

Behavioural Biases in Financial Investments: A Comprehensive Literature Review

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Abstract

This study uses a systematic assessment of 1980–2024 literature to examine how behavioural biases affect financial investment decisions. Psychology and emotion influence investor behaviour in behavioural finance, challenging rational decision-making. The study analyses 40 scientific papers from Google Scholar and PubMed using a systematic literature review (SLR) technique and predetermined keywords and inclusion criteria. Cognitive biases like overconfidence and conservatism and emotional biases like loss aversion and regret aversion strongly influence investment decisions. The study also investigates how post-COVID-19 economic trends and generational behaviours, notably among Millennials and Generation Z, have changed investment tactics. Anchoring, mental accounting, herding, and confirmation biases affect market results and individual decision-making. Financial literacy, planning, and technology moderate these biases, according to this review. The study suggests that behavioural psychology is crucial to designing better investment strategies and provides a roadmap for future research on biases and financial decision-making.

Keywords: Behavioural Biases, Cognitive, rational thinking, emotional biases, Risk aversion

JEL Classification: G11, G41

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Introduction

The majority of the time, investment decisions are both instinctive and complicated. Investors' complicated choices have been the subject of multiple studies. After realising that the theory of rationality fell short in adequately describing investing activity, academics became increasingly interested in looking into additional elements, such as behavioural aspects, that might have an impact. An interdisciplinary field known as "behavioral finance" offers proof of some investors' irrational actions. For years, investors have relied on current financial theories and expert judgments to maximize short- and long-term gains. Capital Structure (Modigliani & Miller, 1958), the Efficient Market Hypothesis (Fama, 1970), the Capital Asset Pricing Model (Sharpe, 1964; Lintner, 1965, and Mossin, 1966), and the Options Pricing Model (Black and Scholes, 1973) are all theories in finance that presume rational investors make decisions using the information at their disposal.

Chin (2012) argues that the stock market's volatility is related to behavioral biases and cannot be explained by investors' rational decision-making. According to financial theory, these were unimportant. According to Prasad et al. (2015), contemporary theories of finance are incorrect since Long Term Capital Management (LTCM) failed because of changes in the stock market. These outliers point to a hole in the contemporary theory of rationality, as pointed out by Nofsinger and Varma (2014). Kahneman & Tversky (1979) found data that refuted the EMH and Expected Utility Theory after the 1970s energy crisis. Kahneman and Tversky (1979) proposed prospect theory, an EUT alternative that explains uncertain decision-making. Combining behavioural and psychological aspects of economic and financial decision-making created behavioural finance, which quickly and drastically changed traditional finance. Traditional theories of efficient market hypothesis and anticipated utility theory failed to explain irrational decisions, leading to behavioral finance. Thus, behavioral finance indicates that behavioral biases cause investing irrationality (Paul & Sundaram, 2023).

This research employed systematic literature review and content analysis to answer questions. A systematic literature review uses keywords, search, and inclusion/exclusion criteria to discover relevant content (Kumar et al., 2020). Prior study findings were presented using content analysis

Literature review

Behavioral biases in investors' investment decisions are explained logically. How do investors act? What motivates investors? These issues were addressed by behavioural finance in economics and finance in the 1980s (Ávila et al. 2016), which define behavioral finance as the study of psychological factors in financial decision-making and investor irrationality., argues that investors choose between possible profits and losses over final results. Cognitive biases alter our Prospect theory, developed by Kahneman and Tversky (1979) evaluation of gains and losses. We examine behavioural biases that affect investors' investment decisions listed below. Protocols that search many databases using a predetermined search strategy form the basis of systematic literature reviews, such as the one this study follows. According (Samal 2020) this improves the work's quality by making it more comprehensive, scientific, and transparent. Thorough systematic literature reviews increase the research's rust worthiness while reducing the possibility of including superfluous studies (Tang, 2019).

Research questions for this study:

1. What are the major behavioral bias publication patterns over the past 50 years?
2. How do behavioural biases impact the investment decision of an individual?

3. The most important questions and areas for future study in this area? The review article outline follows. First, a literature review, then the material and technique, then the results and discussion, and finally the future research agenda.

Methodology

This desk research uses secondary data from a complete evaluation of studies, reports, and statistical data. Desk research, unlike fieldwork, is cost-effective and efficient since it focuses on data consolidation and analysis. Systematic Literature Review (SLR) and meta-analysis are used.

SALSA (Search, Appraisal, Synthesis, and Analysis) defines four steps of SLR:

1. Search for relevant content using keywords such as "Behavioural Biases" and "Investment Decisions." Google Scholar and PubMed were primary sources. Comprehensive search algorithms used Boolean operators and complex filters to find high-quality, relevant studies.

