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UNDERSTANDING THE NEXUS OF FINANCIAL LITERACY AND BEHAVIORAL BIASES IN INVESTMENT DECISIONS

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Abstract

In an era marked by an increasingly complex and dynamic financial landscape, the intersection of financial literacy, behavioral biases and investment decisions stands as a critical link influencing the economic well-being of individuals. The aim of this study is to determine the influence of financial literacy and behavioral biases on investment decisions. This study used an online questionnaire for management students of UIN Sunan Gunung Djati Bandung. It used a quantitative approach and associative design and used multiple linear regression for analysis. The study confirms that behavioral biases are present in the investment decision-making of the students. Along with financial literacy, it also significantly influences the investment decision. The study highlights the significance of financial literacy in shaping the financial stability of students. It also made aware of the potential adverse effect of behavioral biases in influencing investment decisions among investors.

Keywords: Behavioral Biases; Financial Literacy; Investment Decisions; Personality Traits.

Abstrak

Di era yang ditandai dengan lanskap keuangan yang semakin kompleks dan dinamis, titik temu antara literasi keuangan, bias perilaku, dan keputusan investasi merupakan mata rantai penting yang mempengaruhi kesejahteraan ekonomi individu. Tujuan dari penelitian ini adalah untuk mengetahui pengaruh literasi keuangan dan bias perilaku terhadap keputusan investasi. Penelitian ini menggunakan kuesioner online untuk mahasiswa manajemen UIN Sunan Gunung Djati Bandung. Penelitian ini menggunakan pendekatan kuantitatif dan desain asosiatif serta menggunakan regresi linier berganda untuk analisisnya. Studi ini menegaskan bahwa bias perilaku hadir dalam pengambilan keputusan investasi siswa. Selain literasi keuangan, hal ini juga berpengaruh signifikan terhadap keputusan investasi. Studi ini menyoroti pentingnya literasi keuangan dalam membentuk stabilitas keuangan siswa. Hal ini juga menyadarkan potensi dampak buruk dari bias perilaku dalam mempengaruhi keputusan investasi di kalangan investor.

Kata Kunci: Bias Perilaku; Literasi Keuangan; Keputusan Investasi, Sifat Kepribadian.

1 Introduction

In recent years, financial markets have become increasingly accessible to a broader segment of the population(Goyal et al., 2021; Isidore & Arun, 2023). As a result, more individuals are making investment decisions independently. However, the ability to make informed and rational choices in this complex landscape depends on one's level of financial literacy and susceptibility to behavioral biases(Abideen et al., 2023; Ahmed et al., 2022; Zahera & Bansal, 2018). Financial literacy and behavioral biases are two pivotal factors that might have a significant impact on the decision-making process of individual investors in the world of finance. This article delves into the intricate relationship between these elements and their combined effect on investment choices.

Financial literacy encompasses an individual's understanding of financial concepts, investment instruments, and risk management (Broihanne, 2022; Weixiang et al., 2022). In contrast, behavioral biases refer to the psychological tendencies that can lead investors to make irrational decisions, often driven by emotions or cognitive shortcuts (Abideen et al., 2023; Zahera & Bansal, 2018). Financial literacy is a fundamental skill with immense importance for higher education students. It equips students with the knowledge and skills to navigate the complex financial landscape they face during their academic journey and beyond. Financial literacy includes debt management, budgeting, and financial independence (Mohta & Shunmugasundaram, 2023). Many households rely on loans to finance many of their purchases such as gadgets, vehicles, and houses (CNBC Research Team, 2023). Financial literacy enables them to understand the terms, interest rates, and repayment options associated with loans. This knowledge empowers them to make informed borrowing decisions and manage their debt responsibly.

