately gain individual financial well-being.

Developing the definition of financial literacy from OECD (2013), in this research, financial literacy is understood as the combination of financial knowledge, attitude and behavior to make financial decisions and enhance the financial status of a person. From this definition, financial literacy score can be calculated by taking average score of three components above.

2.2. Reflective factors of Financial literacy
Financial knowledge

In this research, financial knowledge is defined as the awareness understanding about the financial concepts and procedures as well as the use of this understanding to solve financial problems (IGI, 2017).

Knowledge is the most apparent factor mentioned in all different definitions of financial literacy as well as an important factor needed to improve a personal financial status. The importance of financial knowledge is measured in researches of Vitt et al. (2000) and Braunstein & Welch (2002). Many researchers, analysts and policy makers point out the lack of financial knowledge is one of the main reason leading to low financial literacy (Collins, 2012; Huston, 2010; Nicolini et al., 2013). Zhan et al. (2006) analyze and pointed out enhancing financial knowledge can improve financial literacy (see also in Taft et al. (2013), Scheresberg (2013)).

Hypothesis 1 (H1): Financial knowledge (KT) is a financial literacy's (DTTC) reflective factor.

Financial attitude

Attitude is a factor that drives an individual's demeanor and state of mind in making decisions during transactions (Moore, 2003). In another way, financial attitude refers to one's beliefs and values related to various personal finance concepts, such as whether one believes it is important to save money (Chowa et al., 2012). These definitions are supported by researchers and analysts by defining financial attitude as the way a person think and feel about finance, directly influencing their behaviors (Kaufman, 2017).

Atkinson & Messy (2012) point out that attitude is a very important factor reflecting financial literacy. Financial attitude is put into financial literacy regression as an independent variable in

many researches, such as Godwin & Carroll (1986), Godwin & Koonce (1992), Godwin (1994). Concretely, Godwin (1994) measured the influence of this variable to personal financial management and come to conclusion that financial attitude is a crucial factor to predict cash flow of an individual. People with positive financial attitude tend to manage money better (see also in Atkinson & Messy, 2012; OECD, 2013).

Hypothesis 2 (H2): Financial attitude (HV) is a financial literacy's reflective factor.

Financial behavior

Financial behavior is a term mentioned in many researches in recent years, especially in behavioral economics. Researchers have considered and intensively analysed about this definition such as Muske & Winter (2001), Hogarth et al. (2002), Hilgert et al. (2003), O'Neill & Xiao (2004), Xiao (2016). Financial behavior is refered as any human behavior that is relevant to money management (Xiao, 2004). Developing from this, Tezel (2015) point out financial behavior is the capability to have the knowledge about the overall impact of financial decision in any circumstances of a person and make correct decisions relating to cash management, risk prevention and fund planning. This explanation is used in this research as the definition of financial behavior.

Atkinson & Messy (2012) and OECD (2013) all support that financial behavior can reflect financial literacy. The more positive financial behavior, the higher financial literacy. Moreover, Hilgert et al. (2003) and Taft et al. (2013) prove that this relationship has statistical meaning (see also in Robb & Wodyard, 2011).

Hypothesis 3 (H3): Financial behavior (TD) is a financial literacy's reflective factor.

2.3. Determinants of Financial Literacy
Income

Lusardi & Tufano (2009) point out that people with higher income often have better financial literacy scores. This result is supported by Clercq et al. (2009), Potrich et al. (2015) và Sekar & Gowri (2015), Lusardi & Mitchell (2011), Atkinson & Messy (2012).

Hypothesis 4 (H4): There is a significant relationship between respondent's income and financial literacy.

Education level

Within the framework of the International Standard Classification of Education (ISCED, 2011), levels of education are an ordered set of categories, intended to group educational programmes in relation to gradations of learning experiences and the knowledge, skills and competencies which each programme is designed to impart. Levels of education are therefore a construct based on the assumption that education programmes can be grouped into an ordered series of categories. These categories represent broad steps of educational progression in terms of the complexity of educational content. The education level of an individual is the most advanced programme his/her has joined in national education system. Friedman (2005) pointed out in his research that educational barriers may discourage some respondents from taking positive action to manage their finances. Similarly, Lusardi & Mitchell (2013) provided practical evidence that people with bachelor degrees will score five time higher in financial literacy questionaire than people have just finished high school.

