

# A Study on Influence of Overconfidence Bias and Financial Risk Perception on Stock Investment Decision-Making

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**Abstract:** *Investor behavior in financial markets is frequently influenced by factors beyond reason, according to classic economic theories. Behavioral finance has emphasized the influence of psychological elements and perceptions on financial decision-making. This study investigates the impact of overconfidence bias and financial risk perception on stock investment decisions among individual investors in India. Overconfidence bias denotes investors' propensity to overrate their expertise and forecasting skills, whereas financial risk perception encompasses the subjective assessment of market uncertainty. Both notions are crucial in influencing investment decisions, especially in emerging countries with growing retail involvement. The study used a quantitative research design, gathering primary data using a structured questionnaire distributed to 700 individual investors across diverse age groups, genders, and investment experience levels. Descriptive statistics were employed to examine demographic distributions, and inferential analysis was performed using simple linear regression to evaluate the hypotheses. The findings indicate that overconfidence bias has a substantial and statistically significant favorable effect on stock investment decision-making. Perception of financial risk exerts a substantial positive influence, suggesting that investors' subjective assessments of risk shape their trading actions. The results highlight the significant influence of behavioral biases on investment behavior and provide practical consequences for investors, advisors, and legislators. Improving financial literacy and incorporating behavioral insights into advisory and regulatory frameworks might promote more rational, informed, and sustainable investment behaviors in the Indian stock market.*

**Keywords:** Overconfidence bias, financial risk, investment decision, Behavioral Finance, Investors

## I. INTRODUCTION

Investment decision-making has always captivated researchers, practitioners, and policymakers due to its crucial influence on individual financial results and the general stability of capital markets. Historically, the efficient market hypothesis (EMH) and other classical economic theories have posited that investors are rational agents who systematically analyze all available information and make decisions aimed at maximizing their utility. Nonetheless, mounting research from behavioral finance contests this perspective, emphasizing that psychological biases and subjective perceptions profoundly affect financial decision-making. In this context, overconfidence bias and financial risk perception have emerged as two critical predictors of investor behavior in stock markets (Naseer Haidari, 2023). Overconfidence bias denotes the propensity of individuals to exaggerate their knowledge, capabilities, and the precision of their assessments. In investment situations, overconfident investors frequently assume they can forecast market movements more accurately than others, resulting in increased trading frequency and heightened risk-taking. Although this may occasionally produce immediate benefits, overconfidence frequently leads to inferior investment choices, inadequate portfolio diversification, and enduring financial detriment. The incidence of overconfidence among investors has intensified in the digital era, when the extensive accessibility of financial information via internet platforms and social media can exacerbate biased assessments (Bregu, 2020).



In addition to overconfidence, the perception of financial risk significantly influences investment behavior. Risk perception is fundamentally subjective, since investors interpret and react to market uncertainty variably, influenced by their individual experiences, knowledge, and psychological disposition. Some investors may regard high-risk opportunities as appealing prospects for possible profits, while others may consider them as risks to financial stability. Research indicates that risk perception mediates the connection between cognitive biases and investing decisions, rendering it an essential element for comprehending behavioral patterns in financial markets (Abdin et al., 2022).

In emerging markets such as India, where retail involvement in stock trading has significantly increased over the past decade, the interaction of behavioral biases and risk perception necessitates further scrutiny. The growing availability of internet trading platforms, along with increased exposure to financial news and social media discourse, has amplified both opportunities and threats for ordinary investors. Young and inexperienced investors are particularly susceptible to biases and misperceptions of risk, which can substantially affect their long-term financial results. Consequently, examining the impact of overconfidence bias and financial risk perception on stock investment decision-making is crucial for fostering responsible investing and ensuring market efficiency.

### **Problem statement**

Investor behavior in financial markets is frequently presumed to be rational; nevertheless, empirical findings from behavioral finance demonstrate that cognitive biases and subjective perceptions substantially affect decision-making. Overconfidence bias and financial risk perception are two essential aspects influencing stock investment behavior. Overconfidence frequently causes investors to overrate their expertise and skills, leading to excessive trading, inadequate diversification, and increased risk exposure. Financial risk perception similarly affects investors' interpretation of uncertainty, influencing their propensity to engage in risk-taking or to adopt conservative tactics. In India, retail engagement in stock markets has surged significantly owing to computerized trading platforms and enhanced accessibility to financial information. However, limited research has systematically examined the combined impact of overconfidence and risk perception on stock investment decisions in the Indian context. Understanding these behavioral determinants is essential for fostering informed decision-making and ensuring the stability and efficiency of capital markets.

