

# Behavioral Finance and Stock Market Investment Decisions: A Review of Retail Investor Biases

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## ABSTRACT

Current systems that produce multi-modal content, including video and audio, often suffer from missing objects, weak links between meanings, poor coordination of the visual and sound elements, etc. These problems often occur because the visuals and the audio are developed separately, resulting in a mismatch between what you see and what you hear. To address these challenges, we introduce SG-WORLD V2, a planning-first framework for semantic reasoning and coordination in structured world simulations. SG-WORLD V2 does not create video or audio directly, but rather a semantic blueprint. It translates natural language into machine-understandable representations, reasons on the Universal Scene Graph (USG), adds a Quantification Rule to keep track of the items requested, and employs Deterministic Pre-Temporal Synchronization (DPTS) to synchronize audio and visual events during planning. The system also has a self-correcting mechanism that checks semantic consistency before producing outputs. The framework is tested on 54 different prompts including object layouts, spatial relations, actions and synchronized audio-video scenarios. The results show that the object tracking, relationship maintenance and logically consistent planning are performed well. Overall, SG-WORLD V2 provides a transparent and reliable semantic planning paradigm, which could be a stepping stone for future video and audio generation systems, and also contribute to consistency and alignment among modalities.

**Keywords:** Behavioral Finance, Retail Investors, Investment Decisions, Behavioral Biases, Stock Market, Investor Psychology

## 1. INTRODUCTION

The Efficient Market Hypothesis (EMH) (Fama, 1970) has been used to explain financial markets suggesting that security prices fully reflect all available information and investors act rationally. Under this framework, investment decisions are expected to maximize utility and minimize risk. However, several market anomalies such as speculative bubbles, excess volatility and financial crises challenge the rationality assumption of investors.

Behavioral finance is a new approach that takes into account psychological factors in the financial decision process. The field was popularized by early work by Kahneman and Tversky (1979) who developed Prospect Theory to describe how people evaluate gains and losses with risk. Behavioral finance differs from traditional finance in that it recognizes that investors are subject to cognitive shortcuts, emotions and social factors.

Retail investors make up a huge chunk of today's financial markets. Their decisions influence market liquidity, valuation of stocks, and market efficiency in general. However, retail investors usually do not have the professional expertise and are therefore more subject to behavioral biases. Such biases can cause irrational decisions that adversely affect investment performance.

The objective of this review paper is to study the major behavioral biases affecting retail investors and their implications on stock market investment decisions.

## Objectives

- To assess the concept of behavioral finance and its relevance to investment decision making.
- To determine non-technical determinants of investment decisions of retail investors.
- To study the impact of behavioral biases on investment decisions in the stock market.
- To identify the research gaps and future research opportunities.

## 2. LITERATURE REVIEW

Table 1: Recent Empirical Studies on Behavioral Biases and Retail Investors (2020–2025)

| Author(s) & Year                           | Country/Market             | Sample Method                                          | Behavioral Biases Examined                                                 | Key Findings                                                                                                                                                    |
|--------------------------------------------|----------------------------|--------------------------------------------------------|----------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sharma, Adhikari & Khatun (2024)           | Nepal                      | Individual investors; mediation analysis               | Overconfidence, Loss Aversion, Herding, Familiarity Bias, Disposition Bias | Behavioral biases significantly influence investment decisions; financial risk propensity partially mediates these relationships.                               |
| Aqham et al. (2024) & Badola et al. (2024) | Emerging Markets           | 200 retail investors; mixed-method study               | Overconfidence, Herding, Anchoring, Loss Aversion                          | Overconfidence was the most prevalent bias. Herding, anchoring, and loss aversion negatively affected portfolio performance.                                    |
| El Asri & Abdelaziz (2024)                 | Emerging Markets           | Systematic Literature Review                           | Overconfidence, Herding, Anchoring, Loss Aversion                          | Behavioral biases remain dominant determinants of investment decision-making in emerging markets; research gaps remain in comparative and longitudinal studies. |
| Jhalani et al. (2026), Shah et al. (2024)  | Emerging Markets           | 69 empirical studies; bibliometric & systematic review | Overconfidence, Herding, Anchoring, Loss Aversion                          | Financial literacy moderates but does not eliminate bias effects; crisis periods amplify behavioral distortions.                                                |
| Liu et al. (2022) & Srivastava(2025)       | Global Financial Markets   | Simulation and reinforcement-learning framework        | Prospect Bias, Optimism, Pessimism, Bounded Rationality                    | Investor biases affect market liquidity and price efficiency; irrational behavior can create market anomalies.                                                  |
| Zhou et al. (2024) & Paul et al. (2023)    | Financial Decision Systems | Experimental study on financial AI models              | Risk Preference Bias, Financial Irrationality                              | Behavioral finance concepts remain relevant in AI-assisted investment decisions; financial biases can persist even in automated systems.                        |