2. Appraisal: Study selection was based on established inclusion and exclusion criteria. These criteria were behavioural finance and investment decisions relevance, 1980–2024 coverage, and methodological rigour. The selected studies' validity and reliability were assessed using critical appraisal tools including the CASP checklist.

3. Synthesis: The data were categorised to determine how behavioural biases affect investment decisions. We synthesised qualitative and quantitative data to examine how emotional and cognitive biases affect decision-making. Patterns and trends were identified using narrative synthesis and statistical aggregation.

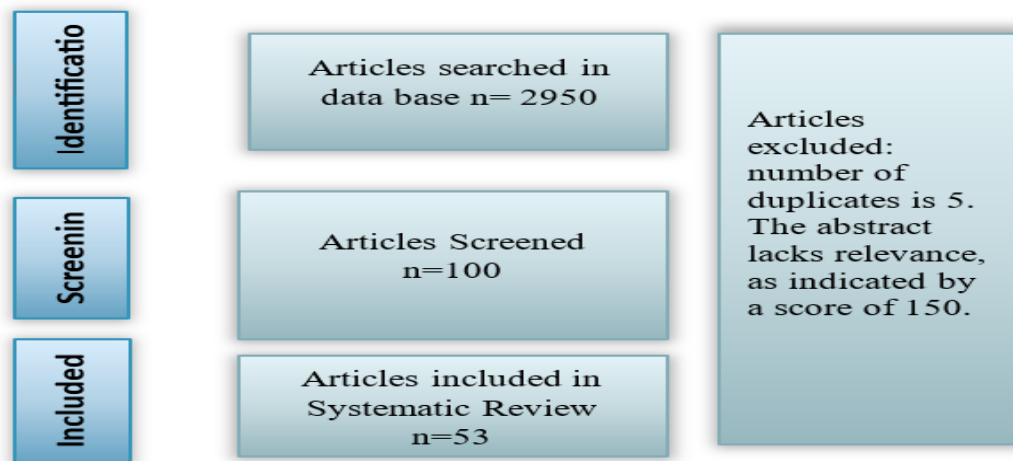
4. Analysis: Biases were assessed across demographic and economic situations using descriptive and inferential statistics. To ensure robustness and examine study heterogeneity, meta-regression, subgroup analysis, and sensitivity analysis were used.

The meta-analysis process involved data extraction, effect size calculation, heterogeneity assessment, publication bias detection, and model application. Content analysis ensures extensive, scientific, and transparent documentation of financial investing behavioral biases, while increasing the depth and rigor of the review. Fixed-effect and random-effect models were chosen based on heterogeneity levels.

Variables and Data Sources The data came from peer-reviewed journals, conference proceedings, and reliable internet sources. Cognitive and emotional biases (overconfidence, representativeness, loss aversion, regret aversion) are important. Their impact on investment behaviour was examined.

Scope of Analysis The four-decade study examines pre- and post-COVID-19 patterns. Technology, generational impacts, and global financial dynamics. are prioritised.

Analytic Framework The methodology uses quantitative (frequency analysis of biases) and qualitative (thematic study of investor behaviour patterns) metrics. Pie charts and other visuals show behavioural biases across studies.



Block Diagram 1: Research article selection according to the PRISMA framework

Source: Author's creation

Data and variables



Block Diagram 2: Antecedents of Individual Investment Decisions

Block Diagram 2: Antecedents of Individual Investment Decisions

Source: Author's creation

Emotional and cognitive biases were the two types of biases that were almost exclusively studied in earlier research. In general, prejudice causes bias when choosing one thing over another. Experience, judgment, societal norms, preconceptions, academics, and more influence biases. Cognitive biases entail making decisions based on inaccurate concepts. Emotional biases usually arise spontaneously from what someone feels when making a decision. Emotional biases rarely involve expansive conceptual reasoning. Cognitive and emotional biases may or may not influence a decision. Researchers Hamid et al. (2013) discovered that people's risk propensity influences their risk-taking behaviour, which in turn influences their stock investment decisions. Similarly, risk propensity significantly positively affects stock investment decisions, according to several studies (e.g., Mulyani et al., 2021; Riaz and Hunjra, 2015; UIAbdin et al., 2022).

