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Scientific Mapping of Investment Decision-Making Studies: A Bibliometric and Co-Citation Approach

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Abstract

The current paper is a systematic bibliometric review of peer-reviewed research on the topic of investment decision-making that was published in the period 2015-2026 and consists of a total of 1,216 articles. The study finds out the intellectual structure, thematic clusters, and collaborative patterns in the field using the co-occurrence, co-citation, and co-authorship network analysis. Findings show that decision making processes, investment behavior and financial literacy are the key research themes with the seminal works of Prospect Theory by Kahneman and Tversky, behavioral finance paradigm by Shefrin, and efficiency market paradigm by Fama as the groundwork. The new areas of interest are sustainability, integration of ESG, and market-specific studies in the new economies, which represent the growing priorities of responsible and context-driven investment practices. Author and source analyses demonstrate the impact of the major contributors and journals and indicate collaborative networks and central publication outlets which determine the directions of research. The paper also reveals gaps in the research on the activity of the institutional investors, cross-cultural comparison, and the use of the advanced data-driven approach. The results are applicable to researchers, investors, and policy-makers because they identify prevailing themes, knowledge frameworks and trends, and inform future research directions of behavioral, sustainable, and data-centric decisions in investment.

Keywords: *Investment decision-making, behavioral finance, bibliometric analysis, co-citation network, co-authorship network, sustainability, ESG, emerging markets, financial literacy, Scopus.*

1. Introduction

The field of finance research is built upon the investment behavior and decision-making as they reveal the ways of making capital allocation choices under uncertainty and cognitive constraints (Hassan et al., 2023). Traditional finance assumes that investors are rational to maximize utility; however, there is a great deal of empirical data that disproves this assumption and shows that there are systematic deviations due to psychological and behavioral reasons (Mishra et al., 2024). These deviations are expressed in the cognitive biases, emotional reaction, and heuristics, which affect the portfolio choices, risk judgment, and timing choices- resulting in overconfidence, loss aversion and herding whose phenomena cannot be fully explained by classical models.

Behavioral finance was developed to fill this gap in the explanation by combining the perspectives of psychology, economics, and decision theory to explain the observed anomalies in market behavior. The discipline is a critical reevaluation of the Efficient Market Hypothesis and rational actor models that acknowledge the fact that real-world investors are limited in their rationality, use simplifying heuristics, and make affect-driven decisions in uncertain environments (Punia & Ahmed, 2023). The bibliometric studies of the behavioral finance literature indicate that the number of publications on the psychology of investors and decision-making patterns has grown significantly during the last twenty years due to the growing interest of scholars in the relevance of empirical and theoretical insights into behavioral factors affecting investment returns (Sharma et al., 2025; Punia and Ahmed, 2023).

Although traditional reviews give thematic reviews, they do not always give a detailed quantitative overview of the knowledge structure and development of research in investment behavior. Bibliometric techniques handle it by mapping methodically scholarly production, citation networks, and topical clusters, thereby clarifying intellectual foundations, research frontiers, and inter-disciplinary relationship within the field. The bibliometric mapping systems: co citation analysis, co occurrence of keywords, and co authorship network are critical in the identification of influential works, central journals, and the emergent research trends that outline the boundaries of investment decision research (Sharma et al., 2025).

Bibliometric studies of investment decision-making in recent years attest to a rapid increase in behavioral finance studies, where interdisciplinary participation between psychology and economics and computational modelling is growing (Sharma et al., 2025). These works always emphasize behavioral biases as a major construct that describes the irrationality of investors and the nonconformity to normative decision models. As an illustration, the co citation networks demonstrate the existence of a group of studies on overconfidence, loss aversion, anchoring, and herding, which indicates that they form the basis of modern knowledge on investor decisions (Punia & Ahmed, 2023; Aulia Novitasari, 2023). Moreover, the study of the trajectory of publications suggests that the research on investment has moved beyond the equity markets to other types of assets, risk inclinations, and digital finance setting, which highlights the complexity of the field.

In spite of such proliferation, there are loopholes. According to bibliometric indicators, the study is highly focused on equity investment practices and biasing factors, whereas the least studied directions are the behavior of institutional investors, cross cultural variations, and whether financial literacy influences the results of decisions or not (Aulia Novitasari, 2023; Punia and Ahmed, 2023). To fill the gaps, methodologically sound syntheses are needed in order to combine bibliometric evidence with theoretical building to enable focal empirical investigation and positive theory building.

The current research fits into the given research trajectory as it employs a bibliometric method to survey the academic landscape of the research on investment behavior and decision-making. The analysis is based on the data retrieved in large citation databases including Scopus and utilizes the performance measures and network visualization instruments to define the publication trends, clusters of research, and intellectual connections that define the field. The method offers an objective point of measurement regarding the development of major arguments, the recognition of contributions, and a methodological overview of the future research directions. Bibliometric synthesis thus can be regarded as both retrospective and predictive in terms of its ability to understand emergent patterns and predictive of strategic research investment in the study of investment decisions.