Hypothesis 5 (H5): There is a significant positive relationship between respondent's education and financial literacy.

Age

Lusardi & Mitchell (2007) affirm that financial behavior, especially planning and budgeting, is different between young people and the middle-aged. However, Scheresberg (2013) state that this difference is very light and not significant. So, the relationship between age and financial literacy score is diversified among researchers.

Hypothesis 6 (H6): There is a significant positive relationship between respondent's age and financial literacy.

Gender

Chen & Volpe (1998), Banks & Oldfield (2007), Lusardi (2008), Lusardi & Tufano (2009) and Scheresberg (2013) are unanimous in the opinion that female is less confident about financial knowledge than male. But some researchers claimed that this gap is very slight (Bucher et al., 2011; Bhushan & Medury, 2013; Nanzir & Leibbrandt, 2018). Conclusively, gender is a determinant influencing financial literacy.

Hypothesis 7 (H7): There is significant relationship between respondent's gender and financial literacy.

2.4. Impact of Financial literacy on income

Fisher & Hostland (2002) suggest the statement that financial knowledge, attitude, behavior – reflective factors of financial literacy are all affected personal income. The higher the financial literacy score is, the higher the personal income is. This conclusion is also supported in many other researches (Stango & Zinma, 2006; Agarwal, 2008; Lusardi & Tufano,2009; Lusardi & Mitchell, 2013). Combined with H4, there is a positive correlation between financial literacy and income.

Hypothesis 8 (H8): There is a positive correlation between financial literacy and income

Figure 1. Research model
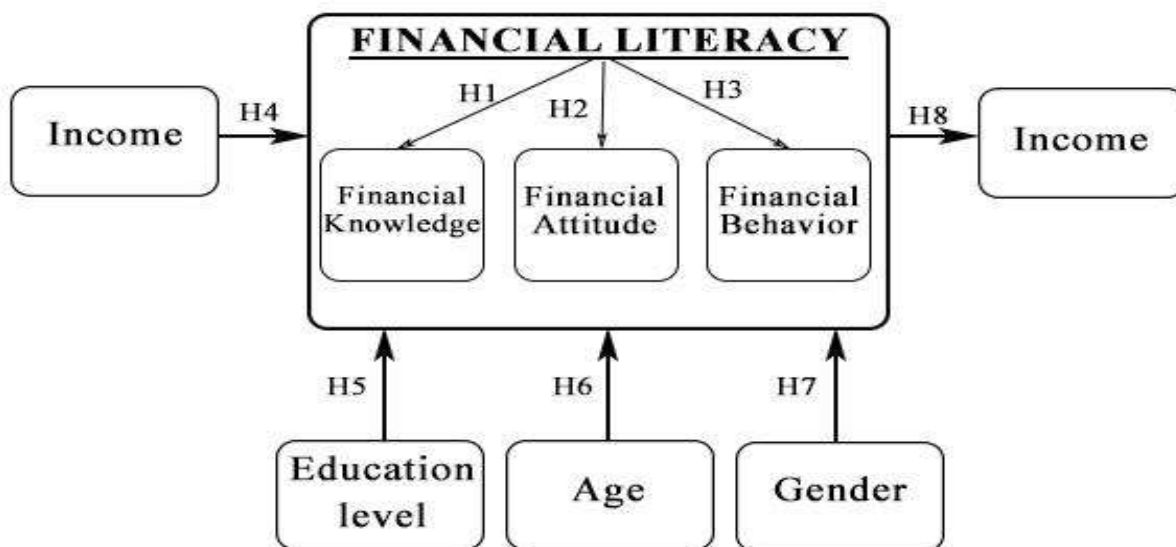
Source: Authors' development

3. Research methodology

3.1. Qualitative research

Qualitative research is conducted through in-depth interviews with experts in the field of personal finance, microfinance, education and quantification to provide the most accurate and selective measure of the impact of financial literacy in rural areas of Vietnam, as well as adjustments to the survey questionnaire with people living in rural areas of Vietnam. In-depth interviews were conducted with 12 experts (3 in the financial sector, 3 in the field of personal finance, 2 in the field of microfinance, 1 in the field of public finance, 1 in the field of education and 2 people in the quantitative field). Each interview lasts from 25 to 40 minutes.

