

Strategies For Reducing Heuristic Bias In Investment Decision Making: A Study Of Individual Investors

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Abstract.

This study focuses on what strategies are used to reduce the negative impact of using heuristics in decision making. This study aims to examine in depth the relevant strategies that can be used to reduce heuristic bias in investment decision making, especially among individual investors. Qualitative research method with a case study approach, research data was collected using purposive sampling technique on individual investors who actively invest in the capital market, either through stocks or digital platforms such as online mutual funds and trading applications. The research findings consist of one main theme that is in accordance with the focus of the research, namely strategies to overcome heuristic bias, which includes four sub-themes consisting of systematic evaluation and planning, application of practical strategies and self-discipline, use of guidelines for consistency and objectivity, and training to increase awareness and self-control. The findings contribute to the literature in behavioral finance and financial psychology, especially by expanding the understanding of the self-control mechanisms used by investors in responding to cognitive biases. These findings also support and strengthen prospect theory by adding dimensions of contextual and individual control strategies in responding to investment risk and uncertainty.

Keywords: *Heuristic Bias; Investment Decisions Making and Individual Investors .*

I. INTRODUCTION

Investment decision-making is a fundamental aspect of financial activities that should ideally be based on rationality and objective analysis [1]. However, in practice, the decisions made by investors are often influenced by human cognitive limitations, including a tendency to use heuristics [2]. Heuristics are simple mental rules used to simplify the decision-making process with the aim of speeding up thinking processes within time constraints [3]. The use of heuristics, if not balanced with relevant data, can also result in biases that may impact investment losses [4]. Individual investors are more susceptible to the influence of heuristic biases than institutional investors [5]. This is due to limitations in access to adequate information, lack of experience, low financial literacy, and the absence of data-driven decision-making support systems [6]. In many cases, individual investors make decisions based on intuition, public opinion, or information disseminated through social media, without conducting adequate fundamental or technical analysis [7]. This not only increases the risk of loss but also causes overall market inefficiency [8].

As the field of behavioral finance has evolved, researchers and practitioners have begun developing various approaches to reduce the influence of heuristic biases in investment [9]. These strategies include financial literacy education and training, the use of technology-based tools and data analytics, increasing self-awareness of heuristic biases, and the implementation of more neutral and structured financial information design [10]. However, the effectiveness of these strategies in the context of individual investors remains an open question and requires further empirical examination. Based on the above background, this study focuses on what strategies are used to reduce the negative impact of heuristic use in decision-making. Therefore, this study aims to examine in depth the relevant strategies that can be used to reduce heuristic biases in investment decision-making, particularly among individual investors. This study is expected to provide theoretical contributions in expanding the understanding of psychological mechanisms in financial decision-making, as well as practical contributions in designing more effective interventions for improving the quality of investment decisions among individuals. Thus, the results of this study are expected to encourage more rational, sustainable, and adaptive investment behavior in response to the dynamics of modern financial markets.

Prospect Theory

Prospect Theory, developed by Kahneman & Tversky, (1979) is one of the main foundations of behavioral finance that explains how individuals make decisions under conditions of risk and uncertainty. Unlike utility theory, which assumes that individuals act rationally and consistently in pursuing maximum profit, prospect theory shows that individuals tend to be more sensitive to losses than to equivalent gains [12]. Within this theoretical framework, individuals evaluate decision outcomes based on relative changes in value relative to a specific reference point, rather than based on absolute final wealth. Furthermore, this theory suggests that individuals tend to take greater risks to avoid losses, but are conservative when faced with potential gains. The implications of this theory are particularly relevant in the context of investment, where financial decisions are often influenced by emotional perceptions of risk and outcomes, rather than by objective considerations alone [13].

