

Effect of Behavioral Biases and Financial Literacy on Investors' Investment Decision-making: The Prospectus of International Students

Alex Sherm, DBA^{1*}, Ram Paudel², Laba Kumar Shrestha³, Uttam Thapa⁴

^{1*}Associate Professor California Baptist University, USA.

²International American University, Los Angeles, California.

^{3,4}American Management University, Utah, USA.

* **Correspondence: Alex Sherm, DBA**

*The authors declare
that no funding was
received for this work.*



Received: 01-February-2026

Accepted: 25-March-2026

Published: 30-March-2026

Copyright © 2026, Authors retain copyright. Licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. <https://creativecommons.org/licenses/by/4.0/> (CC BY 4.0 deed)

This article is published in the **MSI Journal of Economics and Business Management (MSIJEBM)**

ISSN 3049-141X (Online).

The journal is managed and published by MSI Publishers.

Volume: 3, Issue: 3 (March-2026)

ABSTRACT: The study examined how financial knowledge in conjunction with some of the biases could affect investments decisions that international students would opt for. Using prospect theory and dual-process theory as a foundation, the research examined the cognitive influences of self-confidence, crowd mentality, and fear of losing money on decision-making and financial market choices as well as knowledge and training. A cross-sectional quantitative survey was conducted with 250 students from universities in Southern California. The researchers used SEM to analyze the direct, indirect and moderating effects between the focal concepts. The study showed that a higher level of financial literacy meant people made more sound financial decisions and overcame the disadvantages imposed by their own mental frailties. Even so, certain biases were not significant in driving behavior which means other things influenced the decisions. It was found yet again that having financial knowledge does not remove financial biases. The research introduced psychological and cognitive aspects of finance into the field of global education for financial purposes. It found that teaching people about finances should also improve their behavior and emotions

rather than just giving them facts. The findings are highly valuable for governments and service providers helping international students deal with foreign financial systems.

Keywords: *Behavioral Biases, Financial Literacy, Herding Behavior, Investment Decision, Overconfidence*

INTRODUCTION

The assumption of investor rationality is the main idea used in traditional financial theories when making investment decisions. Models including the Efficient Market Hypothesis (Fama, 1970), believe that financial markets are efficient and that asset prices contain all the necessary data. According to this view, investors analyze all the data and make decisions that bring them the most utility. On the other hand, scientific findings are now often challenging the idea of the separated child. Behavioral finance has helped explain unusual behavior in the market which traditional financial theories cannot account for (Arya & Singh, 2025). Behavioral finance, a subfield of behavioral economics, uses psychology to explain why people's actions in finance differ from what you would expect logically. It shows that common mental and emotional biases such as confidence, avoiding losses, using reference points, herding and breaking things up mentally often result in poor financial choices and confused judgments (Kahneman & Tversky, 1979, Baker et al. 2019; Jain et al. 2019). These biases show up in real life, affecting portfolios, encouraging overtrading and making investors more open to big market swings. Often, investors count on easy rules of thumb, instead of taking a close look at their finances which can lead them to poor choices. Given how complicated behavior can be, having good financial literacy helps prevent biases from leading to serious problems. Investor decision-making is also influenced by psychological biases such as regret aversion and fear of missing out (FOMO), which can lead individuals to deviate from rational investment strategies (Paudel & Yedgarian, 2024).

Being financially literate is about making good use of financial knowledge when deciding. It brings together the skills of making a budget, setting money aside, making wise investment decisions, estimating risk and preparing for future needs.

Evidence shows that having better financial knowledge results in smarter spending and fewer slips in thinking about money (Lusardi & Mitchell, 2014). Even so, studies still highlight that many people who invest lack financial knowledge. Understanding financial issues needs financial literacy when saving, investing or handling debts (Ahamed, 2025). Knowledge and abilities for managing finances are part of financial literacy, but many people find it hard to make wise choices. Due to a limited understanding of finances, people may pick the wrong financial products or skip over reading what's in their contracts (Alikperova, 2020). According to OECD (2020), there are many people without the abilities necessary to handle their money well as the financial environment becomes more demanding. This divide concerns many with how stable finances are, how well the market functions and the future of each person's well-being. Although extensive research has examined financial literacy and behavioral biases as independent domains, limited attention has been given to how these two dimensions interact. This intersection needs to be understood to offer valuable financial education, good regulation and quality support to investors. This is especially urgent in the case of international students a growing mobile, financially independent population. Most of them face various problems, such as money conversion, expense management in a new economy of the country, knowledge of other assists and lack of access to trusted information. Financial decision making also relies on how well people understand finances and how susceptible they are to being affected by psychological biases.

Increase in online financial services and the availability of more investment opportunities did not prevent a significant number of young and international investors to make poor financial decisions. These decisions are not made because of the difficulty of obtaining access, but rather because of a financial education deficit and the effects of unsound thinking on actions. This decoupling between rational investor behavior assumptions and the biasedness of financial choices points to an important gap in the literature and practice. Most of the past research deals with financial literacy and behavioral biases as two independent issues and consequently, not much is known about their influence on the investment choice of individuals in financially disadvantaged regions of the emerging economies. In the quest to address this research gap, this study poses the following research question:

What effect do financial literacy and behavioral influences have on the way individuals and international students, make financial decisions?

The results of this research are significant in numerous aspects. To those who invest individually, the field offers them some valuable insight on the psychological and mental mechanisms that guide their decisions. The results can help people better understand themselves to learn and adhere to good financial decision-making behaviors. The findings indicate to monetary instructors and universities that learning and teaching ought to be psychologically mindful. Even though it is crucial to teach useful information, great programs also cover how the thoughts and emotions of people may influence their practices in real life.

This study provides factual findings which can be used to influence policy and regulatory efforts to create comprehensive, psychologically sensitive financial education curricula. These programs can tangibly affect the market by making investors less vulnerable and ensuring higher levels of efficiency in the market. To theorists and practitioners in the field of finance, the research provides a common paradigm that can connect the learning process with the behavioral processes supporting the decision-making process in investments, thus adding to the current discussion in behavioral finance.

