

Thirty Years of Behavioral Finance Research: A Bibliometric Perspective on Financial Markets

Campo Elías López-Rodríguez ¹, Luis Gabriel Gutiérrez Bernal ²,
Luis Alberto Páramo Renza ², William Vásquez Hernández ³

¹ Corporación Universitaria de Asturias, Bogotá, Colombia

² Fundación Universitaria del Área Andina, Bogotá, Colombia

³ Universidad Nacional Abierta y a Distancia UNAD, Bogotá, Colombia

Abstract – The importance of behavioral finance lies in its ability to explain and predict financial behaviors that do not align with traditional models of rational economics. This impacts financial markets by offering a perspective that challenges conventional assumptions about how markets and investors operate. Therefore, the objective of this research is to characterize the scientific output of behavioral finance in financial markets over the past 30 years through a bibliometric analysis. Scopus was used to analyze 994 documents focused on the areas of Business, Management, Economics, Econometrics, Finance, Social Sciences, and Multidisciplinary studies using R Core Team 2022 software with the Bibliometrix package and VOSviewer. The main results reveal the following thematic clusters: "Behavior and decision-making in personal finance," "Impact of psychological and market factors on economic crises," "Innovations in trading and financial analysis in the digital age," "Advanced analysis and prediction in finance and economics," "Financial markets and economic systems," "Financial management models and risk analysis," and "Opinions and data on social networks."

The findings conclude that these clusters reflect the diversity and breadth of the field of behavioral finance, spanning from individual behavior in financial decision-making to advanced analysis and prediction in global markets, as well as the influence of psychological and technological factors in the current economic context.

Keywords – Behavioral finance, financial markets, financial management, bibliometric analysis.

1. Introduction

Behavioral finance corresponds to an economic discipline that explores how psychological, social, and emotional factors influence the financial decisions of individuals and organizations [1]. Unlike classical financial theory, which assumes that market participants act rationally and make optimal decisions based on all available information [2], behavioral finance acknowledges that individuals frequently make irrational decisions [3]. These behavioral patterns often manifest as cognitive biases, such as overconfidence, loss aversion, and herd behavior, which lead to decisions that fail to maximize personal or corporate economic well-being [4].

Behavioral finance examines how irrational decisions can affect the functioning of financial markets [5]. An example of this is when these biases contribute to the formation of price bubbles, where assets become overvalued due to investors' irrational euphoria, or financial panics, where asset prices plummet due to widespread fear [6]. By integrating insights from psychology and economics, behavioural finance offers a comprehensive and realistic view of market behaviour, helping to explain phenomena that can not be fully understood through traditional financial models [7].

Financial markets, on the other hand, are platforms or systems where financial assets such as stocks, bonds, currencies, and derivatives are traded [6]. Their primary function is to facilitate the transfer of funds between savers and investors, providing companies and governments with the capital necessary to finance their essential functions [8].

DOI: 10.18421/TEM151-26

<https://doi.org/10.18421/TEM151-26>

Corresponding author: Campo Elías López-Rodríguez,
Corporación Universitaria de Asturias, Bogotá, Colombia

Email: campo.lopez@asturias.edu.co

Received: 18 March 2025.

Revised: 06 October 2025.

Accepted: 15 October 2025.

Published: 27 February 2026.



© 2026 Campo Elías López-Rodríguez et al.; published by UIKTEN. This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 4.0 License.

The article is published with Open Access at <https://www.temjournal.com/>

By determining asset prices and enabling investment diversification, financial markets channel resources into growth opportunities among multiple participants while mitigating risks.

Understanding the scientific production associated with behavioural finance in financial markets is essential to comprehend how investors' emotions, cognitions, and behaviours can influence financial decisions and, consequently, market functioning. Behavioural finance challenges the traditional notion that markets are perfectly rational, promoting the theory that investment decisions are often influenced by subjective psychological biases that may lead to outcomes differing from expectations.

The relevance of behavioural finance to financial management lies in its ability to offer realistic explanations of market behaviours [9]. Rather than relying solely on theoretical models that assume economic agents' rationality, behavioural finance incorporates human aspects such as fear, risk aversion, and overconfidence [3]. For financial managers, this means adopting a holistic approach to analysing investor behaviour and making strategic decisions that consider both economic and psychological factors impacting real market dynamics.

Thus, the primary objective of this research is to characterise the scientific production of behavioural finance in financial markets over the past 30 years through a bibliometric analysis. The following questions will be addressed:

- What is the trend in the production of scientific documents associated with behavioural finance in financial markets between 1995 and 2024?
- Who are the most representative authors studying behavioural finance in financial markets?
- Which studies have the most significant impact based on citation count?
- Which journals produce the highest number of documents related to behavioural finance in financial markets?
- Which countries lead international production related to behavioural finance in financial markets?
- How are citation networks associated with behavioural finance in financial markets manifested?
- How is bibliographic coupling associated with behavioural finance in financial markets represented?
- What is the conceptual structure of publications focused on behavioural finance in financial markets?

Answering these questions will uncover new research areas pertinent to both academia and productive sectors, particularly in enhancing and consolidating financial management practices.

2. Methodology

To conduct the bibliometric analysis, the Scopus database was utilised for its wide coverage and access to high-quality research. This database facilitates the discovery and ensures proper information management [10]. Queries can be performed across various fields such as titles, abstracts, keywords, references, and data can be downloaded with relative ease. However, there are limitations when dealing with extremely large result sets exceeding 2000 entries [11].

Data collection was conducted in February 2025, covering an analysis of documents from 1995 to 2024, focusing on relevant studies in the areas of Business, Management, Economics, Econometrics, Finance, Social Sciences, and Multidisciplinary fields. This allowed results to be centred on the finance field, generating the following search syntax:

TITLE-ABS-KEY ("behavioural finance") AND TITLE-ABS-KEY (financial AND markets) AND PUBYEAR > 1994 AND PUBYEAR < 2025 AND (EXCLUDE (SUBJAREA, "CHEM") OR EXCLUDE (SUBJAREA, "CENG")) AND (EXCLUDE (DOCTYPE, "no") OR EXCLUDE (DOCTYPE, "er") OR EXCLUDE (DOCTYPE, "tb") OR EXCLUDE (DOCTYPE, "ed"))

The R Core Team 2022 software along with the Bibliometrix package, a relevant tool in the field of bibliometrics and scientometrics [11], was used. Additionally, VOSviewer, a free programme developed by researchers in the Netherlands [12], was employed.

3. Results

This Section presents the results of the study, organised around key components that reflect the intellectual and scientific dynamics of the field. The analysis begins with an examination of scientific document production trends, followed by the identification of the most representative authors and the documents with the greatest impact. Subsequently, the attention is directed to the journals with the highest document output and the countries leading document production. The results further include an exploration of citation network analysis, bibliographic coupling, and the conceptual structure of publications, providing a comprehensive overview of the research landscape.

3.1. Scientific Document Production Trends

The bibliometric analysis reveals a total of 1033 scientific documents, distributed across 764 articles (73%), 34 books (3.5%), 58 book chapters (6%), 122 conference proceedings (12%), 2 conference reviews (0.02%), and 53 reviews (5.3%).

A total of 2,227 authors were counted, of whom 193 (8.6%) published individually, while 2,034 (91.4%) engaged in co-authorship. International co-authorship represents 16.1%, with an average of 2.53 co-authors per document and a general collaboration index of 2.25. Each author contributes an average of 0.549 documents. On average, the documents receive 13.7 citations each, with 2,511 author keywords utilised.

The average age of the documents is 6.38 years, with an annual growth rate of 16.69%. The annual production of documents published on the studied topic was low between 1995 and 2004, during which only 13 studies were published. However, from 2005 to 2024, production has increased significantly, reflecting an emerging scientific interest in developing studies related to behavioural finance in financial markets, as illustrated in Figure 1.