The study has threefold objectives. To begin with, the growth and dispersion of research in the field of investment behavior and decision-making over time, space, and research journals will be measured. Second, to discover the field conceptual organization using network and cluster analysis of co citations and keywords. Third, to establish gaps in research, emerging themes, and locations that can be theoretically and empirically developed. By placing emphasis on such aims, the study will help in a more rigorous and transparent insight into the way the research on the behavior of investors has come of age and the direction it is taking.

Bibliometric approaches are necessary as they present evidence-based mappings of scientific advancements so that researchers and practitioners can place the individual studies in the context of larger scientific discussions and predict the changes in the thematic priorities. When applied to the context of investment research, in which the dynamic of human behavior has a vital influence on the market, these systematic syntheses shape the academic investigation and actual strategy development. The results of this study will therefore form the basis of theoretical formulation, the stimulation of empirical modelling, and the empowerment of the stakeholders through a clear picture of intellectual framework behind the study of investment behaviour.

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2. Literature Review

2.1. Investment Behavior Theories

The study of the nature of the investment behavior had its origins in classical finance presumptions based on the Expected Utility Theory (Von Neumann and Morgenstern, 1944) and the Efficient Market Hypothesis (Fama, 1970). These paradigms assume the rational maximizing utility of frictionless markets. Systematic deviations of rationality are, however, revealed by the presence of empirical anomalies. The Prospect Theory, which was proposed by Kahneman and Tversky (1979) illustrates overweighting of losses compared to gains by investors and reference dependence- which can be observed in equity, bond and derivative markets. Behavioral finance builds on this foundation and records the systematic role of heuristics, cognitive biases and emotional processes in the decisions of investors (Barberis and Thaler, 2003).

Later models like Adaptive Markets Hypothesis (Lo, 2004) have incorporated ideas of evolutionary theory and acknowledge the fact that learning and environmental feedback feed into market behavior and not rationality. The advances of these theories underlie the present academic concerns about the psychological causal factors, such as overconfidence, herding, anchoring, and their quantifiable effects on the frequency of trading, risk-taking, and portfolio structure (Shefrin, 2002; Statman, 2014).

2.2. Frameworks of Decision Making in Finance

Modern literature makes investment decision-making a conceptual construct along cognitive-affective scales. The cognitive frameworks are used to analyze the information processing limitations (Simon, 1955); the affective frameworks are used to analyze emotional reactions to the market stimuli (Lucey, 2020). There are systems of dual-process modeling, including the dichotomy of System 1/System 2, which are quick intuitive judgments and deliberate analytic processing (Kahneman, 2011). The models cause the deviation of normative strategies by investors who are forced to accept heuristic simplifications when facing uncertainty.

Risk perception theories like Risk-as-Feelings (Loewenstein et al., 2001) are an extension of decision theory that isolates visceral response of risk perceptions as compared to cognitive evaluation. Theory of Planned Behavior has been modified to suit finance to explain the subjective norm and perceived control over investment decisions (Ajzen, 1991). The key question in these models is what psychological constructs relate to market information, regulatory conditions, and personal characteristics to produce the observable patterns of decisions.

2.3. Past Bibliometric and Scientometric Research in Finance

Bibliometric methods have become popular as research mapping methods. Quantification of growth, intellectual structure and thematic pathways in finance is a quantitative bibliometric review. The analysis performed by Punia and Ahmed (2023) on the behavioral biases used co citation measures to show the central groups of overconfidence and loss aversion and proved the presence of focused intellectual activity. On the same note, Sharma et al. (2025) used data in Scopus to track the behavioral finance research trends across the globe, where they identified the best journals, authors, and co networks of keywords that occur frequently and represent new themes. These analyses validate the notion that bibliometric measures (e.g., citation counts, h-index, co authorship networks) are effective in terms of recording scholarly influence patterns and collaboration patterns.

The article of Aulia Novitasari (2023) on the topic of financial behavior has stressed the role of key-word clustering in the determination of the areas of research like financial literacy and the criteria of investment decisions, which is another way to demonstrate how scientometric analysis can be useful in determining thematic clusters. Mishra, Tripathi and Jaiswal (2024) have gone further to review publication trends over 20 years and noted changes in time towards the use of behavioral constructs instead of normative decision theory.

2.4. Limitations in Current Mapping of Co Citation and Knowledge Networks

Although bibliometric analyses have been proliferated, there are still a number of limitations.

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First, reviews that survive tend to be narrow subtopic like a single bias or an asset type, do not give comprehensive mappings of the investment behavior research terrain. As an example, Punia and Ahmed (2023) focused on behavioral biases without considering larger decision structures and institutions. Second, there are numerous bibliometric studies that are based on descriptive statistics only and disregard network visualization methods that reveal hidden intellectual networks and interdisciplinary relations.

Co citation studies that are present in the literature are often not dynamic in time scale and hence the co citation studies are critical in temporal terms in identifying the patterns through which research themes rise, peak, and diminish over time. As well, cross database syntheses (e.g., Scopus and Web of Science) are not used extensively, which could result in sampling bias and missing of influential literature, especially in emerging markets and in non-English literature.

