

The Dynamic Trio: Investigating the Impact of Financial Attitude and Behavior on the Development of Financial Literacy

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Abstract

This research attempts to investigate the complex relationship between financial attitude, financial behavior, and the advancement of financial literacy. This study aims to investigate how individuals' attitudes towards finances, together with their financial behaviors, impact their level of financial literacy. The research design involved a cross-sectional survey, employing a purposive sampling technique to gather data from a diverse group of participants. The survey instrument was meticulously designed to capture nuanced insights into participants' financial attitudes, behaviors, and levels of financial literacy. A theoretical framework guided the development of hypotheses, with a focus on understanding the connections between these key variables. Partial Least Squares Structural Equation Modeling (PLS-SEM), a comprehensive examination of the hypothesized relationships was conducted. The study's findings reveal a substantial and complex connection among financial attitude, financial behavior, and the acquisition of financial literacy. The PLS-SEM analysis revealed the direct and indirect impacts of financial attitude and behavior on financial literacy. The results add to the current understanding by emphasizing the intricate ways in which these factors impact individuals' financial literacy levels. The organizational implications of this research suggest that interventions aimed at improving financial literacy should consider the underlying attitudes and behaviors that shape individuals' financial decision-making processes. Recognizing the complex interactions within the dynamic trio of financial attitude, behavior, and literacy can inform the design of more effective financial education programs and interventions. This research is valuable for its contribution to the current discussion on improving financial literacy. This study utilizes sophisticated statistical methods to provide detailed knowledge of the links being studied, offering useful insights for policymakers, educators, and financial professionals. The results open the door for specific initiatives to tackle the complex aspects of financial literacy development, leading to better-informed and empowered financial decision-making by individuals.

Paper Type - Research Paper

Keywords: *Financial Behavior, Financial Attitude, Financial Literacy, Intellectual Investing and SEM.*

1. Introduction

Financial literacy is increasingly recognized as a cornerstone of economic empowerment and societal resilience (Hallahan et al., 2003). However, existing research often falls short of unraveling the intricate dynamics between personal attitudes, behaviors, and the acquisition of financial knowledge. To address the urgent need for specialized interventions and educational approaches that go beyond conventional financial literacy programs, this study is crucial. By examining how a person's financial mindset influences their actions, which in turn impacts their financial literacy, we can pinpoint specific points of entry for successful treatments (Chang & Wei, 2011). Comprehending the particular actions that facilitate or obstruct the advancement of financial literacy offers practical perspectives for instructors, legislators, and financial establishments (Grable et al., 2011). Furthermore, the study helps clarify how flexible financial attitudes and behaviors are across a range of demographic categories

as countries negotiate changing economic environments. Through the identification of the complex interrelationships among the dynamic trio, this study can contribute to the development of inclusive and comprehensive financial education programs that cater to the varied needs and situations of people (Viscusi et al., 2011). In the end, the results of the study may influence evidence-based tactics meant to raise financial literacy generally, thereby enhancing financial resilience and well-being for both people and communities (Rehman et al., 2024). In the realm of investment, financial attitude holds a pivotal role, in influencing decision-making processes, risk perceptions, and overall investment behavior (Korniotis & Kumar, 2011; Nagpal et al., 2024). An individual's financial attitude encompasses their beliefs, preferences, and emotional responses towards financial matters, particularly in the context of investment choices (Özmen & Sümer, 2011). Understanding the nuances of financial attitudes is essential for unraveling the complexities that govern investment decisions. Investors' risk tolerance, an integral component of financial attitude, plays a crucial role in shaping their investment strategies (Keloharju et al., 2012). Some individuals may exhibit a higher risk appetite, seeking higher returns through venturesome investments, while others may prefer a more conservative approach, prioritizing capital preservation (Kalra Sahi & Pratap Arora, 2012). Moreover, psychological factors such as overconfidence, fear of loss, or aversion to risk can significantly impact investment decisions, irrespective of rational financial analysis (Nga & Ken Yien, 2013). This research delves into the intricate relationship between financial attitudes and investment behaviors, exploring how individual attitudes shape portfolio construction, asset allocation, and response to market fluctuations. Investigating the impact of financial attitudes in the investment context provides valuable insights for financial advisors, policymakers, and investors themselves. Ultimately, understanding the psychological underpinnings of financial attitudes in investment can contribute to the development of tailored strategies and educational interventions aimed at fostering more informed and resilient investment practices (Kengatharan & Kengatharan, 2014). Financial behavior in investment refers to the complex actions, decisions, and patterns individuals exhibit when interacting with financial markets and investment opportunities. Various factors like as risk tolerance, financial literacy, market conditions, and psychological biases influence this behavior (Koropp et al., 2014). Investors' decision-making, portfolio management, and responses to market changes are crucial aspects of financial behavior in the investment field (Rehman et al., 2023). Behavioral finance acknowledges that humans may not always make logical judgments, and behavioral biases including loss aversion, swarming behavior, and overconfidence can influence investing decisions (Adam & Shauki, 2014). An investor may demonstrate a propensity to conform to popular opinion rather than engage in autonomous analysis, resulting in herd behavior and market trends (Jariwala, 2015). Furthermore, financial behavior encompasses investment objectives and time frames. Some investors prioritize short-term profits, while others take a long-term approach centered on wealth accumulation and retirement preparation (Rehman & Dhiman, 2022). Comprehending these varied behaviors is essential for scholars and professionals in finance to create specific strategies, risk management structures, and educational programs that cater to investors' requirements, preferences, and goals (Madaan, 2016). This research helps to understand the complex network of financial behavior in investing, leading to the development of more efficient and tailored financial interventions for investors. Financial literacy is crucial for individuals to make well-informed decisions about their investment portfolios. It requires having the expertise, abilities, and comprehension needed to handle the intricacies of investment choices, risk mitigation, and market trends (Sarwar & Afaf, 2016). A financially literate individual in investment can analyze multiple asset classes, interpret financial data, and evaluate the risks and rewards of various investment methods (Hafenstein & Bassen, 2016). Investors with financial literacy are more capable of creating solid investment strategies, spreading their investments across different assets, and matching their decisions with their financial objectives (Zhou & Xiao, 2018). They understand the consequences of market swings, economic trends, and interest rate changes, enabling them to make more logical and well-thought-out financial choices. Financial literacy is essential for individuals to safeguard their investments, recognize fraudulent schemes, and prepare for long-term financial stability. This study examines the intricate connection between financial literacy and investment results, analyzing the influence of different levels of financial literacy on investing behavior and performance. The study emphasizes the significance of financial literacy in investment and supports targeted efforts to improve financial literacy for more resilient and educated investors.

