THE IMPACT OF FINANCIAL LITERACY ON FINANCIAL INVESTMENT STRATEGIES: A CASE STUDY IN VIETNAM

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Abstract

The study aims to explore the impact of financial literacy on the investment strategies of individual investors in the Vietnamese stock market. The study collected data on 375 individual investors. The methods applied are multiple linear regression (MLR), ordinal logistic regression (OLR) and structural equation modeling (SEM). The results reveal that financial literacy positively affects short-term investment and leverage strategies. The more financially literate investors are, the more inclined they are to short-term and leverage investments.

Keywords: *financial literacy, short-term investment, leverage, Vietnam.*

JEL classification: B26, F65, G11.

TÁC ĐỘNG CỦA KIẾN THỨC TÀI CHÍNH ĐẾN CÁC CHIẾN LƯỢC ĐẦU TƯ TÀI CHÍNH: NGHIÊN CỨU TRƯỜNG HỢP VIỆT NAM

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Tóm tắt

Mục đích của nghiên cứu này nhằm khám phá tác động của kiến thức tài chính đến các chiến lược đầu tư của các nhà đầu tư cá nhân ở thị trường chứng khoán Việt Nam. Nghiên cứu thu thập dữ liệu từ 375 nhà đầu tư cá nhân. Các phương pháp được sử dụng là phân tích hồi quy tuyến tính bội (MLR), hồi quy logistic thứ tự (OLR) và mô hình cấu trúc tuyến tính (SEM). Các kết quả phân tích tiết lộ rằng kiến thức tài chính có tác động tích cực đến các chiến lược đầu tư ngắn hạn và đòn bẩy. Nhà đầu tư càng có kiến thức tài chính, họ càng có xu hướng đầu tư ngắn hạn và sử dụng đòn bẩy nhiều hơn.

Từ khoá: *kiến thức tài chính, đầu tư ngắn hạn, đòn bẩy, Việt Nam.*

1. Introduction

Financial literacy is one of the main factors contributing significantly to the development of the stock market. The more financial literacy investors have, the more they participate in investing in stocks (Chen et al., 2023) and tend to choose to invest in stocks rather than bonds (Zhu and Xiao, 2022) and the more investment strategies such as "stop loss and take profits" (Zhang et al., 2023).

Over the past decades, the matter of improving financial literacy has been discussed in many countries. Developed countries have built and implemented national programs and strategies to improve financial literacy, establishing state agencies to perform tasks about financial knowledge and education (Nugraha et al., 2021). Nevertheless, financial literacy is still very low globally, with only one in three adults, on average, having a good understanding of finance (Klapper and Lusardi, 2020). Research by Bolognesi et al. (2020) also confirmed that only 19 percent of millennials confidently answer financial questions correctly.

Vietnam is a developing country located in Southeast Asia. According to the global financial literacy ranking, Vietnam only reaches 24 per cent of adults, ranking 118/144 countries surveyed (Dinh and Dao, 2023) and the lowest compared to some countries of Southeast Asia such as Singapore (59 percent), Malaysia (36 percent), Indonesia (32 percent), Thailand (27 percent) and Philippines (25 percent). Hence, the matter of improving financial literacy becomes urgent (Tran et al., 2023).

In recent years, to the best of the authors' knowledge, studies exploring the role of financial literacy in investment decision-making have been of great interest to domestic and foreign researchers. For instance, Phung (2023) found evidence of the importance of parental financial heads in the family in promoting college students' financial literacy levels and budgeting habits in Vietnam. In addition, Nugraha et al. (2021) revealed the impact of financial literacy and

inclusion on investment decisions in Manado using the multiple linear regression method. Similarly, Kumari (2020) indicated the effect of financial literacy on the investment decisions of 200 students from four government universities in the Western Province of Sri Lanka through the partial least squares structural equation modeling (PLS-SEM) method. In Vietnam, the study by Nguyen and Kim (2022) provided information on the effect of demographic factors and financial literacy on the managers' decision-making process by using three multiple linear regression model analyses. In general, previous studies in Vietnam mainly explored the role of financial literacy in investment decisions. Nevertheless, they have not comprehensively explained its implications for short-term investment and leveraged strategies. More importantly, the above works have not been using a combination of various methods to answer the question of whether financial literacy affects the investment strategies of individual investors in the Vietnamese stock market - an emerging economy in Southeast Asia.