Decision Making Based on Heuristics

Heuristic-based decision making is a cognitive process in which individuals use simple mental rules or intuitive strategies to simplify complex situations, especially when faced with limited information, time, and cognitive capacity [14]. Heuristics enable quick and efficient decision-making under conditions of uncertainty; however, these strategies do not always result in optimal decisions [15]. Kahneman & Tversky, (1979) identified several types of heuristics commonly used in decision-making, such as the availability heuristic, where individuals assess the likelihood of an event based on how easily they can recall it, and the representativeness heuristic, which encourages individuals to assess something based on its similarity to a particular category, even if the information is not statistically relevant.

In the context of investment decision-making, the use of heuristics can significantly impact investment behavior and outcomes, particularly among individual investors [16]. For example, the anchoring heuristic can lead investors to overly rely on a stock's historical price as a reference for buy or sell decisions, even though market conditions have changed [17]. Additionally, overconfidence bias, which often stems from intuitive heuristics, encourages investors to overestimate the accuracy of their assessments and predictive abilities, potentially leading to disproportionate risk-taking [18]. Although heuristics are not entirely negative, limited understanding of their mechanisms and impacts can cause investors to disregard rational analysis and rely on biased intuitive judgments [19]. Therefore, it is important to understand how heuristics work in cognitive processes and how strategies can be designed to reduce their negative influence on investment decision-making.

Strategies for Overcoming the Use of Heuristics in Investment Decision-Making

The main strategy for reducing the influence of heuristic biases on investment decision-making is through increased financial literacy and behavior-based education [20]. Adequate financial literacy enables individuals to understand the basic principles of investing, recognize risks, and critically evaluate information before making decisions [21]. Such education not only covers technical aspects but also emphasizes the importance of awareness of cognitive biases that often arise in the thinking process [22]. Through behavioral finance-based training, investors can be trained to recognize deviant thinking patterns, distinguish between intuition and analysis, and develop a data-driven approach to evaluating investment alternatives influenced by short-term trends or market sentiment, which can help reduce availability bias and herding behavior [17]. The combination of educational, technological, and behavioral design approaches forms an effective foundation for mitigating heuristic biases in investment decision-making, particularly for individual investors who are more susceptible to cognitive errors.

II. METHODS

This study uses a qualitative approach with a case study method to gain a deep understanding of heuristic biases in investment decision-making by individual investors, as well as the strategies used to reduce them [23]. The research subjects are individual investors who are actively investing in the capital market, either through stocks or digital platforms such as online mutual funds and trading applications. Informants were selected purposively based on the following criteria: at least one year of experience, making investment decisions independently, and willing to be interviewed in depth. Data collection was conducted

through semi-structured interviews to explore investors' experiences and strategies in dealing with heuristic biases, non-participatory observation when possible, and documentation such as investment histories and personal notes (with participant consent). Data validity was ensured through triangulation of sources, comparing interview results with documentation and investment activity data. Data analysis was conducted using Braun & Clarke, (2006) thematic analysis method, which includes six stages: familiarization with the data, initial coding, theme identification, theme review, theme definition and naming, and the writing of a coherent and argumentative report. This approach was used to identify thematic patterns related to types of heuristic biases and strategies for reducing them in the context of individual investors' real-world experiences.

III. RESULT AND DISCUSSION

The results of this study were obtained from data compiled based on coding. Interviews were conducted with 12 informants consisting of seven male investors and five female investors who are members of the domestic investor community. Based on the results of thematic analysis, this study revealed one main theme in line with the research focus, namely strategies for overcoming heuristic bias in investment activities. This theme revealed four sub-indicators, including 1). Systematic evaluation and planning, 2). Implementation of practical strategies and self-discipline, 3). Use of guidelines for consistency and objectivity, and 4). Training as an effort to increase awareness and control of heuristic bias.

Strategies for Overcoming Heuristic Bias in Investment Activities

Based on the results of the thematic analysis, strategies for overcoming heuristic bias in investment activities consist of four sub-indicators, including systematic evaluation and planning, the application of practical strategies and self-discipline, the use of guidelines for consistency and objectivity, and training as an effort to increase awareness and control of heuristic bias.