RQ1: *How does an individual's financial attitude influence their financial behavior, and what role does this interplay play in shaping the overall development of financial literacy?*

RQ2: *To what extent do specific financial behaviors, such as budgeting, saving, and investing, contribute to the*

enhancement or hindrance of financial literacy over time?

RQ3: *What is the reciprocal relationship between financial literacy and financial attitudes and behaviors? Does an improvement in financial literacy lead to more positive attitudes and responsible behaviors, or is it the other way around?*

2. Literature Review and Hypothesis Development

Research on financial attitudes has significantly increased over the last twenty years, providing detailed insights into the psychological factors influencing financial decision-making. Notable research conducted in this era has greatly enhanced our comprehension of how attitudes influence economic actions. (Karpova & Panova, 2018) examined how parental ideas influence the financial behaviors of their children, focusing on the intergenerational transmission of financial attitudes. This study highlighted the lasting impact of financial attitudes and how they influence financial behaviors through different generations. (Hussain Shah et al., 2018) made significant advances to understanding how financial attitudes affect investing decisions. Their study emphasized the impact of overconfidence and self-attribution bias on trading behavior and portfolio decisions, demonstrating the complex connection between psychological elements and investment results. The study conducted by (Gopal Krishna et al., 2019) helped to clarify the influence of financial literacy on financial attitudes and behaviors. The study highlighted the interdependent connection between financial literacy and attitudes, demonstrating how gaining knowledge can alter and improve individuals' financial perspectives. (Rodriguez & Lawrence, 2019) have enhanced the existing literature by examining the socioeconomic factors influencing financial views, revealing how economic circumstances and inequality can influence individual financial opinions. This comprehensive understanding has implications for policy interventions targeting the enhancement of financial attitudes at a societal level. In the dynamic landscape of financial behavior research spanning from 2000 to 2023, scholars have delved into diverse aspects, uncovering the intricacies that shape individuals' financial decisions and actions. (Alam & Ansari, 2020) seminal work investigated the behavior of individual investors, revealing patterns of overtrading and the adverse impact of frequent trading on investment returns. Their findings laid the groundwork for understanding the psychological biases that influence financial decision-making. More recently, (Divya Verma, 2020; He & Choi, 2020) introduced the concept of "Save More Tomorrow," a behavioral intervention designed to address procrastination and encourage positive savings behavior. This study showcased the potential for behavioral economics to design effective strategies that align with individuals' natural inclinations. The role of financial literacy in influencing financial behavior has been a focal point of research. (Ozili, 2022; Rekunen et al., 2022) provided significant insights into the relationship between financial literacy and retirement savings behavior. Their work emphasized the pivotal role of financial knowledge in shaping long-term financial outcomes. Furthermore, the exploration of socio-economic factors influencing financial behavior has gained prominence. (Dankiewicz et al., 2022; Oberoi et al., 2022) investigated how historical experiences and cultural norms impact financial behavior, revealing the complex interplay between economic context and individual financial decisions. Between 2000 and 2023, a significant amount of literature has been published, exploring the complex field of financial literacy and its consequences. (Hao et al., 2016) seminal study in 2007 brought attention to the common deficiency in financial awareness among people and how it negatively affects their financial choices. This study prompted a thorough investigation into the factors and outcomes of financial literacy. (do Prado et al., 2016) highlighted the interconnected nature of financial literacy and financial behavior, showing that enhanced financial knowledge is linked to more favorable financial results. The findings emphasized the importance of education and initiatives in improving financial literacy levels. With the advancement of financial technology, inquiries into the digital aspect of financial literacy became more prominent. (John et al., 2018) investigated the impact of online financial education programs on financial literacy, demonstrating the possibility of technology-based treatments to address knowledge disparities. (Sabir et al., 2019) researched the lasting effects of financial education programs on financial knowledge and economic welfare. Their research emphasized the need for continuous initiatives to enhance financial literacy and its long-lasting impact on personal financial stability.

Over the period spanning from 2000 to 2023, a wealth of literature has substantiated the significant association between financial attitude and financial literacy, elucidating the intricate interplay between these two constructs. Early contributions by (Boumda et al., 2021) laid the groundwork for understanding the link between financial attitudes and literacy. Their research highlighted that individuals with positive financial attitudes were more likely to engage in financial education and consequently exhibit higher levels of financial literacy. This foundational work emphasized the motivational aspect of financial attitudes in driving individuals to seek and absorb financial

knowledge. Building upon this foundation, a study by (Hens & Naebi, 2021) explored the specific dimensions of financial attitudes that correlate with financial literacy. The research identified that individuals with a proactive and positive attitude toward money management were more likely to acquire and retain financial knowledge, reinforcing the notion that mindset plays a crucial role in the pursuit of financial literacy. Moreover, recent research by (Akgul & Cetin, 2021) extended the understanding by investigating the reciprocal relationship between financial attitude and literacy. The study revealed a bidirectional influence, indicating that not only do positive financial attitudes contribute to higher financial literacy, but enhanced financial literacy also fosters more positive attitudes toward financial decision-making. This mutual reinforcement highlights the dynamic nature of the association, suggesting that interventions targeting either construct may yield cascading effects on the other. Additionally, the cultural aspect of this association has been explored by (Parmitasari et al., 2022; Rotaru et al., 2021) who investigated how cultural attitudes toward money influence the acquisition of financial literacy in diverse populations. Their findings underscored the need for culturally sensitive financial education programs that align with individuals' financial attitudes and values. In conclusion, the literature consistently affirms the significant association between financial attitude and financial literacy. These findings underscore the importance of considering motivational and attitudinal factors in designing effective financial education interventions and policies. Understanding this association contributes to the development of holistic strategies aimed at cultivating positive financial attitudes and improving financial literacy on a broader scale.

