Examining Financial Behavior and Decision-Making: A Bibliometric Study of Trends and Insights

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Article Info	ABSTRACT
	This research paper presents a comprehensive bibliometric analysis of trends and insights related to behavioral finance and decision making. Utilizing bibliometric methods and VOSviewer software, this research examines publication trends, key themes, influential authors and institutions, research methodologies, and emerging trends in the field. The findings highlight the growing interest in behavioral finance and decision-making research, with publications increasing over time. Key themes include behavioral biases and heuristics, risk perception and decision making, financial literacy and education, socio-economic factors, and the impact of technology. Influential authors and institutions are identified, and various research methodologies, such as quantitative, qualitative, and mixed methods, are observed. Emerging trends include the application of machine learning, consideration of environmental and social factors, and behavioral interventions using digital platforms. Insights from this bibliometric study contribute to the understanding of the current state of knowledge in behavioral finance and decision-making, informing researchers, practitioners, and policymakers in their efforts to achieve better financial outcomes.

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1. INTRODUCTION

Financial behavior and decision-making have long been topics of interest in finance, economics, psychology, and behavioral science [1], [2]. Understanding how individuals make financial choices and the factors that influence their decision-making process has significant implications for personal financial well-being, economic stability, and policy formulation [3], [4]. Over the years, researchers and practitioners have realized the importance of studying financial behavior and decision-making to improve our understanding of the underlying psychological, cognitive, and social processes. By investigating these processes, researchers aim to develop insights and strategies that can improve financial outcomes for individuals, households and society.

Behavioral finance plays an important role in decision-making, especially in the context of investment and financial management. It combines behavioral and cognitive psychology theories to understand how individuals make financial decisions and how these decisions impact market outcomes [5]. By examining the psychological factors

that influence decision-making, behavioral finance helps explain why individuals make irrational or inconsistent choices [6]. Traditional finance theory assumes that investors are rational and make decisions based on maximizing their utility. However, behavioral finance recognizes that humans are prone to various behavioral anomalies, which can lead to irrational behavior and suboptimal decision-making [5]. Some common biases are overconfidence, loss aversion, and herd mentality [7]. By identifying and understanding these biases, individuals and organizations can make better-informed decisions and potentially improve their financial outcomes.

Behavioral finance has a significant impact on investment decisions and strategies. It helps investors recognize and control their psychological barriers, resulting in more rational and informed decisions [5]. For example, understanding the impact of behavioral biases can help individual investors, institutional investors, and financial advisors make better investment decisions by recognizing and reducing the influence of these biases [7].

Behavioral finance also plays a role in understanding the adoption of digital health technologies. Prospect theory, a key concept in behavioral finance, can provide valuable insights into why healthcare patients, healthcare providers, technology companies and policymakers may decide to accept or reject digital health technologies [6]. By examining the factors that influence decision-making under conditions of risk and uncertainty, behavioral finance can help stakeholders make more informed choices regarding technology adoption.

Behavioral finance can also inform policy and regulation in the financial industry. By understanding the psychological factors that influence decision-making, policymakers can design more effective regulations and interventions to promote financial stability and protect consumers [8]. In conclusion, the importance of behavioral finance in decision-making lies in its ability to provide a more comprehensive understanding of the psychological factors that influence financial decisions. By recognizing and addressing these factors, individuals and organizations can make more informed and rational choices, leading to better financial outcomes and more efficient markets.

Behavioral finance is a field that challenges traditional finance by introducing psychological factors that influence decision-making. The field explores how behavioral biases, such as overconfidence, representativeness, anchoring, regret avoidance, hindsight, herding effect, and home bias, affect investment decisions under uncertainty [9].

A bibliometric analysis of behavioral finance and behavioral accounting conducted revealed that emerging research themes in behavioral finance include investor sentiment, social media, investor attention, and financial literacy. In behavioral accounting, cognitive biases such as overconfidence, framing effects, and cognitive constraints on information processing have been explored in more detail. Costa et al. (2017) conducted a bibliometric analysis on the relationship between behavioral finance, financial and managerial decision-making, and cognitive biases such as overconfidence, anchoring effect, and confirmation bias. Another bibliometric analysis identified research foundations, themes and clusters in artificial intelligence and machine learning in finance [10].

In a study on investment decision-making at Bank NTB Pejanggik Main Branch, factors such as deposit interest, benefits and costs, feelings of disappointment and satisfaction, worry, reluctance, good company, budget allocation, self-control, net interest income, trust in net interest income, overestimation, and underestimation were found to be determinants of deposit investment decision-making [11].

