

Behavioral Biases and Retail Investor Irrationality: Uncovering New Drivers of Investment Performance Using Bibliometric Analysis

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Abstract

This research study explores the development of behavioral biases, particularly overconfidence, in the investment decisions made by individual investors and their consequences. Though traditional financial theories, such as the Efficient Market Hypothesis (EMH), presume rationality, evidence indicates that emotional and cognitive biases often mislead investors' decisions. Through a bibliometric analysis of 195 Scopus datasets spanning from 2017 to 2025, key research patterns, the most cited authors, contributing countries, and thematic clusters in behavioural finance have been identified. The results indicate that overconfidence and investment decision-making have emerged as the most significant keywords, reflecting scholarly work trends since 2020, with India and the USA as leading contributors. The findings highlight a notable gap in studies addressing the factors contributing to investors' irrational behaviours. This research aims to enhance the awareness of financial advisors, policymakers, and retail investors regarding the reduction of biases, thereby aiding in informed decision-making and improved investment outcomes.

Keywords: Systematic Literature Review, Behavioural Finance, Overconfidence, Retail Investors, Bibliometric Analysis, Financial Literacy, Irrationality

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Introduction

The financial industry plays a crucial role in driving economic growth, and every country actively participates in capital formation (Vijaya, 2016). Retail investors typically make financial decisions based on rational and objective perspectives, guided by traditional theories such as the Efficient Market Hypothesis and the Capital Asset Pricing Model (CAPM) (Upashi & Kadakol, 2023). However, the field of behavioral finance sheds light on the irrational behaviors exhibited by individuals in investment contexts. Leading figures in behavioral finance, such as Daniel Kahneman, Amos Tversky, Robert Shiller, and Richard Thaler, have significantly contributed to its development. Retail investors' behaviors are often analyzed through the lens of behavioral finance, which suggests that they frequently fall prey to emotional and cognitive biases (Upashi & Kadakol, 2023). Recent research highlights the influence of inadequate self-control, which can lead to overconfidence among retail investors. This often results in excessive trading, even when investors are incurring losses due to their reactions to market patterns. Behavioral finance reveals how real-life scenarios impact individuals, taking into account the various behavioral factors at play. It is essential to examine the elements that contribute to the irrationality of investors in this context.

Recent reports from SEBI indicate a concerning trend of increasing losses among retail investors in the stock

market (Benn Kochuveedan, 2024). According to the SEBI study, 7 out of 10 retail investors are currently facing losses. It is imperative to understand the significance of behavioral deviations in decision-making, as these insights could assist retail investors in minimizing errors resulting from irrational behavior that

negatively affects their investment performance (Wang, 2023). The primary aim of this study is to evaluate the behavioral factors that influence investor decision-making and their subsequent impact on investment performance. The findings suggest that retail investors should be mindful of how biases can affect their decision-making processes.

The findings are proving valuable for financial firms, advisors, and retail investors who are focused on effectively identifying the negative impacts of behavioral factors highlighted in the current study. This enhanced understanding of behavioral finance factors can subsequently aid investors in making more informed investment decisions (Aref et al., 2024).

The research study is structured as follows: Section 2 provides a review of the literature on the behavioral factors influencing investment decisions. Section 3 outlines the methodology, while Sections 4 and 5 present the research discussion and the conclusion of the paper, respectively.

1. Review of Literature

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The evolution of behavioral finance was initially supported by Herbert Simon in 1955 through his concept of bounded rationality, which critiques the assumption of rationality prevalent in traditional theory (Simon, 1955). This study aimed to compare and understand the behavioral factors influencing investment performance, focusing on aspects such as overconfidence, greed, and the availability of market information to retail investors. Despite the Efficient Market Hypothesis (EMH) being a cornerstone of traditional finance, many questions remained unresolved, which allowed for the emergence of behavioral finance. A significant contribution to this field came from Kahneman and Tversky in 1979 with their research on prospect theory, which revealed how individuals frequently deviate from rational decision-making due to factors like loss aversion and the complexity of choice. This work laid the groundwork for integrating investor psychology, finance, and behavioural economics. In 1980, further concepts, including mental accounting, the endowment effect, and consumer choice, were introduced to behavioural finance, solidifying its foundation (Thaler, 1985).