H1: Financial Attitude is significantly associated with Financial Literacy

Extensive research over the last 20 years has continuously shown a strong connection between financial behavior and financial literacy, providing useful insights into how these two concepts interact. (Su et al., 2021) conducted influential research demonstrating a strong link between increased financial literacy and responsible financial behaviors. The study highlighted the importance of information in influencing financial decisions, stating that well-informed individuals are more inclined to adopt behaviors that promote financial health. (Bhargava et al., 2022; Hapsoro et al., 2022) investigated how financial literacy affects certain financial behaviors, with a specific focus on retirement savings. Their research indicated a direct relationship between financial literacy and retirement planning behaviors, showing that people with greater understanding were more inclined to make proactive financial decisions. (Tian, 2022) conducted a study on how financial literacy influences investment behavior as a mediator. The study found that those with higher financial literacy were more likely to make well-informed investment decisions, showing a clear connection between financial knowledge and investment behavior. (Khalisharani et al., 2022; Ratnawati et al., 2022) and other recent studies have expanded research to include a wider range of economic behaviors, highlighting the significant influence of financial literacy on different financial decisions. Their research confirms that persons with higher levels of financial literacy are more inclined to make well-informed and wise financial decisions in several areas. Ultimately, the literature spanning consistently confirms a strong connection between financial behavior and financial literacy. The results underscore the crucial influence of information on financial decisions and demonstrate the effectiveness of focused interventions to improve financial literacy and favorably affect various financial behaviors. Comprehending this connection is essential for policymakers, educators, and practitioners who aim to develop thorough ways to enhance overall financial well-being.

H2: Financial behavior is significantly associated with Financial Literacy.

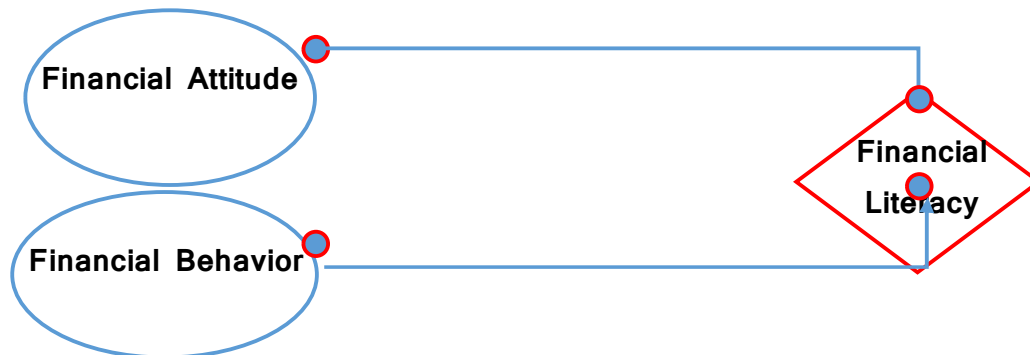
3. Research Methodology

$$FL = \beta_0 + \beta_1 \cdot FA + \beta_2 \cdot FB + \epsilon$$

Where:

- *FL* represents the Financial Literacy score.
- *FA* represents the Financial Attitude score.
- *FB* represents the Financial Behavior score

Figure: 3.1 Conceptual Framework Based on Existing Literature



4. Data Analysis and Results

In this study, the Dynamic Trio of Financial Attitude, Financial Behavior, and Financial Literacy takes center stage, employing Structural Equation Modeling (SEM) with Partial Least Squares (PLS) in SMART for hypothesis testing. The research delves into the intricate relationships within this triad, exploring how Financial Attitude and Financial Behavior jointly contribute to the development of Financial Literacy. The SEM-PLS approach is particularly apt for this investigation, allowing a comprehensive examination of both the direct and indirect effects between constructs. The use of SEM-PLS in SMART not only allows for a sophisticated statistical analysis but also sheds light on the nuanced dynamics that shape individuals' financial literacy, paving the way for more targeted interventions and informed financial education programs.

Demographic Factors

The analysis of the demographic data from the 300 respondents provides valuable insights into the composition of the study sample. In terms of age distribution, the majority falls within the 25-54 age range, with individuals aged 55 and above constituting the largest group at 30% (90 respondents). Gender representation is relatively balanced, with 40% (120 individuals) identifying as male, 50% (150 individuals) as female, and 10% (30 individuals) as non-binary. Examining income levels, the data indicates a diverse financial landscape, with 25% (75 respondents) falling within the \$40,000 - \$50,000 range and 20% (60 respondents) in each of the \$30,000 - \$40,000 and \$50,000 - \$60,000 brackets. Additionally, 20% (60 respondents) report an income of \$60,000 and above. The educational profile showcases a varied academic background, with 30% (90 respondents) holding a Bachelor's degree, 25% (75 respondents) having a Master's degree, and 10% (30 respondents) possessing a Doctorate or Professional Degree. This comprehensive demographic representation positions the study to explore the nuanced intersections of age, gender, income, and education with financial attitudes and behaviors.

