Financial Literacy, Behavioral Biases and Risk Perception: Evidence from the London Stock Exchange

Syed Jawad Ali Kazmi[1*], Faisal Siddiqui[2], Muhammad Irfan[1], Sikandar Khalil Ishaq[1], Murtaza Ahmed[3]

ABSTRACT

The study's primary objective is to analyze the impact of Financial Literacy on the behavioral biases of individual investors mediated by risk perception, evidence from the London Stock Exchange. Utilizing data gathered from 458 LSE investors, the study validates that FL dramatically lowers BB by raising RP. The results show that financially knowledgeable investors are more suited to evaluate risks precisely, thereby reducing prejudices such as loss aversion, overconfidence, and anchoring. RP converts financial information into more logical investing choices as a vital intermediary. Emphasizing the need for focused financial education programs to improve investor decision-making, the study helps behavioral finance by offering empirical data from one of the most powerful financial markets worldwide. Although the cross-sectional character of the study restricts causal inference, the findings provide insightful analysis for legislators, financial institutions, and teachers trying to create more stable and efficient markets by raising financial literacy.

Keywords: Financial Literacy; Behavioral biases; Risk perception; London Stock Exchange

1. INTRODUCTION

The intricacy of the factors influencing investors' decisions has piqued the curiosity of many in the area of behavioral finance (Almansour et al., 2023). Good financial management depends on wise investment decisions, but because of things like market dynamics, risk assessment, and regulatory frameworks, they are also somewhat difficult. This intricacy explains why it is so crucial to grasp the special contribution of the London Stock Exchange (LSE) in financial decision analysis. The

[1] Riphah International University, Islamabad
[2] Air University School of Management Air University, Islamabad.
[3] Foundation University, Islamabad
[*]Corresponding author's E-mail: jawad.kazmi@riphah.edu.pk
This is an open-access article. Available Online: 12-02-2025

London Stock Exchange has expanded to become one of the most well-known and oldest financial markets worldwide since its founding in 1801. Having grown over the years, it is now a central center for bonds, derivatives, equities, and ETFs exchanged under trade-through policies. The London Stock Exchange distinguishes itself from other stock markets in part by including both conventional wisdom and fresh, creative ideas. Represented in numerous worldwide indices, the LSE is a major player in the complex network of world financial markets. Before making big financial commitments, the London Stock Exchange is the best location to finish your research. The LSE's influence on the world financial system adds even greater relevance to this institution. Given its global market, it is a consistent indication of more general trends, difficulties, and prospects. Familiarizing oneself with the London Stock Exchange as a case study in investment decision-making will help investors, analysts, and legislators in the dynamic and linked financial markets of today.

Investment decisions are heavily influenced by behavioral biases (BB), which may deviate from reasonable financial conduct. These prejudices include overconfidence, anchoring, herd behavior, loss aversion, and recency bias, which could result in less-than-ideal investing decisions (Barberis & Thaler, 2003; Kahneman & Tversky, 2013). Making wise financial selections depends on an awareness of and respect for these prejudices. Reducing these prejudices mostly depends on financial literacy (FL), that is, the capacity to grasp and apply several financial skills (Lusardi and Mitchell, 2007). The value of FL has increased as financial products get more complicated, as it will let investors negotiate the complexity of financial markets (Schwarcz, 2009).

Along with improving one's capacity to make wise financial decisions, FL greatly influences risk perspective. Higher financial literacy investors see hazards more precisely, which influences their investment plans (Van Rooij et al., 2011). This awareness of risk perception (RP) is essential in determining investor behavior and hence lowering irrational decision-making motivated by behavioral prejudices (Ritter, 2003). FL enables investors to properly balance possible risks and benefits by means of a more precise evaluation of hazards, therefore guiding more logical investment decisions.

With its lengthy legacy and a major influence on world financial markets, the LSE offers a great case study to investigate these ideas. This study intends to investigate if FL influences personal investors' prejudices and ascertain whether risk perception

moderates the link between FL and individual investor behavior. Based on LSE empirical data, the European market takes the stage. By filling in knowledge on the interaction among FL, BB, and RP in the framework of a significant financial market, this study makes a significant addition to the body of knowledge. For financial institutions, legislators, and investors, it will offer insightful analysis to help promote market stability and enhance investment decisions.