|                                          |       |                                 |                                  |                                                                                                                     |
|------------------------------------------|-------|---------------------------------|----------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Indian Economic Survey Discussion (2025) | India | Retail investor market analysis | Sentiment Bias, Recency Bias     | Rapid retail participation increases vulnerability to market corrections and behavioral reactions during downturns. |
| Retail Investor Behavior Analysis (2025) | India | Retail investment observations  | Anchoring, Herding, Recency Bias | Retail investors often rely on recent performance and crowd behavior, resulting in suboptimal investment timing.    |

### 3. THEORETICAL BACKGROUND OF THE BEHAVIORAL FINANCE

Behavioral finance is a mix of psychology, economics and finance to explain investor behavior. Behavioral finance is based on two large theories.

#### 3.1 Theory of Prospects

In Prospect Theory, Kahneman et al.(1979) & Kumar et al. (2023) suggest that individuals assess gains and losses relative to a reference point and not to the absolute levels of wealth. Investors generally tend to eschew risk when it comes to gains and take risks when it comes to losses.

#### 3.2 The Heuristic Theory

Heuristics are shortcuts that people use to make complicated decisions easier. Heuristics minimize the cognitive effort but often lead to systematic errors and biases (Tversky et al (1974) & Shefrin (2007))

### 4. RESEARCH METHODOLOGY

#### 4.1 Design of the Research

This study employs the Systematic Literature Review (SLR) methodology to synthesize and critically appraise the extant research on behavioral biases affecting retail investors' stock market investment decisions. The review is performed according to the Preferred Reporting Items for Systematic Reviews guidelines to ensure transparency, reproducibility and methodological rigor in the selection and analysis of relevant studies.

#### 4.2 Data Sources and Search Strategy

A thorough search in major academic databases was carried out to locate relevant literature including journal articles. The search process used combinations of keywords and Boolean operators to find studies related to behavioural finance and retail investor behaviour.

Main search terms were:

- "Behavioral Finance"
- ""Behavioral Biases"
- "Retail Investors"
- "Investment Decisions in the Stock Market"
- "Psychology of Investors"
- "Overconfidence Bias"
- "Loss aversion"
- "The Herd" "Anchoring bias"
- "Confirmation Bias"

### 4.3 Inclusion Criteria

The review included studies if they met the following criteria:

1. Published in scholarly journals, review articles, academic reports or other credible sources related to behavioral finance and investment decision-making.
2. In English language.
3. Retail investors and behavioral finance.
4. Reviewed one or more behavioral biases that affect investment decisions.
5. Empirical findings, systematic reviews or theoretical contributions on investor behavior.

### 4.4. Criteria for Exclusion

The following studies were excluded according to the following criteria:

1. Conference proceedings, editorials, book reviews and dissertations.
2. Publications not in English.
3. Studies on institutional investors only.
4. Articles with inadequate methodological description.
5. Duplicate records identified in databases.

### 4.5 Selection of studies

Relevant articles were identified and screened using the PRISMA framework. A total of 150 records were identified from database searches initially. After deduplication and screening titles and abstracts, 60 articles were selected for full text assessment. After eligibility assessment, 20 studies met the inclusion criteria and were included in the final review.