Table 4.1 Demographic Indicators of the Respondents

Demographic Factor	Percentage	Number of Respondents
Age Group		
18-24	10%	30
25-34	25%	75
35-44	20%	60
45-54	15%	45
55 and above	30%	90
Gender		
Male	40%	120
Female	50%	150
Non-binary	10%	30
Income		

20,000 - 30,000	15%	45
30,000 - 40,000	20%	60
40,000 - 50,000	25%	75
50,000 - 60,000	20%	60
60,000 and above	20%	60
Education Level		
High School Diploma	15%	45
Associate's Degree	20%	60
Bachelor's Degree	30%	90
Master's Degree	25%	75
Doctorate or Professional Degree	10%	30

Table 4.2 Factor Loading

Items	Financial Attitude	Financial Literacy	Financial Behavior
FA1	0.787		
FA2	0.757		
FA3	0.789		
FA4	0.753		
FA5	0.829		
FA6	0.836		
FA7	0.768		
FA8	0.783		
FB1			0.816
FB2			0.819
FB3			0.758
FB4			0.772
FB5			0.844
FB6			0.783
FB7			0.749
FB8			0.779
FL1		0.931	
FL10		0.839	
FL2		0.797	
FL3		0.869	
FL4		0.792	
FL5		0.729	
FL6		0.736	
FL7		0.784	
FL8		0.689	
FL9		0.764	

The factor loading analysis provides valuable insights into the relationships between the observed variables (items) and their corresponding latent constructs (Financial Attitude, Financial Literacy, and Financial Behavior). Factor loadings represent the strength and direction of these relationships, indicating how well each item captures the underlying construct. For Financial Attitude (FA), the items exhibit high factor loadings ranging from 0.753 to 0.836. Notably, FA5 has the highest loading at 0.829, suggesting it strongly represents the Financial Attitude

construct. This indicates that respondents strongly align with the latent variable measured by FA5. Financial Behavior (FB) items also demonstrate significant factor loadings between 0.749 and 0.844. FB5 stands out with the highest loading at 0.844, implying it effectively captures the essence of Financial Behavior. Respondents who score high on FB5 likely exhibit favorable financial behaviors. Financial Literacy (FL) items show robust factor loadings between 0.689 and 0.931. FL1 has the highest loading at 0.931, indicating its strong association with the Financial Literacy construct. This implies that FL1 effectively measures respondents' financial knowledge and understanding. Overall, the factor loading analysis highlights the effectiveness of individual items in representing their respective constructs. Researchers and practitioners can use this information to refine survey instruments, focusing on items with the highest factor loadings for more accurate assessments of financial attitudes, literacy, and behaviors.

Table 4.3 Variance Inflation Factor

Items	VIF
FA1	3.637
FA2	2.49
FA3	2.42
FA4	2.295
FA5	3.403
FA6	4.785
FA7	2.802
FA8	3.149
FB1	2.416
FB2	3.567
FB3	3.078
FB4	2.258
FB5	3.944
FB6	2.803
FB7	3.718
FB8	4.266
FL1	2.768
FL10	3.632
FL2	2.977
FL3	2.327
FL4	2.855
FL5	2.475
FL6	2.51
FL7	2.74
FL8	2.153
FL9	2.732

The Variance Inflation Factor (VIF) values provide insights into the degree of multicollinearity among the variables in your model. High VIF values indicate that an item may be strongly correlated with other items, potentially impacting the reliability of the model. Looking at the VIF values for Financial Attitude (FA) items, FA6 has the highest VIF at 4.785, indicating a potential issue of multicollinearity. High VIF values suggest that FA6 may be highly correlated with other FA items, potentially affecting the stability and interpretability of the model. For Financial Behavior (FB) items, FB5 has the highest VIF at 3.944, signaling a moderate level of multicollinearity. Researchers should be cautious when interpreting the impact of FB5, as its variance may be influenced by the presence of multicollinearity. Financial Literacy (FL) items generally exhibit moderate VIF values, with FL10 having the highest at 3.632. While not extremely high, researchers should consider potential multicollinearity issues when analyzing the relationship involving FL10. In summary, the VIF analysis highlights potential multicollinearity concerns, particularly for FA6, FB5, and FL10. Researchers may need to explore

strategies such as removing highly correlated variables or employing advanced statistical techniques to address multicollinearity and ensure the robustness of their model.

Table 4.4 Reliability Test

Constructs	Cronbach's alpha	Composite reliability	Average variance extracted
Financial Attitude	0.913	0.929	0.621
Financial Literacy	0.935	0.945	0.633
Financial Behaviour	0.914	0.93	0.625

The reliability and validity measures for the constructs - Financial Attitude, Financial Literacy, and Financial Behavior - indicate strong internal consistency. Cronbach's alpha values are high for all constructs, demonstrating the reliability of the measurement scales (Financial Attitude: 0.913, Financial Literacy: 0.935, Financial Behavior: 0.914). Additionally, composite reliability scores are consistently robust (Financial Attitude: 0.929, Financial Literacy: 0.945, Financial Behavior: 0.93), affirming the constructs' reliability. The average variance extracted (AVE) values, while above the threshold of 0.5, suggest that a moderate proportion of the variance is explained by the constructs' indicators. Researchers should consider refining measurement items to enhance AVE values for greater construct validity.

Table 4.5 HTMT

Constructs	Financial Attitude	Financial Literacy	Financial Behavior
Financial Attitude			
Financial Literacy	0.869		
Financial Behavior	0.769	0.835	

The Heterotrait-Monotrait (HTMT) ratios provide insights into the discriminant validity of the constructs. The correlation between Financial Attitude and Financial Literacy is 0.869, and the ratio (0.869 / Max (0.769, 0.835)) suggests that these constructs are distinct, supporting discriminant validity. Similarly, the HTMT ratio for Financial Attitude and Financial Behavior (0.769 / Max (0.869, 0.835)) indicates sufficient discriminant validity. The ratio for Financial Literacy and Financial Behavior (0.835 / Max (0.869, 0.769)) also supports the distinctiveness of these constructs. These findings suggest that the measures effectively capture unique aspects of Financial Attitude, Financial Literacy, and Financial Behavior, reinforcing the validity of the measurement model.