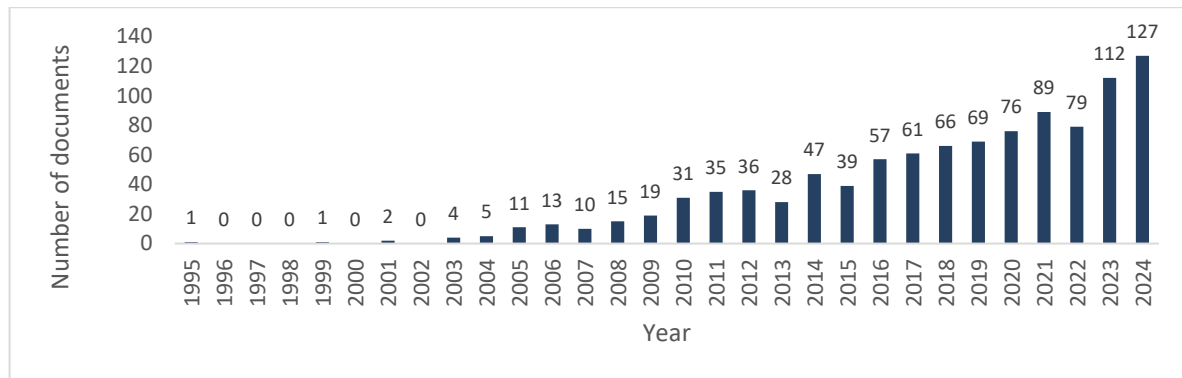


Figure 1. Annual production level

3.2. Most Representative Authors

Figure 2 highlights the ten authors with the highest level of scientific production related to the study topic. Among them, two authors, Zhang W and Zhang Y, have achieved nine publications each, followed by Kumar A with eight documents.

Four other authors have seven published documents: Kumar S, Lai K, Liu Y, and Shiva A. This figure also illustrates the level of fractional articles, where each document is divided by the number of authors in the publication. This list is led by two authors: Feldman T and Bouteska A, with 5 and 3.67 fractional documents, respectively.

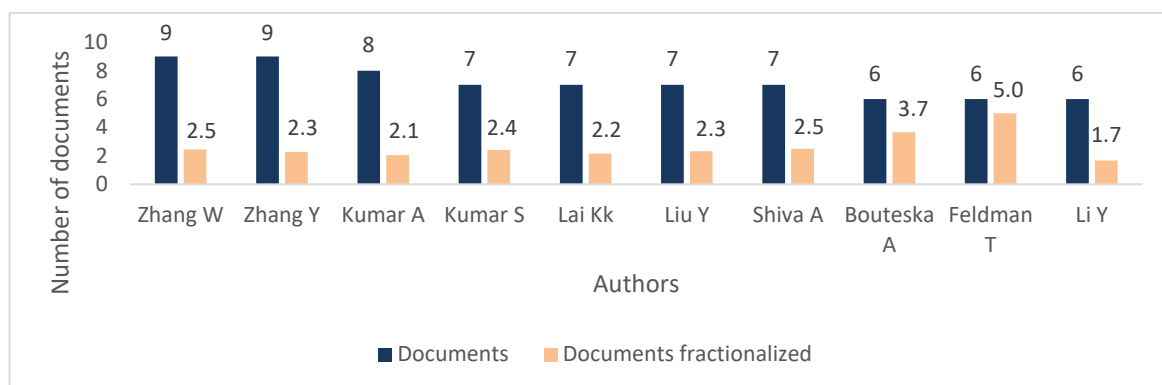


Figure 2. Authors with the highest productivity

Table 1 presents a ranking of authors based on their H, G, and M indices, along with the total number of citations for each. The H index measures an author's academic impact by evaluating how their works have been cited by other researchers, considering both the number of citations and their distribution [13]. The G index focuses on quantifying scientific productivity by ranking publications according to the number of citations they have received [14]. The M index represents the ratio between the H index and the number of years since the author's first publication [15].

Topping this ranking is Ahmed Bouteska, who has distinguished himself through research related to loss aversion, investor overconfidence, and the performance of the U.S. stock market [16]. Following closely is Atul Shiva, who, along with his colleagues, studied the drivers of investment decisions among retail investors, highlighting evidence of nomophobia—the fear of being without a mobile device—which intensifies investors' fear of missing out on market-related behaviours [17].

Also noteworthy is Muhammad Zubair Tauni, recognised for his research on the role of financial advice and word-of-mouth communication in linking investor personality with stock trading behaviour in the Chinese stock market [18]. Similarly, Weiqiang Zhang and his colleagues explored topics related to financial literacy, portfolio choice, and financial well-being in the context of capital markets [19].

Table 1. Ranking of the top authors

Authors	H Index	G Index	M Index	TC
Bouteska A	5	6	0,71	70
Shiva A	5	7	1	101
Tauni M	5	5	0,55	110
Zhang W	5	7	0,26	51
Zhang Y	5	9	0,23	424
Ahmad M	4	5	0,8	109
Gómez-Martínez R	4	5	0,8	84
Kliger D	4	5	0,33	44
Kudryavtsev A	4	5	0,30	66
Paule-Vianez J	4	5	0,8	86

Lotka's coefficient is a discrete probability distribution that classifies authors based on their productivity, dividing them into three categories: small producers (with one publication), medium producers (with two to nine publications), and large producers (with ten or more publications) [19], [20]. Following this classification, Table 2 shows that there are 1,738 authors with a single publication, 207 with two, 49 with three, 12 with four, 16 with five, 5 with six, 4 with seven, 1 with eight, and 2 authors with nine publications.

Table 2. Lotka's coefficient

Written documents	Number of authors	Proportion of authors
1	1738	0,854
2	207	0,102
3	49	0,024
4	12	0,006
5	16	0,008
6	5	0,002
7	4	0,002
8	1	0,001
9	2	0,001

3.3. Documents with the Greatest Impact

In this bibliometric analysis, identifying the most-cited documents is crucial to recognising their contributions to behavioural finance in financial markets.

Table 3 presents the most-cited documents, highlighting their authors, titles, total historical citations (TC), and citations received in the last year (TC per year).

The most notable is the document "A Survey of Behavioral Finance" [21], a seminal work for understanding the evolution and impact of behavioural finance. It provides a comprehensive analysis of how psychological theories are integrated into financial decision-making, challenging traditional assumptions of rationality and market efficiency. Significant insights into the cognitive biases and heuristics influencing investor behaviour reflect the reality of financial decision-making [21]. This document has amassed 893 citations to date, with an average of over 40 citations per year.

Another key study is "Herd Behaviour and Cascading in Capital Markets: A Review and Synthesis" [22]. This work is an essential reference for understanding collective behaviour phenomena in financial markets, known as herd behaviour. It explains how investment decisions are often influenced by the actions of others, leading to synchronised movements in financial markets. This research has been cited 491 times, with an average of more than 22 citations per year.

The third document in this ranking is "Agent-Based Computational Finance" [23]. This study explores how agent-based simulations, featuring autonomous behaviours and decisions, capture the complexity and dynamics of financial markets in ways traditional models cannot. Its distinct approach makes it a critical guide for market practices and regulation, as agent-based models provide tools for forecasting financial crises, evaluating economic policies, and optimising investment strategies. This document has received 478 total citations, with an annual average exceeding 25 citations.