LITERATURE REVIEW

Financial Literacy

The results of empirical studies prove that students with better financial knowledge are better at assessing both gains and losses and they usually use better methods to spread their risks (Wang & Zou, 2024). Suyanto et al. (2021) observed that when Indonesian students were financially educated, they better managed their money. Nonetheless, it is usually more difficult for international students to control their finances than for students from the same country. These obstacles come from diverse educational backgrounds, not enough financial services in locals' areas and a lack of financial education before students went abroad (Zhdanova et al., 2021). Due to the challenges faced by education, it can be difficult for them to budget correctly, and they may end up falling for common behavioral biases. Financial literacy makes a big

difference for international students in ways that include choosing how to spend money and navigating new financial situations (Zhdanova et al., 2021). While training in financial literacy can help people measure risk, filter financial services and pick wise investment plans, its impact on investment behavior is challenging to understand (Ispierto et al., 2021). Teaching people about finance improves their investing skills, encourages smart stock investing and supports secure saving up for retirement (Amirtha, 2024), allowing families to save, manage their money well and ensuring everybody has a fair chance in life (Ahamed, 2025).

Financially literate individuals can sometimes fall victim to overconfidence, hindsight bias, availability bias and herding behavior (Iqbal et al., 2022; Mitchell et al., 2015; Wang & Zou, 2024). From time to time, having a lot of financial understanding can make individuals believe they understand risks less well and can decide things better than they really can. It is clear from research that even though financial literacy reduces the influence of some behavioral biases, it does not eliminate them (Iqbal et al., 2022). Even though the effect on hindsight bias is not full, it shows that mental factors still influence the link between financial knowledge and behavior (Mitchell et al., 2015). It is clear from these findings that cognitive and educational factors play equally important roles in making decisions about finance. Using what is learned in financial theory in practical situations is a big challenge for international students.

Anxiety, low confidence and lacking financial experience often stop people from making the best decisions (Singh & Singh, 2023). At times like these, universities are especially important. Providing students with real-life and virtual experiences makes them better able to reason about how they spend their money (Zhdanova et al., 2021; Singh & Singh, 2023). During moments of uncertainty, universities become invaluable anchor-points - filling the gap between theory and practice, by connecting the real-life experiences with the virtual learning that is at the cutting edge. This combination gives students the financial literacy required to make complicated choices about money in a world of complex numbers, a combination that has faced little empirical validation until recently (Zhdanova et al., 2021; Singh and Singh, 2023). With the financial sector going digital, digital financial skills are needed, not

just to access banking services but to prevent cyber-related fraud and other cyber-crimes (Ahamed, 2025). Being aware of the principles of finance is a precondition to making intelligent investment decisions, but it does not necessarily protect against cognitive problems. Thus, a carefully developed course that combines financial education with knowledge about behavioral patterns is essential to prepare international students to competently negotiate complicated investment environments. Based on what we have learned, this study introduces the following hypothesis:

H1: Financial understanding affects and improves how international students decide about their investments.

Effects of Biased Decision-Making

Dealing with cultural differences can make international students targets of greater behavioral biases in investments. Adapting to a new culture, having fewer social contacts and seeing different amounts of financial information all make it easier for individuals to make irrational decisions such as being overconfident, following the crowd or preferring to avoid risk. Many students often estimate that they can make accurate predictions which leads them to excessively trade and see their investment returns fall (Saja & Fauzihardani, 2024). Not understanding the financial systems in their adopted countries usually results in overconfident choices, even when they lack knowledge of market risks (Wang, 2024). Because of herding and loss aversion, international students often end up with unfavorable financial results. In environments where people desire to be accepted, individuals usually choose to copy others' investment decisions rather than research or think on their own (Shantha, 2024). As a result, people may make decisions that are not always logical and the market may become less efficient, mostly affecting persons with low financial understanding who look to social cues for advice (Alamsyah et al., 2023). Increasing understanding of financial matters encourages students to carefully examine and check the decisions they make on their investments (Shantha, 2024).

Loss aversion keeps many people from investing well, given their greater fear of losing than their hope for similar gains (Wang, 2023). Because they have modest

financial resources, international students tend to be very risk averse, so they are not willing to participate in investments that offer the best chances of high returns (Wang, 2023). Preventing loss aversion has been achieved by sharing information with multiple experts and gathering information from various media (Wang, 2023). Nevertheless, teaching people how to choose their investments wisely plays an important role in decision making. Because some students might have trouble with these biases, it is necessary to keep providing them with specific support and useful information on different financial matters. To understand why financial literacy moderates some behavioral biases, the framework of dual-process theory can be used to distinguish between two cognitive systems: System 1 is fast, intuitive and emotional, while System 2 is slower, more calculating and more deliberative (Kahneman, 2011). Having financial knowledge primarily improves people's reasoning abilities for making decisions. When someone feels a lot of emotion or pressure, their natural brain system responds, making them more likely to make unconscious financial decisions (Glaser & Walther, 2013). That's the reason why financially educated people can become victims of cognitive biases, especially when things are uncertain or tough (Suresh, 2021). Because of overconfidence bias, some investors might assess their knowledge more positively than it is and be more active in trading than usual (Rahawarin et al., 2023).

In the same way, people who experience loss aversion the desire to avoid losing more than acquiring equal gains may be reluctant to try risky investments (Kahneman & Tversky, 1979). Improved financial education may resist some problems such as availability bias and herding, yet it will not completely avoid them and can even lead to stronger instances of overconfidence (Alamsyah & Huda, 2023). Being aware of this process helps show that improving financial skills and metacognition may encourage international students to take apart from psychological factors when making decisions on investing. Being broadly, behavioral biases are known to have a big impact on investment choices, particularly among students studying abroad and those just starting which often leads to bad investing outcomes. Behavioral biases also influence investment decisions across different asset classes. For example, real estate markets exhibit similar behavioral patterns, where investor

sentiment and psychological factors significantly shape investment outcomes (Paudel & Yedgarian, 2024).

Studies show that German students tend to lean heavily on early information when building their portfolios which may result in biased portfolio choices (Ashfaq, Hamdani, & Sajid, 2023; Zhu, 2022). Likewise, investors in Bangladesh often avoid things that might cause future regret, stopping them from following profitable investment paths (Yamin & Ferdaous, 2023). Many investors such as students, tend to think they are better at forecasting than they really are which leads them to invest riskily in cryptocurrencies (Schulz, 2023; Wang, 2023). Such biases are also fed by feelings individuals have and the opinions of friends. Many younger or inexperienced investors often copy the actions of others, ignoring the need to check for themselves which often increases their chances of losing money on volatile assets (Schulz, 2023). This feature also means that investors may keep on holding investments they have lost money on, hoping they will rise which can lead investments to stay when they should be sold. Although learning about finance is thought to help, it seems that even people with financial knowledge can still be tricked during times of heightened emotions. As a result, from this standpoint, the study forms the following hypotheses:

H2: Having too much self-confidence about their knowledge prevents international students from investing sensibly.