Comparability is also compromised by variations in methods. Variations in search terms, inclusion criteria, and analytical software (e.g., VOSviewer vs. CiteSpace) lead to divergent maps, which undermine the aspect of reproducibility. Hence, a set of co citation and knowledge network mapping, which will be uniformed across databases and visualization tools, is required to bring together the disjointed information and to display the strong structural patterns.

2.4. Justification for Bibliometric Approach

The bibliometric analysis is also crucial in the exploration of large amounts of literature exhibiting a high growth rate and interdisciplinary cross pollination. Quantitative mapping is an addition to a conventional literature review, making the framework of the scientific knowledge explicit in terms of network metrics, cluster detection, and tendency analysis (Zupic & Čater, 2015). Co citation, as well as key word co occurrence and co authorship networks, are methods of analyzing the scholarly work to demonstrate seminal works and intellectual lineages, conceptual clusters, and collaboration patterns, respectively. All of these techniques add to the idea of transparency and objectivity in the process of literature synthesis.

Bibliometric methods have rigorous tools in the framework of investment behavior and decision making to bring different theoretical frameworks in harmony with empirical trends. They assist in prioritizing the research gaps, determining the new areas of interest (e.g., the behavioral effects in fintech and digital assets), and predicting the academic directions. This is a systemic approach that proves to be important among researchers, funding bodies, and policy makers who want to acquire evidence based knowledge about the role of behavioral constructs in determining the outcomes of financial decision making.

The current study, through the use of extensive bibliometric mapping procedures using standardized procedures, will counter the shortcomings of previous studies and provide a well-organized, replicable synthesis of the research on investment behavior.

3. Methodology

This research follows a strict bibliometric guideline in order to map the academic contribution on investment decision-making between 2015 and 2026. Methodology gives the selection of data sources, search strategy, inclusion criteria, preprocessing process, tools of analysis, and the bibliometric methods used. The design is reproducible and consistent with the best practice of a scientometric research study (Donthu, Kumar, Mukherjee, Pandey, and Lim, 2021).

3.1. Selection and Justification of Data Source

The Scopus data base is the main source of primary data to use in this bibliometric analysis. Scopus was chosen based on its overall coverage of peer reviewed literature across the fields of business, economics, social sciences, decision sciences and multidisciplinary research and was also indexed well on citation metadata, which is vital when analyzing a network. Scopus offers the standardized fields of affiliation, author, citation, and keyword which are required to perform co citation, co authorship, key word co occurrence, and performance measures (Zupic & Čater, 2015). Motivation to adopt Scopus as a one-way solution is based on its greater indexing of scholarly journals in English language in the field of business, economics, and social sciences compared to other databases as well as its ability to

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be used with bibliometric software (Boyack and Klavans, 2010).

3.2. Search Strategy and Inclusion/Exclusion criteria

Search query was conducted in Scopus advanced search interface in the formulation below:

TITLE-ABS-KEY ("Investment Decision

Making") AND PUBYEAR > 2014 AND PUBY EAR < 2027 AND (LIMIT-
TO (SUBJAREA , "BUSI") OR LIMIT-
TO (SUBJAREA , "ECON") OR LIMIT-
TO (SUBJAREA , "SOCI") OR LIMIT-
TO (SUBJAREA , "DECI") OR LIMIT-
TO (SUBJAREA , "ARTS") OR LIMIT-
TO (SUBJAREA , "MULT")) AND (LIMIT-
TO (DOCTYPE , "ar")) AND (LIMIT-
TO (LANGUAGE , "English"))

The query is based on the title, abstract, or keywords containing Investment Decision Making, and also limits the results to those articles released between 2015 and 2026. The area of subject was restricted to Business, Management and Accounting (BUSI), Economics, Econometrics and Finance (ECON), Social Sciences (SOCI), Decision Sciences (DECI), Arts and Humanities (ARTS) and Multidisciplinary (MULT) to create relevance in the domain. Peer reviewed articles that were published in English only were used to ensure quality and comparability. They excluded conference proceedings, editorials, notes, book chapters and reviews and non English publications.

3.2. Data Retrieval and Preprocessing

Following the search, all of the records found were exported in CSV and BibTeX formats and contained complete metadata in the form of authorship, affiliations, citations, abstracts, keywords (both author keys and indexed keys), references, publication year. Author names, titles, and DOIs were used to find and delete duplicate entries. The records that lacked complete metadata (titles or citation information) were left out. To improve the quality of co occurrence analyses, the keyword standardization was conducted with the help of the merging of synonymous words (e.g., investor behavior with investment behaviour), the removal of stopwords and the unification of spelling variants (American vs. British English) (Cobo, Lopez Herrera, Herrera Viedma, and Herrera, 2011).