2. THEORY AND LITERATURE:

2.1 Behavioral Finance Theory

Behavioral finance emphasizes the need for risk perception in investment decisions, by means of which risk perception moderates the link between FL and BB. A more accurate risk assessment resulting from better financial knowledge can help to lower prejudices in investment behavior. Emphasizing their connection in decision-making, Sitkin and Pablo's (1992) Comprehensive Model of Risk Behavior combines risk propensity and risk perception in supporting this point of view. By investigating how FL affects these elements and mediates their impact on BB, the present study can extend this model. Furthermore, Leković (2019) Behavioral Asset Pricing Model (BAPM) combines BB into conventional asset pricing models, therefore offering a structure to grasp how biases influence market results and investment decisions. Grounding the study in Behavioral Finance Theory helps the research to properly address how FL and RP affect the behavioral biases of individual investors, therefore providing an insightful analysis of the decision-making procedures inside the LSE.

Figure 1: *Theoretical Framework*

2.2 Financial Literacy and Behavioral Biases of Individual Investors

Individual investors' investing decisions are highly influenced by their behavioral prejudices, which may deviate from logical conduct as expected by conventional financial theory. Among these prejudices are overconfidence, in which investors overestimate their expertise and predictive capacity; anchoring, in which people base mostly on the first information when making judgments; and herd behavior, in which

investors follow the activities of a greater group instead of their own analysis. Other typical biases are recency bias, in which recent events disproportionately affect investment decisions, and loss aversion, in which the fear of losses results in poor decision-making (Barberis & Thaler, 2003; Kahneman & Tversky, 2013).

By improving investors' knowledge and handling of financial goods and decisions, FL greatly helps to reduce these BB. Personal financial management, budgeting, and investing are among the several financial skills that one may grasp and apply with FL. Lusardi and Mitchell (2007) underlined the growing relevance of FL because of the increasing complexity of financial products and the crucial family financial decisions taken. Calvet et al. (2007) observed that the introduction of creative financial products has motivated individual investors to engage more actively in financial markets, therefore requiring a higher degree of FL to properly negotiate these complicated instruments.

Researchers such as Lusardi and Mitchell (2014) and Alan et al. (2017) have underlined that financial literacy covers a wide spectrum of financial services, administration of financial investments, and an awareness of financial terminologies, therefore decreasing asymmetrical information problems. By improving their capacity to understand and evaluate financial risks more precisely, FL directly influences the behavioral biases of individual investors by lowering the effect of cognitive biases, including representativeness, overconfidence, anchoring, and availability bias on their investment decisions. This suggests the following theory.

H_1: Financial literacy is significantly related to the behavioral biases of individual investors.

2.3 Mediating Role of Risk Perception

Behavioral finance has produced a lot of studies on the link between one's risk preferences and actual risk-taking behavior. Sitkin and Pablo (1992) offered a thorough theoretical framework to help explain the differences in risky behavior and choice. They contended that clusters of events affect decision-makers, a component sometimes disregarded in studies on decision-making, which results in erroneous findings on the motivation of dangerous action. The three personal factors most significantly correlated with risk-taking, according to Sitkin and Pablo (1992), are risk inclination, risk perception, and risk propensity.

Sitkin and Pablo (1992) define risk propensity as the disposition to take risks; risk perception is the subjective assessment of a danger's degree and likelihood. Risk

preference captures a person's inclination toward taking chances. These elements interact subtly to affect decision-making. People with high-risk propensity and low-risk perception, for example, may participate in dangerous conduct, whereas those with high-risk perception may avoid risk even if they have a high-risk propensity. Sitkin and Weingart (1995) underlined in their empirical validation of the model the mediating functions of risk attitude and risk propensity. Their results confirm the theory that these elements are very important for risk-taking behavior, but they also underline the necessity of more thorough validation of these links by more extensive empirical study with bigger and more varied samples. While Sitkin and Pablo's (1992) emphasis on organizational contexts contrasts with this study's (similar) concentration on risk behavior in family financial decision-making.