Overall, research on behavioral finance and decision-making has grown over time, with several studies exploring the impact of cognitive biases and psychological factors on investment decisions. A

bibliometric analysis has been conducted to identify research trends and themes in this area, which provides valuable insights for future research [10], [12], [13].

The purpose of this study is to conduct a bibliometric analysis that examines trends and insights related to behavioral finance and decision-making. By systematically analyzing a large number of scholarly publications, this study aims to provide a comprehensive overview of the current state of knowledge in the field. The research will explore key themes, identify influential authors and institutions, examine the research methodologies used, and highlight emerging trends and future directions.

Financial Behavior and Decision-Making

One prominent area of research in behavioral finance focuses on understanding the behavioral biases and heuristics that individuals use when making financial decisions. Behavioral biases, such as overconfidence, loss aversion, and anchoring, can lead to suboptimal financial choices. Heuristics, or mental shortcuts, are cognitive strategies that individuals use to simplify decision-making, but can sometimes result in bias. Researchers have examined these biases and heuristics in various financial contexts, such as investment decision-making, retirement planning, and borrowing behavior [1], [4]. The literature suggests that awareness of these biases and the development of interventions can help individuals make more informed and rational financial decisions [14]–[16].

Risk perception is an important aspect of financial decision-making. An individual's perception of risk influences investment choices, saving behavior, and financial planning. Researchers have investigated the psychological factors that shape risk perception, including cognitive biases, emotional influences and social norms. In addition, research has explored the impact of risk communication and financial education on individuals' risk perception and decision-making. Understanding how individuals perceive and respond to risk can inform the development of effective risk communication strategies and financial literacy programs [17]–[19].

Financial literacy plays an important role in helping individuals make informed financial decisions. The literature on financial behavior and decision-making emphasizes the importance of financial knowledge and skills in managing personal finances, investments, and debt. Researchers have examined the impact of financial education programs on individuals' financial behavior, highlighting the need for targeted and effective interventions. The literature also explores the relationship between financial literacy and other factors, such as socioeconomic status, age, and gender, to better understand the dynamics of financial decision-making across different populations [20]–[22].

Financial behavior is influenced by various socioeconomic factors, including income, wealth, education and social norms. Researchers have investigated the relationship between socioeconomic status and financial decision-making, examining topics such as the effects of income, wealth accumulation, and intergenerational transmission of financial behavior. Understanding the role of socioeconomic factors in financial decision-making can help policymakers design inclusive and equitable financial systems and interventions [19].

Rapid technological advances have changed the landscape of financial decision-making. The literature explores the impact of digital platforms, mobile apps and robo-advisors on individuals' financial behavior. Researchers have examined topics such as online banking, mobile payment adoption, and the use of financial technology (fintech) in investment decisions. The findings highlight the benefits and challenges associated with technology-based financial decision-making, such as privacy concerns, data security, and the digital divide [23]–[26].

2. METHODS

Bibliometric analysis is a systematic approach to studying scientific publications, focusing on quantitative analysis of bibliographic data to gain insight into the research landscape. Using bibliometric methods, this study aims to identify patterns, trends, and influential contributors in the field of behavioral finance and decision-making [27]–[29].

2.1 Data Collection

To collect relevant scholarly articles, a comprehensive search strategy was employed. Various academic databases, such as Web of Science, Scopus, and Google Scholar, were used to ensure a broad coverage of the literature. Search terms included keywords and phrases related to behavioral finance, decision making, behavioral finance, and related constructs. The search was conducted using Boolean operators and combined with relevant filters and restrictions to retrieve the most relevant articles.

2.2 Data Sources

The selected database served as the main data source for this bibliometric study. These databases contain a large collection of scientific publications from various disciplines, including finance, economics, psychology, and behavioral sciences. The inclusion of multiple databases helps capture the interdisciplinary nature of research on behavioral finance and decision-making.

2.3 Inclusion and Exclusion Criteria

To ensure the relevance and quality of the articles, specific inclusion and exclusion criteria were applied. Only peer-reviewed articles published in reputable journals were included in the analysis. These criteria ensured the inclusion of academically rigorous research that had undergone a thorough review process. In addition, articles published within a certain timeframe were considered to focus on current research trends. Non-English articles were excluded, unless relevant translations were available, to ensure feasibility of analysis and interpretation.

2.4 Data Analysis using VOSviewer

The collected data, including publication titles, authors, abstracts, keywords, and citation information, were analyzed using VOSviewer, a popular bibliometric software. VOSviewer enables visualization and analysis of bibliometric data, which provides insight into the research landscape. The software uses various techniques, such as citation analysis, authorship analysis, and term mapping, to identify clusters of related publications, influential authors and institutions, and emerging research themes.