Furthermore, College life often introduces students to managing their finances, including tuition, housing, and living expenses. Financial literacy provides the tools to create budgets, track spending, and avoid overspending, ensuring students can cover their costs without financial stress. Life a0-/9lso continues after college. Many of their big purchases will likely be financed by debt. Having the ability to manage debt effectively will make life easier for them(Sekścinńska & Markiewicz, 2020). Higher education is a stepping stone to adulthood and financial independence. Students must learn to make decisions about credit, savings, and investments. Financial literacy guides them in making sound financial choices and planning for their financial future., it can also enable them to make a conscious decision to gambling that recently has become a societal issue (Swawardhani, 2023).

Behavioral biases in investment refer to the psychological tendencies and cognitive errors that can lead investors to make irrational decisions, often deviating from rational, objective analysis (Baker et al., 2021; Lee et al., 2022; Rao & Lakkol, 2022). These biases can significantly impact investment outcomes and result in suboptimal choices (Şenol & Onay, 2023). Overconfidence: Investors tend to overestimate their knowledge and ability to predict market movements, leading to excessive trading and unwarranted risk-taking (Kumar & Prince, 2023; ul Abdin et al., 2022); Loss Aversion: This bias describes the tendency to strongly dislike losses more than equivalent gains. It can lead investors to hold on to losing investments for too long in the hope of avoiding losses (Durand et al., 2019; Shafqat & Malik, 2021).

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Anchoring: Investors may fixate on specific prices or values, even when they are no longer relevant, which can lead to poor decision-making. They anchor their expectations on past prices or arbitrary reference points; Herd Mentality: Investors oft0-/9en follow the crowd and make investment decisions based on what others are doing rather than conducting independent research. This can lead to market bubbles and crashes(Jain et al., 2023; Kumari et al., 2020); Confirmation Bias: Investors seek information that confirms their existing beliefs while ignoring or discounting contradictory information, which can lead to poor decision-making; Recency Bias: This bias occurs when investors give greater importance to recent events or trends, assuming they will continue, even when historical data suggests otherwise; Regret Aversion: Investors may avoid making decisions that could lead to regret, such as selling a stock too early and missing out on potential gains. This can lead to inaction and missed opportunities (Shafqat & Malik, 2021; Wangzhou et al., 2021).

Recognizing these behavioral biases is the first step in mitigating their impact on investment decisions. Investors can benefit from education, self-awareness, and adopting strategies that promote rational decision-making, such as setting clear investment goals, diversifying portfolios, and adhering to long-term investment strategies. By understanding and addressing these biases, investors can make more informed and rational investment choices, ultimately improving their chances of achieving their financial goals.

Investment decisions involve the process of allocating funds to various assets or ventures with the expectation of generating returns in the future. These decisions are influenced by a myriad of factors, both internal and external, which can impact the choice of investment opportunities and the level of risk investors are willing to undertake. Investment decision takes into consideration risk tolerance, investment horizon, and portfolio diversification(F. Akhtar & Das, 2020; Akintona, 2017; Rao & Lakkol, 2022). With sound financial literacy, the students will likely have more robust investment decisions which will lead to better investment strategy.

Previous studies on the influence of financial literacy and investment decisions have different outcomes. Khairyati and Krisnawati (2019) studied the effect of financial literacy on investment decisions to the investors that reside in Bandung and found that financial literacy has influence 53.3% in the investment decisions. Another study on the students of Faculty of Economics and Business also determined that financial literacy has significant influence on investment decisions (Putri, 2021). Other investigation on the financial literacy effect on investment decisions was also conducted on lecturers and it confirmed that it also has influence on their investment decisions (Safryani et al., 2020). However, these past studies used financial literacy solely or used other variables as the independent variables. Meanwhile, the influence of behavioral biases is also important to be investigated and might harm investment decision quality.

This research endeavours to investigate the intricate interplay between financial literacy, behavioral finance, and investment decisions. By scrutinizing whether and to what extent financial literacy and behavioral biases influence individuals' investment choices, the study seeks to uncover valuable insights with substantial consequences. The implications of this research extend to the realms of financial education within higher institutions and policy formulation. In essence, comprehending how financial literacy and behavioral biases shape investment decisions is fundamental for designing and implementing effective financial literacy programs.