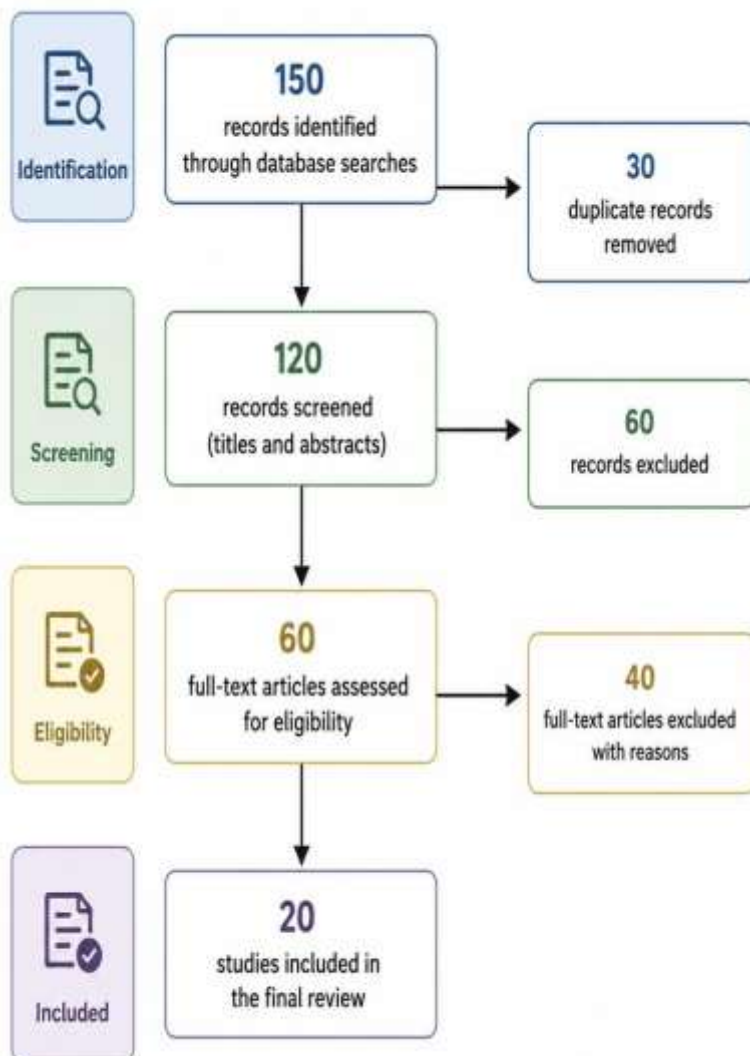


Figure 1: PRISMA flow diagram of study selection

#### 4.6 Extraction and Analysis of Data

Data from each selected study were systematically extracted using a standardized review matrix. The extracted information was:

- Author(s) and year of publication
- Study country
- Research aims
- Characteristics of the sample
- Methodology employed
- Reviewed behavioral bias
- Principal results

Thematic analysis approach was used to classify the literature into major behavioral bias dimensions such as overconfidence, loss aversion, herding behavior, anchoring bias, confirmation bias, representativeness bias, availability bias, and mental accounting. The synthesized results were employed to identify common themes, research trends, knowledge gaps and future research opportunities.

#### 4.7 Evaluation of quality

To ensure the reliability and validity of the review, the study included scholarly journal articles, review papers, academic reports and other relevant sources that contributed to understanding behavioral biases and retail investor decision-making. The sources selected were examined for research design, methodological rigor, sample adequacy, data analysis techniques and relevance to the research objectives. For the final synthesis, only those sources that met the predefined quality criteria were included.

### 5. MAJOR BEHAVIORAL BIASES AFFECTING RETAIL INVESTORS

#### 5.1 The Bias of Overconfidence

Overconfidence is when investors overrate their knowledge, skills and ability to predict market movements. Barber and Odean (2001), Statman (2019) & Pompian (2017) found that overconfident investors trade more often and have lower net returns due to excessive trading costs.

Overconfidence leads investors to underestimate risks and overestimate expected returns, resulting in poor portfolio diversification.

#### 5.2 Loss attenuation

Loss aversion is a tendency of individuals to experience losses more than equivalent gains (Kahneman & Tversky, 1979). Investors tend to remain long on losing stocks and quickly sell winning investments.

This behavior contributes to the disposition effect and can have a negative effect on portfolio performance.

#### 5.3 Herd Behaviour

This is referred to as herding, when investors follow others' actions instead of their own analysis (Banerjee, 1992 & Shukla et al. (2020)). Social media and online investment communities have amplified herding behavior among retail investors.

Herding can result in market bubbles, over-volatility and irrational price movements.

#### 5.4 Anchorage bias

Anchoring bias occurs when investors rely too heavily on the first piece of information they receive when making investment decisions (Tversky & Kahneman, 1974).