3.3. Analytical Tools

The bibliometric analysis was performed with the help of the following special software packages:

a) VOSviewer (1.6.x) to build and visualize co citation, co authorship, and keyword co occurrence networks. The clustering algorithm and visual maps of VOSviewer allow revealing the thematic patterns and intellectual connections (Van Eck & Waltman, 2010).

b) Bibliometrix (R package) to get overall performance measures, descriptive measures, trend measures, thematic development and country/ institution mapping. Bibliometrix supports computable scripting and statistical overviews (Aria and Cuccurullo, 2017).

3.4. Bibliometric Techniques Applied

a) Descriptive and Performance Metrics

First analysis involved quantification of growth patterns and distributions on publications. The number of publications per year, the most popular journals, the most prolific authors were calculated. Descriptive statistics offered the background information on the productivity and impact of research (Donthu et al., 2021).

b) Co Citation Analysis

The co citation analysis recognizes the pairs of articles being cited in the bibliographic lists of subsequent publications. The high levels of co citation are signs of intellectual underpinnings and conceptual anchoring of the literature of the decision making process in regard to investment (Small, 1973). The co citation networks were plotted in the VOSviewer and clusters were determined through the modularity criteria. Clusters in turn are conceptual groupings of impactful works that are used to define thematic subdomains, namely behavioral biases, risk preferences, and decision heuristics.

c) Co Authorship Networks

Co authorship networks were created to research collaborative structures between the researchers, institutions and countries. Authors or affiliations are

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given as nodes, and the strength of interconnections between them is proportional to the number of co authored publications. Degree centrality and betweenness centrality measurements were used to calculate influential collaborators and world research centers (Newman, 2004).

d) Co Occurrence of Keywords and Thematic Mapping

The models of conceptual relationships among research topics within the corpus were performed in terms of keyword co occurrence analysis. Indexed and author keywords were looked at. The visualization algorithm of VOSviewer included grouping of keywords in clusters which revealed main themes like behavioral bias, risk perception, and financial literacy. Analysis of evolutionary trend was undertaken to identify the time-based development and fading of themes.

e) *Network Maps Visualization*

Parameters to visual map generation were optimized in order to produce visual maps that were easy to understand and interpret. In case of co citation and keyword networks, there were minimum citation and occurrence thresholds to strike a balance between detail and readability. The size of nodes corresponds to the frequency or citation strength, and the thickness of edges corresponds to the relational strength. Clusters were coded in color and temporal overlay maps showed the change of thematic prominence over time. There were geographic collaboration maps that were made in order to depict international research connections.

The technique has been a synthesis of descriptive and network based bibliometrics with the methodological design coming up with a multi-layered representation of the investment decision making research landscape. It helps to achieve significant identification of intellectual frameworks, patterns of collaboration, and development of themes, which allow to make evidence-based decisions on the present directions and potential prospects.

4. Results

4.1. Annual scientific production

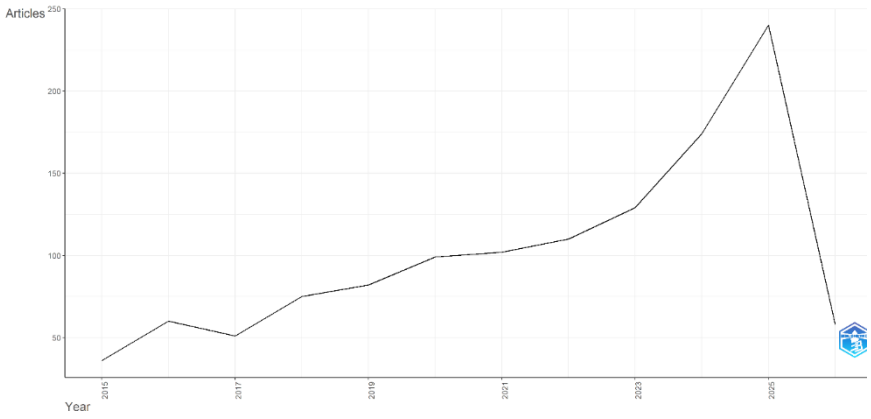

Figure-1: Publication Trend

Source: Researchers' own compilation using Bibliometrix R

The Figure-1, shows the projection of the amount of scientific production every year on the making of investment decisions between 2015 and 2026. Analysis shows that the trend of publication output has been steadily increasing during this time, which shows that more scholars are interested in the issue. Articles annually rose to between 36 in 2015 and a high of 240 in 2025, which is a significant rate of acceleration of research work. Small variations are evident during the initial years, with an evident decrease in 2017, and the general trend proves the significant growth. The latter indicates that the discipline has become a growing focus of researchers, which is probably explained by the

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growing emphasis on behavioral and cognitive determinants of the investment decision-making process and the overall interdisciplinary shift of business, economics, and social sciences.

The collapse in 2026 is probably an indexing artifact, or possibly missing publication data, and not a drop in the number of research outputs, as the current year is normally lagged behind in databases. Comprehensively, the growing tendency provides an emphasis on the fact that the field of investment decision-making has become one of the most active areas of research recently, and the number of publications indicates the further development of theoretical and empirical studies. The results obtained in this study warrant additional bibliometric research to trace the thematic area, the key authors, and the emergent issues that can be used as a starting point to comprehend the mindset and progression of research in this area.