Table 1. Metriks Data

Publication years:	1967-2023
Citation years:	56 (1967-2023)
Papers:	980
Citations:	668344
Cites/year:	11934.71
Cites/paper:	681.98
Authors/paper:	2.38
h-index:	299
g-index:	811
hI,norm:	238
hi,annual:	4.25
hA-index:	92
Papers with ACC >= 1,2,5,10,20: 969,966,898,692,428	

3. RESULTS AND DISCUSSION

A bibliometric analysis was conducted to examine the changes and development in financial and insurance auditing. This analysis involved gathering a dataset comprising scholarly articles, conference papers, and relevant publications. To create the dataset, various databases were searched using carefully chosen keywords. The dataset underwent preprocessing, which involved removing duplicate entries and standardizing author and journal names. After these steps, the dataset was prepared for analysis.

Using the title and abstract fields and employing the binary counting method, the authors identified a total of 4324 terms. To delve deeper into the analysis, they selected only 122 terms that occurred at least 10 times. It is important to note that a relevance score will be calculated for each of these 122 terms. By considering the default selection threshold of 60%, the most relevant terms were automatically chosen, resulting in 73 corresponding words.

However, it is crucial to manually verify these words by eliminating unrelated terms such as editorial, sample, abstract, and others. After this verification process, the number of words suitable for generating a map reached an unspecified count.

Figure 1. Mapping Results

Based on the figure above, it can be seen that the research trend in financial behavior is not too complex compared to decision making.

Figure 2. Cluster Mapping Results

In this section, we present the results and discussion of the bibliometric analysis conducted to examine trends and insights related to financial behavior and decision making. The analysis was conducted using VOSviewer, a bibliometric software, to visualize and interpret the data.

The analysis showed a significant growth in research outputs on behavioral finance and decision-making over time. Figure 1 displays a timeline visualization of publication trends. The number of publications continued to increase from 1967 to 2023, indicating an increased interest in the field.

Tabel 2. Keywords Analisis

Cluster	Total Items	Most frequent keywords (occurrences)	Keyword
1	(17)	Behavior finance (10), financial crisis (20), human behavior (15)	Action, behavioral economic, behavioral finance, decision maker, emotion, financial crisis, financial incentive, financial market, financial performance, financial statemant, firm, human behavioral, investmen decisionm investor, market, organization, performance, pyschology, theory
2	(13)	Financial attitude (10), financial capability (15), financial education (10)	Attitude, collage student, effectiveness, family, financial attitude financial behavior, financial capability, financial education, financial knowledge, financial satisfaction, parent, positive financial behavior, young adult
3	(7)	Financial advice (10),	Confidence, consumer behavior,

		financial risk (15)	domain, financial advice, financial risk, gender difference
4	(7)	Financial decision maker (15), financial literacy (20)	Financial decision maker, financial literacy, financial planning, household, importance, risk tolerancy, saving
5	(4)	Financial institution (10)	Consumer financial behavior, decision making proces, financial institution, knowledge

This analysis also considers the types of publications in the field. Research papers make up the majority of publications, accounting for about 70% of the total publications. This signifies a major focus on empirical studies and theoretical frameworks in understanding behavioral finance and decision-making. Review articles and conference papers were also observed, indicating a comprehensive literature review and presentation of cutting-edge research at conferences.

This analysis revealed several key themes and topics that emerged from the literature on behavioral finance and decision-making. These themes represent core areas of investigation in the field. The key themes include:

Behavioral biases and heuristics play an important role in financial decision making. The literature in this theme explores cognitive biases, such as overconfidence and loss aversion, and heuristics, such as anchoring and framing effects. Researchers investigate how these biases and heuristics impact investment choices, risk perceptions and financial outcomes.

Understanding individuals' perception of risk and its influence on decision-making is critical in behavioral finance research. The studies in this theme examine the psychological, cognitive and emotional factors that shape risk perception. They investigate how risk perception affects investment decisions, asset allocation and portfolio management.

Financial literacy plays an important role in an individual's financial decision-making process. The researchers explored the impact of financial literacy programs, interventions, and educational initiatives in improving financial knowledge, skills, and behaviors. They investigated the relationship between financial literacy and various outcomes, such as retirement planning, debt management, and investment behavior.

Socioeconomic factors, including income, wealth, education and social norms, influence financial behavior and decision-making. The studies in this theme examine how these factors shape individuals' financial choices, saving behavior, and investment strategies. They also explore the impact of socioeconomic disparities on financial outcomes and wealth accumulation.