The literature review on behavioural finance can be categorised into distinct sections, each exploring unique facets. The first phase evaluates prospect theory, which explains why investors tend to avoid risk by holding onto losing stocks while selling their winning ones (Shefrin, 2002). Many investors exhibit herding behaviour or the overconfidence bias during their decision-making processes. This tendency can stem from a low-risk propensity, driven by a desire to minimize financial losses (M. Ahmad & Shah, 2020). In the second phase, the impact of overconfidence is examined as a cognitive bias, where investors often overestimate their investment outcomes and abilities, leading them to take unwarranted risks (Almansour et al., 2023). Due to this overconfidence, investors may adopt a riskier approach in their decision-making (Parveen et al., 2020). A study conducted by Hossain and Siddiqua (2022) highlights the role of overconfidence among Bangladeshi investors in the decision-making process. Their findings suggest that higher confidence levels are associated with a greater willingness to take risks. The investigation revealed that overconfidence significantly influences investment decisions, emphasizing that it can distort individual decision-making processes. The final phase focuses on a crucial behavioral factor: the allocation of attention by investors towards market stocks. The primary focus on market information arises from investor demand on investment forums. The second instrument involves considering the insights shared by other investors, as expressed in social media posts and by influencers (Reichenbach & Walther, 2024). Consequently, while the study of social media offers valuable insights, it does not provide a comprehensive set of information; hence, investors must ultimately decide which stocks to purchase or avoid. Various dimensions of information contribute to making informed decisions.

The literature review emphasizes the significance of risk attitude, particularly how overconfidence can lead to excessive trading behaviours. Bibliometric analysis serves as an organized approach to understanding a specific knowledge area by utilizing various tools (Mishra et al., 2017). This analysis aims to identify emerging or under-explored domains within theme-based instructions derived from research articles, conferences, and journals (Ojha & Agarwala, 2024). The dataset is examined using tools such as VOSviewer, RStudio, and Biblioshiny.

The objective of this research is to explore the influence of behavioural finance on investment performance. It will examine various factors that contribute to this relationship, with a particular focus on financial psychology. The study aims to understand how emotions and cognitive biases, specifically greed and overconfidence, affect decision-making in investment scenarios.

The research questions designed to explore the topic are as follows:

RQ1: What are the most frequently utilised keywords in the literature, and how do these keywords reflect the current trends and focal points of research within this field?

RQ2: Who are the authors that have been most frequently cited in the relevant publications, and what impact do their works have on the development of theories and methodologies in this area?

RQ3: What is the annual count of publications produced in this field over the years, and how does this trend indicate the growth and evolving interest in the subject?

RQ4: Which countries have contributed the most to the body of cited literature, and how do their contributions compare in terms of quality and influence across different regions?

2. Methodology:

The body of literature concerning overconfidence, specifically from the years 2017 to 2025, has been thoroughly evaluated. A range of relevant keywords was employed to guide the research, including phrases such as "overconfidence AND retail investors," "overconfidence AND investment decisions," "overconfidence AND behavioral biases," and "overconfidence AND stock market."

To conduct a comprehensive analysis, data regarding publication years, journals, sources, authors, countries, and keywords were extracted from the Scopus database. The text data was then processed using the visualization program Vosviewer, which facilitated the analysis. During this process, duplicate documents were eliminated, as well as unrelated titles, book chapters, and any papers that were not written in English, ensuring a focused and relevant dataset for further study.

