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The Effect of Financial Literacy on Investors' Financial Risk Tolerance

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Abstract

This paper aims to examine the effect of financial literacy on investors' financial risk tolerance among investors of the Tehran Stock Exchange. The research sample selected by available methods includes 384 investors of the Tehran Stock Exchange in the first half of 2020. The standard questionnaire of financial literacy and financial risk tolerance of Yaghoubnejad et al. (2011) and Carina & Lisa (2015) has been used to measure the research variables and test hypotheses. The content and face validity methods and factor analysis were used to confirm the validity of the questionnaire, and its reliability was evaluated using Cronbach's alpha coefficient. Structural equation and PLS methods have been used to test the research hypotheses. The research hypotheses test results showed that earning money literacy, investment literacy, spending and borrowing literacy and financial risk literacy as components of financial literacy has a positive and significant effect on financial risk tolerance. But savings literacy does not affect financial risk tolerance.

Keywords

Financial Literacy, Financial Risk Tolerance, Investors

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1. Introduction

It is universally accepted that financial literacy is an essential component of financial and economic stability and development. There are several definitions of financial literacy; however, there is no agreement to these definitions. Each institution has designed financial literacy measuring tools according to its definition; for this reason, there have been many tools and methods in measuring financial literacy. These methods and tools vary differently from each other (Allgood & Walstad, 2011). Based on the definition of the Organization for Economic Development and Cooperation in 2013, “financial literacy is the ability to make informed judgments and make effective decisions about the use and management of money"(ASIC,2013). According to Jumpstart (2009), financial literacy is the ability of a person to use his/her knowledge and skills to effectively manage his/her financial resources for financial security throughout his/her lifetime. Therefore, one of the main issues in financial markets' efficient performance is current or potential participants (Karimkhani & Eslami, 2015).

Financial literacy and understanding its implications are particularly important to investors because financial decisions significantly impact their financial situation during their lifetime. Additionally, their financial situation in life can affect their overall performance (Shirazian, 2018). In recent years, developing and developed countries have been concerned about their citizens' level of financial literacy. Because it can not be ignored that the investors are often faced with difficult economic and financial contexts, financial decisions can have major negative consequences in risky financial situations (Gerardi et al., 2015). On the one hand, a person's background feelings or circumstances, such as their financial literacy, may influence financial decisions (Nofsinger, 2014). Investors with poor financial intelligence and poor financial management skills may avoid investing in risky and complex projects. On the other hand, those with the lowest risk tolerance levels may need more financial training (Gunderse & Garasky, 2012).

Risk tolerance has been regarded as the opposite of risk aversion. Risk tolerance is also expressed so that despite the uncertainty that people have in financial decisions, both in their economic and social life, they accept it and are willing to do it. Financial risk tolerance is a mental trait and a genetic predisposition (Huhmann and McQuitty, 2009). The literature shows that investors' individual characteristics will affect their perception of risk and risk-taking (Mayfield et al., 2008). Much of modern economic research has pointed out that the rational man is always trying to maximize wealth while at the same time considering minimizing risk (Barber & Odean, 2011). Managers' financial literacy can also be expected to affect financial risk tolerance (Carina and Lisa, 2015).

Lack of understanding of economics and finance is a deterrent to stock ownership (Rooij Lusardi and Alessie, 2011). A review of studies shows that various factors are involved in risk perception and investor decisions, including financial literacy (Agarwal et al., 2015; Almenberg & Dreber, 2015; Calcagno & Monticone, 2015; Sharma & Johri, 2014).

Ryack (2011) argues that the role of financial training and literacy about financial risk tolerance is a critical approach that has not received enough attention. However, some researchers have shown that financial literacy and higher education are associated with increased financial risk tolerance (Grable, 2000; Hallahan et al., 2004). Consequently, according to the principles presented on the subject of research, we can say that the primary purpose of this study is to investigate the effect of financial literacy on financial risk tolerance.

This study will continue as follows: first, the theoretical framework of financial literacy research on financial risk tolerance is defined. In the following, the research methodology, including research variables and patterns, are presented. In the final part, after stating the research results, conclusions and suggestions will be presented.

2. Literature Review and Background Review

Financial risk tolerance is necessary for building a portfolio and plays a vital role in financial decisions, such as job choice, insurance exemptions, mortgages, necessary budgets, and negotiations. Financial risk tolerance is, therefore, a relevant structure for understanding individuals' behaviours. As a result, a careful assessment of financial risk tolerance will be essential. Financial risk tolerance refers to investors' attitudes toward risk and returns on investment fluctuations that an investor is willing to accept to make his/her decision (Aqasi et al., 2016).