Table 3. Most cited documents

Authors	Document title	TC	TC per year	TC normalised
[21]	A survey of behavioral finance.	893	40,59	2,45
[22]	Herd behaviour and cascading in capital markets: A review and synthesis.	491	22,32	1,35
[23]	Agent-based computational finance.	478	25,16	8,36
[24]	Financial decision-making in markets and firms: A behavioral perspective.	392	13,07	1,00
[25]	Do investors overvalue firms with bloated balance sheets?	358	17,05	4,39
[26]	Understanding mechanisms underlying peer effects: Evidence from a field experiment on financial decisions.	261	23,73	16,06
[27]	Stock prices and geographic proximity of information: Evidence from the Ebola outbreak.	238	34,00	14,18
[28]	Behavioral finance.	231	23,10	12,43
[29]	The courage of misguided convictions.	188	7,23	1,00
[30]	Econophysics review: II. Agent-based models.	174	12,43	7,21

3.4. Journals with the Highest Document Output

Figure 3 presents the ranking of journals leading in publications on behavioural finance in financial markets. At the top of the list is the Journal of Behavioral Finance with 28 articles, followed by the Review of Behavioral Finance with 22 and the Journal of Behavioral and Experimental Finance with 19. Also noteworthy are Qualitative Research in Financial Markets and Quantitative Finance, both with 17 publications, and finally, Physica A: Statistical Mechanics and its Applications with 14 documents.

Table 4, which ranks journals based on the number of citations in this field and their H, G, and M indices, shows that the Journal of Behavioral Finance leads with 426 citations. Quantitative Finance follows with 526 citations, while the Journal of Behavioral and Experimental Finance has accumulated 303 citations.

Physica A: Statistical Mechanics and its Applications ranks fourth with 252 citations, and the Review of Behavioral Finance closes the list with 268 citations.

Notably, the top three journals from Figure 3 and Table 4 includes the Journal of Behavioral Finance and the Journal of Behavioral and Experimental Finance. The former focuses on studying how emotions, cognitive biases, and other psychological factors influence investor behaviour and financial markets, exploring the intersection of psychology and finance. The latter delves into the overlap between financial theory and behavioural psychology through experimental and empirical methods, both in laboratory and practical settings, aiming to understand financial market dynamics and investor decision-making processes.

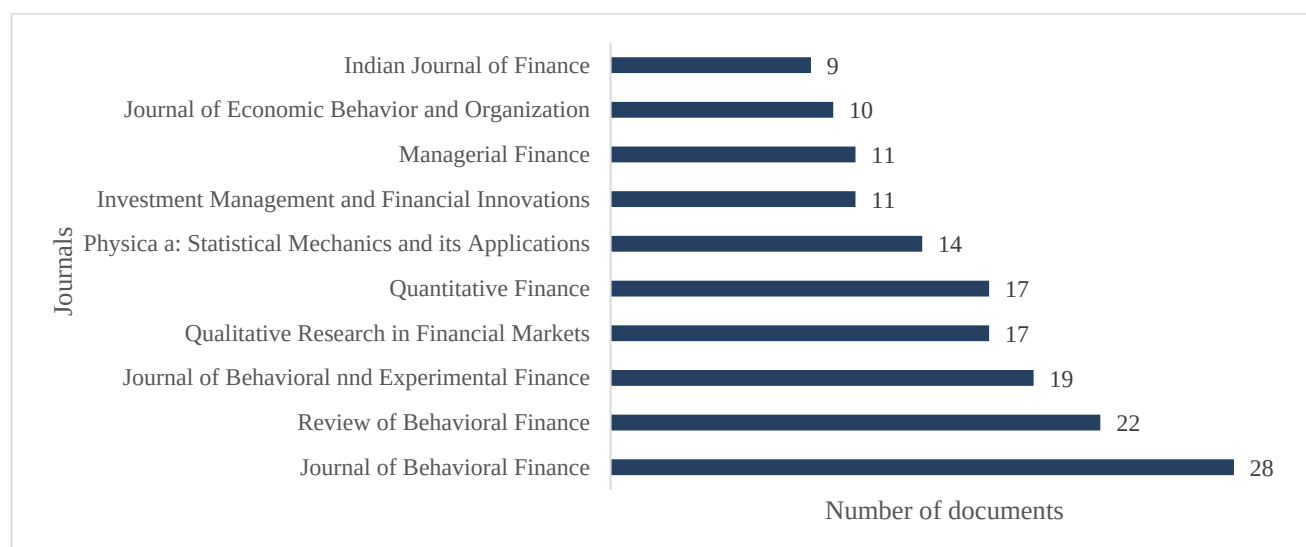


Figure 3. Authors with the highest productivity

Table 4. Journals with the highest citation level

Journal	H Index	G Index	M Index	TC
Journal of Behavioral Finance	10	20	0,714	426
Quantitative Finance	10	17	0,526	526
Journal of Behavioral and Experimental Finance	9	17	0,818	303
Physica A: Statistical Mechanics and its Applications	9	14	0,375	252
Review of Behavioral Finance	8	16	0,667	268
Journal of Economic Behavior and Organization	7	10	0,467	321
Qualitative Research in Financial Markets	7	16	0,467	261
Research in International Business and Finance	6	6	0,60	118
European Journal of Finance	5	6	0,455	112
International Review of Financial Analysis	5	6	0,208	365

3.5. Countries Leading Document Production

The analysis of document production by country, presented in Table 5, highlights various trends in international collaboration and domestic research. China leads with a total of 108 documents, of which 88 are exclusively authored by domestic researchers, while 20 involve international collaboration. The United States follows with 98 documents, 86 of which are domestic and 12 collaboratives, highlighting both its robust national output and its role in fostering global research networks. India shows a strong focus on internal production, with 84 out of 88 publications being authored domestically and only 4 involving international partnerships.

In contrast, countries like France and Australia exhibit a significant proportion of collaborative publications, with 10 and 8 collaborative documents respectively, reflecting a higher degree of international collaboration relative to their total output.

Bibliometric data suggest that while nations such as China and the United States maintain high domestic scientific production with moderate collaboration, countries like India and Germany concentrate more on internal research with fewer international collaborations.

Table 5. Countries with the highest document production

Countries	Documents	Individual publications of the country	Publications with other countries
China	108	88	20
United States	98	86	12
India	88	84	4
United Kingdom	39	33	6
Germany	32	30	2
Italy	25	19	6
Australia	21	13	8
Malaysia	19	13	6
Brazil	18	14	4
France	18	8	10

The bibliometric analysis reveals significant variations in the impact and recognition of scientific publications across different regions, as shown in Table 6. The United States leads with the highest total number of citations (2,348) and an average of 24.0 citations per document, reflecting both high scientific output and substantial influence within the academic community. China, while having fewer total citations (1,245), maintains an average of 11.5 citations per document, indicating considerable but comparatively lower impact than the United States. India, with 897 total citations and an average of 10.2, demonstrates notable scientific production with moderate impact. In contrast, Slovenia stands out with an exceptionally high average of 238.0 citations per document, suggesting that its publications, though fewer in number, are highly influential in their field. Similarly, countries like Switzerland and France also exhibit high average citation rates (25.8 and 20.7, respectively), despite having lower total citation counts. These trends underscore the varying degrees of academic influence and recognition across nations.

Table 6. Number of citations by country and average citations per document

Countries	Total citations	Average citations per document
United States	2348	24,0
China	1245	11,5
India	897	10,2
United Kingdom	468	12,0
Germany	393	12,3
France	373	20,7
Switzerland	258	25,8
Slovenia	238	238,0
Australia	236	11,2
Portugal	221	18,4

3.6. Citation Network Analysis

This analysis within bibliometrics examines the relationships between documents, authors, and journals based on citations, focusing on citation dynamics and how elements of the literature are connected through these [31]. Initially, author co-citation is presented, identifying groups of authors who share similar themes to reveal the intellectual structure of behavioural finance in financial markets.

