Cognition Meets Capital: Financial Literacy, Emotional Intelligence, and Behavioral Biases in Investment Decisions

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Abstract. The intersection of financial literacy, emotional intelligence, and behavioral biases offers an important lens for understanding investment decision making. However, existing studies remain fragmented, limiting cumulative insight and future research direction. This study conducts a bibliometric review of 82 Scopus indexed documents published between 2015 and 2025. Using Bibliometrix for performance analysis and VOSviewer for science mapping, the study examines publication trends, influential sources, highly cited works, and thematic evolution. The findings show that decision making, financial systems, and investment remain dominant themes, while financial literacy and decentralized finance emerge as developing areas requiring deeper empirical investigation. Highly cited studies emphasize the role of financial literacy in moderating behavioral biases and the importance of emotional competencies in shaping investor behavior. Overall, the field is moving toward a more interdisciplinary, emotionally aware, and digitally oriented research agenda. These findings offer useful insights for educators, policymakers, and financial professionals in promoting more informed and inclusive investment decisions.

Keywords: Bibliometric Analysis, Financial Literacy, Emotional Intelligence, Behavioral Biases, Investment Decision Making, Behavioral Finance.

1 Introduction

In today's dynamic financial landscape, investment decisions are shaped by financial knowledge, emotion, and behavioral tendencies. While traditional financial theories assume rational investor behavior in evaluating risk and return [1, 2], behavioral finance shows that cognitive limitations and emotional factors influence financial decisions [3, 4]. Biases such as overconfidence, herding, disposition effect, and anchoring can distort judgment and lead to irrational investment outcomes [5-7].

Financial literacy and emotional intelligence may help investors manage these biases. Financial literacy supports the ability to understand financial concepts and process market information, while emotional intelligence helps regulate emotions under financial stress or uncertainty [6, 8 ,9]. Prior studies show that financial literacy can reduce

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susceptibility to behavioral biases and moderate their influence on investment decisions [5-7, 10]. Emotional intelligence may also help investors remain disciplined during market volatility and avoid impulsive actions such as panic selling or following market crowds [9, 11, 12].

However, research integrating financial literacy, emotional intelligence, and behavioral biases remains fragmented across disciplines and contexts. Therefore, this study uses bibliometric analysis to map the intellectual structure, thematic development, and emerging trends in this field. Using Scopus indexed publications from 2015 to 2025, Bibliometrix, and VOS viewer, this study identifies dominant themes, scholarly collaborations, and knowledge clusters related to financial literacy, emotional intelligence, and behavioral biases in investment decisions [13-15].

2 Methods

This study employed bibliometric analysis to map the intellectual structure, thematic development, and research frontiers of financial literacy, emotional intelligence, behavioral biases, and investment decision making, as this approach is useful for identifying publication trends, influential sources, collaboration patterns, and conceptual networks [13, 14]. Data were retrieved from Scopus using Boolean logic in the title, abstract, and keywords fields with the following string: TITLE-ABS-KEY (("financial literacy" OR "literacy" OR "emotional intelligence") AND ("behavioral bias*" OR "investor bias*" OR "cognitive bias*" OR "investment bias*" OR "heuristic*" OR "overconfidence" OR "herding" OR "disposition effect" OR "mental accounting" OR "anchoring" OR "loss aversion" OR "representativeness") AND ("investment decision*" OR "investor behavior" OR "financial decision*" OR "investment choice")) AND (LIMIT-TO (SUBJAREA , "ECON") OR LIMIT-TO (SUBJAREA , "BUSI")) AND (LIMIT-TO (DOCTYPE , "ar") OR LIMIT-TO (DOCTYPE , "cp")) AND (LIMIT-TO (LANGUAGE , "English")). The search covered English publications from 2015 to 2025 in economics, finance, business, management, and accounting, yielding 85 documents and a final dataset of 82 documents after screening and deduplication. Data were exported in BibTeX and CSV formats, analyzed using Bibliometrix and Biblioshiny for performance analysis and thematic mapping [13], and visualized using VOSviewer to identify keyword co-occurrence, author collaboration, thematic clusters, and conceptual links among financial cognition, emotion, and investment behavior [15].

