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The Determinants of Financial Literacy in the Southeast of Vietnam

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ABSTRACT

This study explores how demographic and socioeconomic characteristics are linked with the financial literacy of individuals in the southeast of Vietnam. In this study, financial literacy is estimated by assessing financial knowledge, financial behavior, and financial attitude. The utilized method involves a sample comprising 527 individuals. The ordinary least squares (OLS) and the generalized structural equation model in logit (GSEM) regressions were applied to analyze the data and provide an explanation of the relationship among demographics, socioeconomic characteristics, and three facets of financial literacy. The results show that education levels and the formal sector have a positive relationship with both financial knowledge and financial attitude. Specifically, the findings indicate that males have a higher level of financial knowledge than females, whereas females have better financial behavior and attitude. Age has a positive and statistically significant relationship with financial attitude but no statistically significant relationship with financial behavior. Also, we cannot detect any correlation between young and old people with financial knowledge. Individuals in mid-life have greater financial knowledge than younger generations. Accordingly, it is highly recommended that women, the young, and the elderly all are singled out because of their demographics may benefit most from increased financial literacy. In addition, governments should focus on strengthening and educating people about financial literacy, especially those who are thought to be less financially literate.

INTRODUCTION

Literacy in financial matters is now widely acknowledged as an essential ability for people to possess in order to thrive in today's ever-more-complicated economic environment. Despite its importance, several studies from around the globe show that a sizable portion of the population still lacks financial literacy and that urgent action is required to address the issue (Lusardi and Mitchell, 2011a; Brown and Graf, 2013).

The increasing complexity of financial markets may cause consumers to make bad decisions if they are not well informed. The lack of awareness of the importance of financial literacy among consumers and their propensity to make poor financial decisions prove the pressing need for them to acquire financial literacy (OECD, 2019). People's ability to make economically and financially sustainable decisions may be supported by financial literacy, which in turn improves people's future well-being.

Financial literacy term is extensively utilized in the literature review, but the current article is approached by using a definition where financial literacy encompasses three aspects financial attitude, financial knowledge, and financial behavior (Huston, 2010). Individuals with a high level of financial literacy can use their knowledge of economic concepts and principles to make educated choices in areas such as retirement planning, asset accumulation, cost-cutting measures, and debt management (Lusardi and Mitchell, 2014). According to the OECD's definition, financial literacy encompasses a wide range of competencies necessary for an individual to make informed decisions about their own finances and attain a condition of financial security. Experts and researchers agree that financial knowledge, behavior, and attitude are three parts of financial literacy that should be considered (Atkinson & Messy, 2012; Santini et al., 2019). Placing an emphasis not only on financial knowledge but also on financial behavior and financial attitude that the OECD considers important aspects of one's overall financial well-being, the approach to financial literacy advocated by the OECD is ideally suited to be implemented in this context.

Numerous research articles have explored how characteristics like demographic and socioeconomic factors impact financial literacy (Kadoya and Khan, 2020). Previous research demonstrate that gender has an impact on financial literacy (Bawre and Kar, 2019; Kadoya and Khan, 2020). Women have been shown to have a poorer level of financial literacy than men in more recent research conducted by Kadoya and Khan (2020); and Rink et al. (2021). On the other hand, Kim and Mountain (2019) contends that sexual orientation has no impact on financial literacy. They demonstrate that there is no difference in financial awareness based on gender since people of both sexes have an identical level of the grasp of the financial awareness idea. However, age shows a significant difference between developing and developed economies when it comes to financial literacy. Bawre & Kar (2019) found that young and old people lack financial knowledge compared with other age groups. Earlier researchers also explore whether individuals' income has any effect on their financial literacy. In addition, Bawre and Kar (2019) also propose that income levels significantly impact on financial literacy. However, this finding is not supported by Kim and Mountain (2019) who prove that there is no relationship between income and financial knowledge.