Hence, to fill the research gap, the paper uses econometric analysis techniques through multiple linear regression (MLR), ordinal logistic regression (OLR) and structural equation modeling (SEM) to explore the impact of financial literacy on the short-term and leveraged investment strategies of individual investors in the stock market in Vietnam. The results of this study contribute to theory because it has added knowledge in the field of financial investment and examined the impact model of financial literacy on financial investment strategies in the Vietnamese market as well as the use of various methods. At the same time, practically, this study will provide more empirical evidence with a new and comprehensive approach for policy managers and investors to have objective information about the importance of financial literacy, as well as the impact of demography, thereby contributing to deciding effective investment strategies.

2. Literature review

Financial literacy is how individuals manage their financial resources through investments, insurance, budgeting, and savings (Hogarth, 2002). Financial literacy measures understanding of financial concepts such as credit scoring, compound interest, inflation, and calculations, especially the effects of interest rates, inflation, risks, and financial returns. Financial literacy develops into the skills needed to regulate an individual's financial behavior and attitudes (Hastings et al., 2013). Additionally, financial literacy is awareness of different financial ideas and their ability to solve financial problems(Nguyen, 2023).

Financial literacy has been found to have a relationship with financial decisions. According to Zhu and Xiao (2022), financial literacy impacts the holding of risky financial assets such as stocks, bonds and mutual funds in households in China. In addition, Yamori and Ueyama (2022) have also concluded that the higher the financial literacy, the higher the trading frequency of Japanese investors. This finding is also consistent with the study of Chen et al. (2023).

Some studies found that individuals with high financial literacy will manage their finances more effectively, such as using credit cards (Hamid and Loke, 2021), retirement savings (Hastings and Mitchell, 2020), borrowing money at low-interest rates (Huston, 2012), spending budgeting habits (Phung, 2023), planning to start a business (Tran et al., 2023).

Research by Zhang et al. (2023) found that financial literacy helps increase profits for individual investors in China through a "stop loss and take profits" investment strategy. In addition, Rieger (2021) conducted an online empirical study of 97 German investors and found tendencies to invest in risky assets for one year and ten years. In particular, the trend is higher and higher the longer the investment period. Short-term investment strategies also impact the peer-to-peer lending market (Fang et al., 2018). However, research on the relationship between financial literacy and short-term investment and leverage strategies has not been explored. Therefore, the hypotheses proposed are as follows:

H1: Financial literacy has a positive impact on short-term investment strategies.

H2: Financial literacy has a positive impact on leveraged strategies.

From the above hypotheses, the proposed research model is presented as in Figure 1:

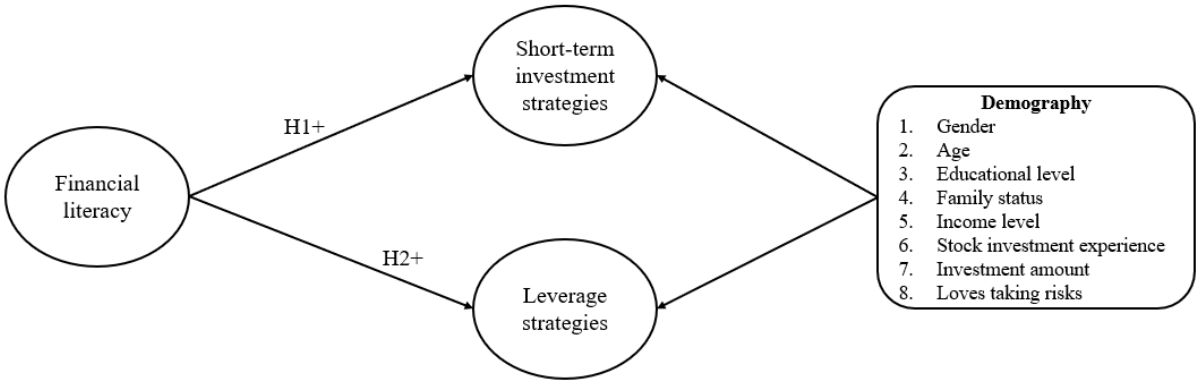

Figure 1. Research model

Source: The authors developed

3. Method

Some studies found that individuals with high financial literacy will manage their finances more effectively, such as using credit cards (Hamid and Loke, 2021), retirement savings (Hastings and Mitchell, 2020), borrowing money at low-interest rates (Huston, 2012), spending budgeting habits (Phung, 2023), planning to start a business (Tran et al., 2023).

The study sends questionnaires to investors as "Google Forms" for about sixteen weeks (from August to December 2023). Respondents are individual investors based on lists of listed companies in Vietnam using a single random sampling method. According to Hair et al. (2010), the ideal sample size should be 1:5 or 1:10. Therefore, the minimum survey sample is 250. However, to optimize the study results, the author increased the sample size to 500, but after cleaning data, the formal sample size for analysis was 375 with a response rate of 75 percent. Of the 375 investors, 65.6 percent were male, and 34.4 per cent were female. The majority are young investors under the age of 35 years old (76 percent) and with a college education (83.2 percent), single (57.3 percent) and average monthly income from 20 to 50 million VND (60 per cent). Most investors have less than five years' experience (58.1 percent), an investment amount of less than 250 million VND (68.8 percent) and love risk (79.5 percent).

The study used 16 items by Ballock et al. (2014) to measure financial literacy with 1 point per correct answer, such as *"What is meant by the capital market?"*, *"What is meant by shares?"*, *"Where you can buy company stock?"*, *"Does the stock have a term/ maturity date?"*, *"Does the bond have a maturity/maturity?"*, *"What are the advantages of the investment made?"* and so on. The scale of "short-term investment strategies" inherited by Rieger et al. (2021) *"What percentage (%) of your portfolio is held in stocks for less than one year?"* and the scale of "leveraged strategies" developed by Phung et al. (2022) *"What is the average leverage ratio (debt to equity) in your portfolio?"* with 1: no debt used at all, 2: less than 20%, 3: 20% to less than 30%, 4: 30% to less than 50%, and 5: 50% (the maximum level according to regulations). In addition, the control variables used in the study are inherited by Tran et al. (2023) including gender, age, education, income, family status, experience, investment amount and love of taking risks.

The study uses Multiple Linear Regression (MLR), Ordinal Logistic Regression (OLR) and Structural Equation Modeling (SEM) analysis methods to test research hypotheses by SPSS and AMOS software.

4. Findings and discussions

4.1. Factors affecting short-term investment strategies

The analysis results in Table 1 showed that financial literacy is the key explanatory factor with many different types of variables such as the

continuous variable in model 1, dummy variable (above average financial literacy= 1) in model 2, basic and advanced financial literacy in model 3 and intermediate variable in model 4.

The results revealed that financial literacy influenced short-term investment strategies, and this influence was similar in all four models. In models 1 and 4, financial literacy had an impact coefficient of 0.542 and 0.513 with 99 percent significance. It proves that the higher the financial literacy, the higher the percentage of short-term investment. Meanwhile, model 2 showed that investors with below-average financial literacy have a lower ratio of short-term investments than investors with average or higher financial literacy. Model 3 has an impact coefficient of 0.432 with a 95 percent significance that the higher the individual's advanced financial literacy, the more inclined they are to make short-term investments.