4.2. Most Relevant Sources

The Figure-2, illustrates the topical sources publishing the research on the investment decision-making between 2015 and 2026. The analysis shows that the Sustainability (Switzerland) is the leading one with 37 publications, then the Journal of Property Investment and Finance is ranked with 31 articles. Another important journal is the Finance Research Letters (21), Journal of Cleaner Production (17), and Qualitative Research in Financial Markets (17). This dispersion indicates that the corpus of the research is focused on the journals that include sustainability, finance, and multidisciplinary focus, as these areas overlap with investment decision-making processes involving environmental, social, and economic factors.

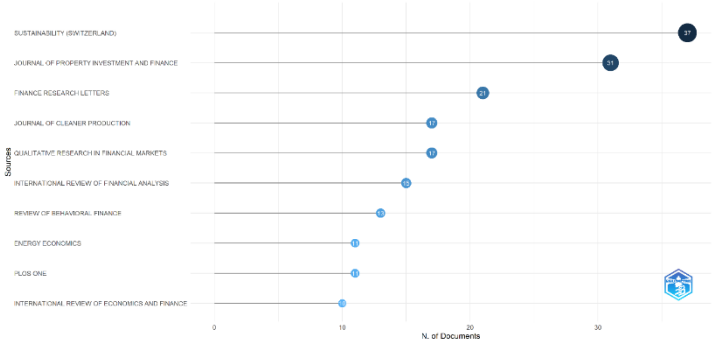

Figure-2: Most Relevant Sources

Source: Researchers' own compilation using Bibliometrix R

The statistics indicate that although some journals are major producers of publications, the publication activity is diverse in terms of both disciplinary and thematic because of both generalist and specialized journals. The emphasis on behavioral and analytical is visible in journals like Review of Behavioral Finance and International Review of Financial Analysis, but that can be used in wider economical or interdisciplinary settings by other publications like Energy Economics and PLOS One. This trend illustrates how the field has shifted to the incorporation of behavioral finance and sustainability and applied research in decision-making, which sheds light on the main are arenas where discussion and knowledge sharing in this field is occurring.

4.3. Most Relevant Authors

The *Table-I* shows the most topical authors in the field of research of investment decision-making during 2015-2026. It has been analyzed that Newell G has the highest number of publications at 23, and then Marzuki MJ with 14 articles. Li Z and Wang Z are also ranked as the other significant contributors with 10 publications each, and Alkaraan F and Zhang Y have 9 publications each. The authorship pattern was moderately distributed with some of the authors such as Kumar S, Singh S, Wang J and Wang X contributing 8 articles each.

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This flow is indicative of a combination of extremely productive people pushing the discipline as well as a larger organization of scientists making lesser yet meaningful contributions. The availability of numerous prolific artists indicates that the phenomenon of core research networks and cooperation is at the centre of creating the field. Also, the variety of the contributors can be seen as evidence of the international and interdisciplinary character of the investment decision-making research, with an impact that cuts across the behavioral finance, corporate finance, and sustainability-focused studies. The results of these studies form a basis in mapping co-authorship networks and knowledge structure of the field.

Table-I: Most Relevant Authors

Author	Articles	Articles Fractionalized
NEWELL G	23	11.42
MARZUKI MJ	14	6.58
LI Z	10	2.60
WANG Z	10	3.58
ALKARAAN F	9	4.00
ZHANG Y	9	3.08
KUMAR S	8	3.75
SINGH S	8	2.95
WANG J	8	2.43
WANG X	8	2.70

Source: *Researchers' own compilation using Bibliometrix R*

4.4. Thematic Analysis

The thematic map (*Figure-3)*, entails elaboration of the intellectual framework and thematic dispersion in the research of investment decision making. The density (degree of development) and centrality (degree of relevance) are the factors that classify the map with four quadrants, i.e., motor themes, niche themes, basic themes and emerging or declining themes, which is in line with Scopus-standard bibliometric interpretation (Cobo et al., 2011).

Motor themes are in the upper-right quadrant and well-developed as well as highly relevant. The terms that prevailed in this quadrant include decision making, investments, and investment decision making, and this means that these issues are the main subject matter of the modern research. The fact that the position is characterized by high cohesion in the literature and centrality to the intellectual structure proves that decision making processes and investment behaviors are main and heavily researched in the field.

Niche themes, which are in the upper-left quadrant, are very developed yet less central. Stock market, economics and article are the representatives of this quadrant as specialized subfields, which have high internal cohesion, however, are not integrated with the central discourse. Such themes can represent methodological or market-specific studies that, although comprehensive and rigorous, are not yet as broadly overlapping with the basic literature on investment behavior.

