

Research Article

Systematic Literature Review on the Impact of Behavioral Biases on Investment Decision-Making

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Submission: 11/01/2025;

Received: 05/02/2025;

Revision: 14/03/2025;

Published: 05/04/2025

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Abstract: This paper aims to explore and outline the various biases that influence investment decisions by reviewing existing research in behavioral finance. It examines the behavioral tendencies of investors, covering studies published from the earliest in 1974 to the most recent in 2019. The reviewed papers are grouped according to different biases, with a particular focus on individual investors. The research identifies seven distinct types of biases. Additionally, the paper incorporates recent studies to offer a succinct summary of the latest advancements in this field. The practical value of this study lies in its ability to provide insights that can benefit individual investors, investment advisors, students, and relevant institutions. A key feature of this paper is that it not only addresses the foundational concepts of behavioral finance but also highlights emerging ideas in the discipline.

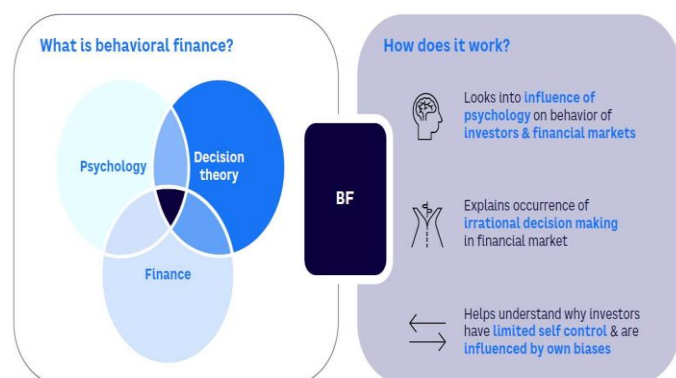
Keywords: Keywords such as financial markets and investments, behavioral finance, behavioral biases, and investment decisions are discussed in the text above.

INTRODUCTION

In recent years, extensive research has been conducted on investments in financial markets from a logical perspective. This has led to the development of various theories, most of which are based on the concept of individual rationality. The Efficient Market Hypothesis (EMH) and Modern Portfolio Theory (MPT), which form the core of traditional finance, are effective in many cases. However, financial markets often present anomalies and puzzles that traditional finance theories fail to explain rationally. It is behavioral finance theories that provide the most coherent explanations for these phenomena. As a result, the alternative behavioral finance method takes into account psychological aspects of financial market investing. Traditional finance models are being replaced in the financial markets by a relatively new idea called behavioral finance, which provides a more accurate explanation of investor behavior. It also describes how private investors earn financial markets' decision-making about the interpretation and application of particular data.

REVIEW OF LITERATURE

In their 1979 paper, "*Prospect Theory: An Analysis of Decision Under Risk*," Kahneman and Tversky [27] introduced a key contribution to the field of behavioral finance. The core idea of Prospect Theory explains how investors make decisions involving risk when the potential outcomes are probabilistic. Thaler (1980) [64] further noted that behavioral biases often lead investors to make suboptimal decisions during the decision-making process. In his paper "The End of Behavioral Finance," Thaler (1999)[65] elucidated that there are numerous mysteries in the financial markets for which contemporary finance theories cannot provide an explanation. In these cases, the tenets of behavioral finance can be useful in deciphering the difficulties. He has outlined five instances in which investor behavior in the stock market deviates from the assumptions made by conventional and traditional finance theories. Key elements in behavioral finance include volume, volatility, predictability, and the equity premium. According to Ricciardi and Simon (2000) [49], behavioral finance provides a framework for understanding the psychological and emotional aspects of investors in financial markets. Researchers and professionals in the field continue to push for its development. Shiller (2003) [53] raised several criticisms of the Efficient Market Hypothesis, emphasizing the connection between finance and behavioral finance. This approach extends beyond finance and has enriched our comprehension of financial markets by integrating insights from other social sciences. Ritter, J. R. (2003) [48] highlighted two key aspects of behavioral finance: the limitations of arbitrage and the role of cognitive psychology. Furthermore, Subrahmanyam (2008) [56]