In addition, education impacts short-term investment strategies. The regression coefficients of 0.235 and 0.324 in models 3 and 4 indicated that the more educated an investor is, the more likely they are to invest in short-term stocks. Model 2 has an impact coefficient of -0.237, which shows that investors with a high school education tend to have a lower tendency to make short-term investments than investors with a master's degree.

Table 1: *Factors explaining short-term investment strategies*

	(1)	**(2)**	**(3)**	**(4)**
	MLR	**OLR**	**MLR**	**SEM**
Financial literacy	0.542			0.513
	(2.378)***			(1.980)***
Financial literacy		-0.453		
(below average vs. above average)		(2.313)***		
Basic financial literacy			0.102	
			(1.243)	
Advanced financial literacy			0.432	
			(2.124)**	
Gender	0.124		0.078	0.113
(Male = 1)	(1.572)		(0.379)	(0.784)
Female = 0		-0.006		
		(0.378)		
Age	-0.457		-0.136	-0.462
	(-0.173)		(-0.125)	(-0.242)
Under 35 vs. over 35		-0.006		
		(0.378)		
Education	0.353		0.235	0.324
	(3.428)***		(2.134)**	(3.294)**
High school vs. Master's		-0.237		
		(3.216)***		
Family status	-3.251		-3.127	-2.893
(Married = 1)	(-0.693)		(-0.891)	(-0.893)
Single = 0		0.168		
		(0.758)		
Income	-2.463		-2.563	-2.094
	(-1.473)		(-1.521)	(-1.031)
Less than 50 million VND vs. over		0.213		
50 million VND		(0.380)		
Experience	-0.178		-0.362	-0.375
	(-0.385)		(-0.321)	(-0.485)
Less than 5 years vs. 10 years or		0.124		
more		(0.067)		
Investment amount	-0.253		-0.095	-0.321
	(-0.035)		(-0.001)	(-0.074)

	(1)	(2)	(3)	(4)
	MLR	**OLR**	**MLR**	**SEM**
Less than 250 million VND vs. over 3 billion VND		0.173 (0.004)		
Love taking risks	0.546 (0.674)		0.453 (0.213)	0.427 (0.132)
Fear vs. Risk-taking		0.045 (0.005)		
-2 Log Likelihood	47.895 ***	1736.394	46.203 ***	
Pseudo R-Square/Adjust R^2/ R^2	0.006	0.045	0.032	0.04
F Change/Chi-square	1.324 ***	74.563***	1.635 ***	1.874 ***
Df	10	22	13	4

*Note: *** p < 1%, ** p < 5%, * p < 10%, T-test in parentheses. SEM indicators: GFI = 0.930, TLI = 0.912, CFI = 0.942, RMSEA = 0.056*

Source: Authors' analysis

4.2. Factors affecting leveraged strategies

The analysis results in Table 2 of 4 models showed that financial literacy has a positive impact on leveraged strategies. In models 5 and 8, the regression coefficient reached 0.435 with a 99 percent significance between financial literacy and leveraged strategies. It means that the higher the financial literacy, the higher the leverage ratio. A coefficient of -0.433 in model 2 indicated that investors with below-average financial literacy use lower leverage than investors with above-average financial literacy. In model 3, advanced financial literacy influences leverage strategies with a regression coefficient of 0.584, meaning that the higher the investor's advanced financial literacy, the higher the level of leverage.

Another factor is age, which has an impact coefficient of 0.604 in model 6, indicating that investors under 35 years old use higher debt than investors over so. A coefficient of 0.270 between income and leveraged strategies and 0.303 between experienced and leveraged strategies in models 5, 7, and 8 indicated that the higher income and more experienced investors invest, the more leveraged they use.

Next, investment amount with a coefficient of 0.211 and a love taking risks with a coefficient of 0.176 with a strategy using leverage in models 5, 7 and 8 showed that the higher the invested capital, the more risk-loving, the more they use leverage.