3 Result and Discussion

The bibliometric analysis covers 82 documents published between 2015 and 2025 across 66 sources, including journals, books, and conference proceedings. The dataset shows an annual growth rate of 7.18 percent, with an average of 13.74 citations per document and an average document age of 3.16 years. These indicators suggest that research on financial literacy, emotional intelligence, behavioral biases, and investment decision making has developed steadily and remains relatively current. The authorship pattern also indicates a collaborative research culture. The dataset includes 225 authors,

only seven single authored documents, an average of 2.84 coauthors per document, and 24.39 percent international co-authorship. These findings show that the field is increasingly interdisciplinary and globally connected, reflecting the growing importance of behavioral and emotional dimensions in finance.

Table 1. Main Information About Data

Description	Results
Timespan	2015:2025
Sources (Journals, Books, etc)	66
Documents	82
Annual Growth Rate %	7,18
Document Average Age	3,16
Average citations per doc	13,74
AUTHORS	
Authors	225
Authors of single-authored docs	7
AUTHORS COLLABORATION	
Single-authored docs	7
Co-Authors per Doc	2,84
International co-authorships %	24,39

Annual scientific production shows that early publications from 2015 to 2019 were limited in number but highly cited, especially in 2018 and 2019. After 2020, publication output increased sharply, peaking in 2024, although average citations declined because newer studies had less time to gain citations and the field began expanding into more diverse subthemes.

Table2. Annual Scientific Production and Average Citation per Year

No	Year	Mean Total Citation per Articles	Article Number	Mean Total Citation per Year
1	2015	24,00	3	2,18
2	2016	14,67	3	1,47
3	2017	28,00	2	3,11
4	2018	38,33	3	4,79
5	2019	35,33	6	5,05
6	2020	26,80	5	4,47
7	2021	19,20	5	3,84
8	2022	17,45	11	4,36
9	2023	7,69	13	2,56
10	2024	3,84	25	1,92
11	2025	1,67	6	1,67

The publication distribution shows the interdisciplinary nature of this research area. The most active journals, including *Global Business Review*, *International Journal of Economics and Financial Issues*, *Journal of Economic Psychology*, *Review of Behavioral Finance*, and *Risks*, reflect the integration of business, economics, psychology, risk management, and behavioral finance perspectives. Their presence indicates that this topic is relevant not only to behavioral theory but also to broader discussions on financial systems, risk, and policy.

In terms of local impact, *Journal of Economic Psychology* recorded the highest local H index, confirming its role as a key source in this field. Other journals, including *Review of Behavioral Finance*, *Risks*, *Global Business Review*, and *International Journal of Bank Marketing*, also showed consistent citation influence. Overall, these findings indicate that behavioral finance research is supported by both specialized journals and broader business, finance, and economics outlet.

The most globally cited documents highlight the intellectual foundation of the field. Ahmad and Shah ranked first by explaining the role of overconfidence, risk perception, and financial literacy in investment decisions. Carpena et al. emphasized financial education in shaping attitudes, behavior, and cognitive biases [16], while Bellofatto et al. highlighted subjective financial literacy in retail investor behavior [17]. Adil et al. further showed that financial literacy moderates the relationship between behavioral biases and investment decisions[5]. Together, these studies confirm financial literacy as a central construct in understanding how investors manage bias and make rational decisions.

Other highly cited studies show that financial literacy interacts with behavioral factors in complex ways. Kawamura et al. (2021) questioned whether financial literacy is always beneficial [18], while Balasubramanian and Sargent (2020) showed that perceived financial literacy can influence financial decision making19. Evidence from emerging markets further indicates that financial literacy relates to investment culture, portfolio diversification, overconfidence, and herding behavior [7, 20, 21]. Gerrans and Heaney added that personal finance education shapes financial literacy, attitudes, and intentions [22]. Overall, these studies suggest that the field has shifted from asking whether financial literacy matters to examining how it interacts with bias, perception, context, and education.

Keyword co-occurrence analysis shows that "investment" is the central thematic anchor, closely linked with information, value, return, risk, and company. Financial literacy also forms a prominent cluster connected to demographic variables such as age, gender, income, and occupation. Its association with retail investors, heuristics, and financial decision making confirms its role in explaining how investors process information and manage behavioral bias.