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reviewed the existing literature on the current theories in behavioral finance and pointed out that there is significant opportunity to explore the evolving field of market microstructure, as well as the impact of CEO characteristics on predicting corporate events such as mergers and acquisitions, stock splits, and security offerings. While there are varying perspectives on the application of behavioral finance research in both academia and business, DeBondt et al. (2010) [10] explored the numerous benefits that behavioral finance can bring to the financial sector. Muradoglu & Harvey (2012) [35] examined how surveys can be used to understand investor behavior in financial markets. Sahi (2012) [25] argued that individual investment decisions in real-world scenarios cannot be fully explained. Moreover, research in neuro-finance and brain autonomies has shown that emotions influence cognitive processes, challenging the traditional finance theory that assumes human decision-making is entirely rational. Bikas and colleagues also contributed to this line of inquiry. In 2013, a study [6] emphasized that behavioral finance is based on understanding the influence of emotional factors on major shifts in financial markets, highlighting the limitations of human reasoning and the role of psychological elements in financial investment decisions. This field investigates the behavior of managers and investors by analyzing desires, mistakes, preferences, and actions through surveys, experiments, and real-world observations, both directly and indirectly. Nair and Antony (2015) [40] argued that investors often act irrationally in financial markets, with this irrationality linked to behavioral biases and heuristics. These emotional and psychological biases play a crucial role in decision-making. Kumar and Goyal (2015) [29] conducted a systematic literature review focused on four primary types of investor biases, providing a detailed analysis of research papers through data and citation analysis. Huang et al. (2016) [22] surveyed studies published over the past two decades, offering valuable insights into key research in this field. Kapoor & Prosad (2017) [26] suggested that psychological factors bias investors, which can lead to irrational behavior and suboptimal investment decisions. A substantial connection was found between fuzzy logic and behavioral finance by Valaskova et al. (2019)[67]. He looked at how well fuzzy sets can simulate human decision-making and The fuzzy logic model of human decision-making has strong validity in the real world, as demonstrated by behavioral psychology Globe. A number of biases, including loss aversion, herd mentality, overconfidence, representativeness, disposition impact, mental accounting, and anchoring bias, affect how investors make decisions. Based on a survey of the literature, this report examines seven biases. In their studies, the majority of researchers have noted the biases already indicated.

| Year | Author(s) | Key Contribution |
|------|----------------------|---|
| 1979 | Kahneman and Tversky | Introduced Prospect Theory, explaining how investors make decisions under risk. |
| 1980 | Thaler | Highlighted that behavioral biases lead to suboptimal investment decisions. |

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|------|---------------------|--|
| 1999 | Thaler | Identified mysteries in financial markets that behavioral finance can help explain. |
| 2000 | Ricciardi and Simon | Emphasized the importance of psychological processes and emotional components in investor behavior. |
| 2003 | Shiller | Criticized the efficient market hypothesis, linking behavioral finance to other social sciences. |
| 2003 | Ritter | Discussed arbitrage limitations and cognitive psychology as core components of behavioral finance. |
| 2008 | Subrahmanyam | Reviewed literature on behavioral finance and market microstructure, highlighting CEO traits' influence on business events. |
| 2010 | DeBondt et al. | Explored the advantages of behavioral finance research for the financial sector. |
| 2012 | Muradoglu & Harvey | Investigated the use of surveys to learn about investor actions in financial markets. |
| 2012 | Sahi | Claimed investment decisions made by individuals in real-world situations cannot be explained by traditional finance theories. |
| 2013 | Bikas et al. | Emphasized the limitations of human reason and the impact of emotional elements on financial markets. |
| 2015 | Sahi | Claimed investment decisions made by individuals in real-world situations cannot be explained by traditional finance theories. |
| 2013 | Bikas et al | Emphasized the limitations of human reason and the impact of emotional elements on financial markets. |
| 2015 | Nair Antony and | Connected investor irrationality in financial markets to behavioral biases and heuristics. |
| 2015 | Kumar and Goyal | Provided a systematic literature review of the primary forms of investor biases. |
| 2016 | Huang et al. | Surveyed significant research in behavioral |

| | | |
|------|------------------|---|
| | | finance over the last 20 years. |
| 2017 | Kapoor & Prosad | Highlighted the influence of psychological factors on irrational investing behavior |
| 2019 | Valaskova et al. | Found a substantial connection between fuzzy logic and behavioral finance. |