### **Objectives**

- To evaluate impact of overconfidence bias on stock investment decision-making of individuals.
- To evaluate effect of financial risk perception on stock investment decision-making of individuals.

### **Hypothesis**

- $H_01$ : Overconfidence bias does not significantly impact on the stock investment decision-making of individuals.
- $H_02$ : Financial risk perception does not significantly effect on the stock investment decision-making of individual investor.

## **II. LITERATURE REVIEW**

(Sathya & Prabhavathi, 2024) The increased use of social media platforms for financial information and advise has raised worries about their influence on investing decisions. This study investigated the impact of behavioral biases and risk perception on investing decisions, with a particular emphasis on the role of social media in changing these variables. To do this, a thorough examination of the current research was conducted to determine the effects of social media on investment decisions, including its impact on behavioral biases and risk perception. Furthermore, data were gathered through an online poll of individual investors who used social media for investment-related information and guidance. The poll looked at participants' financial decisions, cognitive biases, risk perceptions, and the impact of social media on these factors. The study provided useful insights into how social media influenced investing decisions, as well as a deeper knowledge of behavioral biases and risk perception in this setting. The findings revealed that individual



investors' investment behaviors and views were significantly influenced by social media. It was observed to exacerbate behavioral biases such as herd mentality and overconfidence, as well as alter risk perception. The report also underlined the importance of efficient social media management in order to make educated investment decisions. These findings seek to help individual investors better understand the effects of social media on their financial behaviour, as well as to give policymakers and financial regulators with valuable implications for formulating recommendations for the responsible use of social media in the investing arena.

**(Jain et al., 2023)** Over the last two decades, there has been a major surge in research on behavioral biases, driven mostly by rising academic interest and a desire to publish findings. This study looked at how risk perception affected the link between heuristic biases and individual equity investors' decisions. It used Partial Least Square Structural Equation Modelling (PLS-SEM) to analyze survey data from 432 individual equities investors who trade on India's National Stock Exchange (NSE). The findings showed that risk perception influenced the link between overconfidence bias, availability bias, gamblers' fallacy bias, and anchoring bias in investment decision-making. However, it completely mediated the link between representativeness bias and investment decision-making. The study shed light on different behavioral biases seen among capital market participants, including individual equity investors, financial advisors, and policymakers. While the study focused primarily on individual equity investors' cognitive biases, it noted that various other factors could influence their investment decisions, which was deemed a shortcoming of the study.

**(Almansour et al., 2023)** The purpose of this study was to investigate how behavioural finance features influenced investment decisions in the Saudi equities market, with risk perception serving as a mediating variable. A digital survey was distributed to 150 individual investors, and 134 replies were received and processed for analysis. Structural Equation Modelling (SEM) was used to analyze the data. The data showed that herding, disposition effect, and blue chip bias all had a significant favorable impact on risk perception. Overconfidence had a significant positive influence primarily on investment decision-making, but not on risk perception. A significant positive link was discovered between risk perception and investment decision-making. The four behavioural finance characteristics had a large and positive indirect effect on investment decision-making via risk perception. This study was conducted in a specific cultural setting—Saudi Arabia—so its conclusions may not be applicable to other cultural contexts. Furthermore, the study only looked at four behavioural finance characteristics, recognizing that other factors may influence risk perception and investing decisions. The findings highlighted the necessity of taking into account individual risk perception when making investing decisions, as it had a considerable impact on risk-taking tendencies and, ultimately, portfolio success. The study suggested that investors should be aware of their behavioral biases, and advisors and policymakers should devise measures to limit their effects.