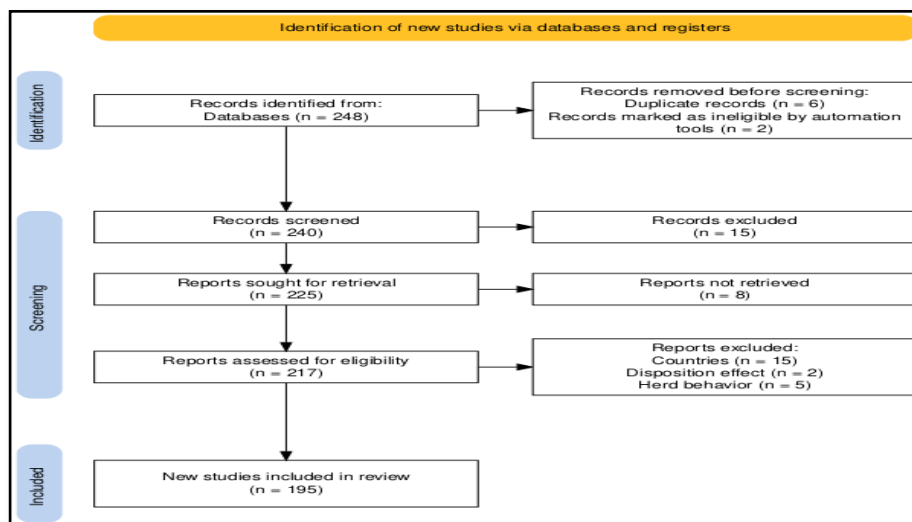


Figure1: Using Prisma framework

The investigation into the identified keywords has yielded a total of 248 documents. These documents underwent a thorough screening process guided by specific exclusion criteria. In this meticulous review of the database, we followed a structured approach to narrowing down the information. After careful evaluation, we compiled a final set of 195 records that are relevant to our study. To facilitate a comprehensive analysis and interpretation, we have established certain thresholds. Our examination has broadly focused on key areas, allowing us to identify significant gaps within the existing literature that remain underexplored. This process not only highlights the need for further investigation but also sets the stage for potential future research opportunities.

3. Analysis and Interpretation

Between the years 2020 and 2025, a comprehensive bibliometric analysis was conducted using data extracted from Scopus, resulting in a total document count of 195 publications. This analysis specifically focuses on the keyword "overconfidence," which has been a significant area of research during this period. As illustrated in Figure 2, the graph depicts the trend in the number of publications related to overconfidence over these five years, beginning with its initial appearance in 2020. The visual representation highlights not only the growth in research output on this topic but also provides insights into the evolving interest and scholarly attention surrounding overconfidence in various academic fields.

4.1 Keywords

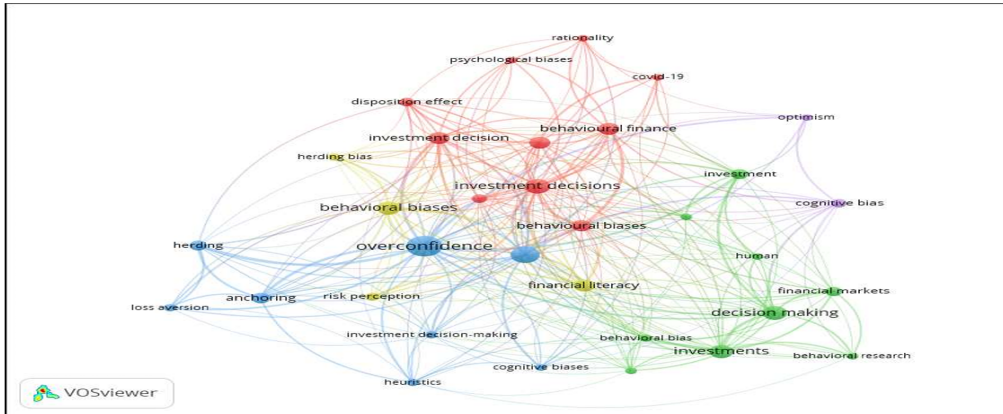
Out of a total of 1,546 identified keywords, a subset of 519 keywords met the criteria of having a minimum of

five occurrences in articles that have been published. The analysis utilised the Scopus dataset, which provides a robust framework for network visualisation of keywords through the software VOSviewer. Among the 519 keywords, "overconfidence" emerged as the most frequently cited term within Cluster 2, which is represented in green. This keyword recorded a substantial total link strength of 114, with 28 link connections and a total of 44 occurrences in the literature.