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2 Research Methods

This study used quantitative approach with causal research design to find out the relationship between the dependent and independent variables. This article aims to investigate the influence of financial literacy and behavioral finance on investment decisions among management students at UIN Sunan Gunung Djati Bandung. A quantitative survey method was employed to collect the data and multiple linear regression analysis was used to analyze the data collected.

Population and Sample

The population of management students is 1,200 students and using Yamane's (1968)sampling technique, a sample size of 100 is used in this study. The following is the calculation for the sampling size:

n = N / (1+Ne^2)

N= Population Number

e = margin of error

n = 1.200 / (1+(1.200(0.1)2) = 92,31

For convenience, the sample size is then rounded to 100 students.

The survey is distributed to the participants using an online platform and the participants were asked to respond to several statements that match their conditions. The responses will be on a Likert scale ranging from 1 as strongly disagree to 5 as strongly agree. It will then be used to analyze the level of their financial literacy, behavior biases, and investment decisions. Multiple regression analysis was employed to find the relationship between these variables

3 Research Results and Discussion

In this part, the result and discussion of the study will be presented. First, the result of the study is presented and then it will be discussed and compared with previous studies.

3.1. Research Result

The results of this study will present the results of calculations using statistical software in the form of classical assumption tests, descriptive statistics, multiple regression analysis, and coefficients of determination.

3.1.1. Classical Assumption Tests

This test was performed to determine if the data in this study is normally distributed or not. This study used the One-Sample Kolmogorov-Smirnov Test. Table 1 provides the result of the test:

Table 1 One Sample Kolmogorov-Smirnov Test Result

One Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	2.83942627
Most Extreme Differences	Absolute	.057
	Positive	.057
	Negative	-.038

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Test Statistic	.057
Asymp. Sig. (2-tailed)	.200[c,d]
a. Test distribution is Normal.	

Source: SPSS version 26 output

Table 1 shows that the value of Asymp. Sig. (2Taled) is 0.200>0.05. This means it can be concluded that the residual value is normally distributed.

In this study Variance Inflation factor was employed to determine whether multicollinearity exists. Multicollinearity does not exist if the value of tolerance is bigger than 0.10 and the VIF value is smaller than 10.00.

Table 2 Multicolinearity Test Result

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.107	3.631		1.957	.053		
	TotalX1	.283	.076	.127	3.737	.000	.912	1.096
	TotalX2	1.459	.055	.902	26.490	.000	.912	1.096
a. Dependent Variable: Investment Decisions								

Source: SPSS version 26 output

Table 2 shows the result of the VIF test and the result shows that the collinearity tolerance is 0.912 which is larger than 0.10. Furthermore, the VIF value is also smaller than 10. 000. Therefore, it can be said concluded that multicollinearity does not exist in the regression model.

A heteroscedasticity test was conducted to determine whether there is a similarity of variances from the residual values for all observations in the regression model. It is one the causes of inaccuracy and inefficiency in the regression model so it needs to be ruled out. In this study, the Glejser test was performed by transforming the residual value in the regression model into absolute value.

Table 3 Heteroscedasticity test

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.404	2.071		1.644	.104
	Financial Literacy	.018	.043	.044	.416	.678
	Behavioral biases	-.038	.0310-/9	-.126	-1.197	.234
a. Dependent Variable: Abs_Res						

Source: SPSS version 26 output

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Table 3 shows the significance value between independent variables and absolute residuals. The significance values for both variables is larger than 0.05. It means that heteroscedasticity does not exist in the regression model.

3.1.2. Descriptive Statistics

Table 4 shows the minimum, maximum, mean, and standard values for each independent variable and dependent variable. The smallest value for financial literacy is 27, the maximum value is 53 and the mean is 43.73. Meanwhile, the smallest value for behavioral biases is 28, the maximum value is 59 and the mean value is 49.89.