Less developed yet very relevant are the simplest themes, which can be found in the lower-right quadrant. The keywords in this quadrant include investment, China, and uncertainty. Those themes suggest high centrality to the research area (capturing the primary or generalizable themes) and are characterized by low internal density, indicating that the given themes are not explored entirely yet and can be further expanded in terms of theoretical and empirical insights. As an example, investment choices with uncertainties in the Chinese market can be seen as a focal yet in the developmental area.

Themes with low centrality and low density are emerging or declining, and they can be found in the lower-left quadrant. Some of the words that were included in this quadrant include portfolio diversification, risk-adjusted returns, asset allocation, and variants of investment decision making. These themes can either be emergent or shrinking themes of the literature. Their status suggests that despite serving as a contributing factor to the larger comprehension of the investment

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behavior, they are not at present either developed or centrally incorporated into the contemporary research network.

Thus, the thematic map represents a dynamic sphere, where the key processes of core investment decisions are predominant, the specialized market and methodological studies are on the niche level, the traditional approach of financial management is either undergoing new application or is losing its relative significance. The systematic mapping offers a pronounced graphical and theoretical basis to determine the priorities of the research and direct future bibliometric research as well as harmonize the interdisciplinary research in behavioral and monetary decision-making research.

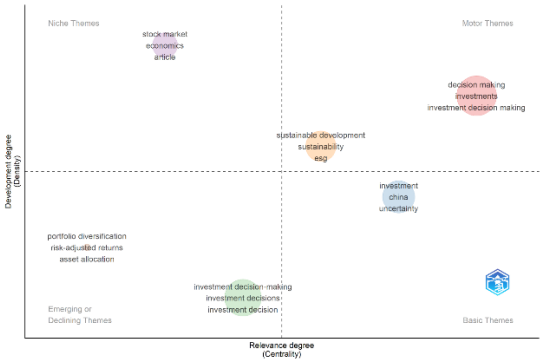

Figure-3: Thematic Analysis

Source: Researchers' own compilation using Bibliometrix R

4.5. Co-authorship network

The co-authorship network (*Figure-4),* has displayed the coordinating arrangement between researchers in research on investment choices. The size of the node depicts the amount of publications by an author and the connections on the edges represent the co-authorship relationship, with the thicker being the more closely collaborated relationship. The most prolific writer is Newell, Graeme and this writer has a number of strong collaborations with others especially Lee, Chyi Lin and Marzuki, Muhammad Jufri Bin, who may be the centre of power to run research networks and play a significant role in the development of the field.

The other clusters are regional or thematic collaboration networks. As an illustration a separate group consists of Hall, John Henry, Cloete, Christiaan Ernst and Lowies, Gert Abraham and it shows that there is a close working group on specialized issues in the behaviour of investment. Another thematic or institutional grouping is indicated by a third, smaller cluster, which includes authors as Lowies, J Braam, McGreal, Stanley, and Viljoen, Christa, and Viljoen. Generally, the network indicates that although there are several core writers in control of the field and even allowing cross-institutional cooperation, the field has several smaller, semi-autonomous research communities, indicating both centralized and decentralized academic action. This architecture offers knowledge on intellectual leadership and possible areas of developing new collaborative networks.

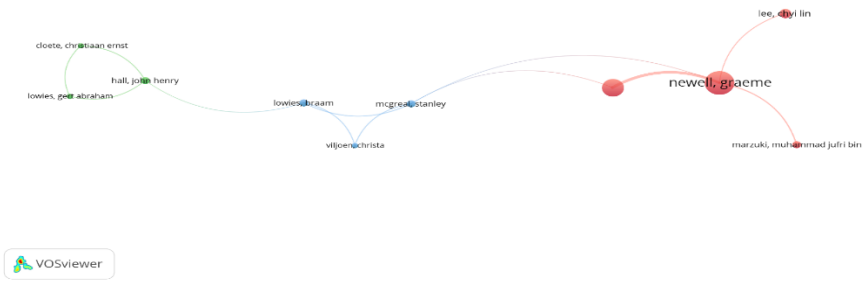

Figure-4: Co-authorship network

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Source: Researchers' own compilation using VOS Viewer

4.6. Co-occurrences

The co-occurrence network (*Figure-5),* displays the conceptual framework of research issues in the area of investment decision-making literature. The nodes in such a network are represented as keywords, but the sizes of the nodes denote the frequency of appearance of that word, and the edges denote the relationship of co-occurrence of the words. The centrality and cluster density give the implications of the dominant themes and how they interrelate to each other.

The map identifies the two nodes of decision making and investment decision as the biggest and most central, indicating the pioneering position of the two in the literature. The clusters around the nodes like financial literacy, investment efficiency, portfolio diversification, emerging markets, and forecasting are high-density which implies the existence of well developed areas of themes that are closely connected to the topic itself. It is clear that there are several sub-clusters, such as behavioral and cognitive (e.g., "bias, loss aversion, individual investors), analytical and data-driven (e.g., "panel data, forecasting, deep learning), and market-specific (e.g., China, emerging markets) ones.