Figure 4 allows the visualisation of four groups of authors.

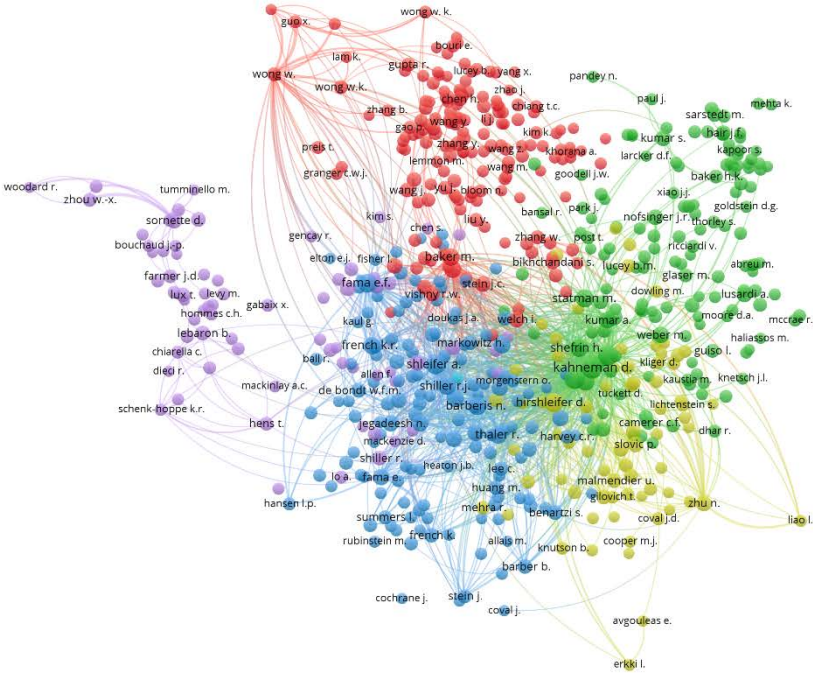


Figure 4. Author co-citation

In terms of centrality, the first group, coloured red, is led by Malcolm Baker from Harvard Business School, Michael Lemmon from BlackRock, Inc., a global investment management and financial services company, and Huafeng Chen, a professor of finance at FISF Fudan University. The second group, coloured blue, is represented by Richard Thaler, Nobel Laureate in Economics in 2017 from the University of Chicago, Ken French from Dartmouth College, and Robert Shiller, Nobel Laureate in Economics in 2013. The third group, coloured green, is led by Daniel Kahneman, Nobel Laureate in Economics in 2002 and emeritus professor at Princeton University, Martin Weber from the University of Mannheim, and Hersh Shefrin from Santa Clara University.

The next two groups, in terms of size, are smaller than the previous ones. The fourth group, coloured purple, is led by Cars Hommes from the University of Amsterdam, J. Dooyne Farmer from Oxford University, and Jean-Philippe Bouchaud, head of research at CFM. The fifth group, coloured yellow, is mainly represented by David Hirshleifer from the University of Southern California, as well as Ulrike Malmendier from the University of California, Berkeley. Figure 5 allows the visualisation of document co-citation, with the aim of analysing how individual documents are cited together in other published research [32].

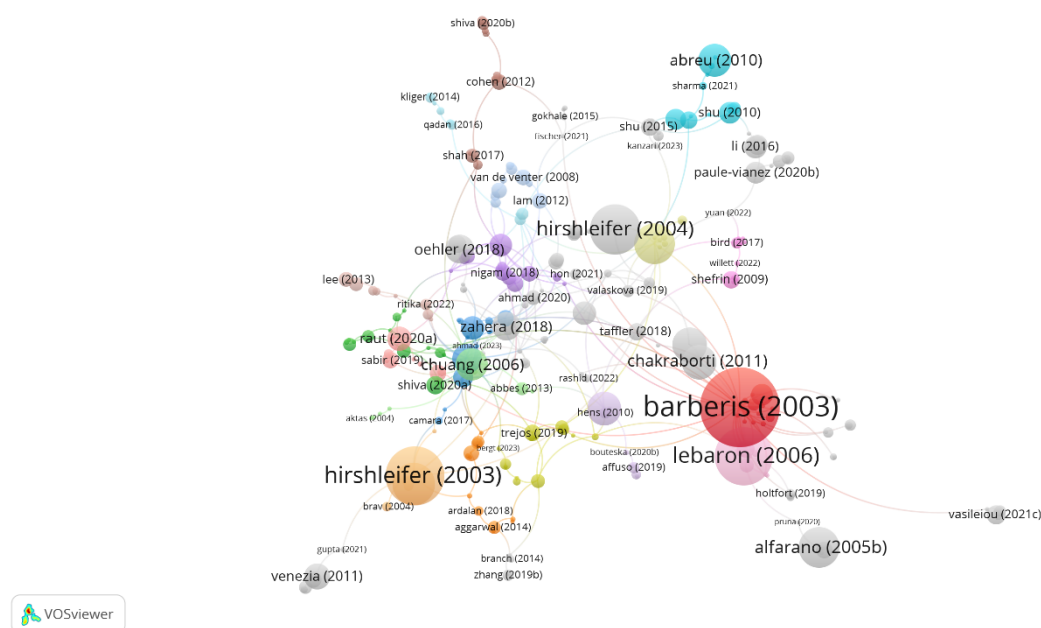


Figure 5. Document co-citation

Among the most representative documents that have influenced the generation of scientific knowledge focused on behavioural finance in financial markets, one study stands out for offering a comprehensive overview of the field of behavioural finance, its application in financial analysis, and the study of markets [33].

Another key contribution describes how investors' limited attention affects the dissemination of information and financial reporting [34]. Further relevant work analyses the use of agent-based models to understand and simulate financial markets [23].

Closing the list, another study investigated how investors value companies with inflated financial statements and whether they tend to overvalue such firms due to specific characteristics of their balance sheets [25]. The development of the bibliographic linkage allows for a holistic understanding of the literature on a given topic, particularly from this exercise on the topic of brand awareness in the last decade, which makes it possible to recognize the orientation of the most recent contributions to the thematic scenario studied. Figure 7 determines the bibliographic linkage analysis of bibliometric authors, in which the nodes symbolize the authors and their leading publications, and the links between them represent the bibliographic linkages, identifying four clusters.

3.7. Bibliographic Coupling

Bibliographic coupling is considered an effective method for visualising specific thematic areas, facilitating the exploration of the literature generated and consumed within a scientific community [35]. In this regard, Figure 6 presents the bibliographic coupling of authors, with the purpose of visualising the relationships between them based on the references shared in their publications [36].

In the largest group (red), Kin Keung Lai from Shaanxi Normal University, Ahmed Bouteska from the University of Tunis El Manar, and Todd Feldman from San Francisco State University stand out. The second group (green) is made up of Jessica Paule Vianez and Raúl Gómez Martínez, both from Universidad Rey Juan Carlos, and Julio Lobao from the University of Porto.

The third group (yellow) consists of two researchers: Kingstone Nyakurukwa and Yudhvir Seetharam from the University of the Witwatersrand. The fourth group (blue) includes Doron Kliger from the University of Haifa and Andrey Kudriyavtsev from the University of Science and Technology of China (USTC).