Table1: contributions of various researchers

CONFIDENCE

Overconfident traders, according to Odean (1998)[41], do not adequately manage and control risk. They typically obtain information from a variety of sources and engage in frequent trading in marketplace. A straightforward model was developed by Scheinkman (2003)[57] et al. to examine financial market and trading volume bubbles. Furthermore, it was mentioned that speculative trading among agents with different beliefs is the reason for the large trading volume. The existence of agents who are overconfident gives birth to heterogeneous beliefs. Overconfidence is characterized by Nevins, D. (2004)[38] as investors' overestimation of their ability to predict market events, which leads to investors frequently taking risks without seeing comparable returns. According to Statman et al. (2006)[59], certain investors see a reduction in overconfidence on the efficacy of active trading following positive portfolio returns, and a rise in overconfidence following negative portfolio returns. According to analysis by Glaser et al. (2007)[17], there is no correlation between trade volume and overconfidence as determined by calibration questions. In order to examine overconfidence in the financial markets and the variables influencing human decision-making on financial market investing, Fagerström (2008)[16] conducted a study. The study came to the conclusion that overconfidence and over optimism biases affected S&P 500 analysts. R. Deaves et al. (2008)[11] examined the relationship between increased trading activity and a higher level of overconfidence. This concept applies to both individuals and markets, indicating that there are no significant gender differences in trading behavior. Graham and colleagues (2009) [19] found that investors with high confidence levels tend to trade more frequently and invest more in foreign assets. Puetz et al. (2011) [44] noted that fund managers are likely to increase trading activity when mutual funds have performed well in the past. Menkhoff et al. (2013) [36] observed notable differences in overconfidence across various groups, with institutional investors displaying the least overconfidence and investment advisors exhibiting the highest levels. Research by Prosad et al. (2015) [45] indicated that men are generally more overconfident than women regarding their understanding of the Indian stock market. Seetharaman et al. (2017) [61] found that behavioral biases such as overconfidence and excessive optimism significantly influence investor behavior. According to KHAN Y. et al. (2017)[30], Overconfidence significantly and favorably affects the return on investments. Ngacha, S. W. (2019)[39] found that overconfidence behavior and the making of investment decisions exhibited a strong positive link. In

2019, Kurniawati D. et al.[31] looked at the overconfidence bias and self-control bias have a significant beneficial impact on the choices of investors make while making IPO investments. According to Baker H. et al. (2019)[7], there is no connection between overconfidence bias and financial literacy.

HERD BEHAVIOR

After examining herding behavior in the Indian stock market from 2000 to 2013, Garg et al. (2013) [17] found no evidence of herding and offered an explanation for why herding behavior is not linked to transaction volumes. Poshakwale (2014) [46] analyzed that herding tends to be more prevalent in bearish financial conditions. Furthermore, herding behavior typically intensifies just before a financial crisis occurs and worsens when one is anticipated. Filip et al. (2015) [14] concluded that investor behavior in Central and Eastern European (CEE) stock markets exhibits herding, as most investors tend to follow the decisions of others during both market rises and declines. In contrast to online investors, offline investors exhibited increased herding behavior, according to Choi S. (2016)[9]. Older offline investors typically place greater faith in advice from friends and family members because they are unable to quickly and easily obtain information. F. Ripoldi (2016).examined indications of the herding bias among investors in the Shenzhen and Shanghai markets [51]. Research by Satish B. et al. (2018) [60] found that investors did not exhibit herding behavior before, during, or after the financial crisis. Dewan, P. (2019) [12] defines herding as the tendency of individuals to follow others within a group. Herding bias contributed to the dotcom bubble, and a similar phenomenon is now occurring with cryptocurrency. Chauhan Y. et al. (2019) [8] noted that herding bias is a pricing risk factor for large-cap stocks but is less evident in small-cap stocks due to lower trading volumes. Dewan P. et al. (2019) [12] explained that herding involves group members making decisions collectively, which can lead to asset prices deviating from their intrinsic values. Indārs E. R. (2019) [23] found that individual investors on the Moscow Exchange generally do not exhibit herding behavior. However, on days when the market declined, they observed some signs that herding was influenced by non-fundamental factors.

THE EFFECT OF DISPOSITION

Shefrin H. (1985)[63] described the intellectual underpinning for the common tendency to retain losers too long and sell winnings too soon, and he also covered the reality of this propensity. Financial markets are more than just a test subject for investors. According to Odean (1998)[42], individual investors often prefer to sell wins and hold losers, with the exception of December, when tax-motivated selling predominates and typically results in worse returns. The disposition effect was defined by Weber et al. (1998)[68] as the tendency of investors to sell assets that have appreciated in value (the "winners") and hold onto assets that have declined in value (the "losers"). According to Frazzini (2006)[15], disposition effect can result in an under reaction to news and information, which can create post announcement price drift and return predictability. Lin, H. W. (2011)[34] investigated the possibility that in

the 1997 Asian financial crisis, the Taiwanese and Chinese stock markets are heavily impacted by the disposition effect. Prosad et al. (2017)[43] looked at the disposal impact that occurred in the Indian financial sector between 2006 and 2013 and provided some solid empirical support for their findings.