Findings and Discussion

Market Outcomes

When the market is doing well and trade volume is high, investors tend to be more upbeat and optimistic, following the herd mentality rather than relying on their analysis. The inverse is true when investors follow the herd and sell their securities at a rapid pace in response to market panic (Pochea et al., 2017). During both rising and falling market and industry conditions, herding behavior has altered the course of the global financial crises (Elshqirat, 2019). A cognitive bias called overconfidence bias is when people overestimate their skills. Those who overestimate themselves give the impression that they are more intelligent than other people. This was advocated for by Odean (1998). Investors make the mistake of blindly following large groupings without examining the rationale behind them. Naturally, humans behave in this manner. Within the realm of investment decision-making, (Grinblatt et al. 1995) carried out a limited amount of study investigating herd behavior. The human tendency to conform to the norms of a group is referred to as herd instincts.

In many cases, investors with this tendency seek advice from brokers, friends, family, and coworkers before investing. Behavioural finance pioneers Tversky & Kahneman (1992) identified a powerful bias, loss aversion bias. It means investors prefer to protect capital rather than increase it. Indian investors, according to several studies, have a similar behavioural bias towards bank fixed deposits. For these investors, losses have twice the impact of gains. After a loss, people with this tendency tend to sell their lucrative shares because they are risk-averse. Another important behavioural bias is the disposition effect, which occurs when investors hold on to losing securities while selling winning ones. To help investors sell successful stocks while holding on to losing ones, Shefrin and Stateman (1985) developed a theoretical framework. A self-attribution bias occurs when an investor attributes positive outcomes to oneself and negative outcomes to other parties. This bias is frequently employed by investors for self-protection or self-improvement. Investors may become overconfident due to self-attribution bias, which in turn can cause them to trade too much and underperform. To address these occurrences, Gervais and Odean wrote "Learning to be Overconfident" in 2001. Most individual investors rely on their prior beliefs to foretell future events. Investors prefer to rely on tried-and-true methods over innovative approaches. According to Alwathainani (2012), investors exhibit conservatism bias when they refuse to consider new information and instead rely on previous projections. A new study indicated that conservative bias in investment decisions is exacerbated by low levels of financial knowledge (Ahmad & Shah, 2022). As a result of representational bias, only investors put money into new events (Anderson et al., 2005). Investment decisions are informed by comparing present occurrences with those of the past. According to Kublay and Bayrakdaroglu (2016), Edmans et al (2022), and Zahera and Bansal (2018), this can lead investors to prioritise short-term rewards above long-term investment potential. When investors see evidence that backs up their ideas, they disregard any evidence to the contrary. Acks, A. (2018) argues that financial bubbles can be caused by confirmation bias.

As defined by Shiller (2000), Hindsight bias is the belief that events were anticipated before they occurred or warranted attention. Investors think a historical occurrence was predicted, but it wasn't. Such inaccurate perceptions might lead to deceptive casual connections and bad decisions.

Post Covid Investment Behaviour

In an analysis of studies conducted post-covid, we have taken here some of the studies conducted on different generations of their behavioral patterns and factors impacts investors in stock market and cryptocurrency market.

In 2022 study of (Jan et al., 2022) suggested that information availability significantly moderates the association between psychological biases and investment decisions in the post-COVID-19 pandemic context. A Study (Pradipta, 2024) conducted on financial behaviour of Generation Z and it's indicated that financial literacy and financial planning exert a substantial favorable influence on investing decisions. Nonetheless, risk tolerance does not influence investment decisions. Moreover, the use of financial technology as a moderating variable might enhance the impact of financial planning and risk tolerance, but not financial literacy. In recent study (Burton, R. & Yunita, I., 2024) conducted on Millennial Generation stating that financial knowledge, behaviour, and attitude affect investment decisions simultaneously. This study also demonstrated that financial knowledge, behaviour, and attitude partially affect investment decisions. In comparative study (Pokharel & Maharjan, 2024) examine the financial behaviour of Millennial and Gen Z and Results showed that financial knowledge, overconfidence, herding, and risk tolerance improve investment decisions. Millennials and Generation Z possess strong economic knowledge, confidence, rely on others, and consider risks when investing. In Pokharel and Mahajan (2024) study, risk perception hampers millennial and Generation Z investment decisions.

The study, (Hasan et al., 2024) suggests that Saudi Arabian cryptocurrency investors are impacted by multiple factors while making investing decisions. Facilitating Conditions like Ease of Use, Trust, Usefulness, and Social Influence, influence their judgements. Higher investor intention led to more proactive investment behaviour, according to the study. Higher FOMO was linked to more aggressive investing.