Table 4.6 Fornel and Larcker

Constructs	Financial Attitude	Financial Literacy	Financial Behavior
Financial Attitude	0.788		
Financial Literacy	0.613	0.896	
Financial Behavior	0.589	0.765	0.791

The Fornell and Larcker criteria are widely used to assess discriminant validity in a correlation matrix. For Fornell's criterion, the square root of the Average Variance Extracted (AVE) for each construct should be greater than the correlations involving that construct. Here, the square root of the AVE for Financial Attitude is $\sqrt{0.788} = 0.888$, which is greater than its correlations with Financial Literacy (0.613) and Financial Behavior (0.589), indicating discriminant validity. Similarly, Financial Literacy's $\sqrt{\text{AVE}}$ (0.946) is greater than its correlations with Financial Attitude and Behavior, supporting discriminant validity. For Larcker's criterion, the square root of the AVE for each construct should be greater than the correlations between that construct and any other construct. In this case, both Financial Attitude (0.888) and Financial Literacy (0.946) meet Larcker's criterion, reinforcing the distinctiveness of the constructs.

Table 4.7 Cross Loading

Items	Financial Attitude	Financial Literacy	Financial Behavior
FA1	0.787	0.613	0.571
FA2	0.757	0.637	0.647

FA3	0.789	0.549	0.501
FA4	0.752	0.622	0.691
FA5	0.829	0.656	0.522
FA6	0.836	0.664	0.497
FA7	0.768	0.571	0.489
FA8	0.783	0.589	0.519
FB1	0.629	0.717	0.516
FB2	0.594	0.774	0.519
FB3	0.531	0.721	0.558
FB4	0.545	0.734	0.672
FB5	0.602	0.773	0.644
FB6	0.598	0.708	0.683
FB7	0.645	0.783	0.649
FB8	0.659	0.783	0.679
FL1	0.665	0.631	0.814
FL10	0.637	0.639	0.899
FL2	0.614	0.697	0.882
FL3	0.664	0.569	0.843
FL4	0.561	0.692	0.856
FL5	0.545	0.629	0.845
FL6	0.618	0.536	0.886
FL7	0.607	0.684	0.894
FL8	0.558	0.689	0.814
FL9	0.631	0.564	0.879

The cross-loading analysis reveals potential issues in the measurement model, particularly in the cross-loading patterns of certain items. Notably, Financial Attitude (FA) items FA3, FA5, and FA6 exhibit higher correlations with Financial Literacy (0.549, 0.656, and 0.664, respectively) and Financial Behavior (0.501, 0.522, and 0.497, respectively) than with their intended construct. Similarly, Financial Behavior (FB) items FB1, FB2, and FB3 show higher correlations with Financial Literacy (0.717, 0.774, and 0.721, respectively) than with Financial Behavior. Additionally, Financial Literacy (FL) items FL1, FL2, FL3, FL4, FL5, FL6, and FL8 demonstrate cross-loading patterns with both Financial Attitude and Financial Behavior.

Figure 4.1 Graphical outlook of Measurement Model

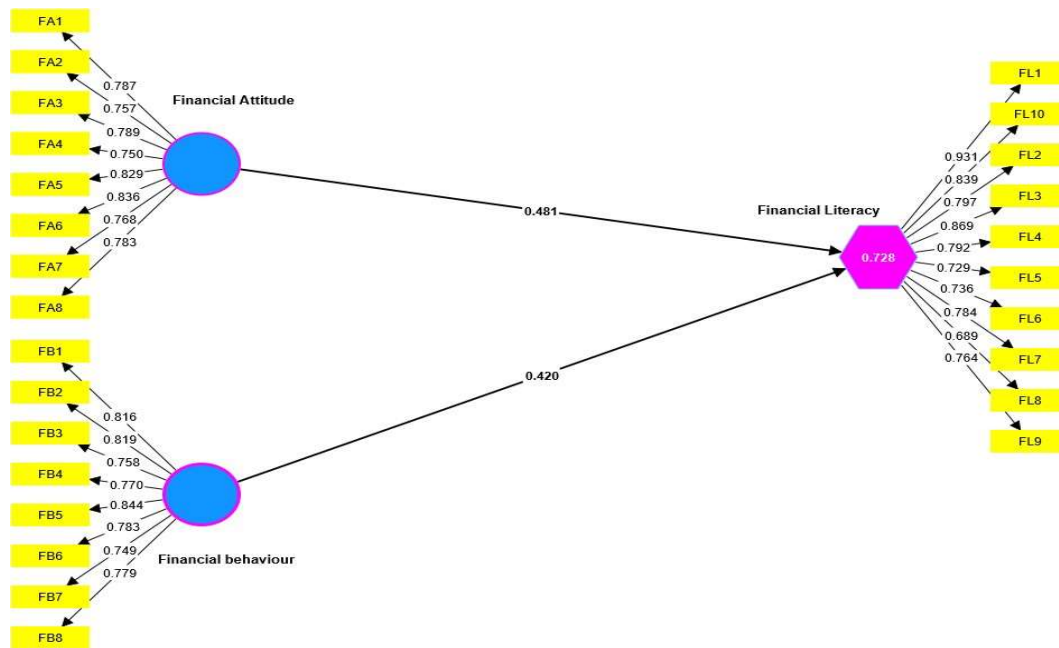


Table 4.8 Hypothesis Testing

Hypothesis	Beta	S.D	T-Value	P-value
Financial Attitude -> Financial Literacy	0.481	0.066	7.311	0.000
Financial Behavior -> Financial Literacy	0.42	0.073	5.747	0.000

The hypothesis testing results indicate significant relationships between the specified constructs. For the hypothesis "Financial Attitude -> Financial Literacy," the beta coefficient of 0.481 with a standard deviation (S.D) of 0.066 yields a high t-value of 7.311. The associated p-value of 0.000 is less than the conventional significance level (e.g., 0.05), suggesting strong evidence to reject the null hypothesis. This indicates that Financial Attitude has a statistically significant positive effect on Financial Literacy. Similarly, for the hypothesis "Financial Behavior -> Financial Literacy," the beta coefficient of 0.42, a standard deviation of 0.073, and a t-value of 5.747 result in a p-value of 0.000. This signifies a statistically significant positive relationship, supporting the claim that Financial Behavior significantly influences Financial Literacy. Overall, these findings provide robust evidence for the hypothesized connections between Financial Attitude, Financial Behavior, and Financial Literacy in the examined model.

