

THE IMPACT OF FINANCIAL LITERACY ON STOCK MARKET PARTICIPATION

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ABSTRACT

This paper addresses the relationship between financial literacy and stock market participation and aims to reveal how an individual's level of financial literacy affects stock market participation. Our comprehensive survey to measure financial literacy and investment behavior includes an assessment of financial literacy and investment attitudes. Results show that financial literacy has a significant impact on stock market participation, as individuals with high financial literacy better understand investment returns and make more informed decisions when making long-term investment is shown. Importantly, the results demonstrates that financial literacy is important in reducing ignorance about expected returns, effectively managing risk, and thereby preventing investors from engaging in optimistic investment behavior. This highlights the important role played by these findings highlight the potential of improving financial literacy to help investors make informed decisions and improve overall financial outcomes. The implications extend to policymakers, financial institutions, educators and individual investors, requiring a concerted effort to improve financial literacy for a more enlightened and responsible investment community.

1. INTRODUCTION

The stock market offers a variety of investment opportunities in today's financial environment, and stocks are a key means of generating wealth (OECD, 2017). For investors, financial experts, and policymakers, the dynamics of equity market participation have important ramifications (Lusardi, 2019). The notion of financial literacy, which includes the knowledge, abilities, and comprehension of financial concepts essential for making wise decisions, is crucial to these issues (Hastings et al., 2013). Individuals' attitudes and behaviors in the stock market are greatly influenced by financial literacy, which goes beyond academic understanding to real world application (Lusardi, 2019). People who are more financially literate are better at handling money, analyzing investments, and controlling risks (Hastings et al., 2013). This literacy also impacts confidence in market participation and contributes to rational decision-making during market volatility (Klapper & Lusardi, 2020).

Conversely, a lack of financial literacy can lead to unrealistic expectations, speculative behavior, and suboptimal investment decisions, particularly among women, low-income individuals, and the less educated (Lusardi, 2019). Bridging this knowledge gap is a priority for policymakers and financial institutions (Hilgert & Hogarth, 2003). This study aims to analyze comprehensively how financial literacy, focusing on dimensions like ignorance of returns and risks, influences stock market participation. By providing insights for policymakers and practitioners, the research contributes to understanding how financial literacy enhances market engagement and improves financial outcomes, ultimately promoting sustainable economic growth. (Van Rooij et al., 2007).

Thus, we try to answer 1) financial Literacy and Stock Market Participation: Investigating how a person's financial literacy influences their decision to trade stocks, examining potential differences across demographic categories. This is crucial for understanding the impact of

financial literacy on stock market participation and identifying populations that could benefit from improved financial education. 2) financial literacy and expected return ignorance ; Exploring the relationship between financial literacy and stock market participations’ expected return ignorance. This focuses on whether higher levels of financial literacy led to a better understanding of investment returns and informed, long-term perspective in investment decisions. 3) financial literacy and risk ignorance: Investigating how financial literacy affects the risk ignorance of stock market investors, specifically examining whether higher levels of financial literacy enable individuals to assess and manage risk effectively in uncertain market conditions and economic downturns. 4) financial literacy and overoptimism: Examining the effect of financial literacy on the overoptimistic investment behavior of stock market participants. This research question explores whether higher levels of financial literacy promote a realistic and balanced understanding of financial concepts, reducing the likelihood of making overoptimistic and potentially risky investment decisions.

2. LITERATURE REVIEW

2.1 Effects of Financial Literacy on Stock Market Participation:

In portfolio allocation, the assumption is that individuals must weigh risks and expected returns when investing in stocks (OECD, 2017). Studies reveal that higher predicted stock returns correlate with increased investor likelihood (Hurd Maarten van Rooij Joachim Winter et al., 2010). Financial literacy, encompassing impacts participation and decision-making in the stock market (Hilgert & Hogarth, 2003). Financial literacy is linked to stock market participation; lack of it reduces’ inclination to manage finances and participate in the market (Yoong, 2010). Low-literate individuals are less likely to own stocks (Van Rooij et al., 2007). Intelligence and IQ show a high relationship with increased stock market activity (Grinblatt et al., 2011). Wealthy and educated individuals are more influenced by values and attitudes in stock market participation (Guiso & Jappelli, 2005).