Table 2: *Factors explaining leveraged strategies*

	(5)	(6)	(7)	(8)
	MLR	**OLR**	**MLR**	**SEM**
Financial literacy	0.435 (2.425)***			0.435 (2.453)***
Financial literacy (below average vs. above average)		-0.433 (3.531)***		
Basic financial literacy			0.362 (1.443)	
Advanced financial literacy			0.584 (4.029)***	
Gender (Male = 1)	0.067 (0.536)		0.067 (0.536)	0.067 (0.540)
Female = 0		0.003 (0.001)		
Age	-0.342 (-1.094)		-0.342 (-1.094)	-0.342 (-1.103)
Under 35 vs. over 35		0.604		

	(5)	(6)	(7)	(8)
	MLR	OLR	MLR	SEM
		(3.452)**		
Education	-0.167		-0.167	-0.167
	(-0.134)		(-0.134)	(-0.138)
High school vs. Master's		-0.344		
		(0.637)		
Family status	-0.189		-0.189	-0.189
(Married = 1)	(-1.301)		(-1.301)	(-1.311)
Single = 0		0.232		
		(1.307)		
Income	0.270		0.270	0.270
	(2.563)**		(2.563)**	(2.583)**
Less than 50 million VND vs. over 50 million VND		-0.631		
		(1.203)		
Experience	0.303		0.303	0.303
	(2.452)**		(2.452)**	(2.477)**
Less than 5 years vs. 10 years or more		-0.492		
		(3.213)*		
Investment amount	0.211		0.211	0.211
	(3.012)**		(3.012)**	(3.034)**
Less than 250 million VND vs. over 3 billion VND		-0.568		
		(1.232)		
Love taking risks	0.176		0.176	0.176
	(1.976)*		(1.976)*	(1.986)*
Fear vs. Risk-taking		-0.045		
		(0.563)		
-2 Log Likelihood	1.674***	1124.738	1.515***	
Pseudo R-Square/Adjust R^2/ R^2	0.098	0.160	0.090	0.117
F Change/Chi-square	6.741***		5.748***	3.903***
Df	10	22	13	4

*Note: *** p < 1%, ** p < 5%, * p < 10%, T-test in parentheses. SEM indicators: GFI = 0.930, TLI = 0.912, CFI = 0.942, RMSEA = 0.056*

Source: Authors' analysis

4.3. Discussion

The study found financial literacy positively affects short-term investment strategies and leveraged strategies. Therefore, the H1 and H2 hypotheses are accepted(see Table 3).

The more financially literate an investor is, the more short-term investment and leverage they use. This finding contributed to previous research such as how financial literacy affects credit card use (Hamid and Loke, 2021), borrowing money at low-interest rates (Huston, 2012), choosing stocks rather than bonds (Zhu and Xiao, 2022) and the "stop loss - take profits" strategy (Zhang et al., 2023).

Table 3: *Results of the hypothesis test*

Hypothesis	Impact sign	Conclusion
H1: Financial literacy → Short-term investment strategy	+	Supported
H2: Financial literacy → Leverage strategy	+	Supported

Source: Authors' analysis

5. Conclusions and implications

This study examines the impact of financial literacy on investment strategies. The three methods applied are multiple linear regression (MLR), ordinal logistic regression (OLR) and structural equation modeling (SEM). The results found financial literacy directly impacts short-term investment and leveraged strategies. The three methods all give similar results.

Based on the research results, financial literacy plays a crucial role in investment strategies. Therefore, stock companies need to organize many training sessions and seminars on finance to help investors improve their financial literacy. Because individual investors invest short-term and use leverage, it is crucial to raise investor awareness to avoid possible losses during the investment process and excessive debt use.

Besides, it is necessary to have a combination of stock companies and educational institutions for training to improve students' financial literacy because they are future individual investors. Policymakers should build policies that support and encourage individual investors to participate in sustainable financial investment.

Although the study has achieved some results, it is inevitable that we only conducted surveys of individual investors, so future studies may expand the research respondents to Generation Z – potential investors or expand outside the territory of Vietnam.

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