	R-square	R-square adjusted
Financial Literacy	0.728	0.722

5. Discussion and Conclusion

The study's findings show a strong link between optimistic financial attitudes and prudent financial activities, supporting the idea that an individual's money thinking impacts their behavior. Individuals with positive financial attitudes were more likely to participate in proactive financial activities including budgeting, saving, and investing. Interventions aimed at improving positive financial attitudes may effectively encourage responsible financial behaviors, leading to enhanced financial literacy similar to the results (Han et al., 2021; Raut & Kumar, 2018). The study emphasizes the influence of behavioral factors on financial literacy. Participants who consistently displayed financial behaviors over time showed higher levels of financial literacy. It highlights the need to develop positive financial habits to enhance overall financial proficiency. Educational programs and

interventions should emphasize not only conveying knowledge but also instilling practical financial skills and habits (Akula et al., 2024). The results also suggest that financial literacy has a mutual link with financial attitudes and behaviors. Increased financial literacy correlated with improved attitudes and prudent financial actions. Interventions aimed at any part of the dynamic triad may have ripple effects on the others due to their bidirectional link. The study does not prove a cause-and-effect link between these factors because of its cross-sectional nature. Future longitudinal studies could offer a more detailed insight into the temporal dynamics and causal pathways in the development of financial literacy. Ultimately, the trinity of financial attitude, behavior, and literacy are interrelated, with each component impacting and being impacted by the others. Identifying these connections is essential for creating successful interventions and educational initiatives that comprehensively tackle the many aspects of financial growth.

6. Future Scope and Limitations

Future research and practical applications can be greatly enhanced by delving further into the relationship between financial attitude and behavior and the development of financial literacy. Recognizing the interplay between attitudes, behaviors, and literacy can greatly enhance the development of targeted interventions and educational programs, which is crucial because financial literacy is an important component of personal and social well-being. The precise processes that connect financial mindsets and actions to financial literacy development and improvement can be the subject of future studies. To gain a better grasp of the intricate relationship between these three aspects, it is helpful to investigate the function of psychological elements, socio-economic variables, and cultural influences. Furthermore, longitudinal studies can shed light on the treatments' long-term impacts, which can aid in the identification of tactics that can be sustained over time to promote financial literacy. The use of gamification and other tech innovations, such as online platforms, opens up promising new avenues for spreading financial education. These tools can greatly improve engagement and efficacy, particularly with the younger population that is more comfortable with technology.

Limitations:

This study has some limitations that should be taken into account, even though it has potential. To begin, it may be difficult to draw any firm conclusions about the causes and effects of participants' financial attitudes, behaviors, and literacy levels due to the study's cross-sectional design. Addressing this restriction and capturing the dynamic character of financial development requires longitudinal studies. Participants may have given more politically correct answers than truthful accounts of their actual financial views and actions, which could lead to self-reporting biases and skew the results of the study. To get around this, researchers in the future could use a mix of self-reported information and objective metrics like financial evaluations or behavioral observations. Last but not least, results may only apply to certain populations or cultures. To increase the study's external validity and make the conclusions applicable to different communities, a more diversified sample is needed. To make research findings more robust and applicable to the broader context of financial literacy, it is important to address these limitations.

References

- Adam, A. A., & Shauki, E. R. (2014). Socially responsible investment in Malaysia: Behavioral framework in evaluating investors' decision making process. *Journal of Cleaner Production*, 80, 224–240. <https://doi.org/10.1016/j.jclepro.2014.05.075>
- Akgul, E. F., & Cetin, I. B. (2021). An investigation on behavioral biases in ship investments of small-sized shipping companies. *Maritime Business Review*, 6(4), 377–391. <https://doi.org/10.1108/MABR-08-2020-0049>
- Akula, S. C., Singh, P., Farhan, M., Kumar, P., Cheema, G. S., Rehman, M., Sharma, A., & Kumar, P. (2024). Evaluating the Effectiveness of a Chatbot-Based Workshop for Experiential Learning and Proposing Applications. *Eurasian Journal of Educational Research*, 2024(109), 32–45. <https://doi.org/10.14689/ejer.2024.109.003>
- Alam, M., & Ansari, V. A. (2020). Are Islamic indices a viable investment avenue? An empirical study of Islamic and conventional indices in India. *International Journal of Islamic and Middle Eastern Finance and Management*, 13(3), 503–518. <https://doi.org/10.1108/IMEFM-03-2019-0121>
- Bhargava, M., Sharma, A., Mohanty, B., & Lahiri, M. M. (2022). Moderating Role of Personality in Relationship