Managing and comprehending risk depends critically on FL. Personal financial management, budgeting, and investing are among the several financial skills that one must be able to grasp and use (Lusardi & Mitchell, 2007). It helps people to make wise decisions and better evaluate the dangers associated with financial goods. Research by Calvet et al. (2007) and Lusardi and Mitchell (2014) underline the growing relevance of FL in the framework of ever-complicated financial markets. Improved risk assessment and, thus, more logical financial conduct follow from higher FL. There is clear evidence linking RP to FL. Those who are financially educated are more suited to assess the risks connected to various investment choices, thereby resulting in more accurate risk perception (Van Rooij et al., 2011). This knowledge helps to moderate excessive risk-taking behavior resulting from misunderstood risk levels, either too aggressive or too cautious. Therefore, FL is rather important in determining risk attitude and, hence, investing behavior.

Financial conduct is much influenced by RP itself. It affects a person's decision-making process by means of their evaluation of the possibility of loss in any given circumstances (Ritter, 2003). More reasonable and well-considered investment decisions follow from accurate risk perception, allowing investors to more effectively weigh possible risks and benefits. Misperceptions of risk can cause behavioral biases like overconfidence and loss aversion, which greatly influence financial decisions (Kahneman & Tversky, 2013). By arming investors with the knowledge and tools required to better grasp and analyze the risks connected with different investment alternatives, thereby enabling more accurate and informed evaluations of possible financial outcomes and hence impacting risk perception. Thus, the following hypothesis is proposed.

H_2: Financial literacy is significantly negatively related to risk perception.

The interaction of RP and BB clarifies even more the difficulties of financial decision-making. BB includes overconfidence, anchoring, herd behavior, and loss aversion can alter RP, therefore affecting investing decisions (Barberis & Thaler, 2003). By means of a better knowledge of financial ideas and risk management strategies, FL helps to reduce these prejudices by promoting more logical investing behavior (Waweru et al., 2014). FL has been shown in several studies to influence household financial decisions. Higher FL, for example, has been demonstrated by Bernheim et al. (2001), Lusardi and Mitchell (2007), and Disney and Gathergood (2013) to provide improved financial results and lower sensitivity to cognitive biases. More thorough data is still needed, though, to properly grasp the interactions between financial literacy, education, and financial behavior (Hung et al., 2009).

Given China's expanding financial sector and varied investment possibilities, FL is a vital topic of research in international settings (Liao et al., 2017; Niu et al., 2020). Studies conducted in several cultural and economic contexts, such as those by Abreu and Mendes (2010) in Portugal, Almenberg, and Widmark (2011) in Sweden, offer insightful analysis of how FL shapes financial behavior across many markets. By influencing how investors view and react to possible hazards, RP develops behavioral prejudices that affect their decision-making process and result in biases, including overconfidence or loss aversion, therefore impacting their investing behavior. This suggests the following theory.

H₃: Risk perception is significantly positively associated with behavioral biases of individual investors.

Between FL and BB, RP is a vital mediator that shapes people's processing and acting upon financial information. More informed decision-making results from FL tools for investors to correctly recognize and assess financial risks (Lusardi & Mitchell, 2007). Still, this information is turned into conduct via risk perception. Higher FL investors are usually better at evaluating risks, which can either help to reduce or aggravate BB (Van Rooij et al., 2011). Accurate RP, for example, can moderate overconfidence and result in more measured and balanced investment plans (Kahneman & Tversky, 2013). On the other hand, even well-informed investors might be prone to prejudices like loss aversion or anchoring if RP is distorted or false (Barberis & Thaler, 2003). Therefore, RP impacts how these tools are used in practice, therefore influencing the degree and kind of BB noticed in investment decisions, even as FL offers the skills for improved financial management. RP mediates the link between FL and BB in individual investors as

better financial literacy increases the accuracy of risk assessment, which in turn affects the degree of BB effect on investing decisions. Thus, the following hypothesis is proposed.

H₄: The relation between financial literacy and behavioral biases of individual investors is mediated by risk perception.

3. METHODOLOGY

3.1. Research Design

With an eye on RP as a mediator, this paper uses a quantitative research approach to investigate how FL affects the BB of individual investors. Data is gathered using a cross-sectional survey approach, which lets participants' snapshot information be gathered at one single moment. With hypotheses developed grounded on current theories and actual data, the deductive approach will direct the investigation. SPSS 21 is used for statistical analysis, looking at the links between BB, RP, and FL.