Qualitative results after in-depth interviews with experts generally support the proposed model of the authors. Specifically: (1) Financial literacy is accurately measured through three reflecting factors are financial knowledge, financial attitude and financial behaviour. In particular, financial behaviour is a factor that is considered to have the highest reflective weight to an individual's financial literacy. (2) Determinants affecting financial literacy are: age, gender, education level and income. (3) Financial literacy impacts positively on income.

3.2. Questionaire and data analysis

3.2.1. Questionaire

In this research, the authors use concepts: financial literacy, financial knowledge, financial attitude, financial behaviour. All of these scales were built on the basis of previous studies, especially OECD (2018) and adapted to the Vietnamese along with qualitative research. The scale is built in Likert 5 levels, of which 1 is completely disagree, 5 is completely agree.

Specifically, the scale of financial knowledge includes 7 observed variables, the scale of financial attitudes includes 5 observed variables and the scale of financial behaviour includes 9 observed variables. After the preliminary quantitative research, an observable variable is excluded from the model because it was not statistically significant. Thus, the official scale includes: 6

observable variables for the scale of financial knowledge, 5 observed variables for the financial attitude scale and 9 observed variables for the scale of financial behaviour. After that, the financial literacy score will be calculated by averaging the scores of the above scales.

The survey tool was built based on the conceptual variables observed in the model. In addition, the survey has demographic questions such as gender, age, education attainment, employment and income. The questions in the questionnaire are reconciled by the authors to check the semantics between the original English and the Vietnamese translation.

3.2.2. Sample
The sample was randomly taken from many rural areas in different provinces across the country. The total number of observations analyzed was 512 observations, including 197 males (38.5%) and 315 females (61.5%). The age of the respondents was from 18 to 70 years, and the group of people aged 26-40 accounted for the highest proportion (42%). Through the statistics of the survey sample, we can see that, the financial literacy scores are classified according to gender, age, education and income groups.

3.3. Result
3.3.1. The impact of internal factors on financial literacy

Figure 2. Results of CFA analysis
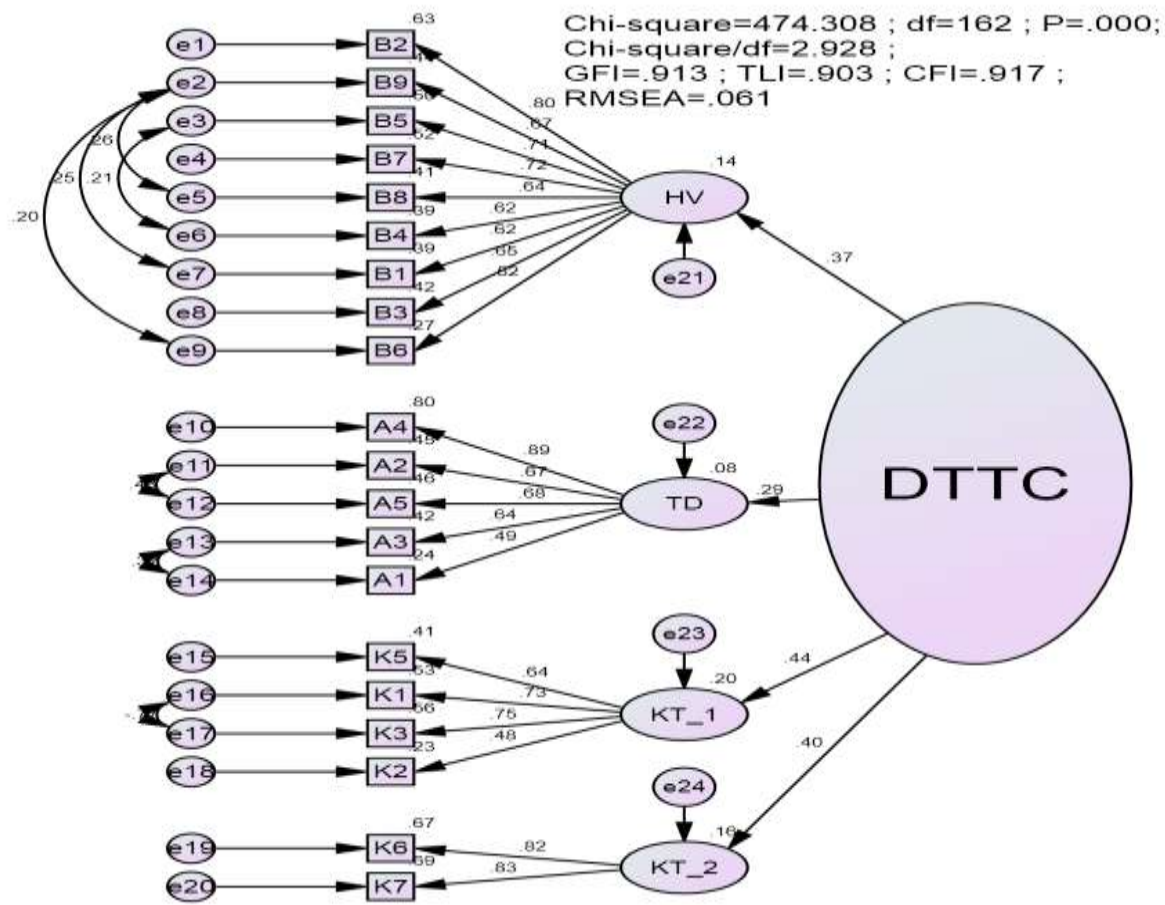
Source: Authors' development