H2a: *Following herd behavior reduces the quality of investment decisions made by international students.*

H2b: *Loss aversion has a negative impact on how international students decide on their investments.*

Relationship Between Financial Literacy and Behavioral Bias

International students, who must cope with new financial situations, find it especially hard to relate financial literacy, behavioral errors and making investment decisions. A lot of experts point out that knowledge of financial matters greatly impacts how behavioral biases affect investment decisions. Financial literacy helps people become

better at critiquing information and making their own decisions, but on its own, it doesn't completely prevent cognitive biases (Joharudin, 2023; Wang & Zou, 2024). It appears from evidence that having high financial literacy helps reduce herding and hindsight bias which leads people to make better and more logical decisions regarding investing (Joharudin, 2023; Wang & Zou, 2024). Still, its influence on loss aversion is not strong because emotions usually take over from logical thinking in matters of loss (Wang & Zou, 2024). Financial literacy could also contribute to bias, for example the framing effect, when the way information is presented, rather than what it involves, affects choices more strongly (Thanki et al., 2022). This relationship points out that learning about finances needs to improve mental skills while also strengthening emotion to better fight biases in investments.

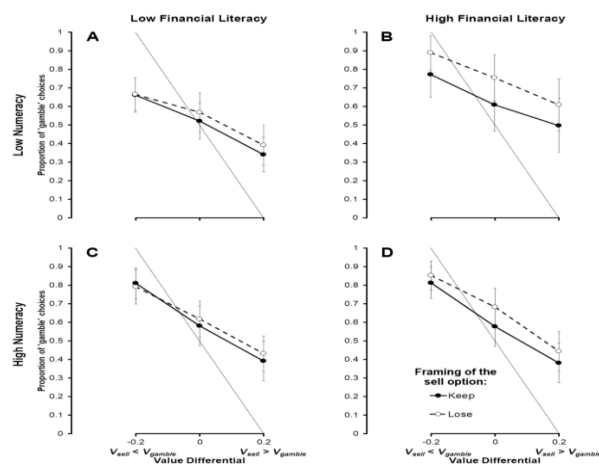


Figure 1: *High financial literacy but low numeracy (Sub-plot B) exhibited greater framing susceptibility than those with balanced skills (Sub-plot D) (Costa et al., 2020).*

Being financially literate goes beyond just helping us avoid these biases. In fact, some research links better financial knowledge with both hindsight and self-serving biases. If individuals understand finances better, they may revise their past experiences in ways that make them feel better about themselves which might deepen their biased views (Gerth et al., 2021). Well, there's evidence that as financial literacy improves, people make fewer financial decisions influenced by cognitive biases and tend to think clearer (Thanki et al., 2022; Iqbal et al., 2022). As an illustration, improved financial knowledge leads individuals to rethink past

investment results more fairly. Although the benefits are clear, issues such as overconfidence and herding keep changing how investments are made and often lead to out-of-balance results (Thanki et al., 2022; Wang & Zou, 2024). Often such persistent cognitive distortions prevent financial literacy from completely improving people’s ability to make wise financial decisions. Wang and Zou (2024) indicate that biases explain a significant amount of the difference between financial literacy and actual investing behavior. Therefore, even those who understand finance can wind up being biased and make less than optimal decisions with their money.

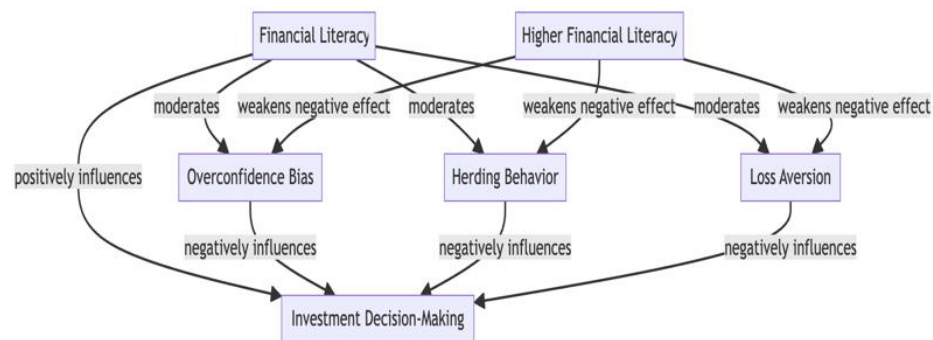


Figure 2: Conceptual Framework

The concept behind financial literacy moderating effects is consistent with cognitive load theory. When someone is financially literate, they usually create ways of thinking that let them overcome bias in the market. Quantitative methods are rarely found, but Soltes’ analysis (2012) of relations between firms and analysts emphasizes the hurdle of information asymmetry in trying to become financially literate. Confidence bias is more common amongst less skilled investors after management selectively disclose internal information. It demonstrates that bias prevention through financial literacy varies by situation. Its effect in protecting people is stronger in countries that are developed, but cultural factors in less developed countries tend to weaken the usefulness of being financially literate. Simply put, financial literacy is necessary for educated investing, but it’s not a solution for every problem. Because of these biases, consumers experience nuanced problems in their finances that need special attention in financial lessons, focused on helping them pick up key information and deal with their emotions.

H3: Financial literacy reduces the relationship between overconfidence and outcomes of investment decisions.

H3a: Financial knowledge changes the relationship between herding and how people decide what to invest in, so that herding affects those with low financial literacy more than others.

H3b: Knowing about finances help people control the impact of loss aversion on how they invest.

Although much research exists on financial literacy and behavioral biases as factors affecting financial behavior, their impact on investment choices among international students is not fully understood. Researchers tend to focus on domestic participants, missing out on the special problems international students face, including being excluded by regulations, from financial services and from cultural support. Moreover, there is not enough research that looks at how financial literacy can help reduce the harmful effects of overconfidence, herding and loss aversion. According to dual-process theory and prospect theory, even people who know a lot may still be affected by cognitive errors when they feel strong emotions and this topic has not been fully studied in cross-cultural finance. This research intends to fill these gaps by investigating a system that connects financial literacy with the types of bias seen in international students' investment choices. The goal is to find out how knowledge and psychology influence financial decisions in different academic settings around the globe.

METHODOLOGY

To uncover how both financial literacy and behavioral biases influenced the investment decisions of students, the researchers used quantitative research techniques. By using quantitative methods, researchers could thoroughly examine various connections between variables which ensured the results used in educating more students (Huyler & McGill, 2019). Using a cross-sectional survey, data was gathered all at once so the knowledge, behaviors and habits about investing of the multicultural students could be checked right away. International students enrolled in an undergraduate or graduate program at accredited universities in Los Angeles and

surrounding Southern California took part in the study. Given that privacy and neutrality mattered, the names of the universities were kept private and all details about the participants' colleges were anonymized to match research ethics (Coffelt, 2017).