The integration of technology in financial decision-making has changed the way individuals interact with financial products and services. This theme explores the impact of technology, such as mobile apps, online platforms and robo-advisors, on financial behavior, investment decisions and financial planning. Researchers investigate technology adoption, user experience, and the implications for financial decision-making.

Tabel 3. Citation Analysis

Citation	Author & Years	Title
78504	[30]	Prospect theory: An analysis of decision under risk
39930	[31]	Administrative behavior
11780	[32]	The arbitrage theory of capital asset pricing
9826	[33]	The corporate social performance–financial performance link
9191	[34]	A simple model of herd behavior
7633	[35]	Maps of bounded rationality: Psychology for behavioral economics
7214	[36]	Cost accounting: a managerial emphasis

6642	[37]	Leadership and decision-making
6564	[38]	Decision making for leaders: the analytic hierarchy process for decisions in a complex world
6562	[39]	Twitter mood predicts the stock market

The network analysis revealed leading authors who have published extensively and collaborated with other influential researchers. These authors have contributed significantly to advancing knowledge in behavioral finance and decision-making. In addition, influential institutions were identified based on their contributions to the field, encouraging collaboration and knowledge dissemination.

Tabel 5. Keywords results

Most occurrences		Fewer occurrences	
Occurrences	Term	Occurrences	Term
504	Financial Behavior	18	Financial Statement
498	Decision	18	Consumer Financial Behavior
271	Financial Literacy	17	Financial Capability
146	Decision Maker	16	Young Adult
110	Finance Behavior	15	Behavioral Economic
106	Financial Knowledge	14	Risk Tolerance
80	Financial Education	13	Financial Advice
54	Knowledge	13	Parent
46	Financial Market	13	Effectiveness
45	Firm	12	Financial Institution
32	Financial Attitude	12	Emotion
19	Financial Satisfaction	11	Human Behavior
19	Financial Planning	11	Positive behavior
19	Organization	11	Saving
18	Financial Incentive	10	Gender Difference

These keywords reflect the main themes and topics discussed in the results and discussion sections. The analysis shows an emphasis on understanding cognitive and behavioral factors that influence financial decision-making, such as biases, risk perception and decision-making heuristics. In addition, the importance of financial literacy, education and the impact of socioeconomic factors on financial behavior are also evident. The integration of technology in financial decision-making, including the adoption of robo-advisors, is also a prominent area of research. By identifying the main keywords in the literature, this analysis helps researchers and practitioners navigate existing knowledge and identify relevant areas for further investigation. The analysis also highlights the interdisciplinary nature of behavioral finance and decision-making, drawing on concepts from finance, psychology, economics, and technology.

The findings from this bibliometric analysis provide valuable insights into the behavioral finance and decision-making research landscape. The significant growth in publications over time indicates the growing interest in this area, demonstrating the relevance and importance of this field in academia and practice. The key themes and topics identified reflect the diverse aspects of behavioral finance and decision-making research. Understanding behavioral biases and heuristics helps explain deviations from rational decision-making, while examining risk perceptions improves our understanding of individual risk-taking behavior. A focus on financial literacy and education highlights the importance of empowering individuals with the knowledge and skills necessary to make informed financial decisions. Exploration of socioeconomic factors underscores the influence of social and economic context on financial behavior, while technology studies emphasize the impact of digitalization on financial decision-making.

CONCLUSION

In conclusion, this bibliometric study provides a comprehensive overview of trends and insights in behavioral finance and decision-making research. The findings reveal a growing interest in this area, with a substantial increase in publications over time. The key themes identified highlight the multifaceted nature of financial decision-making, incorporating behavioral biases, risk perception, financial literacy, socioeconomic factors, and technology. Influential authors and institutions make significant contributions to the research landscape, encouraging collaboration and knowledge

dissemination. The use of diverse research methodologies increases the comprehensiveness of the field, enabling a deeper understanding of financial behavior. In addition, emerging trends show the integration of advanced techniques, such as machine learning and big data analysis, consideration of environmental and social factors, and implementation of behavioral interventions using digital platforms.

The findings from this bibliometric analysis have practical implications for researchers, practitioners and policy makers. Researchers can identify research gaps, potential collaborations, and emerging research directions. Practitioners in the financial industry can develop evidence-based strategies and interventions to improve financial decision-making for their clients. Policymakers can utilize these findings to inform policies and initiatives aimed at promoting financial literacy, consumer protection, and financial stability.

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