Since the introduction of the economic reform agenda in 1986, Vietnam has achieved remarkable progress in spurring the economy from a poverty country to a developing and emerging economy. Contributing to this achievement, the financial industry plays an essential role. The financial sector in Vietnam has continuously grown in order to provide a variety of financial products and services that increase convenience. As a pivotal component, Vietnam's stock market began its establishment and operation in the 2000s, and its rapid development has been documented. In a report from the Ministry of Finance, the volume of market capitalization accumulated to the first quarter of 2022 is 93.8% of GDP. In order to adapt and respond to the significant improvement of the financial sector, individuals' financial literacy should be enhanced. Indeed, the importance of financial literacy has been stated in a range of studies. Lusardi et al. (2017) proved that financial security is critical for the secure future of individuals. Poor financial decisions can result from a lack of financial knowledge, and this prevents individuals from attaining financial goals (Ergün, 2018). However, contrasting sharply with the abundant literature on financial literacy in other countries, research in Vietnam is limited. Therefore, the determinant of financial literacy is pioneer research which would initiate further research to increase financial literacy in Vietnam.

According to studies by Askar et al. (2020) and OECD (2015), having a deep understanding of finances plays a significant part in the fight against poverty. However, there is not much research on this issue in countries with low income. In addition, the problems related to measuring the level of financial literacy and exploring key factors determining individuals' financial literacy or access to formal financial products, inclusion, and well-being perspective are left open. Accordingly, the purpose of this study is to explore which demographic and socioeconomic characteristics affect financial literacy to make recommendations for an appropriate strategy to improve financial literacy among the general population, particularly in the south-east of Vietnam. In prior research, demographic and socioeconomic factors were presented by basic indicators such as gender, age, education, and income. However, in this study, we use a different approach by

adding two more indicators comprising training courses and access to financial information variables to get a great insight into respondents' characteristics. Moreover, following OECD (2016), financial literacy in this research is also examined by measuring three facets to deeply understand the financial knowledge, financial behavior, and financial attitude of respondents.

The paper consists of five sections. The literature review is presented in the next part, followed by data and methodology section. Section 4 shows the results and discussions of the research. The last part presents conclusions.

1. LITERATURE REVIEW

Attempts have been made to develop and research the measurements of financial literacy through surveys that can be empirically tested. The first one was the project of Jump\$tart Coalition at high schools and colleges in the United States in 1997. Lusardi and Mitchell (2007) included a set of financial literacy questions in the research on Health and Retirement Study in 2004, which was used as a model for subsequent surveys. Later polls, such as the OECD/INFE poll, were built on this basis by asking questions about financial knowledge, behavior, and attitude. According to the OECD, financial literacy is demonstrated in this study through three primary aspects, including financial knowledge, financial behavior, and financial attitude (OECD 2016). The financial knowledge component consists of questions on basic concepts related to finance, economics, and numeracy ability. It is an essential part of financial literacy because it allows customers to compare and make sound financial decisions. Financial behavior examines people's activities such as financial product choices, planning, and saving and spending patterns that influence their financial well-being in the short and long terms. The third aspect of financial literacy is financial attitude which is intended to assess respondents' attitudes, an important part to make effective financial decisions and future financial planning.

Several studies conducted throughout the world used demographic and socioeconomic variables of financial literacy to assess people's comprehension of financial literacy. According to Lusardi et al. (2017), there is a gender gap in financial literacy ratings. Women, in particular, have lesser financial literacy than men in most studies (Kadoya and Khan, 2019; Yoshino et al., 2017), and the reasons for this are still being contested. In addition, women are more likely than men to say they do not know the answers to the questions in the survey. Financial literacy follows a hump-shaped pattern with age, growing first and then dropping in old life (Kadoya and Khan, 2020). According to Lusardi and Mitchell (2007), there are variations in the behavior and consequences of planning and spending between youthful and middle-aged persons. However, this finding is different from the result found by Scheresberg (2013) indicating that there is no difference in financial literacy ratings of age.