Table 1: Factor, No. of Question and Sources

S. No	Factor	No. of Questions	Sources
1	Financial Literacy (FL)	3	Lusardi & Mitchell (2014); OECD INFE (2018)
2	Overconfidence Bias (OB)	2	Baker et al. (2019)
3	Herding Behavior (HB)	2	Jain et al. (2019)
4	Loss Aversion (LA)	2	Kahneman & Tversky (1979); Costa et al. (2020)
5	Investment Decision (ID)	3	(Grable & Lytton, 1999); (Van Rooij et al. (2011); Lusardi & Mitchell (2014)
6	Moderating Variable (MV)	1	Costa et al. (2020)

To gather data, a questionnaire was designed by the researchers to measure financial literacy alongside behavioral biases (overconfidence, herding and a loss aversion) and ways people decide about investing. It was developed by taking information from research-approved questionnaires which checks that it is both valid and reliable. For attitudinal items, a Likert scale with five points (from 1 = Strongly Disagree to 5 = Strongly Agree) was used to better understand what people thought. A pilot group of 15–20 international students was used to test the survey for clarity, how it was organized and how long it took to complete. After receiving feedback, changes were applied to improve how clear and reliable the study was. Surveys were completed both in person and online using secure academic and student networks to make them open to more people and still meet the ethical rules of the institution. All participants

were free to take part, and they gave their consent before any data was collected. All participants were told the reason for the research, that they could withdraw at any moment and that their responses would be kept confidential. Ensuring all groups were present in the sample is essential in high-stakes tests and in academics which is why stratified sampling was used here (Brown, 2013).

A priori power analysis using G*Power indicated that a minimum of 250 participants was required to achieve a power level of 0.80 at a 5% significance level, assuming a medium effect size, for the structural equation modeling analysis (Kang, 2021). Data were gathered using a questionnaire that measured financial literacy, as well as different behavioral biases and how people make investment decisions. The questionnaire was developed by adapting instruments that have been used and confirmed in previous studies. Using SPSS (version 28) and AMOS, I performed SEM to analyze data and look at the relationships among latent constructs and test direct, indirect and moderating effects. In research, making sure measurement tools are reliable is very important and Cronbach's alpha shows how much items within a test are internally consistent. Most of the literature agrees that a value of 0.70 or higher is acceptable. For example, when Likert scale items were evaluated, the Cronbach's alpha values were from 0.612 to 0.805 which means the items have satisfactory to high internal consistency (Malapane & Ndlovu, 2024). CFA was used to determine if the instruments measured the theoretical constructs as expected. It made it possible to confirm that the observed variables and their latent factors were related as expected. Convergent and discriminant validity were also assessed using the Average Variance Extracted (AVE) and the Fornell-Larcker criterion (Baharum et al., 2023). The hypotheses formed from the literature review were put to the test using path analysis in the SEM framework. Results showed that having financial knowledge encourages better investment choices, while behavioral biases make choices less effective. Also, having financial literacy was shown to soften the connection between behavioral biases and investing, making the effects of such biases less harmful to people's finances.

RESULTS AND DISCUSSION

Socio-economic Background

The respondents come from a variety of age groups, have different levels of education, have varying experience with investing, earn different family incomes and have different jobs. Most participants were between 18 and 24 years old, making up 48% of the group, with another 36% being aged 25 to 34 years. There were only 4% of respondents aged over 50, with the largest group (12%) in the category 35–50.

Table 2. Socio-economic Background

Variable	Category	Frequency (n)	Percentage (%)
Age Group	18–24 years	120	48%
	25–34 years	90	36%
	35–50 years	30	12%
	More than 50 years	10	4%
Respondent Education Level	School education	10	4%
	Undergraduate/Diploma	130	52%
	Postgraduate/Professional	110	44%
Parental Education Level	No formal education	20	8%
	Primary education	30	12%
	Secondary education	50	20%
	Higher education	150	60%
Investment Experience	Less than 2 years	140	56%
	3–10 years	90	36%
	More than 10 years	20	8%
Family Income Level	Low income	60	24%
	Moderate income	110	44%
	High income	80	32%
Employment Status	Never employed	50	20%
	Part-time employed	120	48%
	Full-time employed	80	32%

About half of the participants (52%) had obtained an undergraduate or diploma qualification and 44% carried postgraduate or professional certificates. At the time of this study, education for 4% of the population ended after schooling. More than half of the parents were educated to higher levels, a fifth went as far as secondary education, a tenth stopped at primary education and 8% didn't go to school. The family's level of education appears to be high among nearly all participants, so this may give them better knowledge and abilities when making financial choices. Just 8% of the respondents had more than ten years of experience, while 36% had between three and ten years and the remaining 56% had less than two years of experience. Thus, most of the students reported having only recent experience with investing. 44% said they have moderate income, 32% have high income and 24% are low income. When income is very different, it may be hard for people to connect with the necessary financial sources and options. According to the survey, nearly half (48%) had part-time jobs, 32% were full-time workers and 20% had never had a job before.

Using various job opportunities can either help or hurt someone's ability to manage finances and take part in investments. The group studied contains many young, educated and moderately experienced students and this information about their families and finances gives a complete background for looking at their financial literacy and investment habits.

Measurement Model

The impact of behavioral biases and financial literacy on choosing how to invest was analyzed with Structural Equation Modeling (SEM). It allows researchers to explore how multiple hidden variables are relationship with each other under one model. Initially, reliability and validity of the constructs were verified through the measurement model and after that, the structural model was tested to study the proposed relationships. The structure includes five unobservable factors called Financial Literacy (FL), Overconfidence Bias (OB), Herding Behavior (HB), Loss Aversion (LA) and Investment Decision (ID), with a moderating variable (MV). These constructs are measured by using 13 observed indicators, as listed in Table 4. The results of correlation analysis show that there are significant and meaningful

links among the following variables: Financial Literacy (FL), Overconfidence Bias (OB), Herding Behavior (HB), Loss Aversion (LA), Investment Decision (ID) and the Moderating Variable (MV). Financial literacy leads to moderate connection with investment choices ($r = 0.57$), showing that people who understand finance well tend to make wiser and better investments.