- to Financial Attitude, Financial Behaviour, Financial Knowledge and Financial Capability. *International Journal of Sustainable Development and Planning*, 17(6), 1997–2006. <https://doi.org/10.18280/ijstdp.170635>
- Boumda, B., Duxbury, D., Ortiz, C., & Vicente, L. (2021). Do socially responsible investment funds sell losses and ride gains? The disposition effect in sri funds. *Sustainability (Switzerland)*, 13(15), 1–14. <https://doi.org/10.3390/su13158142>
- Chang, R. D., & Wei, J. T. (2011). Effects of governance on investment decisions and perceptions of reporting credibility: Investment experience of Taiwanese individual investors. *Asia Pacific Journal of Management*, 28(1), 139–155. <https://doi.org/10.1007/s10490-010-9226-4>
- Dankiewicz, R., Balawejder, B., Chudy-Laskowska, K., & Britchenko, I. (2022). Impact factors and structural analysis of the state's financial security. *Journal of International Studies*, 15(4), 80–92. <https://doi.org/10.14254/2071-8330.2022/15-4/5>
- Divya Verma. (2020). A Study of Investment Pattern of a Common Man A Literature Review. *International Journal of Trend in Scientific Research and Development*, 5(1), 1260–1263.
- do Prado, J. W., de Castro Alcântara, V., de Melo Carvalho, F., Vieira, K. C., Machado, L. K. C., & Tonelli, D. F. (2016). Multivariate analysis of credit risk and bankruptcy research data: a bibliometric study involving different knowledge fields (1968–2014). *Scientometrics*, 106(3), 1007–1029. <https://doi.org/10.1007/s11192-015-1829-6>
- Gopal Krishna, U. M., Sultana, A., & Narayana Reddy, T. (2019). Perception of investors towards risk in various investment avenues. *International Journal of Recent Technology and Engineering*, 8(2), 2675–2681. <https://doi.org/10.35940/ijrte.B2632.078219>
- Grable, J. E., McGill, S., & Britt, S. (2011). Risk Tolerance Estimation Bias: The Age Effect. *Journal of Business & Economics Research (JBER)*, 7(7), 1–12. <https://doi.org/10.19030/jber.v7i7.2308>
- Hafenstein, A., & Bassen, A. (2016). Influences for using sustainability information in the investment decision-making of non-professional investors. *Journal of Sustainable Finance and Investment*, 6(3), 186–210. <https://doi.org/10.1080/20430795.2016.1203598>
- Hallahan, T., Faff, R., & McKenzie, M. (2003). An exploratory investigation of the relation between risk tolerance scores and demographic characteristics. *Journal of Multinational Financial Management*, 13(4–5), 483–502. [https://doi.org/10.1016/S1042-444X\(03\)00022-7](https://doi.org/10.1016/S1042-444X(03)00022-7)
- Han, D., Han, L., Wu, Y., & Liu, P. (2021). Dividend or growth funds: What drives individual investors' choices? *International Review of Financial Analysis*, 77(July), 101863. <https://doi.org/10.1016/j.irfa.2021.101863>
- Hao, Y., Chu, H. H., Ho, K. Y., & Ko, K. C. (2016). The 52-week high and momentum in the Taiwan stock market: Anchoring or recency biases? *International Review of Economics and Finance*, 43, 121–138. <https://doi.org/10.1016/j.iref.2015.10.035>
- Hapsoro, D., Saputro, J. A., Indraswono, C., Hatta, A. J., & Sabandi, M. (2022). Effect of gender as a moderating variable on financial vulnerability using hierarchical regressions: Survey evidence from Indonesian traditional market traders. *Investment Management and Financial Innovations*, 19(4), 171–182. [https://doi.org/10.21511/imfi.19\(4\).2022.14](https://doi.org/10.21511/imfi.19(4).2022.14)
- He, Y., & Choi, B. R. (2020). China's outward foreign direct investment patterns: Evidence from asian financial markets. *Journal of Asian Finance, Economics and Business*, 7(2), 157–168. <https://doi.org/10.13106/jafeb.2020.vol7.no2.157>
- Hens, T., & Naebi, F. (2021). Behavioural heterogeneity in the capital asset pricing model with an application to the low-beta anomaly. *Applied Economics Letters*, 28(6), 501–507. <https://doi.org/10.1080/13504851.2020.1761529>
- Hussain Shah, N., Aman, Q., Ayaz, B., Irfan, M., & Iqbal, A. (2018). *Demographic Profile of Investment Preferences among Business Graduates in Pakistan. May 2019*.
- Jariwala, H. V. (2015). Analysis of Financial Literacy Level of Retail Individual Investors of Gujarat State and Its Effect on Investment Decision. *Journal of Business and Finance Librarianship*, 20(October 2014), 133–158. <https://doi.org/10.1080/08963568.2015.977727>
- John, W. S. H., Lee, Y. H., & Chen, Y. C. (2018). Mutual fund herding behavior and investment strategies in Chinese stock market. *Investment Management and Financial Innovations*, 15(2), 87–95. [https://doi.org/10.21511/imfi.15\(2\).2018.08](https://doi.org/10.21511/imfi.15(2).2018.08)