In Cluster 1, coloured red, the keyword "investment decision" was the next most prominent term, exhibiting a total link strength of 69, comprising 27 connections and 22 occurrences. Cluster 3, represented in blue, highlighted "decision making," which had a total link strength of 68 and included 21 links along with 20 occurrences. Meanwhile, Cluster 5, depicted in purple, focused on "behavioral finance," showing a strong presence with 28 links, a total link strength of 86, and 30 occurrences. Cluster 4, marked in yellow, centred on "behavioral biases," noting 19 occurrences, 21 links, and a total link strength of 41.

The survey revealed that the most investigated keywords from the database were "overconfidence" and "investment decision." Certain keywords, such as "risk perception," "herding," and "loss aversion," were notably prevalent prior to 2018. In more recent studies, particularly after 2020, new keywords emerged, including "Covid-19," "heuristics," "cognitive biases," and "psychological biases." This shift indicates a growing interest in exploring financial literacy and its implications through the analysis of these keywords in the context of contemporary economic challenges.

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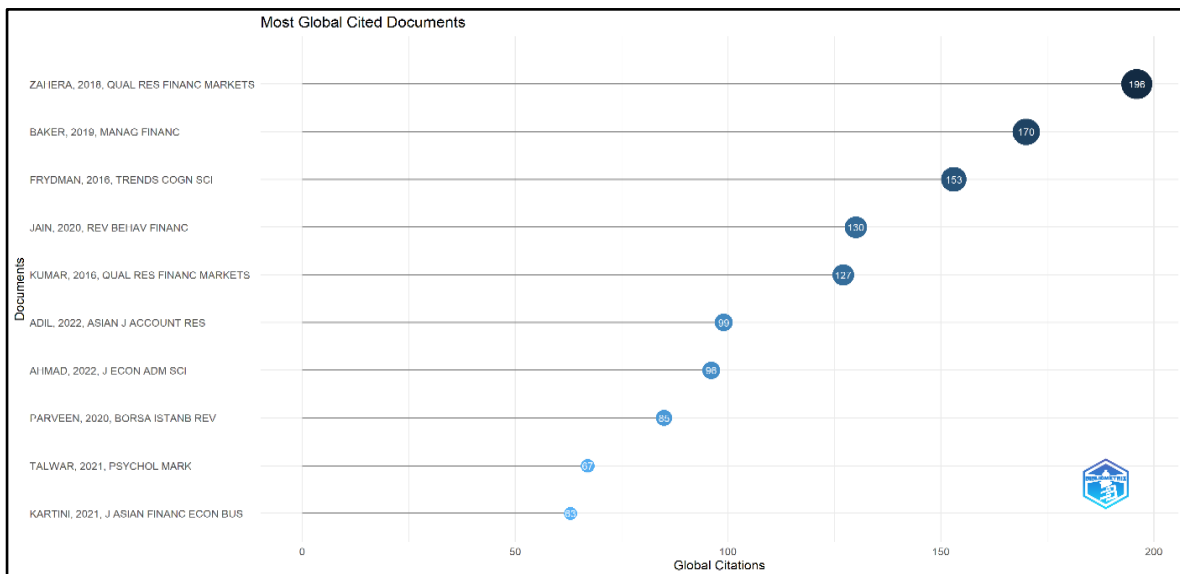


Source: Prepared using VOS viewer with the data extracted from the Scopus database

4.2 Authors

Out of a total of 342 authors, 10 have successfully reached the threshold of at least 4 documents each. This highlights the contributions of these authors within the research community.

Paper	Total Citations	TC per Year	Normalized TC
Zahera, 2018, Qual Res Financ Markets	196	24.50	1.88
Baker, 2019, Manag Financ	170	24.29	2.52
Frydman, 2016, Trends Cogn Sci	153	15.30	4.30
Jain, 2020, Rev Behav Financ	130	21.67	4.37
Kumar, 2016, Qual Res Financ Markets	127	12.70	3.57
Adil, 2022, Asian J Account Res	99	24.75	4.65
Ahmad, 2022, J Econ Adm Sci	96	24.00	4.51
Parveen, 2020, Borsa Istanb Rev	85	14.17	2.86
Talwar, 2021, Psychol Mark	67	13.40	2.98
Kartini, 2021, J Asian Financ Econ Bus	63	12.60	2.81