The results of factor analysis show that the coefficient KMO = 0.806> 0.5, factor analysis is appropriate. The results of the first factor analysis with three components are theoretically defined with the Varimax rotation, which results in four component factors. The variables that measure the "Financial Knowledge" factor do not converge into a total factor but are divided into two components. When reviewing the meaning of the indicators of "Financial Knowledge", the author accepted the observed variables of this factor were split into two components of theoretical significance. The results of factor analysis show that the research model will have to change.

The research model will now be the "Financial literacy" factor that will be reflected directly by four components: (1) Financial behavior (9 items), (2) Financial attitude (5 items), (3) Financial knowledge related to interest rates and inflation (4 items) and (4) Financial knowledge related to investment and risk (2 items). Indicators have "factor loading"> 0.5; This indicates that the observed variables have the value, relevance, statistical significance in factor analysis and reliable enough to explain the total variable.

The total variance extracted from the value explained by 57,447% should be 57,447% of the variation of the component variables (of the factors) explained by the observed variables (indicators).

Reliability: factors have satisfactory confidence factor (CR> 0.5). The coefficients CR> 0.8 show the co-direction of observed variables in a very high factor.

Convergent validity: The Average Variance Extracted (AVE) range from 42.2% to 69.1%, indicating the change of observed variables explains more than 42% of the variation of latent variables. Although less than 0.5, these values are still acceptable values (Hair et al, 2009).

Discriminant validity: When analyzing the above 6 factors, the MSV values are smaller than the AVE value, indicating the observed variable values are discriminant.

The results of the model are shown in Figure 2. The results of confirmatory factor analysis model show that the model is suitable (CMIN / DF <3, GFI, TLI, CFI> 0.9 and RMSEA <0.08 ...). The results are the elements of Financial Knowledge, Financial Attitude, and Financial Behavior reflecting an individual's financial performance in rural Vietnam. The higher the financial knowledge is, attitude and financial behavior is, the higher the financial literacy score and conversely is.

3.3.2. The impact of factors on financial literacy

**Table 1. Regression analysis of factors affecting the financial literacy of individuals**

Independent variables	Adjusted R-Square	F-statistic	Sig.(F-statistic)	Standardlized Beta	t.	Sig.
Gender	.320	60.980	.000	.020	.537	.591
Age				.515	13.874	.000
Education				.118	3.138	.001
Income				.099	2.647	.008

Dependent variable: financial literacy

The adjusted R square is 0.320, which means the model can explain 32% of the change of the dependent variable. The relatively large F-statistic value (60,980) along with a very small p-value

shows that at least one of the independent variables has a significant effect on the dependent variable. To further examine the impact of these factors on financial literacy, the authors use Structural Equation Modeling (SEM).