3.2. Data Collection and Analysis

Mostly from original sources, data is gathered by means of a standardized questionnaire sent to individual investors LSE trades with. The sample was guaranteed to be representative of the target population by use of a convenience probability sampling technique. Likert scale items covering 1 (Strongly Disagree) to 5 (Strongly Agree) abound on the survey. Respondents choose answers that most accurately capture their own ideas and experiences. The researcher stays away from influencing answers during data collection to reduce bias. 720 replies in all were requested, of which 458 were of use.

3.3. Measure of Variables

Every measuring instrument utilized in this research originates from already-existing, validated scales with minor changes to make them relevant to the present study. Using five items scored on a Likert scale from 1 (very poor knowledge) to 5 (very high knowledge), Selim and Aydemir (2014) created an FL measure.

A five-point Likert scale adapted from Ghaffar & Sharif (2016) examined RP. BB, including representativeness, overconfidence, anchoring, and availability, was evaluated using the Kimeu et al. (2016) scale. There are 25 items on the measure, scored on a Likert scale with choices ranging from 1 (strongly disagree) to 5 (strongly agree).

4. DATA ANALYSIS AND RESULTS

Table 1: *Descriptive Statistics*

Variables	N	Minimum	Maximum	Mean	Std. Deviation
FL	458	1.00	3.41	2.1534	.92262
RP	458	2.84	4.84	3.7731	.63966
BB	458	2.73	4.05	3.3498	.39957

Table 2 *One One-Way ANOVA*

Demographics	RP		BB	
	F-Statistics	P Value	F-Statistics	P Value
Gender	4.699	0.32	0.302	.585
Age	11.430	0.0000	54.576	0.0000
Qualification	26.472	0.0000	69.567	0.0000
Job Experience	12.301	0.0000	58.250	0.0000
Income	11.277	0.0000	8.128	0.0000

Table 3: *Reliability Statistics*

Items	Cronbach's Alpha
FL	.903
RP	.794
BB	.812

Consolidated in Table 4.4, the reliability analysis shows the consistency of the measuring scales applied in this investigation. For FL, RP, and BB of Individual Investors, the Cronbach's Alpha values are 0.903, 0.794, and 0.812, respectively. These results show great internal consistency and dependability of the scales as they exceed the generally agreed standard of 0.70 for social scientific research.

Particularly, the FL scale, with an alpha of 0.902, shows outstanding dependability and implies that the items regularly assess financial literacy. Good dependability is also shown by the RP scale, with an alpha of 0.793, and the BB scale, with an alpha of 0.811, therefore showing that the items properly reflect risk perception and behavioral biases. These excellent dependability ratings guarantee that the data gathered with these scales are consistent and fit for further investigation.

Table 4: *Correlation Matrix*

Variables	FL	RP	BB
FL	1		
RP	-.479**	1	
BB	.023	.166*	1

Note: *, **, and*** denotes significance level at 10%, 5%, and 1% respectively

Table 5: *Regression Analysis*

Variable	Coefficient (β)	SE	t-value	p-value	Remarks
IV to Mediator (a path)					
FL ⟶ RP	-.3323	.0422	-7.8716	0.000	Accepted
Mediator on DV (b path)					
RP ⟶ BB	.1438	.0484	2.9670	.0034	Accepted
Direct Effect of IV on DV (c path)					
FL ⟶ BB	.0578	.0336	1.7193	0.087	Accepted
Bootstrap results for Indirect Effect (c` path)					
	Indirect Effect	**SE**	**LLCI**	**ULCI**	
FL ⟶ RP ⟶ BB	-.0478	.0178	-.0853	-.0147	Accepted

**. Correlation is significant at the 0.01 level (2-tailed).

Level of Confidence for Confidence Interval

Number of Bootstrap Resamples: 5000

After that, the relevance of the anticipated correlations was evaluated using 5,000 samples using the bootstrapping method.