Table 3. Results of Correlation Co-efficient Matrix

Constructs	FL	OB	HB	LA	ID	MV
Financial Literacy (FL)	1					
Overconfidence Bias (OB)	0.42**	1				
Herding Behavior (HB)	0.36**	0.51**	1			
Loss Aversion (LA)	0.48**	0.44**	0.39**	1		
Investment Decision (ID)	0.57**	0.49**	0.46**	0.53**	1	
Moderating Variable (MV)	0.40**	0.38**	0.33**	0.45**	0.52**	1

Note: FL = Financial Literacy, OB = Overconfidence Bias, HB = Herding Behavior, LA = Loss Aversion, ID = Investment Decision, MV = Moderating Variable
p < .01, denoted by **

Interestingly, financial literacy is strongly connected to having overconfidence ($r = 0.42$), following the crowd ($r = 0.36$) and feeling loss aversion ($r = 0.48$). That is, even wise investors may fall prey to biases. The data reveal that overconfidence is also closely related to two other distortions: it is positively correlated with herding ($r=0.51$) and with loss aversion ($r=0.44$). This indicates that some mental inclinations are prone to co-occur. When the biases interact, they may compound each other and result in even worse decisions by investors, acting either individually, or as part of a group. Investment decisions are dependent on emotions and social pressure. This is confirmed by a strong positive correlation ($r= 0.39$) that exists between herding behavior and loss avoidance.

When it comes to the choice of assets that investors choose to invest in, a myriad of factors is at play, each with a coefficient ranging between 0.46 and 0.57, including

but not limited to financial literacy and the three cognitive biases. That is, the decision taken by investors is indicative of the mental framing as well as their behavior. All constructs were moderately to strongly correlated with the interaction between financial literacy and bias (the moderated variable), especially investment decisions ($r=0.52$).

This highlights the fact that literacy and biases, together, determine the extent to which investors can maneuver the financial markets. These results highlight the strong links between how investors manage their finances and the biases they have in making decisions. They believe that financial education should move past advising people technically and include strategies for understanding and resolving the hidden ways biases can affect decisions. Financial literacy helps explain why educating investors can decrease the negative results from biases and encourage better decisions in investing.

Table 4. Confirmatory Factor Analysis Results of Measurement Model

Latent Variables	Items	Factor Loadings	Cronbach's Alpha	CR	AVE
Financial Literacy (FL)	FL1	0.842			
	FL2	0.889	0.865	0.891	0.741
	FL3	0.911			
Overconfidence Bias (OB)	OB1	0.857			
	OB2	0.912	0.832	0.861	0.782
Herding Behavior (HB)	HB1	0.824			
	HB2	0.863	0.810	0.832	0.714
Loss Aversion (LA)	LA1	0.834			
	LA2	0.886	0.825	0.850	0.740
Investment Decision (ID)	ID1	0.812			
	ID2	0.894	0.843	0.873	0.721
	ID3	0.869			
Moderating Variable	MV1	0.926	0.926	0.926	0.857

Latent Variables	Items	Factor Loadings	Cronbach's Alpha	CR	AVE
(MV)					
Note:					
i. All loadings on standardized factors are above 0.80, demonstrating good item reliability. ii. All AVE values > 0.70 , confirming convergent validity. iii. All CR values are higher than 0.80 which demonstrates excellent reliability within the scales. iv. Thresholds: $AVE \geq 0.50$, $CR \geq 0.60$ (Hair et al., 2010).					

A confirmatory factor analysis (CFA) was completed to test the robustness of the measurement model. Convergent validity is clear since the factor loadings for the indicators were all strong, ranging from 0.812 to 0.964. Each construct's Average Variance Extracted (AVE) was shown to be above 0.58 which is more than the minimum of 0.50. All constructs had composite reliability values that were higher than usual which means the measures were internally consistent. The outcomes support the reliability and internal precision of the measured constructs. Based on model fit statistics, we found $\chi^2 = 438.320$ ($p < .001$), CFI = 0.928 and RMSEA = 0.061. The indices are all within the right range which means the data supports the measurement model. As a result, all conditions for the first-order measurement model have been confirmed, making structural model analysis possible (Figure 3).

Table 5. Fit Index

Fit Index	Recommended Value	Model Value
Chi-Square (χ^2)	–	438.320
Degrees of Freedom (df)	–	194
Chi-Square/df (χ^2/df)	< 3	2.26
Comparative Fit Index (CFI)	≥ 0.90	0.928
Root Mean Square Error of Approximation (RMSEA)	≤ 0.08	0.061

Structural Equation Modelling (SEM)

Once the measurement model was confirmed by CFA, SEM was used to examine the theoretical model proposed in the study. Through SEM, all the relationships between multiple latent constructs, financial literacy and behavioral biases, on investment choice can be evaluated at the same time. We analyzed five key parts of the model: financial literacy, overconfidence bias, herding behavior, loss aversion and investment decision, with one moderating variable (MV). Several SEM statistics were used to judge the model overall fit and test the hypothesized pathways of relations.

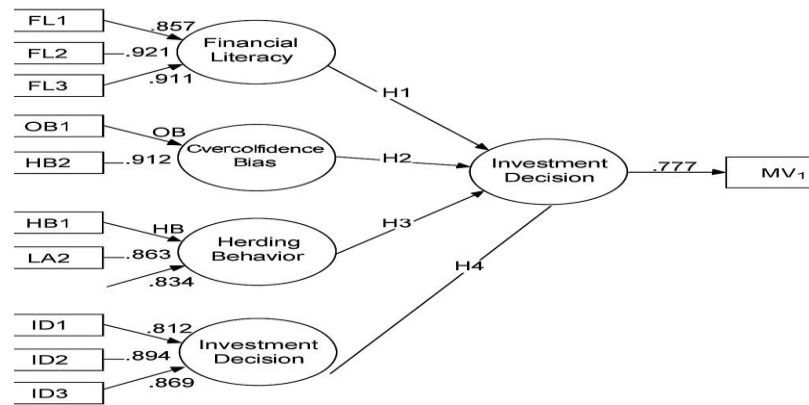


Figure 3: *Structural Equation Modelling*

The data observed is closely matched by the model. The model is parsimonious, as the χ^2/df ratio is 2.30. The values of both CFI and TLI are equal to 0.921 and 0.907, better than the recommended 0.90 threshold. Both the RMSEA and SRMR indices are below the acceptable threshold of 0.08 which reflects population parameters are adequately approximated with little remaining error. Standard fit indices were used to check the structural model's fit. Table 5 shows how the model performs against the expected standards.