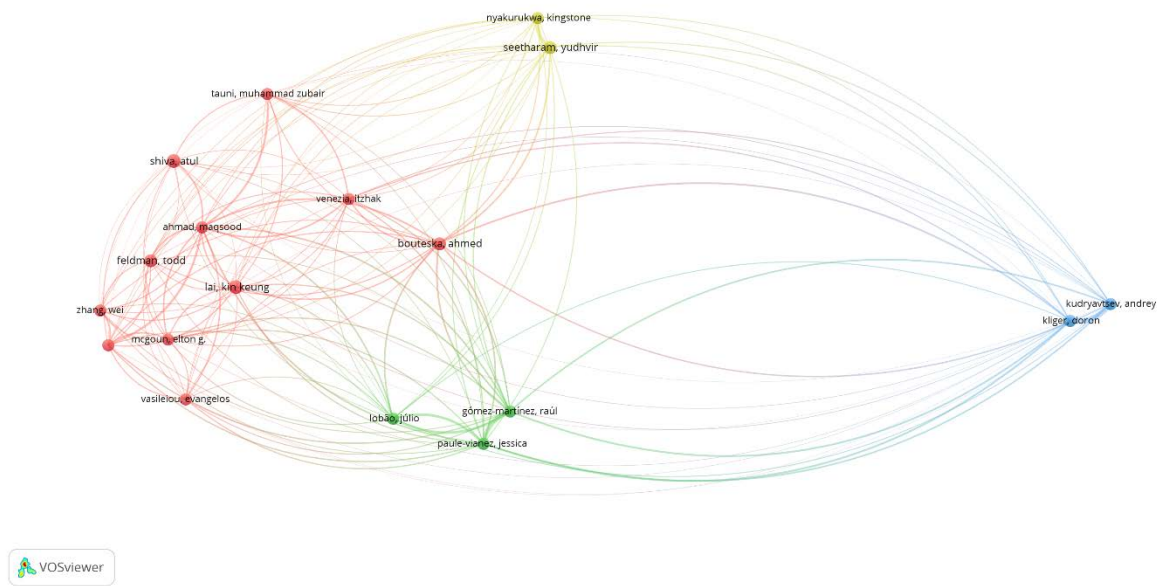


Figure 6. Author bibliographic coupling

The bibliographic coupling of countries, presented in Figure 7, allows for the analysis of collaboration and influence between countries, focusing on the scientific production of behavioural finance in financial markets. The first group (red), in terms of size, is led by the United Kingdom, India, and Turkey; the second (blue) is headed by China, France, and Portugal.

The third group (green) is primarily represented by the United States, Germany, and Italy; the fourth group (yellow) is led by Australia, Japan, and Taiwan. The fifth group (purple), the smallest, is headed by Brazil, Morocco, and Mexico.

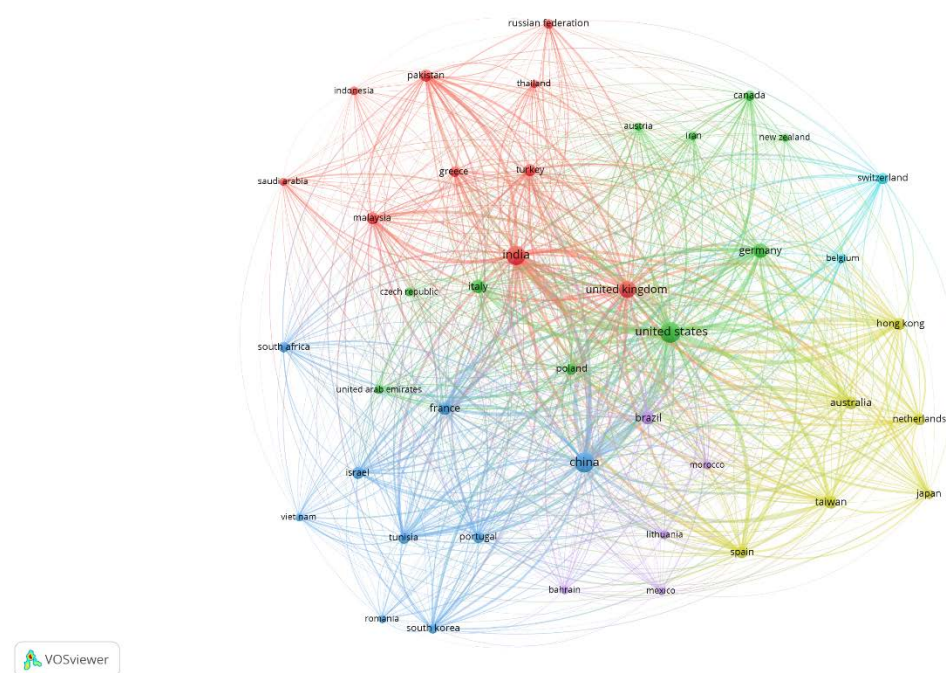


Figure 7. Country bibliographic coupling

The bibliographic coupling of journals helps identify the thematic interrelationships between different scientific publications, thus mapping the structure of the field of study and the influence of certain journals [37], in this case, those publishing studies related to behavioural finance in financial markets. The first group (red) is primarily composed of Review of Behavioral Finance, Qualitative Research in Financial Markets, and Journal of Behavioral and Experimental Economics.

Secondly, another group (blue) is led by Managerial Finance, Financial Markets and Portfolio Management, and Investment Management and Financial Innovations. The third group (green) is headed by Journal of Behavioral Finance, Journal of Economic Behavior & Organization, and Quantitative Finance. The fourth group (yellow) is led by Computational Economics and Lecture Notes in Computer Science, the latter being multidisciplinary. This is shown in Figure 8.

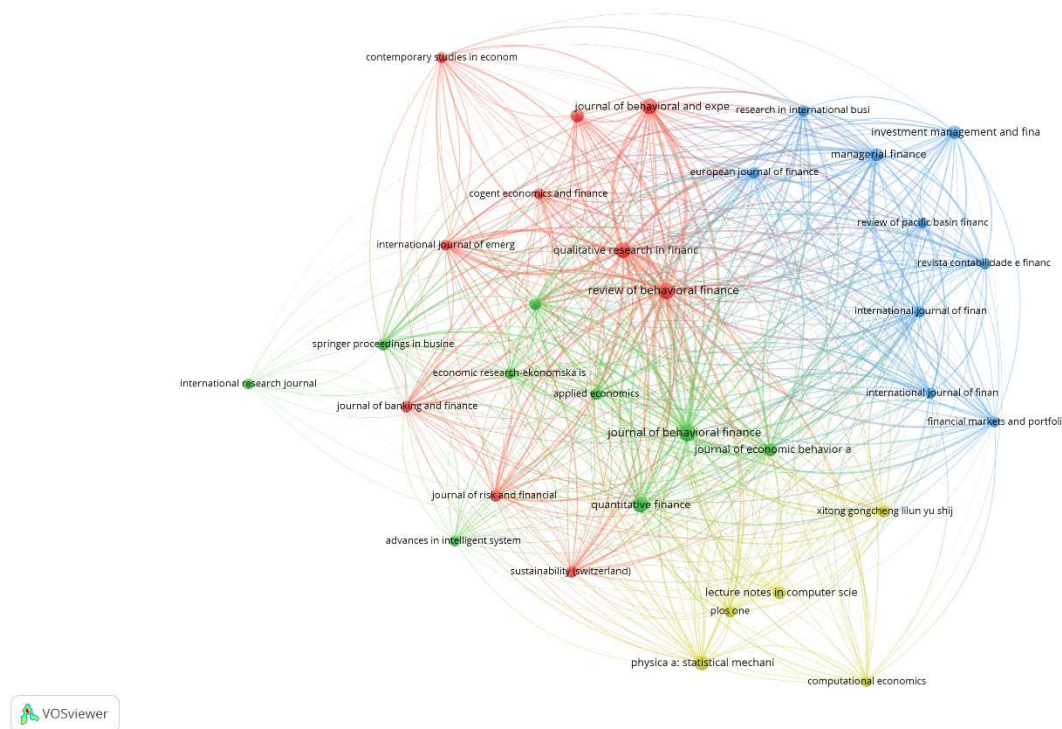


Figure 8. Journal bibliographic coupling

3.8. Conceptual Structure of Publications

The conceptual structure visualises the theoretical framework that organises and categorises the key concepts and their interrelationships within a particular field of study [38]. In this case, for behavioural finance in financial markets, thereby allowing for an understanding of its conceptual evolution, identifying gaps in the literature, and visualising its thematic grouping for the consolidation of emerging research lines in the field of behavioural finance and financial markets.