According to our hypothesis H1, the regression analysis supports "Financial literacy is significantly related to behavioral biases of individual investors," important new understanding of the interactions among FL, RP, and BB among individual investors. The results confirm the hypothesis H1 that BB ($\beta = 0.0578$, $p < 0.10$) is favorably affected by FL. This is in line with other research stressing the need for FL in reducing illogical investing practices (Lusardi & Mitchell, 2014; Van Rooij, Lusardi, & Alessie, 2011). By arming investors with the required information to make wise judgments, FL helps to lower the possibility of allowing prejudices like overconfidence and representativeness to rule. By means of thorough investor education programs and interactive financial tools to address common biases such as overconfidence and herd behavior, the LSE can improve investor outcomes, given the notable positive correlation between financial literacy, FL, and BB. Coupled with open communication about market patterns and dangers, regular seminars and workshops, including behavioral finance specialists, can help to further reduce these biases. Crucially is also embedding behavioral insights into financial goods, pushing for favorable laws and rules, and funding continuous study to grasp and eliminate changing prejudices. These steps will enable investors to make better judgments, therefore promoting a steadier and effective financial market on the LSE.

Furthermore, supporting our hypothesis H2: "Financial literacy is significantly negatively related to risk perception" are the regression findings showing a noteworthy negative link between FL and RP ($\beta = -0.3323$, $p < 0.001$). corresponds with the results of Guiso and Paiella (2008), who claim that financially savvy people are better at evaluating and controlling hazards, thus reducing the apparent dangers. Implementing many industrial implications would help the LSE boost investor confidence and decision-making, considering the notable negative correlation between FL and RP. The LSE should provide thorough FL initiatives stressing risk management and evaluation, thereby enabling investors to fairly see and appraise market risks. Providing interactive tools and resources such as risk calculators and instructional courses helps investors to be educated decision makers. Frequent seminars and workshops with risk management professionals help investors to recognize and reduce risks. Furthermore, lowering unwarranted risk aversion is by including risk management insights into financial products and offering open, clear communication on possible market hazards. The LSE can build a more educated, confident, and resilient investor base by pushing for supporting laws and rules that advance FL and continuous RP research, therefore helping to contribute to market stability and efficiency.

As shown by the favorable link between RP and BB ($\beta = 0.1438$, $p < 0.01$), this decrease in RP subsequently influences their investment activities. The studies confirm hypothesis H3: "Risk perception is significantly positively associated with behavioral biases of individual investors." These findings highlight how closely financial knowledge shapes RP, which in turn shapes investing behavior in turn. The LSE can take numerous actions to reduce the BB of individual investors and enhance investor decision-making, considering their strong positive correlation. The LSE should create and support advanced risk education initiatives, especially addressing the prevalent behavioral biases impacted by misperceived risks, like overconfidence and loss aversion. By use of interactive tools and resources such as risk simulators and bias awareness courses, investors may better control and grasp their risk impressions. Regular seminars and workshops featuring behavioral finance professionals help investors learn even more about the psychological sides of risk and decision-making. To further lower misunderstandings, the LSE may also include behavioral insights into financial products to assist investors in negotiating their prejudices and provide clear, open information on market risks. The LSE can promote a more logical, educated investor base by supporting laws that support FL and continuous study on the link between RP and behavioral prejudices, hence improving market stability and efficiency.

Confirming the mediation hypothesis (H4), risk perception seems to be the mediator between BB and FL. Nonetheless, a complex knowledge of the interaction between these factors is given by the indirect effect of FL on behavioral biases through RP ($\beta = -0.0478$, $p < 0.05$). Although financial knowledge directly influences BB, RP mediates much of this effect. The results of Detthamrong et al. (2017), who also found RP as a crucial mediator in financial decision-making procedures, match this partial mediation. The result underlines hypothesis H4: "The relation between the financial literacy and behavioral biases of individual investors is mediated by risk perception". RP mediates the link between FL and BB of individual investors, so the LSE can carry out focused actions to improve investor behavior and market results. The LSE should give thorough FL initiatives, which not only teach investors about financial ideas but also stress the correct RP top priority. Interactive seminars, risk assessment instruments, and instructional courses stressing how RP shapes investing decisions and behavioral biases can all be part of these events. Through real-time market data and analytics, the LSE can enable investors to better grasp and analyze market risks, hence lowering prejudices such as overconfidence and herd behavior. Including behavioral finance ideas into financial goods and services can also help consumers make more wise and well-balanced judgments. Further improving the