**(Hasan et al., 2023)** The study sought to investigate the impact of heuristic biases on financial decision-making, with a particular emphasis on availability bias, anchoring and adjustment, overconfidence, and representativeness. It also aimed to suggest investing recommendations based on its results. A quantitative approach was used, with correlational research as the methodology. The study included a sample size of 343 respondents and used a standardised questionnaire based on previous research. It examined independent variables such as overconfidence, representativeness, availability, and anchoring bias, with investment decision-making as the dependent variable. The findings demonstrated that representativeness and anchoring biases had a considerable impact on people's risk perception, which indirectly influenced their investment decisions. However, the impacts of availability and overconfidence biases on investment decisions based on risk perception were shown to be statistically insignificant. The report suggested prospective ways for improving the implementation of behavioral finance principles.

**(Asadia et al., 2021)** This investigation investigated the influence of managerial overconfidence on investment efficiency in Iranian firms, including the moderating function of cash reserves. The study examined financial data from 91 firms from 2010 to 2018, with an emphasis on all publicly listed companies on the Tehran Stock Exchange, excluding banks, insurance companies, pension funds, and financial intermediaries. The study found a substantial positive correlation between corporate currency holdings and managerial overconfidence by employing multiple regression models on both pooled and panel datasets with fixed effects. Furthermore, it demonstrated that investment efficiency was adversely affected by excessive cash reserves and overconfident management, frequently resulting in overinvestment and inefficiencies. The research conclusions indicated that managerial overconfidence exacerbated the



detrimental impact of excess liquidity on investment decisions. This research made a significant contribution to the behavioral finance literature and provided practical implications for policymakers, investors, and corporate managers in the pursuit of improved investment efficiency through improved governance and behavioral awareness. It was one of the first studies to investigate this relationship in a developing market context.

**(Malik et al., 2019)** This research specifically examined the mediating role of risk tolerance and the influence of overconfidence bias on investment decisions, with a concentration on the significant role of investor psychology in financial decision-making. A structured survey questionnaire, which was validated through a pilot study with a high reliability score ( $\alpha = .911$ ), was employed to collect data from investors at the Islamabad and Lahore stock exchanges through convenience sampling. The response rate was 70%, as 283 of the 400 questionnaires that were disseminated were returned. A positive correlation was observed between investment decisions and overconfidence bias in a linear regression analysis conducted using SPSS 23.00. Additionally, the analysis revealed that risk tolerance acted as a mediating factor in this relationship. The results suggested that investors frequently failed to adhere to rational decision-making due to their overconfidence, which undermined the objectivity of their investment decisions. Nevertheless, the study recognized a number of constraints, such as a comparatively small sample size, restricted generalizability, limited analytical sophistication, and inherent bias in investor responses. The study suggested that longitudinal designs and more sophisticated statistical methodologies be implemented in future research to enhance the robustness and validity of the results.

**(Aini & Lutfi, 2019)** The objective of this investigation was to investigate the impact of risk tolerance, overconfidence, loss aversion, and risk perception on the investment decision-making process of employees in Surabaya and Jombang, East Java. A questionnaire-based survey method was employed to select a total of 400 respondents. The Partial Least Square-Structural Equation Model (PLS-SEM) was implemented to analyze the data. The results indicated that risk perception had a substantial adverse influence on investment decision-making, whereas both risk tolerance and overconfidence had substantial positive effects. Conversely, investment decisions were not significantly influenced by loss aversion. The research offered valuable insights into the manner in which individuals perceive and react to risk in investment contexts and underscored the significance of addressing behavioral biases to facilitate rational financial decision-making.

**(Kansal & Singh, 2018)** This study conducted an exploratory analysis of the demographic factors and investor characteristics that influenced the degree of overconfidence and its components among individual investors. The data was collected using a well-structured questionnaire that concentrated on four critical components of overconfidence: the "planning fallacy," the "better than average effect," self-attribution, and positive illusion. The data was analyzed using statistical techniques such as ordinary least squares regression, ANOVA, and t-tests. The findings indicated that individuals with a preference for large-cap companies, extensive investment experience, shorter investment horizons, frequent investment activity, shared financial responsibilities, more dependents, and higher incomes were more susceptible to overconfidence. Conversely, overconfidence levels were not substantially influenced by demographic variables, including gender, age, and general education level. This research provided a valuable instrument for assessing overconfidence in individual investors and offered insights that are pertinent to market regulators, financial educators, stock advisors, and investors themselves.

#### Research methodology

The study's methodology was created to methodically examine how financial risk perception and overconfidence bias affect individual investors' stock investment decisions. In order to measure the relationships between behavioral constructs and to statistically validate hypotheses, a quantitative research approach was used.