Systematic Evaluation and Planning

Systematic evaluation and planning are two crucial elements in the process of making rational and sustainable investment decisions [25]. Investment performance evaluation is not limited to measuring results and risks incurred but also includes analyzing the effectiveness of strategies implemented in the context of an ever-changing market dynamic [26]. Through systematic evaluation and planning, investors can periodically identify discrepancies between initial objectives and actual results, and make the necessary adjustments [25]. This is reflected in the research results, where informants emphasized the importance of evaluating past mistakes and losses and using data as a basis for more accurate investment decisions. Such evaluations provide a strong foundation for more adaptive and evidence-based strategic planning for the future.

The prospect theory framework proposed by Kahneman & Tversky, (1979) suggests that individuals tend to be more sensitive to losses than equivalent gains and often make investment decisions based on subjective perceptions of risk. Therefore, systematic planning is key to reducing cognitive biases such as overconfidence and loss aversion, which can lead to impulsive and suboptimal investment decisions. Thus, systematic evaluation and planning not only serve as performance measurement tools but also as mechanisms to prevent behavioral biases in the investment process. Furthermore, insights from informants also indicate that mature investment planning, portfolio diversification, and in-depth analytical skills regarding preferred investment instruments are strategic components that complement the evaluative process. Therefore, periodic evaluation not only serves as a reflection of past performance but also as a basis for forming a more structured future strategy.

Implementation of Practical Strategies and Self-Discipline

The implementation of practical investment strategies and self-discipline is a crucial aspect of rational and sustainable decision-making in financial markets. This strategy emphasizes the importance of developing investment plans based on fundamental and technical analysis, which aims to reduce reliance on intuition or momentary emotional impulses [27]. In this context, investors who are able to maintain discipline in following their investment plans tend to have a higher level of consistency in decision-making [28]. This research also shows that such strategies not only help maintain objectivity but also serve as an effective mechanism to avoid impulsive decisions often arising from cognitive biases. Within the prospect

theory framework developed by Kahneman & Tversky, (1979) individuals tend to make investment decisions based on subjective perceptions of risk and reward, rather than rational value expectations. This causes investors to be more sensitive to potential losses than equivalent gains, making them prone to heuristic biases such as overconfidence, anchoring, and herd behavior.

Practical strategies and the application of self-discipline can serve as effective interventions to address tendencies like overconfidence, anchoring, and herd behavior. By avoiding decisions driven by the fear of missing out or by applying the principle of buying when prices are low and selling when prices are high, investors can avoid irrational behavioral patterns that are detrimental to their interests. The informants' statements in this study reinforce the importance of implementing data-based strategies and emotional discipline in investing. Informants in the study emphasized the need for self-confidence supported by relevant data and the importance of avoiding trend-based speculative actions. Meanwhile, other informants also highlighted the importance of continuous learning, market signal reading skills such as broker summaries, and the ability to control emotions and diversify portfolios. This statement reflects the understanding that rational and structured strategies act as tools to overcome cognitive bias and improve the quality of financial decision-making, in line with the principles of prospect theory and various empirical literature in the field of behavioral finance.

Use of Guidelines for Consistency and Objectivity

The use of guidelines in investment decision-making is a crucial element in maintaining investor consistency and objectivity. Guidelines, whether in the form of investment strategies, fundamental analysis frameworks, or technical approaches, serve as a reference in formulating systematic and measurable steps [29]. This is in line with the principles of prospect theory where individuals tend to make biased decisions due to inconsistency in perceiving risk and return [11]. In this context, guidelines act as an instrument that suppresses the tendency of cognitive bias, especially the framing effect and loss aversion, which are common in intuition-based decision making [30]. The results of this study indicate that the use of guidelines is considered important by investors in maintaining the direction and consistency of their investment strategies. As stated by one informant, guidelines provide a clear direction in investing so that decisions are not taken carelessly. This is supported by statements from other informants who emphasized that guidelines help reduce bias and increase objectivity, as well as encourage consistency of performance.