For instance, investors can anchor their valuation on a stock's historical price, and not adjust sufficiently when new information is available.

#### 5.5 Confirmation Bias

Confirmation bias is the tendency to look for and interpret information in a way that confirms one's pre-conceptions (Nickerson, 1998).

Such bias may impede investors' ability to objectively evaluate investment opportunities and risks.

### 5.6 Bias Toward Representativeness

Representativeness bias is when investors judge future outcomes based on recent trends rather than objective probabilities. Also, investors generally assume that prior performance is a good prediction of future returns, which leads to mispricing and bad investment choices.

### 5.7 Mental Accounting

Mental accounting is the tendency for individuals to divide financial decisions into different mental accounts (Thaler, 1985).

Even if economically equivalent, gains, dividends and salary income can be treated differently by investors resulting in inefficient portfolio management.

Table 2: Summary of Major Behavioral Biases

| Behavioral Bias    | Description                          | Impact on Investment Decisions    |
|--------------------|--------------------------------------|-----------------------------------|
| Overconfidence     | Excessive belief in personal ability | Excessive trading and risk-taking |
| Loss Aversion      | Fear of losses exceeds gains         | Holding losing investments longer |
| Herding            | Following crowd behavior             | Market bubbles and volatility     |
| Anchoring          | Dependence on initial information    | Incorrect valuation decisions     |
| Confirmation Bias  | Seeking supportive evidence          | Poor decision quality             |
| Representativeness | Reliance on recent trends            | Misjudgment of future returns     |
| Mental Accounting  | Segregating financial decisions      | Portfolio inefficiency            |

Table 2 summarizes the key behavioral biases discussed in the literature. Each bias affects investment decision-making differently, but all contribute to deviations from rational financial behavior. Understanding these biases helps explain why investors frequently make suboptimal investment choices.

## 6. BEHAVIORAL BIASES AND INVESTMENT DECISION-MAKING

Behavioral biases influence several aspects of investment behavior, including:

- **Risk Perception**

Behavioral biases affect how investors perceive and evaluate risk. Overconfident investors often underestimate risks, whereas loss-averse investors may avoid potentially profitable opportunities.

- **Portfolio Diversification**

Overconfidence and representativeness biases frequently lead investors to concentrate investments in a limited number of stocks, reducing diversification benefits.

- **Trading Frequency**

Research indicates that overconfident investors engage in excessive trading, increasing transaction costs and reducing net returns.

- **Market Timing**

Anchoring and confirmation biases impair investors' ability to respond effectively to changing market conditions, resulting in poor timing decisions.