### III. RESEARCH DESIGN

This research employed a descriptive and explanatory approach, with the primary aim of elucidating the degree to which behavioral characteristics, such as overconfidence bias and financial risk perception, impact stock investment decisions. The explanatory design facilitated the establishment of cause-effect linkages between the independent variables (overconfidence bias and financial risk perception) and the dependent variable (stock investment decision-



making). The quantitative method allowed for the acquisition of standardized data and supported the application of regression models for hypothesis testing.

### Population and Sample

The study's target audience comprised individual retail investors actively engaged in the stock markets of India. The sample sought to encompass a diverse range of age, gender, and investment experience, reflecting the increasing trend of stock investment across various age demographics. Data were acquired from 700 individual investors using purposive and convenience sampling methods via a structured questionnaire. The substantial sample size guaranteed sufficient representation and improved the reliability and generalizability of the results.

### Data Collection Procedure

The data for this study were obtained via a standardized, self-administered questionnaire particularly crafted to assess overconfidence bias, financial risk perception, and stock investing decision-making. The questionnaire was disseminated both online and offline to maximize reach and participation from various categories of individual investors. Respondents were chosen through purposive and convenience sample methods, concentrating on retail investors actively engaged in stock market trading. The questionnaire comprised three sections: demographic information (age, gender, and investment experience), behavioral constructs pertaining to overconfidence bias and financial risk perception, and metrics of stock investment decision-making. All topics were framed using a five-point Likert scale, from "Strongly Disagree" (1) to "Strongly Agree" (5), to assess the severity of investors' perceptions and decision-making tendencies.

### Tools and Techniques Used

The gathered data were encoded and input into SPSS version 26.0 for statistical analysis. Descriptive statistics were initially utilized to encapsulate demographic data, encompassing frequency distributions and percentages. Inferential analysis was performed utilizing simple linear regression to evaluate the proposed hypotheses. Regression was selected since it facilitated a direct evaluation of the predictive influence of overconfidence bias and financial risk perception on investment decision-making. The model fit was assessed utilizing R,  $R^2$ , the F-statistic, and significant values ( $p < 0.05$ ).

## IV. RESULTS

This section presents the findings of the study derived from the responses of 700 individual investors in India. The results are categorized into two sections: descriptive statistics and hypothesis testing. The descriptive results delineate the demographic attributes of respondents, encompassing their age, gender, and investment experience, so offering a profile of the sample. The inferential analysis utilizes basic linear regression to assess the influence of overconfidence bias and financial risk perception on stock investment decisions.

**Table 4.1: Age wise distribution of participants**

Age		
	Frequency	Percent
Below 25 years	125	17.9
25 - 34 years	180	25.7
35 - 44 years	153	21.9
45 - 54 years	163	23.3
55 - 64 years	75	10.7
Above 65 years	4	.6
Total	700	100.0

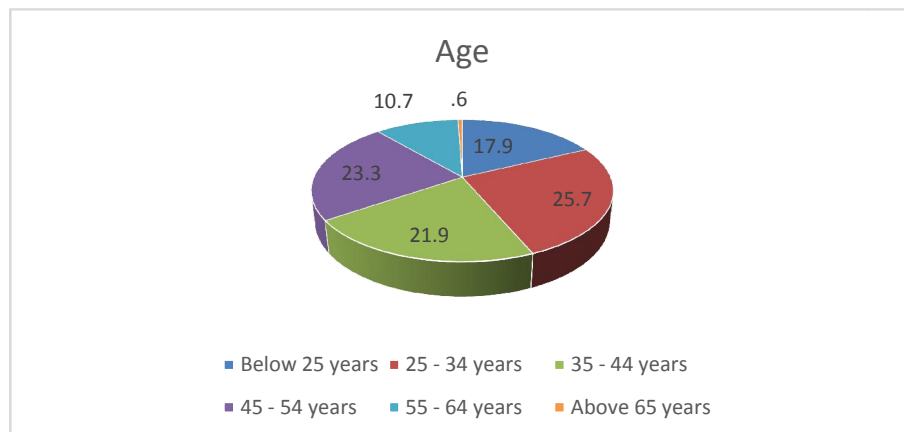
The age distribution of the responses indicates that most participants fall among the younger and middle-aged demographics. The highest percentage (25.7%) is found in the 25–34 years age group, followed closely by the 45–54





years group at 23.3% and the 35–44 years group at 21.9%. Individuals under 25 years comprise 17.9% of the sample, signifying a substantial degree of engagement among young investors. Individuals aged 55–64 constitute 10.7% of the sample, whilst those above 65 years are negligible at just 0.6%.