2.2 Stock Return Ignorance on Stock Market Participation:

Stock return ignorance, characterized by a lack of knowledge about stock returns, significantly influences investment decisions. People with higher trust and awareness of stock return distribution are more likely to invest in stocks (Merkoulova & Veld, 2022). This ignorance is categorized into Expected return ignorance, Risk ignorance, and Overoptimistic, each affecting stock market participation differently.

Expected Return Ignorance: People unaware of expected returns on investments, particularly in stocks, show lower participation rates (Ida Ayu Riana Puspita et al., 2022). Higher expectations for return increase the likelihood of stock market participation (Hurd Maarten van Rooij Joachim Winter et al., 2010).

Risk Ignorance: Financial Literacy enhances rational decision-making during uncertainty and economic downturns (’Aven & ’Steen, 2010). Poor knowledge results in risk ignorance, leading to impulsive decisions and unrealistic return expectations (Oehmen et al., 2020).

Overoptimism: Financial Literacy helps individuals avoid overoptimism by providing a realistic understanding of financial concepts and outcomes (Riset Ekonomi dan Bisnis et al., 2015). Overoptimism bias is strongly linked to stock market investment (Mahina et al., 2018).

2.3 Hypothesis Development:

The research aims to determine if ignorance about expected returns, risk, and overoptimistic expectations impedes active stock market participation (Merkoulova & Veld, 2022).

H1: Variance Ignorance (Stock return ignorance) has a negative impact on stock market participation.

H2: Financial Literacy has a positive impact on stock market participation.

H3: Demographic factors have a positive impact on stock market participation.

3. DATA DAN EMPIRICAL MODEL

3.1 Data

The target population comprises individuals actively participating in the stock market, with a diverse range of investors from different backgrounds, ages, and education levels. A convenient sample of 300 respondents is collected through questionnaires, ensuring representation across various demographic traits.

Sample respondents are selected based on predetermined criteria, including active involvement in the stock market, diverse financial literacy levels, age, and experience variation, and gender diversity. These criteria contribute to creating a varied and representative sample for a comprehensive analysis of the relationship between financial literacy and stock market participation.

3.2 Data Collection:

A comprehensive questionnaire is developed for data collection, consisting of closed-ended questions distributed through Google forms. The questionnaire includes sections for financial literacy assessment, demographic information, stock return ignorance, and stock market participation. The questions are designed to assess financial literacy levels, understand demographic influences, and gauge respondents’ knowledge of stock returns and their participation in the stock market.

Number	Variables	Reason
1	Financial Literacy Assessment	Participants’ financial literacy levels are assessed through 14 questions calibrated based on an established financial literacy scale. Each correct answer receives a score of 1, contributing to the overall financial literacy score
2	Demographic Information	Participants provide information on demographic through 6 questions, differentiating how these variables may affect stock market participation.
3	Stock Return Ignorance	Three questions assess participants’ knowledge of stock returns, classifying them as expected return ignorant, risk ignorant, or overoptimism based on responses.
4	Stock Market Participation	A single question evaluated respondents’ involvement in the stock market, with a score between 0 and 1, indicating participation or non-participation.

3.3 Empirical Model

As highlighted by (Habib, 2016), the empirical model serves as a valuable method for analyzing various issues across disciplines, especially when creating parametric models is challenging. This modeling approach proves beneficial in situations where a fundamental understanding of the variables shaping a system or process is crucial. Employing various techniques and approaches, empirical modeling allows analysts to gain insight into system components. Decision informed by empirical models can be applied to address real-world issues in practical applications.

$$\begin{aligned} \text{StockMarketParticipation}_i &= \beta_0 + \beta_1 \text{ExpectedReturnIgnorance}_i + \beta_2 \text{RiskIgnorance}_i \\ &+ \beta_3 \text{Overoptimism}_i + \beta_4 \text{FinancialLiteracy}_i + \beta_5 \text{Age}_i \\ &+ \beta_6 \text{Gender}_i + \beta_7 \text{Status}_i + \beta_8 \text{HouseholdIncome}_i + \beta_9 \text{Location}_i \\ &+ \beta_{10} \text{Education}_i + \epsilon_i \end{aligned}$$

Where:

- **ExpectedReturnIgnorance_i** is the level of expected return ignorance for individual *i*.
- **RiskIgnorance_i** is the level of risk ignorance for individual *i*.
- **Overoptimism_i** is the level of overoptimism for individual *i*.
- **Age_i** is the age of the individual *i*.
- **Gender_i** is the gender of individual *i*.
- **Status_i** is the marital status of individual *i*.
- **HouseholdIncome_i** is the household income for individual *i*.
- **Location_i** is the geographical location of individual *i*.
- **Education_i** is the education level of individual *i*.
- **β₀, β₁, β₂, ..., β₁₀** are the parameters to be estimated,
- **ε_i** is the error term.