A critical topic is whether education programs related to finance can promote financial literacy. A substantial number of studies on this topic have been undertaken, but the results are equivocal and are influenced by numerous specific elements of the programs such as syllabus, instructor, or target groups, etc. Fernandes et al. (2014) conducted a meta-analysis research including 188 studies and discovered that there is a significant positive relationship between financial education and economic behavior but very little influence. Also, through a meta-analysis of 126 researches, Kaiser and Menkhoff (2017) discovered that financial education has a considerable influence on financial behavior and it seems to be less on financial literacy. However, the findings imply that it is difficult to improve low-income individuals' financial behavior with financial education. Furthermore, in a research aiming to examine the impact of education programs at primary and secondary schools, Amagir et al. (2018) found that financial education programs have significant positive effects on students' financial knowledge but no significance on their financial behavior.

Previous research has also emphasized the importance of other factors, such as workforce status, income, and marital status which have also been proven to influence financial literacy. A study has revealed that the self-employed, particularly company owners, have better levels of financial literacy than the jobless (Lusardi and Tufano, 2009). Chen and Volpe (1998) discovered that persons with more work experience can get a chance to gain more knowledge, facilitate the interpretation of more complicated information, and provide a foundation for decision-making.

In terms of income, Calamato (2010) proposed that a steady source of income may also impact financial attitude and habits since it is easier for persons with a consistent income to manage their financial lives. Additionally, Atkinson and Messy (2012) discovered that financial literacy has a positive connection with income and wealth. Interestingly, Johnson and Sherraden (2007) provided evidence that the income levels of parents have a significant positive relationship with their children's financial knowledge. Further, those with lower incomes have a higher dropout rate, which has an indirect impact on their long-term financial literacy (Calamato, 2010). In this scenario, it is proposed that there is a possibility of reverse causation: persons with high financial literacy levels gain greater income levels while better financial decisions also bring higher incomes. Accordingly, it is also possible that those with greater levels of financial literacy have higher incomes because they can make more informed decisions about their financial issues.

Finally, there is also a correlation between the level of financial knowledge and marital status. Brown and Graf (2013) found that compared to married people, singles tend to have lower levels of financial literacy.

2. DATA AND METHODOLOGY

2.1 Data

A questionnaire survey is used to collect information on individuals' financial literacy and demographic characteristics. Particularly, financial literacy is measured in three aspects, including financial knowledge, financial behavior, and financial attitude. The data was gathered at the beginning of January 2022 by delivering the paper survey to respondents who consented to participate in the study and then collecting it shortly after they finished it. The full sample consists of 527 individuals between 18 and 60 years old and covers five cities representing five provinces in the southeast of Vietnam: Ho Chi Minh city, Bien Hoa city, Vung Tau city, Thu Dau Mot city, and Dong Xoai city. The questionnaire survey was a combination of financial knowledge, financial behavior, and financial attitude which represent three aspects of financial literacy and was designed in accordance with OECD (OECD, 2015). In addition, individuals' information related to gender, age, education level, training courses in business or finance, working status, marital status, access to financial information, and income level was also collected.

2.2 Measurement of variables

Dependent variables

We examined financial knowledge, financial behavior, and financial attitude in this study to better understand various facets of financial literacy. These three aspects of financial literacy are the study's dependent variables. Given the difficulties in effectively evaluating financial literacy by using standard questions about financial literacy, we followed the OECD technique of measuring financial literacy from a broader viewpoint (OECD, 2015). Table 1 summarizes the statistics for the variables considered in this investigation. The average financial knowledge, behavior, and attitude scores of respondents are 0.522 (standard deviation (SD) = 0.25), 0.517 (SD = 0.30), and 0.536 (SD = 0.41), respectively.

Table 1. Descriptive statistics

<i>Variables</i>	<i>Obs</i>	<i>Mean (SD)</i>	<i>Min</i>	<i>Max</i>
Financial knowledge (FK)	527	0.522 (0.25)	0	1
Financial behavior (FB)	527	0.517 (0.30)	0	1
Financial attitude (FA)	527	0.536 (0.41)	0	1

Source: Authors calculated from research data

Independent variables

We incorporate various factors relating to respondents' demographic and socioeconomic characteristics to explain financial knowledge, behavior, and attitude in Vietnam. As well-studied topics in financial literacy literature, gender, age, and education are also included since they appear to be key factors in financial literacy. Furthermore, respondents' employment status, such as working in the formal or informal sector, income level, and access to financial information is also considered to predict financial literacy.