**Graph 4.1: Graphical representation of age wise distribution of participants**

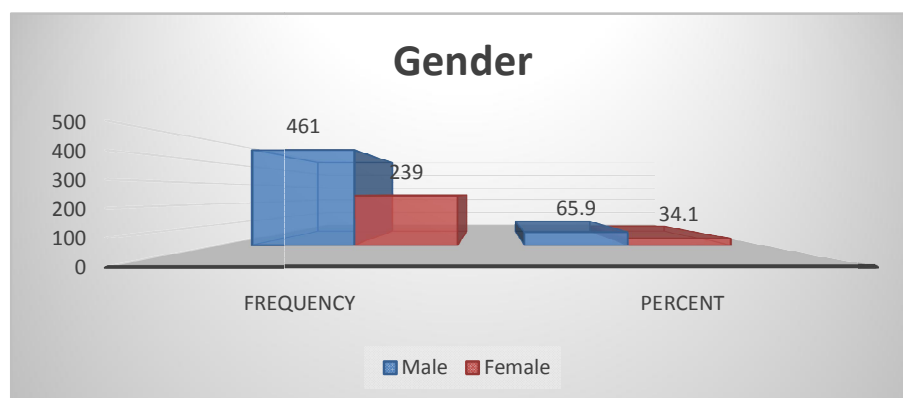


**Table 4.2: Gender wise distribution of participants**

Gender		
	Frequency	Percent
Male	461	65.9
Female	239	34.1
Total	700	100.0

The gender distribution among respondents indicates a significant male majority, with 65.9% identifying as male and 34.1% as female. This indicates that men constitute the predominant portion of the sample engaged in stock investing decision-making in this study.

**Graph 4.2: Graphical representation of gender wise distribution of participants**



**Table 4.3: Experience wise distribution of participants**

Investment Experience (Years)		
	Frequency	Percent
Less than 1 year	62	8.9
1-3 years	238	34.0



3-5 years	183	26.1
5-10 years	140	20.0
More than 10 years	77	11.0
Total	700	100.0

The distribution of respondents' investment experience indicates, approximately 34% of participants possess 1–3 years of experience, being the biggest group, followed by individuals with 3–5 years of experience at 26.1%. Investors with 5–10 years of expertise constitute 20% of the sample, whilst 11% have above 10 years of experience. Only 8.9% of respondents own less than one year of investment experience.

**Graph 4.3: Graphical representation of experience wise distribution of participants**



### Hypothesis testing

Hypothesis 1: Overconfidence bias does not significantly impact on the stock investment decision-making of individuals.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.908 <sup>a</sup>	.824	.824	4.53259
a. Predictors: (Constant), Overconfidence Bias				

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67157.383	1	67157.383	3268.896	.000 <sup>b</sup>
	Residual	14339.966	698	20.544		
	Total	81497.349	699			
a. Dependent Variable: Stock Investment Decision-Making						
b. Predictors: (Constant), Overconfidence Bias						



Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.115	.440		20.698	.000
	Overconfidence Bias	1.467	.026	.908	57.174	.000

a. Dependent Variable: Stock Investment Decision-Making

The second hypothesis stated that "Overconfidence bias does not substantially influence the stock investment decision-making of individuals." A simple linear regression was performed to analyze the relationship between overconfidence bias as the independent variable and stock investing decision-making as the dependent variable. The Model Summary reveals an R-value of 0.908, signifying a robust positive association between overconfidence bias and stock investing decision-making. The R Square value is 0.824, indicating that around 82.4% of the variance in stock investing decision-making is attributable to overconfidence bias, which is considerable. The ANOVA table indicates that the regression model is statistically significant, with an F-value of 3268.896 and a p-value of .000, much lower than the 0.05 criterion. This suggests that overconfidence bias is a substantial predictor of stock investing decision-making. The Coefficients table indicates that the unstandardized coefficient (B) for overconfidence bias is 1.467, accompanied by a very significant t-value of 57.174 ( $p = .000$ ). This indicates that for each one-unit increase in overconfidence bias, stock investing decision-making scores increase by around 1.467 units, provided all other variables stay unchanged. The regression results indicate a highly significant and robust positive correlation ( $p < 0.05$ ), leading to the rejection of the null hypothesis, which posited that overconfidence bias did not significantly influence stock investing decision-making. Consequently, it can be concluded that overconfidence bias exerts a substantial and potent impact on the stock investing decisions of people within the sample.