According to research by Adamola et al. (2019), it was indicated that there is a positive and significant relationship between financial knowledge, risk perception and investment decisions, while this positive relationship is not merely substantial between financial literacy and investment decisions. However, risk perception moderates the effect of financial literacy and investment knowledge on investment decisions. Nguyen et al. (2016) showed that risk tolerance would directly affect the allocation of high-risk assets and indirectly affect risk perception.

Hassanzadeh et al. (2019) showed that personal mindsets, accounting information, economic information and personal financial needs would influence investment decision-making in Iran, while there is no significant relationship between financial literacy level and investor decisions. In addition, the result shows that considering the level of understanding of investors' risk, their level of risk-taking will influence their investment decisions. Mir Mohammadi Sadrabadi and Shakerian (2018) showed that financial literacy, financial knowledge, and perceived risk significantly affect investment decision-making; perceived risk will negatively moderate the relationship between financial knowledge and investment decision, while it does not moderate the relationship between financial literacy and investment decision.

Therefore, today's financial market has a certain complexity and offers clients a wide range of items to meet their financial needs. The approach chosen to interact with these markets and their selections depends on their financial knowledge and skills to evaluate market options. Those unwilling to take risks and have no perception of them are less likely to participate in the stock market. This issue raises this effect on individuals to make desirable financial decisions to interact with these issues with a high level of awareness (Sabri, 2016).

Financial knowledge will allow individuals to have accurate information about financial management calculations, including rates, interest, inflation and principles related to risk diversification, because of the capabilities it creates in the individual; accordingly, one can make more effective decisions in facing situations that require financial choices. Without understanding how users perceive risk financial statements, it will be difficult for individuals to manage and evaluate risk-related ventures. For this reason, those who perform accurate management and evaluation based on their knowledge of financial reporting use findings related to financial risk judgments to make more effective decisions.

The type of approach people take to risk, and their priority to its types can effectively predict their future behaviours. Therefore, recognizing the impact of financial literacy on financial risk tolerance is of great importance, which is also studied in this research.

3. Research Hypotheses

According to the theoretical foundations, the research hypotheses are expressed as follows:

H1: Earning revenue literacy has a positive and significant effect on financial risk tolerance.

H2: Savings literacy has a positive and significant effect on financial risk tolerance.

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H3: Investment literacy has a positive and significant effect on financial risk tolerance.

H4 Spending and borrowing literacy have a positive and significant effect on financial risk tolerance.

H5: Financial risk literacy has a positive and significant effect on financial risk tolerance.

4. Research Methodology

This is a descriptive study; data were collected using a survey method. In this research, we have used the standard questionnaire of Yaghoubnejad (2011) with 25 questions for financial literacy and 18 questions for financial risk tolerance to analyze the variables of financial literacy and financial risk tolerance which is as follows.

Table 1. The Cronbach's alpha coefficient of the questionnaire

Variable	Cronbach's alpha
Financial risk literacy	0.73
Risk tolerance	0.75

The statistical population includes all investors of the Tehran Stock Exchange. Due to the unlimited population and according to the Morgan table, the sample consists of 384 people. Sampling was done by the available method. The collected data were analyzed at two levels of descriptive and inferential statistics.

The descriptive statistics section examined each variable's mean, median, standard deviation, and minimum and maximum indices. In the inferential statistics section, structural equation modelling using the partial least squares (PLS) method is used to test the hypotheses.

5. Research Findings

The results of descriptive statistics of research variables are as described in Table 2.

Table 2. Descriptive statistics

	Mean	Med	Std.dev	Min	Max
Earning Literacy	3.410	3.600	0.696	1.800	4800
Savings Literacy	3.369	3.600	0.717	1.400	4.600
Investment literacy	3.777	3.800	0.601	2.200	5.000
Spending and Borrowing Literacy	3.522	3.600	0.616	2.200	2.000
Financial Risk Literacy	3.283	3.400	0.749	1.000	5.000
Financial Risk Tolerance	3.168	3.388	0.700	1.500	4.500

The results of demographic statistics of the research are described in Table 3.

The ability to measure research variables is assessed according to the questionnaire's questions before testing the main model and research hypotheses using the second-order confirmatory factor analysis method.

Figure 1 shows the model of impact coefficients regarding the factor load after removing the coefficients with a low factor load.