ANCHORING

Shiller (1999) [54] described how people's quantitative assessments are often influenced by suggestions, a phenomenon known as anchoring, which helps explain various puzzles in financial markets. Tversky et al. (1974) [66] defined anchoring as the tendency to use initial values as a reference point when making projections, leading to biased estimates based on those starting points, as different initial values result in varying predictions. Kaustia et al. (2008) [28] conducted a survey that revealed the presence of the anchoring effect in students' long-term stock return expectations, though this effect was found to be less pronounced among professionals. Dodonova (2009) [13] explored how individuals tend to use anchoring when evaluating items they wish to purchase. Andersen et al. (2010) [1] described anchoring as the general tendency of investors to heavily rely on specific information when making financial decisions.

LOSS AVERSION

Hwang et al. (2010) [21] found that investors in financial markets are generally more risk-averse than previously suggested in the literature. Their study also explored the impact of loss aversion, revealing that it varies depending on market conditions. In particular, during bull markets, investors tend to be significantly more risk-averse than in bear markets. Arora et al. (2015) [2] discovered that investors aged 41 to 55 experience a stronger loss aversion bias compared to those aged 25 to 40. Additionally, women were found to exhibit higher levels of loss aversion and regret than men. Lee et al. (2016) [33] observed that investors with high levels of loss aversion typically hold smaller stock positions relative to their overall portfolio. Risk-averse investors also tend to monitor their stock portfolios more closely, leading to a heightened sense of myopic loss aversion. Mahina et al. (2017) [37] found that loss aversion bias had a significant effect on investment behavior in the Rwandan stock market. This study also looked into the idea that stock market investors typically feel worse about holding losing stocks for an extended period of time than they do about selling winning ones too soon. According to research by Kumar et al.(2018)[32], an investor's gender has a significant influence on the likelihood that they will experience loss aversion, which in turn influences the investors' investing decisions.

MENTAL ACCOUNTING

Barberis et al. (2001) [4] define mental accounting as the process by which investors assess and evaluate their financial investments and transactions. According to Barberis et al. (2003) [5], investors use mental accounting to categorize their assets into separate accounts. Grinblatt et al. (2005) [20] noted that mental accounting forms the basis for how investors set benchmarks for their accounts, reflecting their gains and losses. The main idea is that

decision-makers often treat different types of investments as separate accounts, applying prospect theory to each account independently, rather than considering potential interactions. Agnew (2006) [3] concluded that behavioral biases, such as mental accounting bias, frequently influence individual investors. Investors affected by mental accounting bias tend to manage different parts of their portfolio independently, rather than evaluating the entire portfolio as a whole. Sewell, M. (2007) [58] described mental accounting as the collection of cognitive processes that individuals and households use to organize, evaluate, and track their financial transactions and activities.

REPRESENTATIVENESS

Representativeness bias was defined by Ritter, J. R. (2003) [50] as the tendency for people to undervalue long-term average returns. And favor current performance and returns more than other factors. According to Shefrin, H. (2008) [55], it is a mental shortcut that is characterized by an excessive reliance on stereotypes. According to Pompian, M. M. (2017) [47], representativeness bias typically results from an inadequate emotional framework that gets in the way of new information processing. Some investors project results that resonate with their own pre-existing notions and decision making in order to facilitate the processing of new information. According to Shah et al. (2018) [63], representativeness bias significantly affects both the perceived efficiency of the market and the investment decisions made by investors who regularly trade on the PSX.

RESEARCH GAP

Following a study of the body of research on behavioral finance and behavioral biases, it was discovered that there are certain knowledge gaps that need be filled in order to guide future investigations. Conducted on these study gaps, such as: -

1. The majority of these studies have been limited to developing countries since they have focused on the developed world.
2. The bulk of research on behavioral finance examines individual investors in developed markets.
3. The majority of the study in the literature on behavioral finance is based on data that is typically restricted to subsamples of all investor groups in these nations.

SUMMARY

The analysis of research in behavioral finance and biases clearly shows that behavioral finance offers a psychology-driven framework for understanding stock market anomalies, such as sharp fluctuations in stock prices. This field integrates sociology, psychology, and other research methods to explore how investors behave when making investment decisions in financial markets. It challenges the rational assumptions of traditional finance theories and highlights how psychological biases influence real-world investors. To conduct this study, we reviewed previous research on behavioral finance and biases. Most of these studies provided data supporting the existence of the seven behavioral biases identified in investors. Many researchers

have found evidence of overconfidence and herd behavior among investors. However, fewer studies confirm the presence of the other five investment biases. Additionally, numerous studies have established a relationship between behavioral biases and demographic factors like age and gender. Overall, it can be concluded that substantial research has been conducted in the financial markets of developed countries, while there is significant potential for further study in the financial markets of developing nations.

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