This model aims to examine how stock return ignorance, financial literacy, and demographic factors collectively influence an individual’s participation in the stock market. The parameters β_1 , β_2 and β_3 would provide insights into the specific impact on stock return ignorance and financial literacy. Respectively, while $\beta_4, \beta_5, \beta_6, \dots, \beta_{10}$ would indicate the influence of demographic variables.

Logistic regression is employed for analyzing binary outcomes with two mutually exclusive levels. It accommodates multiple factors, allowing for the use of continuous or categorical predictors. This makes Logistic regression particularly beneficial for analyzing observational data, offering adjustments to mitigate bias arising from group variations (LaValley, 2008).

4. EMPIRICAL FINDINGS

4.1 Descriptive Statistics

The dataset comprises of 305 participants, encompassing diverse behavioral, economic, and demographic factors. Notably, that “Gender” variable indicates a dominance of men (mean = 0.452). Regarding “Age”, the majority falls in the 24-age group (mean = 1.59). “Education” highlights a prevalence of participants with a bachelor’s degree. “Household income” suggests a concentration in the 50-million-rupiah range. “Status” indicates that most participants are married (mean = 1.485). “Stock market participation” reveals a 72% involvement. “Expected

return ignorance” is observed in 26% of participants. “Risk ignorance” characterized 48%, and “Overoptimism” applies to approximately 60%, “Financial Literacy” is consolidated from 12 questions assessing understanding in financial literacy.

Table 1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Gender	305	.452	.499	0	1
AGE	305	1.59	.752	1	4
Education	305	3.643	.726	1	6
Household Income	305	1.482	.744	1	4
LOCATION	305	.8	.401	0	1
Status	305	1.485	.557	1	4
Stock Market Participation	305	.728	.446	0	1
Expected return Ignorance	305	.262	.441	0	1
Risk Ignorance	305	.485	.501	0	1
Overoptimism	305	.593	.492	0	1
Financial Literacy	305	5.413	2.161	0	12

4.2 The Effects of Financial Literacy on Stock Return Ignorance

In logistic regression, odds ratio expresses the proportional charge in the probability of an even (1) occurring with each unit increase in the independent variable. Analyzing various factors influencing expected return ignorance, significant findings include “Gender” whereas Man has a higher likelihood (51.8%) of expected return ignorance, as for “Age”, younger individuals are more inclined to participate in stocks, but age does not significantly impact Expected return ignorance.

Table 2 The Effects of Financial Literacy on Stock Return Ignorance

	(1) Expected Return Ignorance	(2) Risk Ignorance	(3) Overoptimism	(4) Expected Return Ignorance	(5) Risk Ignorance	(6) Overoptimism
Gender	-.0751 (.2878)	-.1682 (.2599)	.2625 (.2673)	-.072 (.288)	-.1645 (.261)	.2598 (.2671)
AGE	.1476 (.3185)	-.3803 (.2704)	-.4199* (.2507)	.1378 (.3118)	-.3889 (.2705)	-.4182* (.2514)
Education	- 1.1224*** (.2374)	- .8985*** (.2225)	1.2674*** (.2544)	- 1.1014*** (.2371)	- .8811*** (.2244)	1.2575** * (.2549)
Household Income	-.2103 (.3586)	-.2528 (.2725)	.2959 (.2787)	-.1647 (.3547)	-.1978 (.271)	.2749 (.2805)
LOCATION	1.3249*** (.4712)	-.4928 (.3421)	- 1.5297*** (.3935)	1.3282*** (.4722)	-.4845 (.3442)	- 1.5308** * (.3928)

Status	.2324 (.2472)	-.0134 (.237)	-.3442 (.2377)	.2725 (.251)	.0407 (.2506)	-.3645 (.2418)
Financial Literacy				-.0817 (.0671)	-.1086* (.0639)	.0332 (.0622)
_cons	1.5158 (1.0816)	4.6474** (1.0426) *	-2.254** (.9867)	1.7595 (1.1206)	5.0108** (1.1113) *	- (1.0067) 2.3374**
Observations	305	305	305	305	305	305
Pseudo R ²	.1306	.1168	.1697	.1347	.1245	.1704