This conceptual structure begins with the analysis of keyword co-occurrence presented in Figure 9, where the frequency with which different keywords appear together in the same documents is examined, generating a global map of the theoretical field, themes, emerging subfields, and connections between them [39].

Three significant groups of keywords are identified. The first (green), titled "Behaviour and Decisions in Personal Finance," is led by keywords such as "behavioural finance," "behavioural research," "investment decisions," "decision-making," "individual investors," and "cognitive bias."

This group explores how psychological and behavioural factors influence financial behaviour and individuals' investment decisions, integrating studies aimed at understanding and improving decision-making in personal finance from a psychological and behavioural perspective.

The second group (red), mainly composed of keywords like "behavioural economics," "financial crises," "market conditions," "COVID-19," "herd behaviour," "capital flow," and "emerging markets," is called "Impact of Psychological and Market Factors on Economic Crises" and explores how psychological factors and market conditions affect economic crises and financial behaviour in various contexts, focusing on individual perceptions and behaviours that influence significant economic events, such as financial crises.

A third group (yellow) is led by keywords like "financial markets," "trading," "electronic trading," "big data," "prediction," "forecasting," "social networks," and "digital platforms" and is titled "Innovations in Trading and Financial Analysis in the Digital Age."

It examines how technological and digital innovations are transforming financial markets and trading, allowing for the study of the impact of prediction and forecasting on financial decision-making, as well as the influence of social networks on market behaviour and trading strategies.

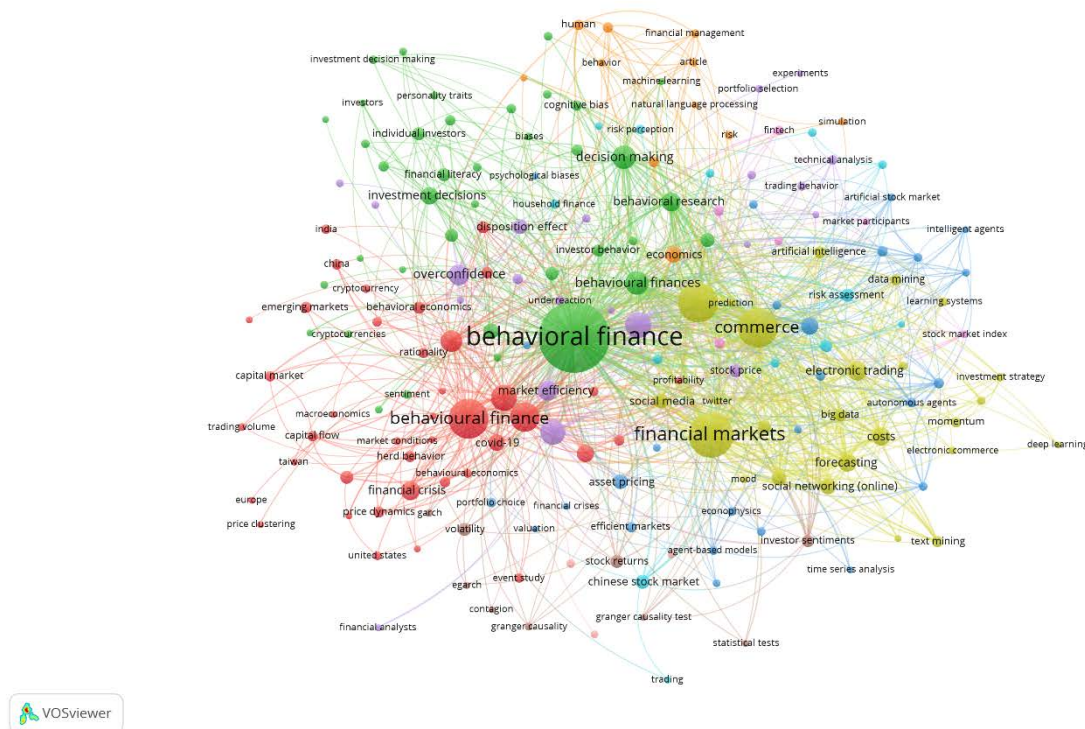


Figure 9. Co-occurrence of keywords

To conclude this bibliometric study, Figure 10 presents four main clusters that consolidate the thematic structure using multiple correspondence analysis, a multivariate statistical technique that reduces the dimensionality of categorical data [40], such as keywords or terms used in the literature. This method visually represents the relationships between them, consolidating the thematic structure of an emerging research field through clusters [41], in this case, behavioural finance in financial markets.

Cluster 1, in blue, is named "Advanced analysis and prediction in finance and economics" and groups terms related to the application of sophisticated techniques to optimise decision-making and forecasting in finance and economics. It includes methods such as regression analysis and the use of artificial intelligence, neural networks, and machine learning to interpret complex data and make accurate predictions. It focuses on analysing investor behaviour and associated costs, reflecting how these factors affect financial decisions. Its emphasis on data mining and big data highlights the importance of handling large volumes of information to improve stock price predictions and market efficiency.

Cluster 2, in red, is titled "Financial markets and economic systems" and groups concepts related to the study of financial crises and their impact on markets, including empirical analysis and asset prices. This cluster considers the influence of global events such as the COVID-19 pandemic, as well as the flow of capital and investment in different contexts, including specific studies on the situation in China. The inclusion of psychology and the human factor underscores the importance of understanding responses and behaviours in critical financial situations.

A smaller Cluster 3, in yellow, relates to "Financial management models and risk analysis," which focuses on the use of advanced technologies for processing financial data and strategic planning. This includes the evaluation and simulation of financial risks through computational methods and artificial stock markets, highlighting the importance of these tools in predicting and managing risks in financial environments.

Finally, Cluster 4, the smallest in size and green in colour, is "Opinions and data in social media," characterised by emphasising the use of advanced techniques to extract and analyse information from social media platforms.

The application of text processing tools to identify and assess sentiments and opinions in user-generated content on social media stands out, as well as the study of online behaviour and communication.