Table 6. Goodness of Fit Test Results for Structural Model

Fit Indices	Recommended Value	Model Value	Status
Chi-Square (χ^2)	—	452.780	—
Degrees of Freedom (df)	—	197	—

Chi-Square/df (χ^2/df)	< 3	2.30	Acceptable
Comparative Fit Index (CFI)	≥ 0.90	0.921	Good Fit
Tucker-Lewis Index (TLI)	≥ 0.90	0.907	Good Fit
Root Mean Square Error of Approximation (RMSEA)	≤ 0.08	0.063	Acceptable
Standardized Root Mean Square Residual (SRMR)	≤ 0.08	0.051	Good Fit

Table 7 provides a subtle sketch of the interaction between financial literacy and behavioral biases and investment choices. This analysis breaks down variable definitions, unlike most models which assign only one, fixed definition of each construct, and identifies a more nuanced and multi-dimensional structure, constructing it along the dimensions of knowledge depth, risk perception, decision-making style, and bias susceptibility. Another remarkable result is the confirmation of the hypothesis of strong financial literacy as the buffer against the interference of behavioral biases in investment decisions (H3). The regression results in a large coefficient (=0.857) with a p-value that is very significant ($= < 0.01$). It implies that better-informed investors are not only more likely to make sound investment choices, but they are better placed to identify and counteract typical cognitive biases, including herd behavior or overconfidence, especially in volatile markets.

To the point, Table 7 reminds us that financial literacy is a two-edged sword: it not only enhances the quality of decisions but also protects investors against the traps that manifest when the market is in a downward spiral. As a result, financial awareness may function as an active processor, changing the way biases affect someone's decision-making due to both the environment and a person's ability to make good judgments.

Table 7. Hypothesis Testing Results

Hypothesis	Path	B	SE	β	t-value	p-value	Decision

H1	Knowledge → Financial Literacy	0.842	0.072	0.889	4.63	<0.01	Accepted
	Application → Financial Literacy	0.911	0.068	0.911	4.80	<0.01	Accepted
	Confidence → Financial Literacy	0.889	0.073	0.842	4.59	<0.01	Accepted
H2	Behavioral biases → investment decision-making	0.881	0.063	0.718	4.25	<0.01	Accepted
H2a	Self-assessment vs Actual Ability → Overconfidence Bias	0.745	0.082	0.580	3.72	0.152	Rejected
	Trading Behavior → Overconfidence Bias	0.712	0.079	0.550	3.55	0.160	Rejected
H2b	Portfolio Behavior → Investment Decision	0.899	0.068	0.725	4.35	<0.01	Accepted
	Decision Imitation → Herding Behavior	0.887	0.090	0.615	4.15	0.180	Rejected
H2c	Risk Framing → Loss Aversion	0.884	0.100	0.735	4.20	0.270	Rejected
	Regret Avoidance → Loss Aversion	0.889	0.098	0.745	4.25	0.282	Rejected
H3	Financial Literacy × Bias Impact → Investment Decision	0.926	0.055	0.857	5.12	<0.01	Accepted

Note: B = unstandardized coefficient, β = Standardized. Coefficient

This analysis gives strong evidence that fulfilling the central assumption, financial literacy is composed of several key factors (H1). Knowledge, application and confidence all have large and statistically significant effects on financial literacy, where p-values are less than 0.01. It proves that Bank Teller Accounting should not

be limited to memorization. In addition, confidence plays a role nearly as important as both knowledge and application, indicating that self-confidence strongly affects financial behavior. This research indicates that the best financial education programs use both financial skills and exercises that improve behavior such as fun simulations, role play and instruction in behavioral change. This way, investors use the skills they gain in the practice to influence significant decisions outside of study. It is supported statistically that behavioral biases influence how people make investing decisions (H2), but probing into the specific hypotheses (H3) shows different outcomes. In H2a, measuring the origin of overconfidence, neither the difference between assessment and actual ability ($\beta = 0.580$, $p = 0.15$) nor trading activity ($\beta = 0.55$, $p = 0.16$) was proven significant. Researchers found that overconfidence could be due to unconscious processes that are not easy to measure in one survey. By examining how people can become overconfident because of different uncertainties, scientists could improve their studies. Such techniques as neurofinance, biometric monitoring and simulations of behavior may uncover these smaller distortions in thinking.

It is also noticeable in H2b and H2c portions. Even though portfolio behavior was strongly linked to investment decisions ($\beta = 0.725$, $p < 0.01$), no significant relationship was found for decision imitation \rightarrow herding behavior, risk framing \rightarrow loss aversion or regret avoidance \rightarrow loss aversion. The results question the assumption in the literature that mixed feelings by investors affect their actions all the time. It has been proposed that such biases are shaped by things in the market that vary such as market swings, lopsided availability of information or whether someone understands financial matters well. Whereas the main pathway from behavioral biases to investment choices was confirmed (H2), evidence from H2a, H2b and H2c suggests that many cognitive biases do not act on their own. Such effects can only manifest themselves in specific conditions or when other factors are involved. The statistically significant result ($p = 0.01$) supports Hypothesis H3: Hypothesis H3 supports the idea that financial literacy lends less to the effect of behavioral biases on investment choices. Nonetheless, evidence of this effect ($BF = 0.857$) has weak support, and the data do not strongly support the hypothesized moderating effect of financial literacy.

DISCUSSION

The research focused on the influence of the understanding of the financing and the cognitive biases of international students on the investment decision-making process abroad. The findings supported Hypothesis H1: students with high financial knowledge, confidence and practical skills were much more likely to make wise investment decisions, namely, diversifying their portfolios, taking risks into consideration, and making long-term plans. This result is also like previous studies conducted by Lusardi and Mitchell (2014) and Heriyati et al. (2024), which emphasize that proper mastery of financial concepts is the key to operating in a new market and making a good decision in a foreign environment.

The research validated the hypothesis that behavioral biases are sometimes relevant to the decision making of market participants (H2) but did not find a statistical justification of the biases discussed. Specifically, H2a, which tested self-confidence versus actual trading behavior by investors, did not test well, and H2b, which considered herding behavior and portfolio decisions, had a null result, too. These results indicate that, at least here, the biases considered will not be the sole factor of investment decisions. Other unmeasured factors, e.g. market conditions, emotional conditions, social dynamics, etc. may be a more significant influence, or the biases may be unconscious and therefore beyond the ability of standard surveys to measure. Such viewpoints match dual-process theory (Kahneman, 2011) which indicates that when we are under stress or strong emotion, thinking fast (System 1) can take over and become our main way of deciding things, typically without us even realizing. Most important, the results of the study proved Hypothesis H3 showing financial literacy influences how behavioral biases affect how people invest. The results demonstrate that having higher financial literacy helps people make sounder financial choices despite having behavioral biases. It means that literacy makes decisions better and gives the investor better control over their emotions. A person's knowledge of finance seems to filter out the effects of biases, depending on their knowledge and experience as investors. Similar to the findings described by Costa et al. (2020), this study findings argue that money-education should have a combination of mental and practical financial abilities. In the case of international students, a

barrier is often the inability to understand the local financial environment, cultural peculiarities, and legal norms according to which daily transactions are organized.