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Table 3. The demographic statistics of the research

Gender	Frequency	Frequency Percentage	Education	Frequency	Frequency Percentage
Female	159	42	Diploma and lower	58	15
Man	225	58	Associate	32	8
			Bachelor	160	42
			Masters	122	32
			P.H.D	12	3
Total	384	100	Total	384	100
Work experience	**Frequency**	**Frequency Percentage**	**Age**	**Frequency**	**Frequency Percentage**
Less than 5 years	242	63	Younger than 30 years	128	33
5 to 10 years	72	19	30 to 40 years	176	46
10 to 15 years	30	8	40 to 50 years	54	14
More than 15 years	40	10	Older than 50 years	26	7
Total	384	100	Total	384	100

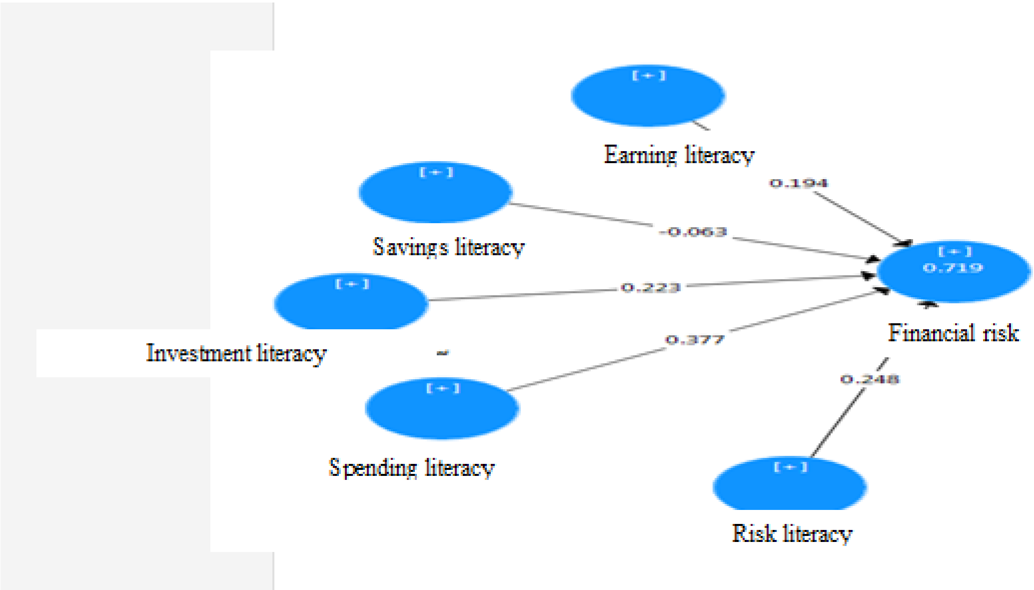

Figure 1: The model of impact coefficients regarding factor load

To test the research hypotheses, we have used PLS; the results of each hypothesis are as follows:

The test results of the first hypothesis of the research based on the positive effect of revenue earning literacy on financial risk tolerance are described in Table 4.

Table 4. Estimation of the coefficients of the first hypothesis

Relationship between variables	Impact coefficient	t-statistic	Sig.
Earning literacy ← Financial risk tolerance	0.194	2.549	0.011

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In 95% confidence level, given the significance level is equal to 0.011 and less than 0.05, it can be said that revenue earning literacy has a significant effect on financial risk tolerance. Also, considering that the coefficient of the impact of revenue earning literacy on financial risk tolerance is positive and equal to 0.194, it is concluded that revenue earning literacy has a positive and significant effect on financial risk tolerance. As a result, the first hypothesis is confirmed.

The results of testing the second hypothesis of the research based on the positive effect of savings literacy on financial risk tolerance are described in Table 5.

Table 5. Estimation of the coefficients of the second hypothesis

Relationship between variables	Impact coefficient	t-statistic	Sig.
Savings literacy ⟵ Financial risk tolerance	-0.063	0.593	0.553

As shown in Table 5, the significance level is more than 0.05, and it can be said that savings literacy has no significant effect on financial risk tolerance. As a result, the second hypothesis of the research is not confirmed.

The results of testing the third research hypothesis on the positive effect of investment literacy on financial risk tolerance are presented in Table 6.