In addition to these conventional demographic and socioeconomic factors, we added two additional variables that previous research did not consider analyzing their connection with financial literacy. First, it is assumed that training courses or major studies related to economics or finance in the recent past are connected with financial literacy. Another additional variable is access to financial information through readiness to acquire financial knowledge, perceive behavior, or perceive attitude via newspapers, magazines, television, and the internet.

Table 2 summarizes the information provided by respondents. 51.23% of the 527 people valid for analysis are female, while 48.77% are male. In terms of age, the majority of respondents are between the ages of 25 and 34, and 35 and 49, with about 43.3% and 29.4%, respectively. Regarding education, almost 60% of respondents have a diploma or a bachelor's degree. The percentages of respondents who complete secondary and high school are nearly 15.8% and 15.4%, respectively. Only approximately 9% of people have a postgraduate degree. In terms of income, approximately 56% of people earn less than VND 9 million each month (they are not obliged to pay personal income tax at this earning level). Additionally, 43.26% of respondents work in the informal sector, while the remaining respondents work in the official sector. Furthermore, just over 18% of respondents routinely access and obtain finance-related information, and around 30% engage in finance/business/economic courses through training courses or their major, which they learn from their university.

Table 2. Summary of demographic characteristics of respondents

	<i>Frequency</i>	<i>%</i>
Gender		
- Female	270	51.23
- Male	257	48.77
Respondents' age		
- Under 25	104	19.73
- 25-34	228	43.26
- 35-49	155	29.42
- 50-60	40	7.59
Respondents' education		
- Secondary school	83	15.75
- High school	81	15.37
- Diploma/Bachelor	316	59.96
- Postgraduate	47	8.92
Marital status		
- Single	162	30.74
- Married	365	69.26
Labor force		
- Informal sector	228	43.26
- Formal sector	299	56.74
Income level		
- Under 5 million VND	141	26.76
- 5 – under 9 million VND	155	29.41
- 9 – 15 million VND	145	27.51
- Over 15 -30 million VND	52	9.87
- Over 30 million VND	34	6.45
Training courses		
- Yes	161	30.55
	366	69.45

- No		
Access to financial information	95	18.03
- Regularly	432	81.97
- Rarely		
Observations	527	100%

Source: Authors calculated from research data

2.3 Methodology

To explain how demographic and socioeconomic characteristics are linked to financial knowledge, financial behavior, and financial attitude, The linear regression is applied by the ordinary least squares (OLS) regression model. For the three aspects of financial literacy, we employed three models. Financial knowledge, financial behavior, and financial attitude are used as dependent variables. Gender, age groups, education levels, labor force, income levels, marital status, training courses, and access to financial information are all independent factors. The linear regression model is as follows:

$$FK \text{ or } FB \text{ or } FA = \alpha + \beta_1 \text{gender} + \beta_2 \text{age} + \beta_3 \text{education} + \beta_4 \text{labor force} + \beta_5 \text{marital status} + \beta_6 \text{income} + \beta_7 \text{training course} + \beta_8 \text{AFI} + \beta_9 \text{area} + \varepsilon_i$$

We also employed a generalized structural equation model in logit (GSEM in logit) to test the robustness of the results. A score of more than 0.5 indicates greater financial knowledge, behavior, and attitude, and a lower score indicates the opposite. The dependent variable is coded 1 for more financially educated respondents, those who have greater financial knowledge, better financial behavior, and better financial attitude, and 0 for those with a score of less than 0.5 for financial knowledge, financial behavior, and financial attitude. The independent variables were left unchanged from the linear regression model. Previous research has claimed that endogeneity is a significant concern in the study of financial literacy, which can lead to biased results (Lusardi & Mitchell, 2011a). According to Bartus (2017), the GSEM in the logit model compensated for any endogeneity bias in the coefficients. Hence, we utilized the GSEM in the logit model, similar to the linear regression model, to control possible endogenous issues.