CONCLUSION

This study investigated how lack of financial knowledge and strong behaviors can greatly affect investment selections made by international students. It appears from the study that being financially literate with knowledge, skill and confidence—favors rational choices in investment. Students who understood finances better were able to decide wisely which points to the need for more financial education, especially in diverse areas where students need to use different financial systems. Although the research began by suggesting that numerous behavioral biases can guide investment decisions, some subcomponents of this hypothesis were not supported by the results (H2a and H2b).

The research discovered behavioral biases do not work alone, they increase when market conditions have moods, and when the emotional state is present. In brief, the paper highlights the importance of sound financial education, particularly among students who must operate within new financial regimes and demonstrates how biases respond dynamically to external influences. It seems that the way people are overconfident and herd with others may not be as important in shaping decisions as traditional behavioral finance assumes. Most important, the research identifies financial literacy as playing a significant role in managing behavioral biases when making investment decisions (H3). When someone is financially literate, biases cause less of a problem, allowing investors to choose investments wisely when rational thinking is blocked. This demonstrates why learning about money should include behavioral and emotional training, in addition to purely technical material. For people coming from another country to study such programs are key since they must manage new financial environments, adapt to cultural differences and face stressful changes.

LIMITATIONS and FUTURE RESEARCH

Even though this study shares many useful ideas, it still has some weaknesses. Surveys asking about people's beliefs might have led to biased results, especially

when measuring behaviors such as overconfidence or herding which we may be unaware of. The structure of these studies does not allow conclusions about cause and effect. Even though the study aims at international students, it may not be diverse enough in nationality, how wealthy the students are or their experience with investing to apply the results to all global student communities. In addition, I did not adjust for current economic trends or changes in currency, but they might change investors' views and actions.

Many ways remain for scholars to pursue the findings of this research in future research. First, it would help to use designs that test behavior repeatedly so we can identify how biases develop over time and in various market situations. By conducting simulations or monitoring investment choices while in school and using games along the way, any hidden biases can be seen more easily. Using biometric and neuroeconomic instruments including eye-trackers, skin-conductance measurements, or EEG data, researchers can reveal situational responses that other surveys typically fail to detect. Once these techniques are implemented in several countries, researchers can follow the evolution of cultural peculiarities influencing literacy, attitudes, and behaviors. According to finding of this research, financial literacy encourages people to make wise investing choices and protects them from making typical mistakes. Although biases such as overconfidence and herding did not stand out as special predictors here, they can influence decisions more when people are under emotional or time pressure. This means it is important to guide people through financial planning, providing both details and techniques to manage tough personal financial issues.

Statement on Consent

All participants gave consent to participate by agreeing verbally prior to the questionnaire survey. The researchers chose participants by asking their supervisors, who each completed the survey on a voluntary basis. No information or images that could identify people are included in the data used here.

Data Availability Statement

As the information in the study is confidential, it may not be released to the public or upon request.

Conflicts of Interest

The authors declare no conflict of interest.

REFERENCES

1. Ahamed, A. J. (2025). Chapter 1 Financial literacy. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5084835>
2. Alamsyah, M. I., Huda, M., & Pranata, R. M. (2023). Herding as behavior investing: A bibliometric analysis . *Journal of Applied Accounting and Finance*, 7(1), Article 28. <https://doi.org/10.33021/jaaf.v7i1.4141>
3. Alikperova, N. V. (2020). Formation of financially competent behaviour of the population: Risks and security conditions. *Humanities and Social Sciences. Bulletin of the Financial University*, 10(3), 86–91. <https://doi.org/10.26794/2226-7867-2020-10-3-86-91>
4. Amirtha, R. (2024). Financial literacy for the future: Preparing individuals for economic success. *Recent Research Reviews Journal*, 3(2), 381–396. <https://doi.org/10.36548/rrrj.2024.2.006>
5. Arya, D. S., & Singh, D. S. (2025). The role of behavioral finance in understanding market anomalies. *Southeastern European Journal of Public Health*, 1799–1812. <https://doi.org/10.70135/seejph.vi.4018>
6. Ashfaq, M., Shafique, A., & Viktoriia Selezneva. (2023). Exploring the missing link: Financial literacy and cognitive biases in investment decisions. *Journal of Modelling in Management*, 19(3), 871–898. <https://doi.org/10.1108/jm2-11-2022-0266>
7. Baharum, H., Ismail, A., Awang, Z., McKenna, L., Ibrahim, R., Mohamed, Z., & Hassan, N. H. (2023). Validating an Instrument for Measuring Newly Graduated

- Nurses' Adaptation. *International Journal of Environmental Research and Public Health*, 20(4), Article 2860. <https://doi.org/10.3390/ijerph20042860>
8. Baker, H. K., Kumar, S., Goyal, N., & Gaur, V. (2019). How financial literacy and demographic variables relate to behavioral biases. *Managerial Finance*, 45(1), 124–146. <https://doi.org/10.1108/mf-01-2018-0003>
 9. Coffelt, T. (2017). Confidentiality and anonymity of participants. *The SAGE Encyclopedia of Communication Research Methods*, 4(1), 228–230. <https://doi.org/10.4135/9781483381411.n86>
 10. Costa, V. M., De Sá Teixeira, N. A., Cordeiro Santos, A., & Santos, E. (2020). When more is less in financial decision-making: Financial literacy magnifies framing effects. *Psychological Research*, 85(5), 2036–2046. <https://doi.org/10.1007/s00426-020-01372-7>
 11. Fama, E. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance*, 25(2), 383–417. <https://doi.org/10.2307/2325486>
 12. Glaser, M., & Walther, T. (2013). Run, Walk, or Buy? Financial Literacy, Dual-Process Theory, and Investment Behavior. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2167270>
 13. Grable, J., & Lytton, R. (1999). Financial risk tolerance revisited: The development of a risk assessment instrument. *Financial Services Review*, 8(3), 163–181. [https://doi.org/10.1016/s1057-0810\(99\)00041-4](https://doi.org/10.1016/s1057-0810(99)00041-4)
 14. Hair, J., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (7th ed.). Pearson Education.
 15. Huyler, D., & McGill, C. M. (2019). Research design: Qualitative, quantitative, and mixed methods approach. *New Horizons in Adult Education and Human Resource Development*, 31(3), 75–77. <https://doi.org/10.1002/nha3.20258>
 16. Iqbal, M. J., Hassan, S., & Kayani, M. B. (2022). Impact of financial literacy on investment decisions with mediating role of behavioral biases. *Global Economics Review*, VII(III), 26–43. [https://doi.org/10.31703/ger.2022\(vii-iii\).03](https://doi.org/10.31703/ger.2022(vii-iii).03)