Cognitive and Emotional Biases Influencing the Investment Decisions

Theories	Cognitive Variables
Heuristic	Representativeness Overconfidence Gambler's Fallacy Availability Biases
Prospect	Loss Aversion Regret Aversion Mental Accounting
Harding Effects	News capture in the market Buying or selling decisions Selection of stock based on trend Volume of transactions Speed of herding

The shows the antecedents of individual investment decisions and the cognitive and emotional biases that influence them. The two main types of biases studied are emotional and cognitive biases, which are often affected by factors such as experience, judgment, societal norms, and preconceptions.

Risk propensity is found to positively influence stock investment decisions while herding behaviour can affect market conditions during both rising and falling markets. Overconfidence

bias can cause investors to overestimate their skills and mindlessly follow groupings without assessing their rationale. Loss aversion bias can lead to investors being risk-averse after a loss and selling profitable shares.

Conservatism bias occurs when investors cling to past predictions rather than incorporating fresh information, while confirmation bias can cause investors to ignore alternative information and focus only on supporting their ideas. Hindsight bias can also cause inaccurate perceptions that lead to bad decisions.

The diagram also shows the cognitive variables and heuristic components that influence individual investment decisions, such as representativeness, overconfidence, availability biases, and mental accounting. Finally, the diagram highlights the factors that affect herding behavior, including the volume of transactions, the speed of herding, and the selection of stocks based on trend.

Publication over the years: Key searching terms are Behavioural Biases and Investment Decisions

The search terms used and the total number of publications from each database.

Data Base	Databases Searching string and searching	terms No of articles
Pub med	➤ Behavioural Biases	106324
	➤ Behavioural Biases and Investment Decisions	160
	➤ Behavioural Biases and Investment Decisions of individuals	95

Looking at the trend of publications published on Behavioral Biases chart 1, we can observe that this field has grown rapidly, especially after 2007. In fact, from 2009 to 2023, 216% of growth when reaching 2023. Behavioral finance is an important field of study, and our analysis shows that interest in and progress within it are on the rise.

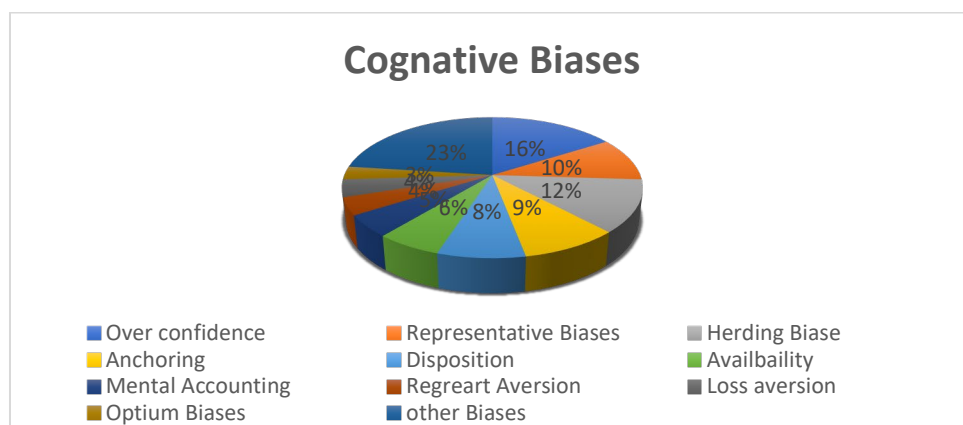
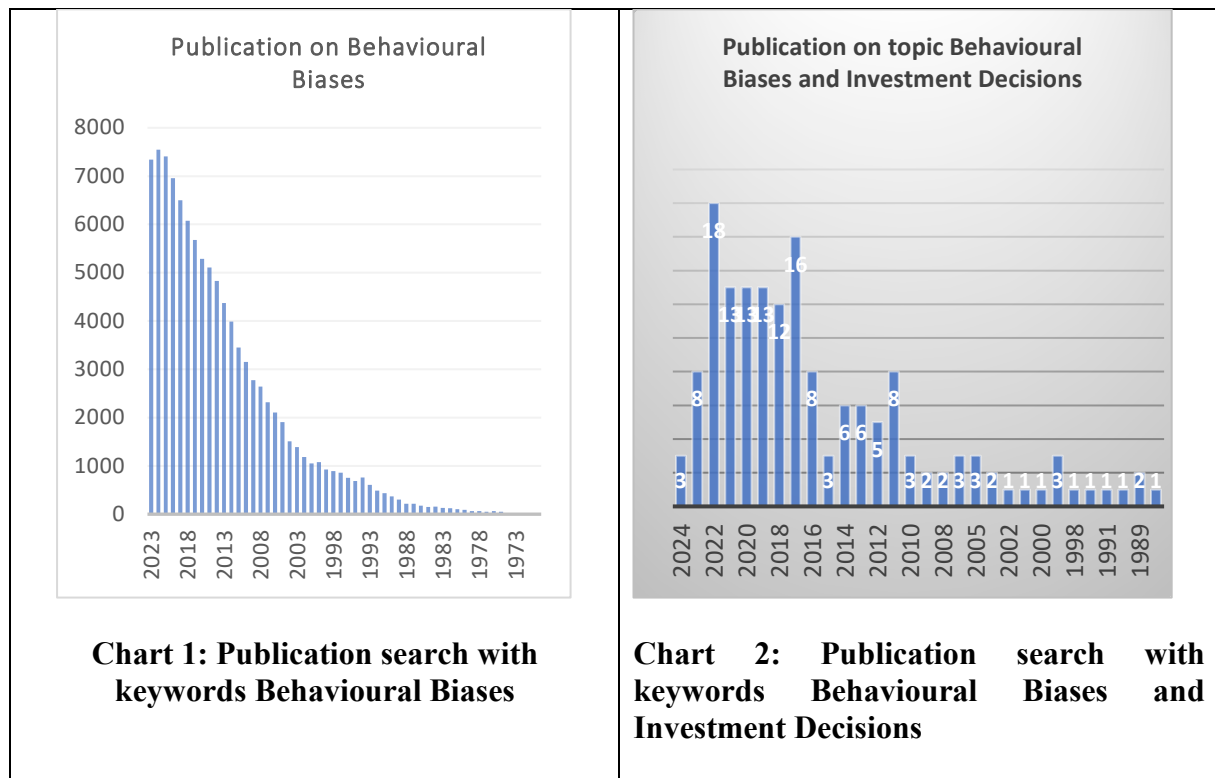