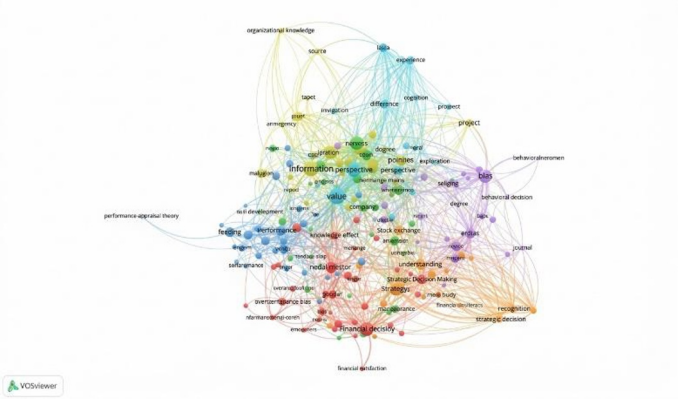

Fig. 1. Co-occurrence Keyword Analysis

The keyword network shows that behavioral biases such as herding, loss aversion, overconfidence, and disposition effect form a closely connected cluster, indicating that these biases are often examined together as core mechanisms explaining irrational or suboptimal investor behavior. Another cluster containing terms such as review, field, article, and bibliometric analysis reflects the growing use of bibliometric and review-based approaches to synthesize behavioral finance literature and identify future research directions [13-15]. The overlay visualization further indicates that the field has evolved from foundational themes such as investment, information, risk, and value toward newer research frontiers, including financial literacy, Covid, heuristic driven bias, and recognition, reflecting a shift from traditional rational choice models to behaviorally informed frameworks that incorporate uncertainty, emotion, demographics, and digital transformation.

The word cloud shows "decision making" as the dominant term, followed by financial literacy, investment, financial system, decentralized finance, and pension system. This indicates that the field focuses on financial decisions under uncertainty, while emerging terms such as decentralized finance, cognitive bias, education, and eye tracking reflect growing interest in digital finance, behavioral science, and experimental approaches.

The thematic map shows that "decision making," "financial system," and "investment" are the core motor themes of the field. Meanwhile, "financial literacy" appears as an emerging theme that still needs deeper integration with emotional intelligence, digital literacy, and behavioral self-regulation, while "finance" and "decentralized finance" remain relevant but require further conceptual development.

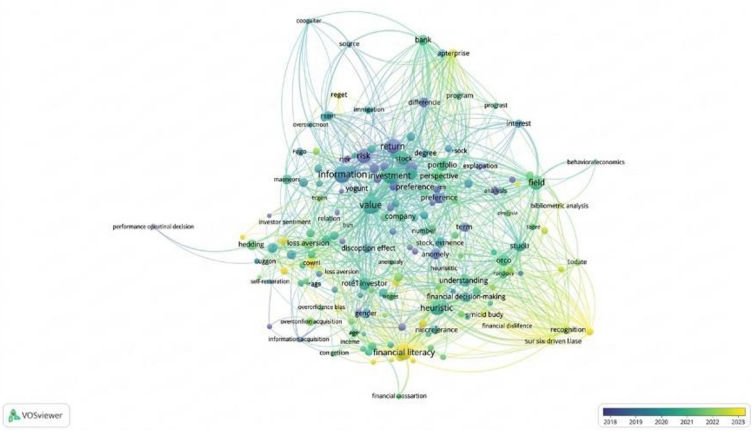

Fig. 2. Thematic Map

Overall, the field is shifting toward a more human centered, interdisciplinary, and digitally sensitive understanding of investment decision making, where investment, risk, and financial systems are increasingly linked to cognition, emotion, demographics, financial education, and technology [3, 4]. The findings confirm that financial literacy can reduce behavioral bias and improve investment decisions, although it still needs stronger integration with emotional intelligence, digital competence, and behavioral

self-control [5-7, 10]. Future studies should also expand evidence from emerging markets and decentralized finance, as investor behavior may vary across cultural, institutional, and digital contexts [7, 20, 21]. This study is limited to Scopus indexed publications and bibliometric indicators, but it still provides a useful map of the field's intellectual structure and future research directions.

4 Conclusion

This bibliometric study shows that research on financial literacy, behavioral biases, and investment decision making has grown into an increasingly interdisciplinary field. The literature remains anchored in themes such as decision making and financial systems, yet it is gradually moving toward a more human centered perspective that recognizes the role of cognition, emotion, and digital change in shaping investor behavior. Although financial literacy is still developing as a research theme, its relevance in helping investors understand, evaluate, and manage behavioral bias is increasingly evident. The findings also indicate that this field is supported by collaborative and international scholarship, reflecting its importance across different financial and cultural contexts. Future research is encouraged to integrate psychological insight, digital finance, and practical investment challenges more deeply, so that the study of investor behavior can offer stronger contributions to education, policy, and financial decision-making practice.

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