Figure 3: Structural Equation Modeling (SEM)
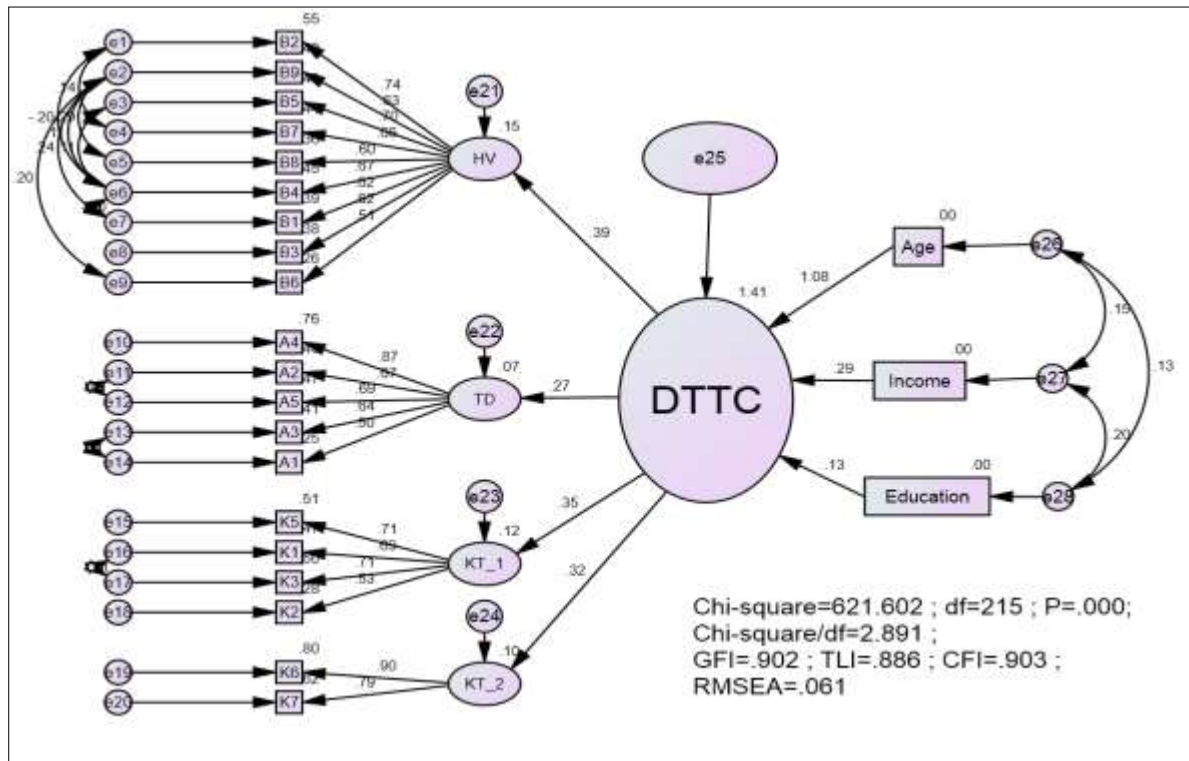
Source: Authors' development

The standardized coefficients of independent variables show that the level of income impact on financial literacy is 0.053, the largest of all determinants. The level of influence of education and age is 0.026 and 0.025 respectively. The criteria for measuring the suitability of the model show that the value of Chi-square / df = 2.891 <3, GFI = 0.902, CFI = 0.903 are greater than 0.9, TLI is within an acceptable threshold, the coefficient RMSEA = 0.061 <0.08, so the model achieves market data conformance. The results of the P-value values of the independent variables are all lower than the value of 0.05, so the independent variables show influence on the dependent variable is financial literacy.

3.3.3. The impact of financial literacy on income

Table 2. Regression analysis of the impact of financial literacy on income

Independent variables	Adjusted R-Square	F-statistic	Sig.(F-statistic)	Standardlized Beta	t.	Sig.
Financial Literacy	.091	53.331	.000	.305	7.234	.000

Independent variable: Income

The adjusted R square is 0.091, which means that financial literacy can explain 9.1% of the change in dependent variable as income. The F-statistic value is 53,331 along with a very small p-value, indicating that the financial income has a significant impact on the dependent variable as income. Based on t-value and p-value, the above result is more clearly stated.