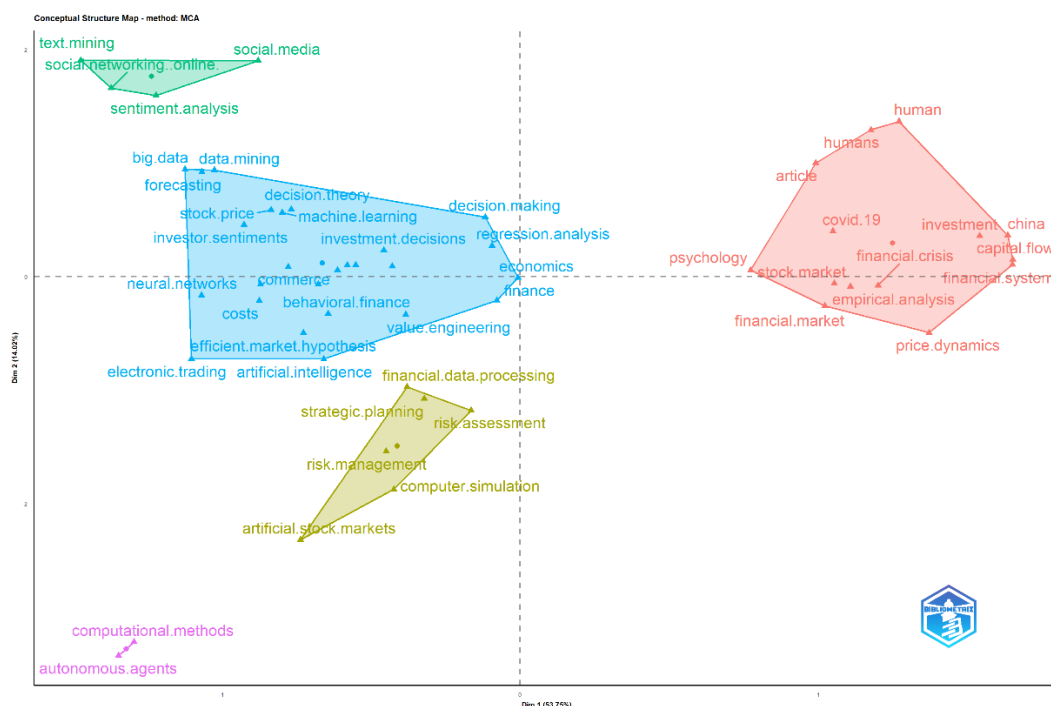


Figure 10. Co-occurrence of keywords

4. Discussion

Behavioural finance has shifted from being a secondary perspective to becoming an integral part of the study of financial markets [42], [43], [44]. The growing number of publications, particularly since 2010, indicates not only an increasing acceptance of behavioural finance concepts but also an expansion in their application to various financial areas. As a result, the recognition of cognitive and emotional biases in financial decision-making has gained traction, questioning and complementing traditional theories of conventional markets.

The theoretical figures in behavioural finance, such as Daniel Kahneman, Amos Tversky, Richard Thaler, Robert Shiller, Hersh Shefrin, and George Akerlof, have established a solid foundation for the empirical consolidation of this field and its influence on financial markets. For instance, the framing theory, which is part of prospect theory, asserts that people's decisions are not always based on an objective evaluation of outcomes, but rather influenced information is presented [45]. Another influential contribution explored how policies and decisions can be designed to help individuals make choices that improve their well-being using principles from behavioural psychology [46].

These contributions not only focused on the development of models explaining market realities but have also influenced financial practices and policy-making, demonstrating how behavioural finance offers valuable and practical insights into understanding the dynamics of financial markets [47].

5. Conclusion

The bibliometric analysis conducted highlights a growing scientific interest in the study of behavioural finance in financial markets, reflected in the notable increase in academic production from 2005 to 2024, with an annual growth rate of 16.69%. This growth in production and international collaboration suggests that behavioural finance has consolidated its place as a dynamic and increasingly relevant area of research in the academic realm. However, despite this increase, overall production remains low in comparison to other management areas, with only 994 publications in the last 30 years in Scopus.

The author ranking, based on H, G, and M indices, as well as total citations, identifies the most influential researchers in the field of behavioural finance.

Ahmed Bouteska leads the list with his research on loss aversion and investor overconfidence in the US stock market, followed by Atul Shiva, with innovative studies on nomophobia and its impact on investment decisions, and Muhammad Tauni, whose work has explored the relationship between investor personality and behaviour in the Chinese stock market.

The analysis of publications on behavioural finance in financial markets highlights the Journal of Behavioral Finance as the leading journal in terms of the number of articles published and citations, reflecting its influence in this discipline. In second place is the Journal of Behavioral and Experimental Finance, which also ranks among the most cited journals, emphasising its relevance in research at the intersection of financial theory and behavioural psychology using experimental methods. Quantitative Finance and Physica A: Statistical Mechanics and its Applications show significant impact, highlighting the diversity of approaches and disciplines converging in the study of behavioural finance.

The scientific output by country reveals significant differences in research dynamics and international collaboration in the field of behavioural finance. China and the United States lead in total publications, with a marked preference for domestic research and moderate collaboration. India shows a strong concentration on national production with few international collaborations, while countries like France and Australia exhibit a higher degree of international cooperation. In terms of impact, the United States stands out with the highest total citations and a high average citation rate per document, followed by countries like Switzerland and France. Slovenia, although having fewer publications, stands out for its high average citation rate, indicating a considerable impact of its research.

The bibliometric exercise highlights emerging trends related to behaviour and decisions in personal finance, psychological factors, markets in economic crises, innovations in commerce, financial analysis in the digital age, trends in financial and economic prediction, risk analysis, big data, artificial intelligence, and social networks—factors influencing investor behaviour. This suggests that the field of behavioural finance is in constant adaptation. These findings not only guide new practices in how research is conducted in this field but also clarify and support the financial decisions of key market players.

Among the limitations of this bibliometric study, it is noteworthy that only the Scopus database was used, so it is recommended to complement this with other databases, particularly Web of Science (WOS), to include a larger number of documents in similar exercises.

Nevertheless, it is important to emphasise that this study serves as a starting point for future research in behavioural finance oriented towards financial markets, providing a solid foundation for exploring new perspectives and addressing pending issues, promoting the advancement and continued relevance of this field in a constantly evolving global financial context.

References:

- [1]. Almansour, B. Y., Elkrghli, S., & Almansour, A. Y. (2023). Behavioral finance factors and investment decisions: A mediating role of risk perception. *Cogent Economics & Finance*, 11(2), 2239032. Doi: 10.1080/23322039.2023.2239032
- [2]. Montoya Morales, A. J., et al. (2024). Finanzas conductuales y finanzas clásicas ¿Teorías opuestas o complementarias? *Tendencias*, 25(2), 278-301. Doi: 10.22267/rtend.242502.262
- [3]. Davison, J. (2024). 'Irrational Exuberance': Behavioural Finance and Émile Zola's L'Argent. *French Studies*, 78(1), 21-39. Doi: 10.1093/fs/knad233
- [4]. Tian, Y. (2024). Behavioral finance: Loss aversion, market anomalies, and prospect theory in financial decision-making. *Highlights in Business, Economics and Management*, 28, 276-280. Doi: 10.54097/h1wnk736
- [5]. Suresh, G. (2024). Impact of financial literacy and behavioural biases on investment decision-making. *FIIB Business Review*, 13(1), 72-86. Doi: 10.1177/23197145211035481
- [6]. Zhang, X., et al. (2023). Systemic risk of Chinese financial institutions and asset price bubbles. *The North American Journal of Economics and Finance*, 64, 101880. Doi: 10.1016/j.najef.2023.101880
- [7]. Nwosu, N. T., & Ilori, O. (2024). Behavioral finance and financial inclusion: A conceptual review and framework development. *World Journal of Advanced Research and Reviews*, 22(3), 204-212.
- [8]. Goldstein, I. (2023). Information in financial markets and its real effects. *Review of Finance*, 27(1), 1-32. Doi: 10.1093/rof/rfac052
- [9]. Rasool, N., & Ullah, S. (2020). Financial literacy and behavioural biases of individual investors: empirical evidence of Pakistan stock exchange. *Journal of Economics, Finance and Administrative Science*, 25(50), 261-278. Doi: 10.1108/JEFAS-03-2019-0031
- [10]. Baas, J., et al. (2020). Scopus as a curated, high-quality bibliometric data source for academic research in quantitative science studies. *Quantitative science studies*, 1(1), 377-386. Doi: 10.1162/qss_a_00019
- [11]. Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of informetrics*, 11(4), 959-975. Doi: 10.1016/j.joi.2017.08.007
- [12]. Van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *scientometrics*, 84(2), 523-538. Doi: 10.1007/s11192-009-0146-3