Table 6. Estimation of the coefficients of the third hypothesis

Relationship between variables	Impact coefficient	t-statistic	Sig.
Investment literacy ⟵ Financial risk tolerance	0.223	1.992	0.047

In the above table, the significance level is equal to 0.047 at the confidence level of 95%, and because it is less than 0.05, then investment literacy has a significant effect on financial risk tolerance. Also, considering that the impact factor of investment literacy on financial risk tolerance is positive and equal to 0.223, it can be seen that it has a positive and significant effect on financial risk tolerance. Accordingly, the third hypothesis of the research is confirmed.

The results of testing the fourth hypothesis of the research based on the positive effect of spending and borrowing literacy on financial risk tolerance are described in Table 7.

Table 7. Estimation of the coefficients of the fourth hypothesis

Relationship between variables	Impact coefficient	t-statistic	Sig.
Spending and borrowing literacy ⟵ Financial risk tolerance	0.377	3.473	0.001

Based on the above table results, since the significance level is 0.001 and less than 0.05, it can be said that spending and borrowing literacy has a significant effect on financial risk tolerance. Also, considering that the coefficient of the effect of spending and borrowing literacy on financial risk tolerance is positive and equal to 0.377, it can be argued that spending and borrowing literacy has a positive and significant effect on financial risk tolerance. As a result, the fourth hypothesis of the research is confirmed.

The results of testing the fifth research hypothesis on the positive effect of financial risk literacy on financial risk tolerance are described in Table 8.

Table 8: Estimation of the coefficients of the fifth hypothesis

Relationship between variables	Impact coefficient	t-statistic	Sig.
Financial risk literacy ⟵ Financial risk tolerance	0.248	2.260	0.025

At the confidence level of 95%, because the significance level is less than 0.05, it can be said that financial risk literacy has a significant effect on financial risk tolerance. Also, considering that the coefficient of the impact of financial risk literacy on financial risk tolerance is positive and equal to 0.248, it is concluded that financial risk literacy has a positive and significant effect on financial risk tolerance. As a result, the fifth hypothesis of the research is confirmed.

6. Discussion and Conclusion

This research aimed to investigate the impact of financial literacy on investors' financial risk tolerance among the investors of the Tehran Stock Exchange. Testing the first hypothesis showed that earning literacy has a positive and significant effect on financial risk tolerance. Accordingly, it appears that having literacy-related skills will enable people to make informed decisions about their financial capital and will minimize the likelihood of any financial mismanagement and also the associated negative consequences, and it can also be effective in predicting their future behaviours. The results of testing the second hypothesis showed that savings literacy had not affected financial risk tolerance. These findings are inconsistence with the research of Zakaria et al. (2017); because they showed that savings financial literacy had a positive effect on risk tolerance and can predict the type of approach a person makes when deciding to invest or save; but they had no connection or influence on each other in this research. The results of testing the third hypothesis showed that investment literacy has a positive and significant effect on financial risk tolerance. Some studies have been done with these results and showed that investment had become a dynamic and challenging field today. Testing the fourth hypothesis showed that spending and borrowing literacy positively and significantly affect financial risk tolerance. Some studies, in this regard, have been done and showed that the company's capital expenditures are the rate of return expected by investors; therefore, when investors invest in a company, they seek to increase their achievable profit. This is an important part that managers consider that financial risk affects the rate of return expected by investors. Finally, the results of testing the fifth hypothesis showed that financial risk literacy has a positive and significant effect on financial risk tolerance. Studies have shown that understanding the risk can express perceived damage from the future to these results. Still, there is always the possibility that an event is associated with the amount of losses and requires it in a way. Hence, investors are advised to pay attention to earning literacy because literacy-related skills enable individuals to make informed decisions about their financial capital. The likelihood of any financial mismanagement and its associated negative consequences will be minimized. Additionally, earning literacy, because of the capabilities it creates in the individual, allows him/her to have accurate information about financial management calculations and principles related to risk diversification and accordingly, he/she can make more effective decisions in the face of situations that require financial choices. If individuals are intended to invest in the stock market, they are advised to increase their investment literacy and use the opinion of expert consultants in this work. Those with more information in the areas of literacy and financial borrowing are advised to be careful enough when practically using this information and always remember that practising a field is very different from knowing it; and they are advised not to over-rely on their theoretical literacy in markets such as the Iranian capital market, which has a relatively high unsystematic risk, and to

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be careful to use their information at the right time and in relevant issues—making the help of psychological counselling and experienced people in the field of capital markets can play a very effective role in this regard. Unfortunately, in our country, there is no positive attitude about this. Perhaps it is one of the reasons for the differences in the results of this research with other countries. A separate study should be conducted to make detailed remarks in this regard.

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