3. RESULTS AND DISCUSSIONS

The OLS regression results of the demographic and socioeconomic components affecting financial knowledge, behavior, and attitude are shown in Table 3. The regression coefficients of financial knowledge, financial behavior, and financial attitude are presented in Models 1, 2, and 3, respectively. Model 1's coefficients indicate a positive link between financial knowledge and male gender, education level, income, training course, and formal sector. We discovered no association between respondents' access to financial information and financial knowledge. The ages 25-34 and above 50 also do not corroborate the relationship. Interestingly, we discovered a distinct association between several demographic characteristics and both financial behavior and financial attitude when we compared the link with financial knowledge. In contrast to model 1, the coefficients of model 2 demonstrate that gender and age have no link with financial behavior, as training courses and marital status do. However, diploma or graduate level of education and income levels over VND9 million are strongly connected with financial behavior. Model 3 coefficients demonstrate that dissimilar to financial knowledge, men are adversely linked with financial attitude, whereas age groups are favorably related to financial attitude. Only the highest income level of more than VND30 million has a close link with financial attitude. Overall, the data suggest that while men have greater financial knowledge than women, women have better financial behavior and attitude than men. Regarding two additional variables connected to training courses and access to financial information, demographic and socioeconomic aspects were introduced. Training courses influence people's financial knowledge but have no impact on their financial behavior or attitude. However, individuals who have access to financial information have an impact on their financial attitude.

Table 3. Ordinary least squares (OLS) regression coefficients.

	<i>Financial knowledge (model 1)</i>	<i>Financial behavior (model 2)</i>	<i>Financial attitude (model 3)</i>
Male	0.046 (0.02) **	-0.036 (0.03)	-0.034 (0.02) *
Age group (ref. under 25)			
- 25-34	0.020 (0.03)	-0.010 (0.03)	0.092 (0.02) ***
- 35-49	0.077 (0.03) **	0.011 (0.04)	0.111 (0.03) ***
- 50-60	0.022 (0.04)	0.021 (0.05)	0.106 (0.05) **
Education level (ref. under high school)			
- High school	0.149 (0.04) ***	0.028 (0.04)	0.052 (0.04)
- Diploma/Graduate degree	0.192 (0.03) ***	0.117 (0.04) ***	0.048 (0.03)
- Postgraduate degree	0.156 (0.05) ***	0.050 (0.05)	0.086 (0.04) *
Formal sector	0.076 (0.02) ***	0.075 (0.03) ***	-0.020 (0.02)
Married status	0.04 (0.13)	0.103 (0.12)	-0.072 (0.06)
Income level (ref. under VND 5 million)			
- VND 5 – 9 million	0.05 (0.03) *	0.039 (0.03)	0.001 (0.03)
- VND 9 – 15 million	0.11 (0.03) ***	0.75 (0.03) **	0.025 (0.03)
- VND Over 15 – 30 million	0.170 (0.04) ***	0.079 (0.04) **	0.027 (0.04)
- Over VND 30 million	0.159 (0.05) ***	0.112 (0.05) **	0.097 (0.04) **
Training course	0.06 (0.02) ***	0.033 (0.02)	0.007 (0.02)
Access to financial information	0.273 (0.03)	0.146 (0.04)	0.197 (0.05) **
Area	yes	yes	yes
F	9.99 ***	5.69 ***	1.79 **
Adjusted R ²	0.283	0.177	0.059
Observations	527		