- [13]. Mondal, H., et al. (2023). The h-Index: Understanding its predictors, significance, and criticism. *Journal of Family Medicine and Primary Care*, 12(11), 2531-2537. Doi: 10.4103/jfmpc.jfmpc_1613_23
- [14]. De Souza, U. J. B., et al. (2025). The SPR-Index: A Novel Metric Integrating the H-Index with Verified Peer Review Scores. *Publications*, 13(2), 22. Doi: 10.3390/publications13020022
- [15]. Neme-Chaves, S. R., & López-Rodríguez, C. E. (2021). Employer branding an exploration of the field of knowledge from bibliometric indicators. *Suma de negocios*, 12(26), 83-92. Doi: 10.14349/sumneg/2021.v12.n26.a9
- [16]. Bouteska, A., & Regaieg, B. (2020). Loss aversion, overconfidence of investors and their impact on market performance evidence from the US stock markets. *Journal of Economics, Finance and Administrative Science*, 25(50), 451-478. Doi: 10.1108/JEFAS-07-2017-0081
- [17]. Shiva, A., Narula, S., & Shahi, S. K. (2020). What drives retail investors' investment decisions? Evidence from no mobile phone phobia (Nomophobia) and investor fear of missing out (I-FoMo). *Journal of Content, Community and Communication*, 10(6), 2-20. Doi: 10.31620/JCCC.06.20/02
- [18]. Tauni, M. Z., Fang, H. X., & Iqbal, A. (2017). The role of financial advice and word-of-mouth communication on the association between investor personality and stock trading behavior: Evidence from Chinese stock market. *Personality and Individual Differences*, 108, 55-65. Doi: 10.1016/j.paid.2016.11.048
- [19]. Chu, Z., et al. (2017). Financial literacy, portfolio choice and financial well-being. *Social indicators research*, 132(2), 799-820. Doi: 10.1007/s11205-016-1309-2
- [20]. Viera-Arroyo, W., et al. (2025). An Assessment of Scientific Productivity: Review in the Area of Agricultural and Biological Sciences in Ecuador Using Scientometrics and Lotka's Law. *Publications*, 13(4), 59. Doi: 10.3390/publications13040059
- [21]. Barberis, N., & Thaler, R. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053-1128.
- [22]. Hirshleifer, D., & Hong Teoh, S. (2003). Herd behaviour and cascading in capital markets: A review and synthesis. *European Financial Management*, 9(1), 25-66. Doi: 10.1111/1468-036X.00207
- [23]. LeBaron, B. (2006). Agent-based computational finance. *Handbook of computational economics*, 2, 1187-1233. Doi: 10.1016/S1574-0021(05)02024-1
- [24]. De Bondt, W. F., & Thaler, R. H. (1995). Financial decision-making in markets and firms: A behavioral perspective. *Handbooks in operations research and management science*, 9, 385-410. Doi: 10.1016/S0927-0507(05)80057-X
- [25]. Hirshleifer, D., et al. (2004). Do investors overvalue firms with bloated balance sheets? *Journal of accounting and economics*, 38, 297-331. Doi: 10.1016/j.jacceco.2004.10.002
- [26]. Bursztyn, L., et al. (2014). Understanding mechanisms underlying peer effects: Evidence from a field experiment on financial decisions. *Econometrica*, 82(4), 1273-1301. Doi: 10.3982/ECTA11991
- [27]. Ichev, R., & Marinč, M. (2018). Stock prices and geographic proximity of information: Evidence from the Ebola outbreak. *International Review of Financial Analysis*, 56, 153-166. Doi: 10.1016/j.irfa.2017.12.004
- [28]. Hirshleifer, D. (2015). Behavioral finance. *Annual Review of Financial Economics*, 7(1), 133-159. Doi: 10.1146/annurev-financial-092214-043752
- [29]. Barber, B. M., & Odean, T. (1999). The courage of misguided convictions. *Financial Analysts Journal*, 55(6), 41-55. Doi: 10.2469/faj.v55.n6.2313
- [30]. Chakraborti, A., et al. (2011). Econophysics review: II. Agent-based models. *Quantitative Finance*, 11(7), 1013-1041. Doi: 10.1080/14697688.2010.539249
- [31]. Ding, Y., & Yang, X. (2021). Citation network analysis: A review and its applications. *Journal of Informetrics*, 15(3), 101236.
- [32]. Rong, J. (2024). Co-citation and Visualized Analysis of Literatures in Library and Information Science Based on Web of Science and VOSviewer". *Academic Journal of Humanities & Social Sciences*, 7(8), 62-73. Doi: 10.25236/AJHSS.2024.070811
- [33]. Barberis, N., & Thaler, R. H. (2003). A survey of behavioral finance. *Handbook of the Economics of Finance*, 1, 1053-1128. North-Holland / Elsevier.
- [34]. Hirshleifer, D., & Teoh, S. H. (2003). Limited attention, information disclosure, and financial reporting. *Journal of accounting and economics*, 36(1-3), 337-386. Doi: 10.1016/j.jacceco.2003.10.002
- [35]. Orviz Martínez, N., et al. (2021). Revisión de la investigación científica en ISO 9001 e ISO 14001: un análisis bibliométrico. *Cuadernos de Gestión*, 21(1). Doi: 10.5295/cdg.191189no
- [36]. Maltseva, D., & Batagelj, V. (2024). Citation and bibliographic coupling between authors in the field of social network analysis. *Journal of Data and Information Science*, 9(4), 110-154. Doi: 10.2478/jdis-2024-0028
- [37]. Rashid, S., et al. (2021). A scientometric analysis of forty-three years of research in social support in education (1977-2020). *Education sciences*, 11(4), 149. Doi: 10.3390/educsci11040149
- [38]. Ballesteros-Ballesteros, V. A., & Zárate-Torres, R. A. (2025). Mapping the conceptual structure of research on open innovation in university-industry collaborations: a bibliometric analysis. *Frontiers in Research Metrics and Analytics*, 10, 1693969. Doi: 10.3389/frma.2025.1693969
- [39]. Donthu, N., et al. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of business research*, 133, 285-296. Doi: 10.1016/j.jbusres.2021.04.070
- [40]. Kumar, S., Sureka, R., & Colombage, S. (2020). Capital structure of SMEs: a systematic literature review and bibliometric analysis. *Management Review Quarterly*, 70(4), 535-565. Doi: 10.1007/s11301-019-00175-4

- [41]. Moral Muñoz, J. A., et al. (2020). Software tools for conducting bibliometric analysis in science: An up-to-date review. *El Profesional de la Información*, 29(1), e290103. Doi: 10.3145/epi.2020.ene.03
- [42]. Mittal, S. K. (2022). Behavior biases and investment decision: theoretical and research framework. *Qualitative Research in Financial Markets*, 14(2), 213-228.
Doi: 10.1108/QRFM-09-2017-0085
- [43]. Choijil, E., et al. (2022). Thirty years of herd behavior in financial markets: A bibliometric analysis. *Research in International Business and Finance*, 59, 101506.
Doi: 10.1016/j.ribaf.2021.101506
- [44]. Duxbury, D., et al. (2020). How emotions influence behavior in financial markets: a conceptual analysis and emotion-based account of buy-sell preferences. *The European Journal of Finance*, 26(14), 1417-1438.
Doi: 10.1080/1351847X.2020.1742758
- [45]. Kahneman, D., & Tversky, A. (1984). Choices, values, and frames. *American psychologist*, 39(4), 341.
- [46]. Thaler, R. H., & Sunstein, C. R. (2008). *Nudge: Improving decisions about health, wealth, and happiness*. Yale University Press.
- [47]. Hafishina, A. D. R., et al. (2023). Disrupting Money: Psychological Factors of Investment Biases in Cryptocurrency. *TEM Journal*, 12(1).
Doi: 10.18421/TEM121-58