Hypothesis 2: Financial risk perception does not significantly affect on the stock investment decision-making of individual investor.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886 <sup>a</sup>	.784	.784	5.02016

a. Predictors: (Constant), Financial Risk Perception

ANOVA <sup>a</sup>						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	63906.343	1	63906.343	2535.763	.000 <sup>b</sup>
	Residual	17591.005	698	25.202		
	Total	81497.349	699			
a. Dependent Variable: Stock Investment Decision-Making						
b. Predictors: (Constant), Financial Risk Perception						





Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.271	.477		21.533	.000
	Financial Risk Perception	1.424	.028	.886	50.356	.000
a. Dependent Variable: Stock Investment Decision-Making						

The third hypothesis stated that "Financial risk perception does not significantly influence the stock investment decision-making of individual investors." A straightforward linear regression was performed, utilizing financial risk perception as the independent variable and stock investing decision-making as the dependent variable. The Model Summary reveals an R-value of 0.886, signifying a robust positive association between financial risk perception and stock investing decision-making. The R Square value is 0.784, indicating that about 78.4% of the variance in stock investing decision-making is attributable to financial risk perception, which is significant. The ANOVA table indicates that the regression model is highly significant, with an F-value of 2535.763 and a p-value of .000, significantly lower than the 0.05 criterion. This indicates that the perception of financial risk is a strong predictor of stock investing decisions. The Coefficients table indicates that the unstandardized coefficient (B) for financial risk perception is 1.424, accompanied by a t-value of 50.356 and a significance level of .000. This signifies that for each one-unit rise in financial risk perception, stock investment decision-making escalates by around 1.424 units, while accounting for other variables. The regression results indicate a highly significant positive correlation ( $p < 0.05$ ), leading to the rejection of the null hypothesis, which posits that financial risk perception does not significantly influence stock investing decision-making. Consequently, it can be concluded that financial risk perception has a substantial and robust impact on the stock investing decision-making of individual investors within the sample.

## V. CONCLUSION

The research aimed to investigate the impact of overconfidence bias and financial risk perception on the stock investment decision-making of individual investors. Utilizing data from 700 respondents, the findings offer compelling evidence that both behavioral and perceptual aspects substantially influence investment decisions. The regression analysis demonstrated that overconfidence bias significantly and positively affects decision-making, suggesting that investors who overrate their knowledge and skills are more inclined to participate actively in stock market transactions. Likewise, the perception of financial risk was identified as having a substantial positive influence, indicating that investors' risk perceptions directly shape their investment behaviors and plans. The findings underscore the essential influence of psychological and cognitive factors in financial decision-making, transcending conventional rational economic models. This study establishes that investment decisions are significantly influenced by behavioral biases and risk perceptions, rather than being solely based on objective information. These results provide significant implications for investors, financial advisors, and legislators. For investors, acknowledging their personal biases can enhance rational decision-making and risk management. The findings emphasize the necessity for financial educators and advisors to incorporate behavioral finance principles into their training and advisory services. Policymakers and regulators might leverage these insights to develop policies that protect investors from the excessive risks linked to cognitive biases.

## Suggestions

- Investors must deliberately assess their decision-making inclinations and exercise caution against overconfidence when trading, since it might result in undue risk-taking.



- Consistent training and financial literacy initiatives can enhance investors' comprehension of risk perception and foster more sensible investment practices.
- Financial advisors ought to incorporate behavioral finance principles into their counsel, assuring clients recognize the psychological biases influencing their decisions.
- Policymakers and regulators should formulate awareness initiatives and investor protection structures to alleviate the adverse effects of biases on market stability.
- Integrating behavioral finance principles into stock market education helps promote sustainable and educated investment strategies.

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