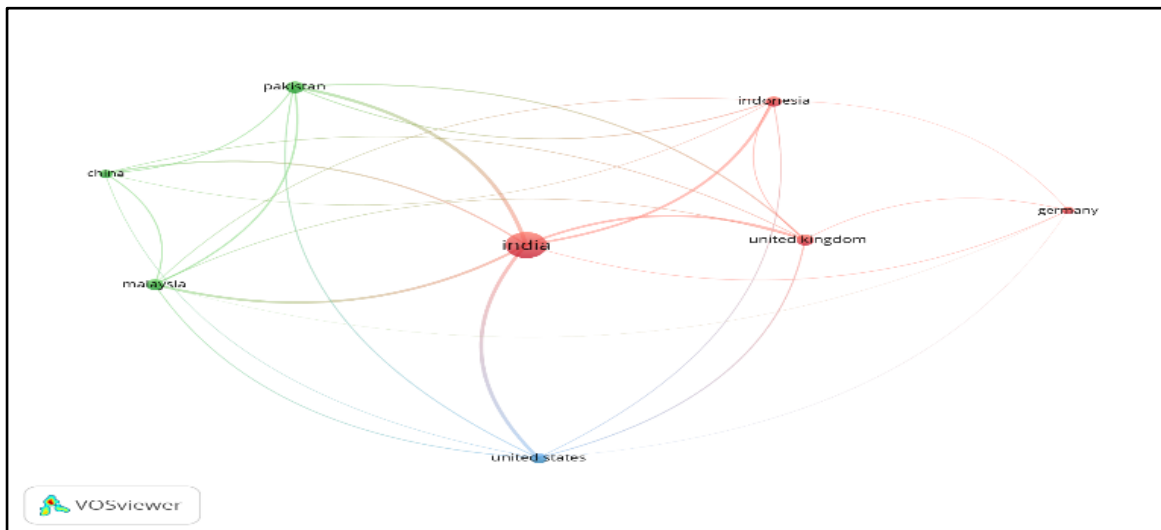


Source: compiled data from Scopus using bibiloshiny app

4.3 Country

Out of a total of 133, 10 successfully met the criteria by having at least 4 documents with the necessary citations in the country.

Country	TC	Average Article Citations
India	1052	32.90
Pakistan	278	30.90
Usa	255	42.50
Indonesia	91	11.40
Malaysia	77	15.40
Norway	67	67.00
Libya	49	49.00
Ghana	43	21.50
United Kingdom	37	9.20
Turkey	30	15.00