Fig.: Publication of different biases

Researchers took potential biases into account for the study pie chart 3. Research examining a total of fifty-three articles revealed a variety of forty-eight biases. Overconfidence bias is prevalent in human subjects and affects 16% of researchers or 34 articles. Ten percent of the papers (i.e., fifteen) looked into representative bias, twelve percent into herding bias, and nine percent into anchoring prejudice. The papers primarily demonstrate the significance of behavioral biases and how they affect investment decisions. Research on disposition effect accounts for 8% of papers, whereas research on availability bias accounts for 6% and mental accounting prejudice accounts for 5%. The optimism bias has received the least amount of attention from researchers (4%), whereas loss aversion and regret aversion have received the most. A small number of research have contemplated investigating additional forms of prejudice, such as confirmation bias, familiarity bias, self-attribution bias, framing bias, an illusion of control, and numerous others.

Future Scope: Post-Covid analysis reveals several biases that heavily influence financial decisions. These biases include algorithm aversion, digital amnesia, fintech adoption bias,

social media influence bias, cryptocurrency FOMO, COVID-19 panic selling bias, Zoom bias, economic uncertainty bias, ESG bias, quantitative easing dependency bias, remote work bias, retail investor herding bias, SPAC hype bias, inflation fears bias, and stay-at-home stock bias, Pelster et al (2016). These biases can lead to impulsive or uninformed financial decisions, overvaluing companies associated with remote work trends, following retail investor herding, and overestimating the potential returns of investments in Special Purpose Acquisition Companies (SPACs). Additionally, concerns about inflation can disproportionately influence investment decisions, leading to suboptimal portfolio allocations or overreaction to short-term market trends.

Conclusion

Psychological factors that influence financial decisions are studied in Behavioural finance. This study aims to explore how investment decisions are influenced by emotional and cognitive biases, other factors may influence, that are not discussed and explored. Post-COVID studies on different generations' behavioral patterns and factors impacting investors in stock and cryptocurrency markets have shown that information availability moderates the association between psychological biases and investment decisions. Financial literacy and planning have a significant positive influence on investing decisions, but risk tolerance does not. Financial technology may enhance the impact of financial planning and risk tolerance, but not financial literacy. Millennials and Gen Z have strong economic knowledge, confidence, and risk tolerance, but risk perception hampers their investment decisions.

This study revealed several decision-making biases: Anchoring, Mental accounting, overconfidence, herding, loss aversion, self-attribution, confirmation, disposition effect, conservatism, representative, and hindsight. Behavioral finance says that investors must regulate their emotions when investing. Investors can better understand behavioral psychology and construct a better investment strategy by identifying biases' relative importance. As a result of the social and intellectual nature of human beings, which they incorporate into the process of decision-making, this concept of behavioral bias has made its way into existence. As a result, this study shed light on this element of investment decisions.

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