17. Ispierto, A., Martínez-García, I., & Ruiz Suárez, G. R. (2021). Financial education and savings and investment decisions: An analysis of the survey of financial competences (ECF). *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3822942>
18. Jain, J., Walia, N., & Gupta, S. (2019). Evaluation of behavioral biases affecting investment decision making of individual equity investors by fuzzy analytic hierarchy process. *Review of Behavioral Finance*, 12(3), 297–314. <https://doi.org/10.1108/rbf-03-2019-0044>
19. Jappelli, T. (2010). Financial literacy: An international comparison. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1716784>
20. Joharudin, A. (2023). Understanding the nexus of financial literacy and behavioral biases in investment decisions. *Finansha*, 4(2), 176–188. <https://doi.org/10.15575/fjsfm.v4i2.30490>
21. Kahneman, D. (2011). *Thinking, fast and slow*. Penguin Books
22. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263–292. <https://doi.org/10.2307/1914185>
23. Kang, H. (2021). Sample size determination and power analysis using the G*power software. *Journal of Educational Evaluation for Health Professions*, 18(17), 17. <https://doi.org/10.3352/jeehp.2021.18.17>
24. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5–44. <https://doi.org/10.1257/jel.52.1.5>
25. Malapane, T. A., & Ndlovu, N. K. (2024). Assessing the reliability of Likert scale statements in an e-commerce quantitative study: A Cronbach Alpha analysis using SPSS statistics. *IEEE Xplore*, 90–95. <https://doi.org/10.1109/sieds61124.2024.10534753>

26. Mitchell, O. S., & Lusardi, A. (2015). Financial literacy and economic outcomes: Evidence and policy implications. *SSRN Electronic Journal*, 3(1). <https://doi.org/10.2139/ssrn.2568732>
27. OECD. (2020). OECD/INFE 2020 international survey of adult financial literacy. In *Implementing the OECD Anti-bribery Convention*. Organization for Economic Cooperation and Development. <https://doi.org/10.1787/145f5607-en>
28. Paudel, R., & Yedgarian, V. A. (2024). Nepal's real estate landscape: Unveiling behavioral dynamics for strategic investments. *Utsaha: Journal of Entrepreneurship*, 3(2), 1–19. <https://doi.org/10.56943/joe.v3i2.514>
29. Paudel, R., & Yedgarian, V. A. (2024). The price of playing safe: Uncovering the deep regret of conservative investors as risk-takers reap unmatched gains. *Ibero-American Journal of Economics & Business Research*, 4(2), 15–30. <https://doi.org/10.56183/iberocbv.v4i2.30>
30. Rahawarin, F. R. (2023). The Effect of Loss Aversion Bias and Regret Aversion Bias on Financial Decisions with Financial Literacy as an Intervening Variable. *Accounting and Finance Studies*, 3(1), 301–314. <https://doi.org/10.47153/afs31.5512023>
31. Saja, M. Q. A., & Fauzihardani, E. (2024). Pengaruh overconfidence bias dan herding bias terhadap pengambilan keputusan gen Z di kota Padang dalam berinvestasi di pasar Saham Indonesia. *Jurnal Eksplorasi Akuntansi*, 6(3), 873–884. <https://doi.org/10.24036/jea.v6i3.1557>
32. Schulz, B. (2023). Behavioral finance and how its behavioral biases affect German investors. *Economic Studies & Analyses / Acta VSFS*, 17(1), 39–59. <https://doi.org/10.37355/acta-2023/1-03>
33. Shantha, K. (2024). Empowering investors: Reducing herd bias through financial literacy and self-reflective thinking. *Journal of Management Matters Journal of Management Matters*, 11(1), 73–91. <https://doi.org/10.4038/jmm.v11i1.68>

34. Singh, P. K., & Singh, I. (2024). Financial literacy education: Bridging the gap between theory and practice. *International Journal of Humanities and Education Research*, 6(1), 01–05. <https://doi.org/10.33545/26649799.2024.v6.i1a.58>
35. Soltes, E. F. (2012). Private interaction between firm management and sell-side analysts. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.1995559>
36. Suresh G. (2021). Impact of financial literacy and behavioral biases on investment decision-making. *FIIIB Business Review*, 13(1), 72–86. <https://doi.org/10.1177/23197145211035481>
37. Suyanto, Setiawan, D., Rahmawati , & Winarna, J. (2021). Effects of Indonesian students' financial literacy on financial behavior. *Advances in Economics, Business and Management Research*. <https://doi.org/10.2991/aebmr.k.210616.086>
38. Thanki, H., Shah, S., & Karani, A. (2022). Exploring the linkages between financial literacy, behavioral biases, and stock market decisions. *The Journal of Wealth Management*, 25(1), 82–104. <https://doi.org/10.3905/jwm.2022.1.164>
39. van Rooij, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and stock market participation. *Journal of Financial Economics*, 101(2), 449–472. <https://doi.org/10.1016/j.jfineco.2011.03.006>
40. Wang, D., & Zou, T. (2024). Financial literacy, cognitive bias, and personal investment decisions: A new perspective in behavioral finance. *Environment and Social Psychology*, 9(11), 1–21. <https://doi.org/10.59429/esp.v9i11.3050>
41. Wang, Y. (2023). Behavioral biases in investment decision-making. *Advances in Economics Management and Political Sciences*, 46(1), 140–146. <https://doi.org/10.54254/2754-1169/46/20230330>
42. Yasmin, F., & Ferdaous, J. (2023). Behavioral biases affecting investment decisions of capital market investors in Bangladesh: A behavioral finance approach. *Investment Management and Financial Innovations*, 20(2), 149–159. [https://doi.org/10.21511/imfi.20\(2\).2023.13](https://doi.org/10.21511/imfi.20(2).2023.13)

43. Zhdanova, N. V., Subbotina, T. Yu., & Kocherov, A. V. (2022). Development of financial literacy as a necessary condition for socio-cultural adaptation of international students. *Bulletin of the South Ural State University Series "Education. Educational Sciences,"* 14(4), 88–105. <https://doi.org/10.14529/ped220408>
44. Zhu, S. (2022). Anchoring effect in capital market. *Highlights in Business, Economics and Management, 1,* 66–70. <https://doi.org/10.54097/hbem.v1i.2320>