Table 4 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Financial Literacy	100	27	53	43.73	3.992
Behavioral Biases	100	28	59	49.89	5.479
Investment Decisions	100	53	106	92.27	8.866
Valid N (listwise)	100				

Source: SPSS version 26 output

Lastly, the investment decision has a minimum value of 53, a maximum value of 106, and a mean value of 92.27. The standard deviation value of all variables is below each mean value. It means all variables have low variances.

3.1.3. Regression Analysis

Multiple Linear Regression analysis was performed to analyze the relationship between the independent variables and dependent variables. Table 5 shows the result of the regression analysis.

Table 5 Multiple Linear Regression Analysis Result Test

Coefficients[a]								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	7.107	3.631		1.957	.053		
	Financial Literacy	.283	.076	.127	3.737	.000	.912	1.096
	Behavioral biases	1.459	.055	.902	26.490	.000	.912	1.096
a. Dependent Variable: Investment Decisions								

Source: SPSS version 26 output

The equation for this regression model is

$Y = \alpha + \beta 1X1 + \beta 2X2 + e$

Y= 7.107 + 0.283 Financial Literacy + 1.459 Behavioral biases +e

Where:

1. Constant (α)

The constant is a positive value of 7.107 which means if financial literacy and behavioral biases have 0 value, the investment decision will have a value of 7.107.

2. Financial Literacy (ß1)

DOI : 10.15575/fjsfm.v4i2.30490

the regression coefficient value for financial literacy is 0.2683 which means it has a positive value. It means if all variable remains constant and the value for financial literacy is increased by 1 it will increase the investment decision by 0.2683.

3. Behavioral Biases (ß2)

the regression coefficient value for behavioral biases is 1.459 which means it has a positive value. It means if all variable remains constant and the value for financial literacy is increased by 1 it will increase the investment decision0-/89 by 1.459.

3.1.4. Coefficient Determination Test

Table 6 shows the result of the coefficient determination test. The R^2 is 0.897 or 89.7%.

Table 6 Coefficient Determination Test Result

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.947[a]	.897	.895	2.869
a. Predictors: (Constant), Financial Literacy, Behavioral Biases				
b. Dependent Variable: Investment Decisions				

Source: SPSS version 26 output

Financial literacy and behavioral biases can predict the investment decision by 89.7%. Meanwhile, the rest of the 10.3% is influenced by other factors outside this study.

3.1.5. Test the hypothesis

Test *t* (Partial Test)

The statistical *t* test or partial test is used to test the extent of the influence of the independent variable on the dependent variable partially. This t test is used to determine the partial influence of the financial literacy and behavioral biases variables on investment decisions. The following are the results of the *t* test calculation using the statistical data processing application SPSS version 26.

Table 7 Partial t-test Result

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients0-=*-	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	7.107	3.631		1.957	.053
	Financial Literacy	.283	.076	.127	3.737	.000
	Behavioral Biases	1.459	.055	.902	26.490	.000
a. Dependent Variable: Investment Decisions						

Source: SPSS version 26 output

1. The influence of financial literacy (X1) on investment decision

Table 7 shows that the t-count is bigger than that of t-table. The t-count is 3.737 while the t-table is 1.660. Furthermore, the unstandardized coefficient B is 0.283 which shows a positive value. Also, the sig value is 0.000 which is lower than 0.05. Therefore, it can be concluded that financial literacy has a positive and significant influence on investment decisions.

DOI : 10.15575/fjsfm.v4i2.30490

2. The influence of behavioral biases (X2) on investment decision

Table 7 also shows that the t-count for behavioral biases is bigger than that of t-table. The t-count is 26.490 while the t-table is 1.660. Furthermore, the unstandardized coefficient B is 1.459 which shows a positive value. Also, the sig value is 0.000 which is lower than 0.05. Therefore, it can be concluded that behavioral biases have a positive and significant influence on investment decisions.