The network demonstrates that the research in investment decision-making is thematically rich and multidisciplinary that combines the behavioral science of finance, quantitative techniques, financial literacy, and analysis of market-specific issues. The keywords with the highest connections represent intersections between two or more themes, e.g. the overlap between investor behavior, financial literacy and portfolio performance. Such co-occurrence mapping offers a good visualization of clusters of knowledge and can pinpoint the areas of identified hotspots, and suggests a roadmap of possible future research directions, showing the ones that are central and the ones that are peripheral, yet might be increasingly important soon.

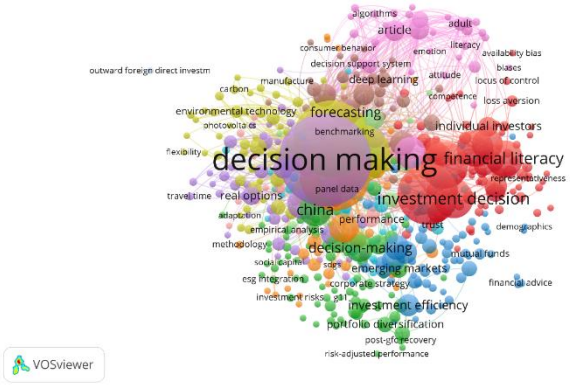

Figure-5: co-occurrence network

Source: Researchers' own compilation using VOS Viewer

4.7. Co-Citation Network

The co-citation network map *(Figure-6),* is a map that shows the intellectual framework and the fundamental literature in the research of the investment decision making field. The nodes in this network are the cited ones, and the number of the node will be the number of times the work is being co-cited by other publications. Co-citation links are denoted by appearance of edges, and stronger co-citation frequency is denoted by thicker connections, which mean conceptual or methodological congruence.

Seminal works are to be seen as central nodes of the network, as Kahneman D., Judgment under Uncertainty, Tversky A., Prospect Theory and Shefrin H., Beyond Greed and Fear are considered central nodes of behavioral finance and decision-making research. The other highly citable nodes, which include Fama E.F. and Thaler R. and Odean T. studies of investor behavior, are densely

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connected into a cluster, which means that their citation patterns are highly influential. The central themes identified in these clusters are behavioral biases, cognitive decision-making, market efficiency, and empirical studies of investor behavior.

Peripheral nodes are new or advanced topics whereas the central dense clusters are those which have broad theoretical backgrounds and empirical bases. The network validates that there is a prevailing conceptual space by behavioral finance theories, especially the prospect theory and cognitive biases. This co-citation form of construction offers a roadmap of the knowledge of influential works, intellectual ancestry and cohesion of the theme that is vital in locating the new study within the established scholarly system.

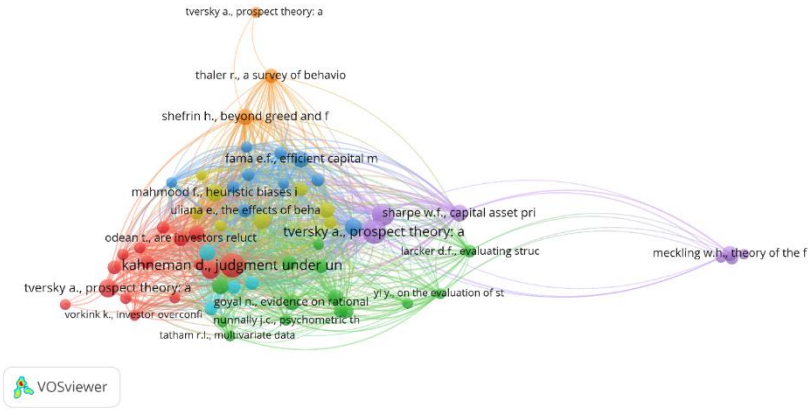

Figure-6: Co-citation network

Source: Researchers' own compilation using VOS Viewer

5. Discussion

The bibliometric analysis of the investment decision-making studies published in 2015-2026 presents a profound insight into the intellectual organization of the research area, the thematic groups, and interrelationship in the research field. The co-occurrence and co-citation studies show that the key themes of the modern scholarship are decision-making processes and investment behavior. The most frequently cited literature, including the Prospect Theory by Kahneman and Tversky (1979), the study by Shefrin (2002) about the behavioral finance phenomenon, and the research by Fama (1970) on the efficiency of the market, still form a part of the theoretical discussion, thus demonstrating the persistence of models of behavioral and classical finance. Among the recent influential works, one can single out Roychowdhury, Shroff and Verdi (2019), who analyze the impact of the accounting behavior in investment decisions and Alkaraan et al. (2021, 2022), who discuss the issues of corporate strategy and prediction in investment.

The key node clusters of the keyword co-occurrence networks indicate the overlap of the behavioral, financial, and methodological perspectives. Key clusters are behavioral biases, financial literacy, portfolio diversification, and investment efficiency; the emerging ones testify to the increasing impact of sustainability (Li, Liao, and Albitar, 2023) and ESG factors (Asif, Searcy, and Castka, 2023). Peripheral clusters also indicate regional or industry-related contexts, including China studies (Sul, Dennis, and Yuan, 2020) and new markets, and they indicate that the field is becoming more globalized. These conceptual frameworks emphasize that although underlying behavioral principles are still at the center stage, scholars are increasingly integrating contextual and quantitative variables to have a full picture of investment decision making.