Notes: t values in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Furthermore, the data is analyzed by using the generalized structural equation model in logit (GSEM in logit) to assess the robustness of the results and ensure the reliability of the findings. Table 4 displays the coefficients of the GSEM in the logit model to investigate what factors increase the chance of having good financial knowledge, behavior, and attitude. Similarly, regarding the OLS estimation, three models are estimated for the three facets of financial literacy. The coefficients of model 1 reveal that male gender, education level, training course, formal sector, and high-income level (over VND30 million) tend to increase financial knowledge, whereas younger people and those with incomes equal to or less than VND30 million per month are not found to have any relationship. After the robustness is controlled, the finding indicated that there are significant discrepancies between respondents' knowledge and their gender. Males tend to have higher levels of financial knowledge than females. This result has supported previous studies (Lusardi & Mitchell, 2014). Furthermore, Lusardi et al. (2017) also found that the more educated persons are, the better financial literacy scores they achieve. The results of model 2 suggest that people who work in the formal sector and have a married status have better financial behavior, but gender, age, education, training course, access to financial information, and an income level of VND30 million or less are unrelated to financial behavior. In model 3, the coefficients demonstrate that age, education, and employment in the formal sector tend to enhance financial attitude, but the male gender tends to deteriorate it. In summary, the results reveal that the connection of age, education, and the formal sector is essentially comparable to three components of financial literacy after correcting any endogeneity by using GSEM in the logit technique. However, there are variations in all aspects of financial literacy for men. Particularly, in contrast to financial knowledge, males are adversely related to financial behavior and financial attitude but just statistically significant with financial attitude. Furthermore, the overall results of the GSEM in logit and OLS models are quite comparable, showing that our results are robust.

Table 4. Generalized structural equation model (GSEM) in logit regression coefficients.

	<i>Financial knowledge (model 1)</i>	<i>Financial behavior (model 2)</i>	<i>Financial attitude (model 3)</i>
Male	0.087 (0.04) **	-0.046 (0.04)	-0.080 (0.04) *
Age group (ref. under 25)			
- 25-34	0.071 (0.06)	-0.067 (0.06)	0.118 (0.07) *
- 35-49	0.198 (0.07) ***	-0.026 (0.07)	0.238 (0.07) ***
- 50-60	0.095 (0.09)	0.086 (0.09)	0.170 (0.09) *
Education level (ref. under high school)			
- High school	0.245 (0.07) ***	0.122 (0.08)	0.138 (0.08) *
- Graduate degree	0.305 (0.06) ***	0.096 (0.07)	0.169 (0.07) **
- Postgraduate degree	0.244 (0.09) ***	0.132 (0.10)	0.167 (0.10) *
Formal sector	0.141 (0.04) ***	0.123 (0.05) **	0.178 (0.05) ***
Married status	0.1168 (0.21)	0.523 (0.22) **	0.265 (0.21)
Income level (ref. under VND 5 million/per month)			
- VND 5 – 9 million	-0.033 (0.06)	-0.03 (0.06)	0.036 (0.06)
- VND 9 – 15 million	0.080 (0.06)	0.052 (0.07)	0.075 (0.07)
- VND Over 15 – 30 million	0.112 (0.08)	0.09 (0.09)	0.170 (0.09) *
- Over VND 30 million	0.264 (0.09) ***	0.217 (0.10) **	0.122 (0.10)
Training course	0.095 (0.05) **	-0.028 (0.05)	- 0.010 (0.05)
Access to financial information	0.031 (0.04)	0.088 (0.06)	0.062 (0.06)
Area	yes		
Observations	527	527	527
Log likelihood	-324.997	-358.537	-353.293

Notes: t values in parentheses. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

CONCLUSION

The purpose of this research is to look at the aspects that contribute to Vietnamese individuals' financial literacy. To determine whether demographics and socioeconomic characteristics influence financial literacy, multivariate regression analysis was used. The survey revealed significant gaps in financial literacy among individuals in the southeast of Vietnam. Specifically, our study findings revealed that females, people working in the informal sector, and those who have not received financial knowledge from any training course have less financial knowledge than males, those working in the formal sector, and those participating in financial training programs. Furthermore, persons with higher incomes were more financially literate than those with lower incomes. However, the findings indicate that there is no evidence of the link between the majority of demographic and socioeconomic characteristics and individual financial behavior. The findings contributed to the existing knowledge of the influence of various demographics and socioeconomic parameters by investigating the diversity of financial knowledge and financial attitude.

The findings of this study also revealed several potential consequences. First, the Vietnamese government must implement educational initiatives to promote people's financial literacy, particularly women, those working in the informal sector, and those proven to be less financially literate. Second, our empirical findings indicate that high-income levels have a considerable effect on the three facets of financial literacy. Hence national financial education approach should prioritize low-income individuals.

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