4. Discussion and policy implications

4.1. Discussion
4.1.1. Determinants influencing financial literacy
Education
Education is a determinant influencing financial literacy. This result is the same with Brown et al. (2013); Lusardi (2013). On the other hand, the researches of Lusardi & Tufano (2009) and Atkinson & Messy (2012) conclude that the elderly often have low level of financial literacy. In rural areas in Vietnam, the higher the level of education is, the higher the financial literacy score is.

Income
Financial literacy score of an individual is increased as the income is higher, which is similar to the conclusions in the study of Lusardi & Tufano (2009). Although the difference is not significant, the uptrend of financial literacy can be easily recognised. Explaining this result, high-income people often have more experience not only in spending, savings, and investment but also on indicators and financial operations and good financial attitudes.

Age
The result shows that the higher the age is, the higher score of financial literacy is; this is similar to the conclusion of Lusardi & Mitchell (2007). Explaining this hypothesis, rural people tend to make financial decisions according to previous experience. Therefore, older people often have a lot of experience in financial knowledge and financial attitudes.

4.1.2. Reflective factors
Financial knowledge
Results from the model has shown that the correlation coefficients of 2 groups KT1 and KT2 to financial literacy are 0.44 and 0.40 and Sig = 0.000<0.05. This means 2 groups of financial knowledge factors in particular or H1 hypothesis is accepted. This is also the results of Collins & O'Rourke studies (2010); Huston (2010); Nicolini et al. (2013), Scheresberg (2013). Thus, in rural Vietnam, financial knowledge is one of the positive factors reflecting financial literacy. When a person has good financial knowledge, he or she will have better investing and saving skills.

Financial attitude
Positive the financial attitude leads to higher level of financial literacy. Specifically, if the subject accurately and positively evaluates changes in the economy, or investment and savings, that person will be more accurate and positive. This point of views is also supported by Le Thanh Tam (2015), Nguyen Kim Anh and Le Thanh Tam (2016). Therefore, improving financial attitudes through different methods can help people to increase financial literacy.

Financial behaviour
The results has shown that financial behaviour positively reflects financial literacy; for that reason, H3 hypothesis is accepted. This is also the results of Hilgert et al. (2003), Moore (2003), Atkinson & Messy (2012), OECD (2013), Taft et al. (2013), Kaufman (2017). Specifically, if the person who has good investment, savings, exact spending; the ability to understand and the attitude

of that person to the economy will be more accurate and positive. Therefore, it is necessary to develop a good investment and saving portfolio.

4.1.3. Impact of financial literacy on income

Interestingly, financial literacy is affected by income, and then, financial literacy itself also has impact on income. This is the same as the results of Lucas (1988), Fisher & Hostland (2002) and Lusardi & Mitchell (2013), Stango & Zinma (2006), Agarwal (2008), Lusardi & Tufano (2009), the DTTC has a positive impact on income. Therefore, in order to increase income for rural people, financial literacy should be increased through different issues in demographic variables or internal problems in the components of financial literacy.

4.2. Policy implications

In the present, financial literacy is still new in Vietnam, and a specific implementation program to improve financial literacy for the people has not yet been developed, especially the people in rural areas in Vietnam, so it is still difficult to orientate. Based on what has been mentioned above, the authors identify advanced solutions of improving financial literacy in rural areas of Vietnam is focus on building the concept of financial literacy for individuals, families and communities, proposing for organizations involved in research, development and implementation of policies

The designed financial literacy enhancement programs need to be flexible and can be adjusted at any time when the environment changes or reflects the progress of the financial literacy development programs. These programs should focus through curriculum and news channels, TV programs about investment and savings planning, financial knowledge and financial attitudes. Politicians should also promote the power of visual and audio media directly through banners and radio systems, with brief and understandable messages and further expand communication channels about finance.

The government should have policies to encourage, especially towards those with low income and education level to consolidate and improve financial literacy in order to create a premise to improve living standards and economy development for the local.

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