F Test (Simultaneous Test)

The F test or simultaneous test is basically carried out to find out whether financial literacy and behavioral biases included in the model have a joint influence on investment decisions**.**

Table 8 F Test Result

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6983.538	2	3491.769	424.347	.000[b]
	Residual	798.172	97	8.229		
	Total	7781.710	99			
a. Dependent Variable: Investment Decisions						
b. Predictors: (Constant), Financial Literacy, Behavioral Biases						

Source: SPSS version 26 output

Table 8 shows the result of the f-test. It calculates the f count that is larger than the f-table. Its F-count is 424.437 >3.92. It means that financial literacy and behavioral biases simultaneously influence investment decisions.

3.2. Discussion

In this section, a discussion will be presented related to financial literacy and behavioral biases on investment decisions.

3.2.1. The influence of financial literacy on investment decisions

This study, delving into the financial decisions of Management students, establishes the pivotal role of financial literacy in shaping investment behaviors. Financially literate individuals demonstrate a heightened ability to assess the inherent risks associated with diverse investment options. Armed with a solid understanding of financial concepts, they engage in a more nuanced analysis of potential gains and losses, ultimately making more informed investment decisions. The study aligns with existing research, such as the work of M. Akhtar & Malik (2020; 2023), highlighting that financially literate investors are inclined towards diversification. This strategic approach involves spreading investments across different asset classes, a practice known to mitigate risk and foster a well-balanced portfolio, as emphasized in the findings of the study.

Beyond risk assessment and diversification, financial literacy encourages a long-term perspective in investment strategies. Those with financial knowledge are more inclined to adopt a patient approach, capitalizing on the benefits of compounding interest and navigating market fluctuations with resilience, as articulated in studies like Wang & McGroarty (2022). Furthermore, the adaptability of financially literate individuals to changing market conditions is a standout feature. The study emphasizes their capacity to make timely adjustments to investment strategies in response to market dynamics, showcasing the practical relevance of financial literacy in the ever-evolving financial landscape, as also noted by Broihanne (2022).

Collectively, this research reinforces the robust and consistent nature of the relationship between financial literacy and informed decision-making in investments. Studies, including those by Mohta & Shunmugasundaram (2023), Nauman Sadiq & Ased Azad Khan (2019), and Shanmugam et al.(2023), collectively underline the enduring importance of financial literacy. Furthermore, the alignment of financial literacy with overarching financial goals signifies that educated investors can tailor their strategies to specific objectives, be it retirement, education, or other life milestones. This understanding not only reinforces the significance of financial literacy but also highlights its potential to positively impact individuals' long-term financial objectives.

3.2.2. The Influence of Behavioral Biases on Investment Decisions

Behavioral biases play a pivotal role in decision-making processes, exerting a substantial influence on financial and investment choices. These biases represent inherent psychological tendencies that can lead individuals away from rational decision-making, introducing a subjective element to the otherwise objective realm of investments. The study conducted on UIN Sunan Gunung DJati Bandung Management Students reveals a noteworthy connection between behavioral biases and investment decisions, underscoring the prevalence and impact of these biases in shaping individual investment choices. This finding aligns with the conclusions drawn from a systematic review of previous studies conducted by Zahera and Bansal in(2018), highlighting the consistency and universality of the phenomenon across diverse contexts.

The study further illuminates that behavioral biases are particularly prone to manifest among small individual investors, a trend substantiated by the insights derived from the work of Weixiang et al. in (2022). The reasons contributing to this vulnerability are multifaceted, ranging from limited access to information and resources to emotional responses triggered by market volatility. Recognizing the susceptibility of small individual investors to these biases becomes imperative for designing targeted interventions and educational programs that address these specific challenges.