These findings reinforce the urgency of implementing a data-based and analytical approach in assessing assets, as recommended in modern financial practices, which emphasize rational decision making based on verifiable information. Furthermore, guidelines also have a preventive function against the risk of detrimental decision making [17]. Informants in this study emphasized that the existence of guidelines allows investors to be more aware of potential risks that arise due to inappropriate decisions. Within the prospect theory framework, this statement asserts that investors who have guidelines tend to be more rational in dealing with risk, because they have more stable cognitive mechanisms to evaluate the possible outcomes of their decisions [31]. Thus, the use of guidelines not only strengthens the consistency of the strategy, but also directs investor behavior in a more rational, measured direction, and free from psychological distortions that are common in uncertain investment environments [7].

Training as an Effort to Increase Awareness and Control of Heuristic Bias

Training plays an important role as a strategic intervention in increasing individual awareness and control of heuristic bias, especially in the context of investment decision making (Putri, 2024). Cognitive heuristic biases such as representativeness, availability, and anchoring often appear as mental mechanisms that facilitate the assessment process under uncertainty, but can also lead to systematically wrong decisions [18]. In the prospect theory framework proposed by Kahneman & Tversky, (1979) individuals tend to make decisions based on perceived potential gains and losses, not final values, making them susceptible to cognitive distortions. Therefore, comprehensively designed training can function as a corrective tool by providing investors with knowledge about bias mechanisms and control strategies, as well as improving skills in fundamental and technical analysis for more rational decision making. The results of this study indicate that training is effective in developing investors' ability to recognize and manage heuristic biases, both consciously and unconsciously. Several informants also stated that through training, they could

understand the right time to use or avoid heuristics, as well as how to balance the influence of heuristics so that they do not have a negative impact on investment decisions. This statement is in line with the principles of prospect theory, which emphasizes the importance of a framework in minimizing the effects of framing and loss aversion.

Thus, it can be concluded that training not only increases awareness of potential cognitive errors, but also strengthens metacognitive abilities in evaluating and reflecting on the thought processes underlying decision-making. Training also contributes to strengthening discipline and consistency in investing through the application of a data-based approach and objective analysis. The informants in this study also said that training helped them identify previously unconscious biases, as well as build habits in developing measurable investment strategies and not solely based on intuition or biased information. The implications of these findings indicate that training that is oriented towards improving cognitive literacy and emotional control can minimize behavioral deviations from the principles of economic rationality. Thus, training is one of the relevant preventive and corrective approaches in helping investors make decisions that are consistent with long-term investment goals, as well as mitigating losses due to heuristic bias.

IV. CONCLUSION

This study shows that individual investors actively develop and implement various strategies to reduce the influence of heuristic bias in investment decision making. Through thematic analysis of interview data from 12 informants, one main theme was found, namely strategies to overcome heuristic bias, which includes four sub-themes consisting of systematic evaluation and planning, application of practical strategies and self-discipline, use of guidelines for consistency and objectivity, and training to increase awareness and self-control. Theoretically, these findings contribute to the literature in the fields of behavioral finance and financial psychology, especially by expanding the understanding of the self-control mechanisms used by investors in responding to cognitive biases. These findings also support and strengthen prospect theory by adding dimensions of contextual and individual control strategies in responding to investment risk and uncertainty. Practically, this study has application value for individual investors, financial industry players, and capital market education providers.

The identified strategies can be used as a guide in designing training modules, data-based investment application features that support rational decision making, and the preparation of investment behavior guidelines. In addition, these findings encourage the importance of providing educational facilities that focus on cognitive literacy and emotional control in the context of investment. For further research, it is recommended to expand the scope of participants, both in terms of demographic background and investment experience, in order to obtain a more diverse and representative picture. In addition, the use of a mixed methods approach can provide more comprehensive results by combining in-depth qualitative data and quantitative measurements of the level of heuristic bias. Future research can also explore the relationship between bias reduction strategies and actual investment performance results in the long term.

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