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The Effect of Risk Perception and Behavioral and Cognitive Bias on the Risk Tolerance of Tehran Stock Exchange Investors

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Abstract
Purpose: The primary objective of this study is to examine the impact of risk perception and behavioral and cognitive biases on the risk-taking behavior of investors in the Tehran Stock Exchange.

Method: This is a descriptive-correlational study, which is applied in terms of its objective and survey-based in terms of data collection. The statistical population of this study includes investors and managers of companies listed on the Tehran Stock Exchange during the period from 2015 to 2023, with a total of 348 companies. The data collection tool is a standardized questionnaire designed for the research variables. A closed-ended questionnaire based on the five-point Likert scale was used to measure the variables. The Moghimi Standard Questionnaire (2011) was employed to measure risk perception, the Sani Standard Questionnaire (2012) was used for behavioral biases, a researcher-made questionnaire was utilized for cognitive biases, and the Sani Standard Questionnaire (2012) was also used to assess investors' risk tolerance. To ensure content validity, expert opinions were sought, and Cronbach’s alpha coefficient (0.94) was used to assess the reliability of the questionnaires.

Results: The results of the study revealed that higher risk perception leads to a lower inclination to invest in both the short-term and long-term. Therefore, the first hypothesis of the research is confirmed. Furthermore, the results showed that more extroverted individuals are less likely to invest in the short-term and long-term.

Conclusion: The findings of this research indicate that risk perception, along with behavioral and cognitive biases, significantly influences investors' risk tolerance in the Tehran Stock Exchange.

Contribution: This research can assist in more accurately identifying behavioral biases and aligning individuals’ demographic characteristics with their investment styles.

Keywords: Risk Perception, Behavioral and Cognitive Bias, Investors' Risk Tolerance, Tehran Stock Exchange

Research Article

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Introduction

Behavioral finance is one of the key topics in the field of finance and economics that has a special appeal for scientific research. One of the determining factors of market movements is investor sentiment. In this context, studying the role of behavioral biases in shaping investors' decisions and its impact on market efficiency is important (Jabri et al., 2023). What is studied at the micro level of behavioral finance is behavioral biases and the impact that these biases have on individual performance. Behavioral biases can lead to cognitive errors in individuals. Cognitive errors are a type of creative simplification that results from the mind's tendency to create mental shortcuts instead of engaging in analytical and complex discussions. When people are in a difficult and complex decision-making situation, they may make suboptimal decisions due to their attention to mental shortcuts (Jamshidi and Ghalibaf-Asl, 2022). A key point in studying investor behavior in general and behavioral biases in particular is that individuals in different societies, due to their shared evolutionary history, are prone to relying on the same non-evidence and are consequently subject to the same biases (Schaffrin, 2020). As Fan and Zhiyu (2015) and Statman (2020) argue, individuals in different societies and cultures may have different behavioral biases, and these behavioral biases can influence their financial decisions. For those who take the role of psychology in financial knowledge as a factor influencing securities markets and investor decisions for granted, it is difficult to accept the existence of doubts about the validity of behavioral finance. Proponents of behavioral finance firmly believe that awareness of the psychological tendencies and behaviors of investors in the investment arena is absolutely necessary and requires serious expansion of the scope of studies. One of the important demographic factors in investors' short-term and long-term decisions is their personality traits. (Ahmad Badri, 2019).Considering the above points, the purpose of this study is to answer the question: Do risk perception and behavioral and cognitive biases affect the risk-taking of investors on the Tehran Stock Exchange?

Materials and Methods

The present study is an applied study in terms of its purpose because it is used to solve a scientific problem and in terms of its method, it is descriptive-correlational. The statistical population studied in the present study is the managers of companies listed on the Tehran Stock Exchange in the period 2015 to 2023. Their number is 348 companies. In this study, in order to sample from among the managers of companies listed on the Tehran Stock Exchange in the period 2015 to 2023, a stratified sampling method was used to distribute the questionnaire. The methods of collecting information can be divided into library methods and field methods. A questionnaire was used to collect the desired information in order to examine the relationships between the research variables. It is worth noting that the questionnaire of the present study was developed as a researcher-made questionnaire and its reliability and validity characteristics were tested through appropriate statistical tools and relying on fit indices. This questionnaire can be distributed and adjusted in different ways according to the researcher's chosen techniques in the research process. In this study, the Moghimi Standard Questionnaire (2011) was used to measure the risk perception variable, the Sani Standard Questionnaire (2012) was used to measure the behavioral biases variable, the researcher-made questionnaire was used to measure the cognitive biases variable, and the Sani Standard Questionnaire (2012) was used to measure the investors' risk tolerance variable.

Results and Discussion

Test of the main hypothesis
"Risk perception and behavioral and cognitive bias have a significant effect on investors' risk-taking in the Tehran Stock Exchange".
Table 7: Durbin-Watson test Component of the main hypothesis
Model Correlation coefficient Coefficient of determination Adjusted coefficient of determination Durbin-Watson estimation criterion error
Original .828a .685 .680 .55706 1.969
Source: Researcher's findings
According to Table 7, the assumption of independence between errors is confirmed. That is, the value of the Durbin-Watson statistic is in the range of 1.5 to 2.5 (1.969), there is no autocorrelation between the errors. Therefore, the regression analysis is valid for the data. Therefore, the hypothesis H0 is confirmed. In order to examine and present the model of risk perception and behavioral and cognitive bias and risk-taking of investors in the Tehran Stock Exchange, after examining the adequacy indices of the model in Table 3, we present the fitted model. The correlation between the risk perception variable and behavioral and cognitive bias and investors' risk taking in Tehran Stock Exchange is 0.828. The coefficient of determination is 0.685, and this value shows that 68.5 percent of the changes in investors' risk taking in Tehran Stock Exchange are related to risk perception and behavioral and cognitive bias. According to the indicators mentioned, the model is adequate. At this stage, the independent variable and the dependent variable were entered into the equation. At this stage, the simple correlation coefficient was R=0.828 and the coefficient of determination was 0.685, and the adjusted coefficient of determination was calculated to be 0.680. On the other hand, the F value obtained from variance analysis was F=134.437 and its significance level was sig=0.000, which is significant at a level of less than one thousandth. Therefore, by observing the coefficient of determination, it can be stated that the aforementioned variable alone explained 68.5 percent of the changes in the dependent variable.

Conclusions

The results of this study show that investors do not act entirely rationally; their behavior is influenced by psychological and social factors. Risk perception, as one of the most critical factors, plays a decisive role in financial decision-making. Particularly in volatile markets, a proper understanding of risk can help reduce

irrational decisions. On the other hand, behavioral biases such as overconfidence and the disposition effect can lead to risky and irrational behaviors, ultimately causing financial losses. These findings have significant implications for the capital market, including: 1. Investor Education: Conducting training programs on behavioral finance can help investors identify their biases and make more informed decisions. 2. Professional Advisory Services: Investors can seek financial advisors to mitigate cognitive biases and improve their analyses.
3. Tailored Investment Tools: Brokerage firms can design tools that align investors' behaviors with their personality traits and demographic characteristics

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