Moreover, the research suggests that certain personality traits are associated with the manifestation of behavioral biases. Studies by Baker et al. (2021) and Rao & Lakkol (2022) highlight the role of individual characteristics in influencing susceptibility to biases. Investors who exhibit these traits may be more prone to making decisions influenced by cognitive shortcuts and emotional responses rather than a careful analysis of available information.

In light of these findings, fostering awareness of these traits becomes essential for investors. Being cognizant of one's own predispositions can empower individuals to identify and mitigate the impact of behavioral biases on their investment decisions. This awareness, coupled with financial literacy, forms a potent combination for investors to make more rational, informed, and objective choices in navigating the complexities of the financial landscape.

DOI : 10.15575/fjsfm.v4i2.30490

3.2.3. The Influence of Financial Literacy and Behavioral Biases on Investment Decisions

The findings of the study underscore the dual and significant impact of financial literacy and behavioral biases on investment decisions, suggesting that both factors wield considerable influence concurrently. Financial literacy emerges as a vital factor, serving as a compass for individuals navigating the intricate terrain of financial decision-making, especially in the realm of investments. A higher level of financial literacy equips individuals with the necessary tools to approach investment choices with caution, fostering a more discerning evaluation of risks and potential returns.

However, the coexistence of behavioral biases in the decision-making process introduces a layer of complexity. Behavioral biases, as revealed by the study, have the potential to exert a detrimental effect on investment goals. When investors fall prey to these biases, the decisions made may be of lower quality, jeopardizing the realization of financial objectives. One prominent concern is the confirmation bias, where individuals actively seek information that aligns with their pre-existing beliefs while disregarding conflicting information. This predisposition can lead to overconfidence in investment decisions, as investors may neglect alternative perspectives and potential risks, thereby impairing the overall quality of decision-making.

Furthermore, the study highlights the critical role of behavioral biases in hindering the achievement of financial goals. The inclination to rely on cognitive shortcuts and emotional responses can impede the development of a well-rounded and strategic investment portfolio. By understanding the existence and potential consequences of these biases, investors can adopt a more cautious and deliberate approach to decision-making, mitigating the adverse effects on their financial goals.

In essence, the simultaneous influence of financial literacy and behavioral biases accentuates the nuanced nature of investment decision-making. While financial literacy serves as a guiding light, behavioral biases underscore the need for continuous self-awareness and a deliberate effort to counteract cognitive pitfalls. Integrating both elements into financial education programs and investment strategies is essential for empowering individuals to make sound, informed, and resilient decisions in the ever-evolving landscape of financial markets..

4 Conclusion

The study's findings illuminate the profound impact of financial literacy and behavioral biases on investment decisions among Management Students at UIN Sunan Gunung Djati Bandung. The recognition that these factors exert significant and simultaneous influences suggests a nuanced interplay that extends beyond individual aspects. The implications of these findings resonate across various domains, particularly in education, policymaking, and financial services. Firstly, in an educational context, the study underscores the importance of integrating financial literacy programs into academic curricula. Such initiatives can empower students with the knowledge and skills necessary for astute financial decision-making, cultivating a financially literate generation capable of navigating the complexities of investment landscapes.

From a policymaking perspective, the study offers a foundation for crafting evidence-based policies that promote financial literacy. Policymakers can leverage these insights to

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design interventions aimed at enhancing financial education at the institutional level, fostering a population better equipped to make informed investment decisions. Moreover, financial institutions and advisory services can draw practical implications from the study's findings. The acknowledgment that both financial literacy and behavioral biases significantly influence investment decisions suggests that customized advisory services and educational initiatives may be more effective when they address both cognitive and emotional aspects of decision-making.

As the study candidly acknowledges its limitations in terms of sample size and scope, it prompts thoughtful considerations for future research. To build on the robustness of the findings, subsequent studies would benefit from employing a larger and more diverse sample size, encompassing participants from various backgrounds and educational institutions. Additionally, widening the scope to explore the universality of these influences could provide a more comprehensive understanding of the role played by financial literacy and behavioral biases in investment decisions across different contexts.

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