efficacy of these programs is advocacy for laws supporting continuous financial education and investigation into the interaction between FL, RP, and BB. Through addressing the mediating function of risk perception, the LSE can build a better-informed and rational investor base, therefore supporting a more stable and efficient market. With an R-Square value of 0.2295, FL and RP taken together help to explain around 22.95% of the diversity in behavioral biases.
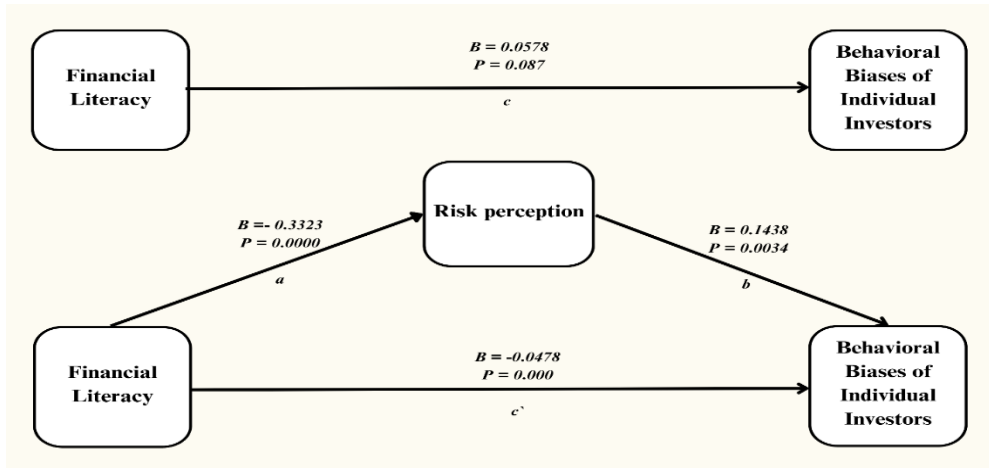
Figure 2: *Summary of Results*

Notables are also contradictions with earlier research. For example, Barber and Odean's (2001) study showed that FL did not always lower the typical BB, overconfidence. various approaches of FL and RP, or various sample characteristics, might be the causes of this difference. Moreover, the research by Glaser and Weber (2007) shows that under some market situations, even financially intelligent people might show notable prejudices, implying that other elements could potentially be involved.

5. CONCLUSION, POLICY IMPLICATIONS AND LIMITATIONS

Behavioral finance has attracted a lot of attention in the subject of the complexity of elements affecting investors' actions, especially in relation to the LSE, a well-known financial market since 1801. This study, which emphasizes the use of the LSE as a case study, has looked at the interactions of FL, BB, and RP among individual investors. The results confirm that FL greatly lowers RP, which lowers BB and promotes more logical investment choices. RP's mediation effect emphasizes its indispensable importance in converting financial information into sensible investing

strategies. Improved FL helps investors to better evaluate and control risks, so lowering the frequency of prejudices like representativeness, overconfidence, anchoring, and availability.

Encouragement of financial literacy initiatives can help investors to better grasp financial markets and risk management, hence reducing BB and strengthening decision-making. By precisely assessing the risks connected with investments, FL greatly lowers RP and helps investors to make more reasonable decisions. Financial education helps investors match their views with their financial goals by addressing the mediating function of RP, therefore promoting more educated and strong investing behavior. To guarantee easily available and successful FL programs, cooperation among financial institutions, authorities, and educational institutions is vital. Constant assessment and program modification will help to keep these initiatives relevant and efficient in handling changing investor behavior and market problems.

Like all studies, this one has numerous restrictions. Suggesting that longitudinal studies are essential to follow these interactions over time, the cross-sectional design restricts the capacity to infer causation between FL, RP, and BB. The reliance on self-reported data exposes possible biases like social desirability and erroneous self-assessment, thereby suggesting the necessity of more objective assessments of FL and RP in further studies. The generalizability of the results is limited by the sample, maybe not completely reflect the varied population of LSE investors. More diversity and breadth of sample would improve representation. Furthermore, the exclusive attention on the LSE implies that the results might not be immediately relevant to other financial markets with distinct architecture and investor behavior. Comparative research across several marketplaces will help to offer a more complete knowledge. Lastly, even if the study reveals important linkages and mediating effects, it does not investigate other moderating factors, including investor experience or market circumstances, which can affect these dynamics. These elements should be included in further studies to offer a more complex knowledge of the interaction among FL, RP, and BB.

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