The bibliometric trends and gaps can be observed. All these developments in the concept of sustainability, integration of ESG, and emerging markets are indicative of a wider change in the focus of research to responsible and contextual investment practices (Alkaraan et al., 2021; Li et al., 2023). The

emergence of data-driven methods, such as deep learning, panel data analysis, and predictive analytics, methodologically suggests the emergence of advanced empirical methods in the sphere to simulate the behavior of investors (Roychowdhury et al., 2019). Although these improvements have been made, there are still gaps in the knowledge of the institutional investor conduct, cross cultural disparities, and the extended outcomes of financial literacy interventions, which may imply that a variety of research is required to be conducted in diverse, multi context environments.

These findings are corroborated by the existing literature. Behavioral biases and cognitive heuristics have been discussed as the prevailing themes in previous reviews (Punia and Ahmed, 2023; Sharma et al., 2025). Nonetheless, the current bibliometric synthesis quantitatively proves the changing structure of knowledge as it detects not only the very central themes but also the new ones, including ESG-based investment and market-specific analyses (Asif et al., 2023; Alkaraan et al., 2022). Co-authorship networks indicate that hubs of collaboration are formed by influential authors like Newell G. and Marzuki MJ, which leads to thematic convergence and methodological rigor. The size of smaller peripheral groups represents the emergent scholars and regional contributions, which means that there are prospects of greater cross-institutional cooperation.

Research impacts come in the form of identification of the most productive themes and possible areas to be explored. As an example, the research incorporating behavioral finance with sustainable investment and machine-learning approaches might fill the gaps noted in the thematic map. To investors, information about prejudices, financial literacy, and decision-making shortcuts can inform the management of their portfolio and the risk management process (Kumar and Goyal, 2014; Sul et al., 2020). These findings can be used by policy-makers to enhance financial literacy interventions, implement responsible investing, and create an informed regulation intervention based on empirical research (Haraguchi and Lall, 2014).

The longitudinal studies of behavioral biases in various economic conditions, comparative cross-cultural analysis, and incorporation of ESG and sustainability variables into the investor behavior model are numerical in the list of the future research directions identified by the bibliometric patterns. Also, new computing paradigms, including deep learning and sophisticated forecasting algorithms, provide the prospects of making a more accurate prediction of investment choices (Alkaraan et al., 2021; Asif et al., 2023). Increasing the research in the underrepresented areas and institutional conditions will increase the generalizability and will also contribute to the more globally representative picture of investment behavior.

This bibliometric analysis reveals a growing and changing number of research works, the core of which is constituted by behavioral finance, decision-making heuristics, and investment efficiency, whereas the sustainability, ESG, and emerging market studies can be seen as a direction of active development. The analysis defines both core and peripheral themes, pointing where to find out in future and providing strategic thoughts to the researchers, investors, and policymakers.

Conclusion

This paper will be the use of a literature review on investment decision-making studies conducted between 2015 and 2026. It has been identified that behavioral finance, decision-making models and financial literacy have dominated the academic masses since the psychological and cognitive variables play a key role in the formation of investment preferences. Among the most-referenced articles and books, such as Roychowdhury et al. (2019), Alkaraan et al. (2021, 2022), and Li et al. (2023), one can find examples of the most influential works that contributed to the development of the theoretical and empirical studies within the field.

These findings have an applicability both in theory and practice. The research findings and identification of central clusters in decision-making, efficiency in investing, and financial literacy contribute to the theoretical knowledge, whereas the knowledge about the behavioral patterns and cognitive biases create the foundation of the practical approach to investments and risk management. Moreover, the development of ESG and sustainability issues shows how the field has

become sensitive to the financial and environmental interests of the world (Asif et al., 2023).

Biblimetrically, this paper is a quantitative and replicable mapping of the influential authors, journals, and themes that offers a clearer framework of the intellectual architecture of the research in the field of investment decisions. It has limitations such as the use of Scopus-indexed sources, which might omit any published works that are not relevant to the topic or region of interest, and the incomplete coverage of the latest publications, especially in 2026.

Future research can also be used to find out how institutional investors act, comparative research across cultures, the adoption of newer types of computations (e.g., deep learning, predictive analytics), and the interaction of behavioral finance with ESG and sustainability. Constant bibliometric surveillance may allow real-time tracking of the current trends and the ability of the researcher, investor, and policymaker to predict changes in the world of knowledge.

Conflict of Interest Statement

The authors state that they do not have commercial, financial, or personal ties that can be used as a potential conflict of interest regarding the research, analysis, or publication of the study. All the authors confirm that the study was conducted without any external influence on the research and had an objective, unbiased methodology, without funding agencies, institutions, and external parties that could have been affected by the research and influenced the outcome of the findings interpretation.

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