Robust standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

“Education” shows a higher education correlate to a lower chance (24.4%) of expected return ignorance. As for “Household income” shows lower income groups exhibit a higher likelihood (44.7%) of expected return ignorance. “Location” shows how participants from JaBoDeTaBek have a higher chance (79%) of Expected return ignorance. “Status” shows that married individuals have a moderate probability (55.7%) of expected return ignorance, and as for “Financial Literacy”, it does not significantly contribute to expected return ignorance (47.9%). Similar analyses for Risk Ignorance and Overoptimism reveal intriguing relationships. Financial Literacy is associated with reduced Risk ignorance but increased Overoptimism. These results deviate from some prior studies, emphasizing the complexity of the relationship between financial literacy and investment behaviors.

4.3 The Effects of Stock Return Ignorance and Financial literacy on Stock Market Participation

This Analysis explores the interplay between stock return ignorance, stock market participation and financial literacy using logistic regression. Key findings from the study are summarized below: **Expected Return Ignorance:** Negative significance (1%) for Gender, implying that those categorized as Expected return ignorant are less likely to participate in the stock market. Age shows a negative coefficient indicating younger individuals are more likely to invest. And higher education and financial literacy positively impact stock market participation.

Table 3 The Effects of Stock Return Ignorance and Financial literacy on Stock Market Participation

	(1) Stock Market Participation	(2) Stock Market Participatio n	(3) Stock Market Participatio n	(4) Stock Market Participatio n	(5) Stock Market Participatio n	(6) Stock Market Participatio n
Expected return Ignorance	-8.857*** (1.4632)			-8.8817*** (1.4279)		
Risk Ignorance		-4.0567*** (.5573)			-4.0522*** (.5572)	
			4.9717***			4.9882*** 1161

Overoptimism			(.7271)			(.7382)
Gender	-.2282 (.9766)	-.2618 (.3815)	-.291 (.4234)	-.223 (.9766)	-.263 (.3823)	-.3308 (.4253)
AGE	-.26 (.8331)	-.645** (.2765)	.1098 (.2677)	-.2707 (.8707)	-.6456** (.2775)	.103 (.2623)
Education	.3576 (.5052)	.9309*** (.3131)	.3942 (.3194)	.335 (.457)	.9312*** (.313)	.4105 (.3263)
Household Income	-.7977 (.6119)	-.3439 (.2989)	-.308 (.3087)	-.8573 (.5346)	-.3554 (.307)	-.4137 (.3141)
LOCATION	-1.85*** (.5776)	-2.1123*** (.4783)	-.5106 (.6204)	-1.9369*** (.6015)	-2.1055*** (.4801)	-.5612 (.6291)
Status	-.9421* (.4976)	-.4513 (.3023)	-.1963 (.3752)	-1.008** (.4442)	-.4599 (.3067)	-.2118 (.3746)
Financial Literacy				.0769 (.1471)	.012 (.0742)	.0922 (.0801)
_cons	7.7007*** (2.8524)	4.629*** (1.3212)	-.8257 (1.4382)	7.6574*** (2.8696)	4.5855*** (1.3512)	-1.1324 (1.4826)
Observations	305	305	305	305	305	305
Pseudo R ²	.8719	.4149	.4994	.8723	.415	.5028

Robust standard errors are in parentheses

*** $p < .01$, ** $p < .05$, * $p < .1$

Risk Ignorance: A strong negative coefficient (1%) for Risk Ignorance, suggesting a low probability of stock market participation, as for education and financial literacy positively influence stock market participation.

Overoptimism: Positive significance (1%) for Overoptimism, indicating a higher likelihood of investing in the stock market. Age and education positively influence overoptimistic behavior, while financial literacy also contributes to stock market participation.

5. CONCLUSION

This study explores the impact of financial literacy on stock market participation, focusing on expected return ignorance, risk ignorance, and overoptimism. Logistic regression analysis reveals that higher financial literacy correlates with better understanding of expected returns and lower risk aversion. Demographic factors show weak relationships with these dimensions. Stock market participation is significantly influenced by financial literacy, with lower ignorance and higher optimism leading to increased participation.

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