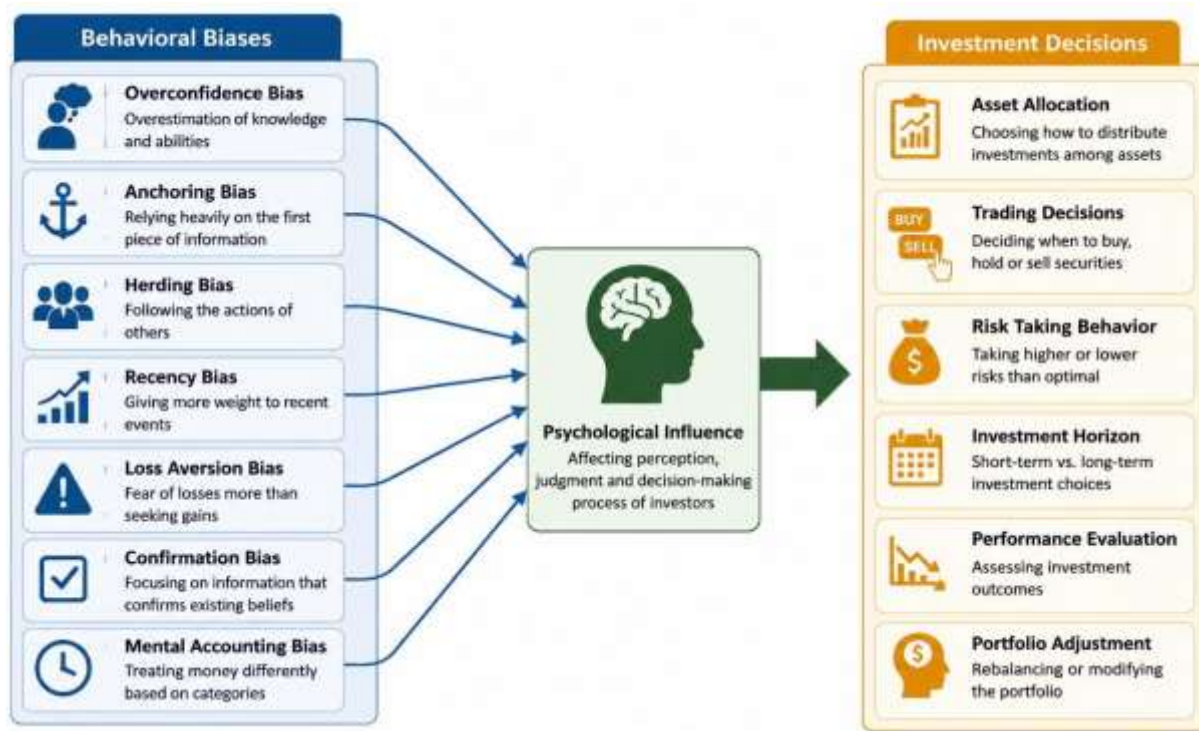


Figure 2: Relationship between Behavioral Biases and Investment Decisions

Figure 2 show the impact of different behavioral biases on financial markets investors' decision making. The left side of the figure shows some important behavioral biases: Overconfidence Bias, Anchoring Bias, Herding Bias, Recency Bias, Loss Aversion Bias, Confirmation Bias, and Mental Accounting Bias. These biases influence the investors' perception, judgment and evaluation of the market information.

The central component, entitled Psychological Influence, represents the cognitive and emotional mechanisms by which these biases affect investor behavior. These psychological factors often affect investors' decision making process more than rational analysis.

The right side of the figure shows the main areas of Investment Decisions affected by behavioral biases. These areas include Asset Allocation, Trading Decisions, Risk-Taking Behavior, Investment Horizon, Performance Evaluation and Portfolio Adjustment. The arrows show that behavioral biases directly affect psychological judgment, which in turn influences investment decisions and overall portfolio management.

Overall, the figure shows that behavioral biases have a significant impact on the financial decisions of retail investors and may cause deviations from rational investment behavior, ultimately influencing investment outcomes and portfolio performance.

## 7. DISCUSSION

The review of the literature shows that behavioral biases influence the stock market decisions of retail investors considerably. Overconfidence is one of the most researched biases, and is strongly associated with excessive trading and poor investment performance. In the same vein, the aversion to losses impacts investors' reticence to realize losses, causing sub-optimal portfolio management.

The availability of financial information on social media platforms has increased the relevance of herding behavior in the digital era. Investor behavior is often driven by collective opinions rather than objective analysis, which fuels market volatility.

Anchoring and confirmation biases also limit investors' ability to process new information objectively. These biases create lasting errors in valuation and forecasting. Mental accounting and representativeness also skew investment decisions, by prompting illogical classification and excessive confidence in past results.

## 8. RESEARCH GAP

Despite the considerable amount of research in behavioral finance, there are still some gaps that need to be filled:

- Few studies on emerging economies.
- Lack of adequate studies on behavioral biases of young retail investors.

- No comparative studies between demographic groups.
- Limited studies on the impact of social media driven investment behavior.
- Need for longitudinal studies on behavioral biases over time.

## 9. DIRECTIONS FOR FUTURE RESEARCH

Future studies may take into consideration: • Behavioral biases in investments in cryptocurrencies and digital assets. • Interactions of artificial intelligence and behavioral finance. • Comparisons of investor behavior across countries. • Gender differences of behavioral biases • Effect of financial literacy programs in reducing investment biases.

## 10. CONCLUSION

Behavioral finance provides a full explanation for deviations from rational investment behavior. The literature review of the study shows that retail investors are highly affected by psychological biases such as Overconfidence, Loss Aversion, Herding, Anchoring, Confirmation Bias, Representativeness and Mental Accounting. These biases influence perception of risk, diversification of portfolio, frequency of trade and investment performance. Behavioral biases can be detected and corrected to improve investment performance and make financial markets more efficient. Rational investment behaviour of retail investors is a key to investor education, financial literacy programmes and awareness of psychological influences.

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