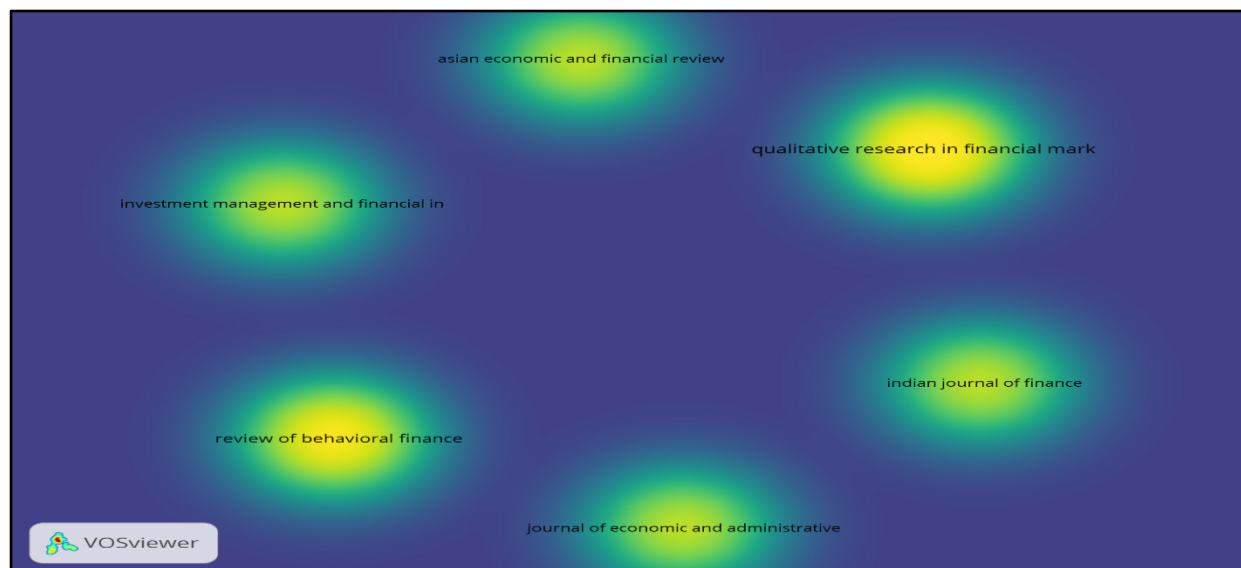


Source: Prepared using VOS viewer with the data extracted from the Scopus database

4.4 Journals

Among a total of 312 journals evaluated, 32 have successfully met the established criteria, which require them to have a minimum of at least four published documents from various sources and a specified minimum number of citations attributed to their country.

Sources	Articles
Qualitative Research In Financial Markets	6
Review Of Behavioral Finance	5
Asian Economic And Financial Review	3
Indian Journal Of Finance	3
Investment Management And Financial Innovations	3
Journal Of Economic And Administrative Sciences	3
Acta Psychologica	2
Corporate And Business Strategy Review	2
Ecs Transactions	2



Source: Prepared using VOS viewer with the data extracted from the Scopus database

Discussion

The comprehensive analysis conducted through the Scopus database yielded a total of 284 research papers published between 2017 and 2025. After a rigorous screening process to eliminate irrelevant studies, we narrowed this selection down to 195 papers. The focus of these selected studies revolves around key themes such as overconfidence, decision-making processes, investment decisions, and the various behavioral biases that influence these areas.

Among the identified keywords, several noteworthy combinations emerged, indicating the primary areas of focus within the literature. The most prominent combinations included “overconfidence AND retail investors,” “overconfidence AND investment decisions,” “overconfidence AND behavioral biases,” and “overconfidence AND stock market.” It is important to note that while the intersection of overconfidence with behavioral biases, cognitive biases, and excessive trading is a crucial area of inquiry, the number of articles addressing these connections remains relatively scarce. Research indicates that individual retail investors often exhibit a tendency toward overconfidence when making investment decisions. This phenomenon has been extensively discussed in the work of Zahera Syed (2018), who highlighted that a lack of financial literacy can contribute significantly to this overconfidence. Additionally, risk perception plays a critical role in shaping the quality of investment decisions and their outcomes. However, enhancing financial literacy and improving risk perception are identified as effective strategies that could potentially elevate the quality of decision-making among investors.

4. Recommendations:

The findings of this study are expected to offer valuable insights for various stakeholders in the investment landscape:

Financial Analysts: By understanding the patterns of awareness among investors, financial analysts can develop better models to predict and analyse investment behaviours’ more effectively. **Professional Advisors and Regulators**:** It is essential for these entities to recognize the importance of protecting investors from behavioral biases, ensuring that they are equipped to support informed decision-making.

Retail Investors:** Individuals looking to invest must become more aware of the emotional influences that can affect their decisions, fostering a more thoughtful approach to their investment choices.

Despite existing research, there remain significant gaps in our understanding of behavioral finance that warrant further exploration:

There is a scarcity of empirical and conceptual research focused on the previously unexamined behavioral factors that can influence investment decisions. Some studies have isolated specific behavioral biases, overlooking how these biases interconnect and collectively drive investment choices.

Additionally, there is a lack of comprehensive integration of various behavioral factors that affect the actions of retail investors, highlighting the need for a more holistic perspective in this area.

5. Conclusion

The decision to invest is significantly influenced by both internal and external factors, which play a crucial role in determining the choice of investment instruments. One prominent issue that can complicate these decisions is overconfidence, often rooted in irrational thinking. Financial literacy emerges as a key element in addressing this challenge, particularly in the context of investment decision-making and the tendency toward overconfidence. The analysis of behaviour post-COVID-19 has revealed a marked increase in the impact of overconfidence on investors’ decisions.

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