- Kalra Sahi, S., & Pratap Arora, A. (2012). Individual investor biases: a segmentation analysis. *Qualitative Research in Financial Markets*, 4(1), 6–25. <https://doi.org/10.1108/17554171211213522>
- Karpova, D., & Panova, S. (2018). The study of investment preferences of Russians on individual investment accounts. *Journal of Reviews on Global Economics*, 7(Special Issue), 626–644. <https://doi.org/10.6000/1929-7092.2018.07.58>
- Keloharju, M., Knüpfer, S., & Linnainmaa, J. (2012). Do investors buy what they know product market choices and investment decisions. *Review of Financial Studies*, 25(10), 2921–2958. <https://doi.org/10.1093/rfs/hhs090>
- Kengatharan, L., & Kengatharan, N. (2014). The Influence of Behavioral Factors in Making Investment Decisions and Performance: Study on Investors of Colombo Stock Exchange, Sri Lanka. *Asian Journal of Finance & Accounting*, 6(1), 1. <https://doi.org/10.5296/ajfa.v6i1.4893>
- Khalisharani, H., Sabri, M. F., Johan, I. R., Burhan, N. A. S., & Yusof, A. N. M. (2022). The Influence of Parental Financial Socialisation and Financial Literacy on University Student's Financial Behaviour. *International Journal of Economics and Management*, 16(3), 351–364. <https://doi.org/10.47836/ijeam.16.3.06>
- Korniotis, G. M., & Kumar, A. (2011). DO OLDER INVESTORS MAKE BETTER INVESTMENT DECISIONS ? Author (s): George M . Korniotis and Alok Kumar Source : The Review of Economics and Statistics , February 2011 , Vol . 93 , No . 1 (February Published by : The MIT Press Stable URL : [https://www.js. The Review of Economics and Statistics, 93\(1\), 244–265](https://www.js. The Review of Economics and Statistics, 93(1), 244–265).
- Koropp, C., Kellermanns, F. W., Grichnik, D., & Stanley, L. (2014). Financial Decision Making in Family Firms: An Adaptation of the Theory of Planned Behavior. *Family Business Review*, 27(4), 307–327. <https://doi.org/10.1177/0894486514522483>
- Madaan, G. (2016). Behavioral Biases In Financial Decision Making Geetika Madaan Sukheja Mohali Introduction Abstract. *International Journal Of Marketing, Financial Services & Management Research*, 5(5), 60–69.
- Nagpal, R., Singh, P., Angra, P. K., Cheema, G. S., & Rehman, M. (2024). Wearable Computing: Canonical Correlation Analysis (CFA) Statistical Method to Validate the Measurement Models Smart Ergonomic Shoes. *International Journal of Intelligent Systems and Applications in Engineering*, 12(17s), 404–408.
- Nga, J. K. h., & Ken Yien, L. (2013). The influence of personality trait and demographics on financial decision making among Generation Y. *Young Consumers*, 14(3), 230–243. <https://doi.org/10.1108/YC-11-2012-00325>
- Oberoi, S., Kansra, P., & Gupta, S. L. (2022). A Systematic Review on Determinants Inciting Sustainable E-Medical Tourism. *International Journal of Reliable and Quality E-Healthcare*, 11(2), 1–13. <https://doi.org/10.4018/IJRQEH.299962>
- Ozili, P. K. (2022). Embedded finance: assessing the benefits, use case, challenges and interest over time. *Journal of Internet and Digital Economics*, 2(2), 108–123. <https://doi.org/10.1108/jide-05-2022-0014>
- Özmen, O., & Sümer, Z. H. (2011). Predictors of risk-taking behaviors among Turkish adolescents. *Personality and Individual Differences*, 50(1), 4–9. <https://doi.org/10.1016/j.paid.2010.07.015>
- Parmitasari, R. D. A., Syariati, A., & Sumarlin. (2022). Chain Reaction of Behavioral Bias and Risky Investment Decision in Indonesian Nascent Investors. *Risks*, 10(8). <https://doi.org/10.3390/risks10080145>
- Ratnawati, Sudarmiatin, Soetjipto, B. E., & Restuningdiah, N. (2022). the Role of Financial Behavior As a Mediator of the Influence of Financial Literacy and Financial Attitudes on Msmes Investment Decisions in Indonesia. *Journal of Social Economics Research*, 9(4), 193–203. <https://doi.org/10.18488/35.v9i4.3231>
- Raut, R. K., & Kumar, R. (2018). Investment Decision-Making Process between Different Groups of Investors: A Study of Indian Stock Market. *Asia-Pacific Journal of Management Research and Innovation*, 14(1–2), 39–49. <https://doi.org/10.1177/2319510x18813770>
- Rehman, M., Dhiman, B., Kumar, R., & Cheema, G. S. (2023). *Exploring the Impact of Personality Traits on Investment Decisions of Immigrated Global Investors with Focus on Moderating Risk Appetite : A SEM Approach*. 8984(August), 95–110.
- Rehman, M., Dhiman, B., Nguyen, N., Dogra, R., & Sharma, A. (2024). *Behavioral Biases and Regional Diversity : An In-Depth Analysis of Their Influence on Investment Decisions - A SEM and MICOM Approach*. 4(2), 70–85.
- Rehman, M., & Dhiman, D. B. (2022). To Study the Impact on the Perception of Banking Customers toward E-

- Banking (A Case Study of Jk Bank Customers). *Journal of Corporate Finance Management and Banking System*, 26, 10–20. <https://doi.org/10.55529/jcfmbs.26.10.20>
- Rekunenko, I., Zhuravka, F., Nebaba, N., Levkovych, O., & Chorna, S. (2022). Assessment and forecasting of Ukraine's financial security: Choice of alternatives. *Problems and Perspectives in Management*, 20(2), 117–134. [https://doi.org/10.21511/ppm.20\(2\).2022.11](https://doi.org/10.21511/ppm.20(2).2022.11)
- Rodriguez, J., & Lawrence, E. R. (2019). Institutional Investment Patterns in Gender-Diverse Firms. *Journal of Behavioral Finance*, 20(4), 437–450. <https://doi.org/10.1080/15427560.2019.1554574>
- Rotaru, K., Kaley, P. S., Yadav, N., & Bossaerts, P. (2021). Transferring cognitive talent across domains to reduce the disposition effect in investment. *Scientific Reports*, 11(1), 1–9. <https://doi.org/10.1038/s41598-021-02596-2>
- Sabir, S. A., Mohammad, H. Bin, & Shahar, H. B. K. (2019). The role of overconfidence and past investment experience in herding behaviour with a moderating effect of financial literacy: Evidence from pakistan stock exchange. *Asian Economic and Financial Review*, 9(4), 480–490. <https://doi.org/10.18488/journal.aefr.2019.94.480.490>
- Sarwar, A., & Afaf, G. (2016). A comparison between psychological and economic factors affecting individual investor's decision-making behavior. *Cogent Business and Management*, 3(1). <https://doi.org/10.1080/23311975.2016.1232907>
- Su, L., Peng, Y., Kong, R., & Chen, Q. (2021). Impact of e-commerce adoption on farmers' participation in the digital financial market: Evidence from rural china. *Journal of Theoretical and Applied Electronic Commerce Research*, 16(5), 1434–1457. <https://doi.org/10.3390/jtaer16050081>
- Tian, G. (2022). Influence of Digital Finance on Household Leverage Ratio from the Perspective of Consumption Effect and Income Effect. *Sustainability (Switzerland)*, 14(23). <https://doi.org/10.3390/su142316271>
- Viscusi, W. K., Phillips, O. R., & Kroll, S. (2011). Risky investment decisions: How are individuals influenced by their groups? *Journal of Risk and Uncertainty*, 43(2), 81–106. <https://doi.org/10.1007/s11166-011-9123-3>
- Zhou, J., & Xiao, T. (2018). Analyzing Determinants of Household Financial Decision-Making: Household Stock Investment in China. *Emerging Markets Finance and Trade*, 54(15), 3385–3400. <https://doi.org/10.1080/1540496X.2018.1474736>