A Bibliometric Exploration of the Financial Robo-Advisory Landscape

Discipline: Commerce

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Abstract

Advancements in data-driven and intelligent technologies have enabled improvements in the provision of financial services. Robo-advisers have become a disruptive factor in the wealth management domain. Automated financial advisors are algorithm-based advisory platforms that provide advice and portfolio optimisation models to investors. It offers 24/7 services at a lower cost than traditional investment advisors. The study used data extracted from Web of Science database, and the collected data were analysed using Biblioshiny. The study examined research trends, key contributors, and thematic developments, and analysed publication patterns, citation networks, keyword occurrences and collaborative research trends. The findings reveal that topics related to artificial intelligence, information technology, investors and robo advisors appear as basic themes, and the current research primarily focuses on user trust and adoption of robo advisory technologies. The keyword analysis highlights fintech, robo advisors and artificial intelligence appear as most central and highly connected keywords. The results provide insights into the evolving research landscape and suggest prominent areas for future investigation.

Keywords: *Bibliometric Analysis, Robo Advisors, Automated Investment, Fintech, Wealth Management*

Introduction

The rapid financialization of the economy and the significant impact of digitalisation have put the wealth management industry at the forefront of change. Hyper-personalisation, where services are tailored to an individual's financial goals and risk appetites, is the trend in the wealth management industry. This transformation is accelerated by financial innovations such as robo-advisors. Robo advisors are digital wealth management platforms that employ algorithms and advanced analytics to deliver automated investment advice with minimal or no human intervention. The deployment of

automated tools and robo-advisors has made investment advice more accessible and affordable to the diverse client base.

Robo advisory services are based on algorithms, and they use online questionnaires to collect data of investors' risk preferences, expected returns, current financial status and financial goals. Robo advisors provide investment advice to their clients based on the information gathered from them (Gulati, N., & Gupta, M. P., 2025). The educational tools provided by the robo-advisors focus on enhancing financial literacy among investors.

The evolution of wealth management can be traced from conventional service delivery through physical channels to a modern digital ecosystem characterised by an unbundled wealth stack. Regardless, the primary goal remains to deliver comprehensive and customised wealth management services. This is enabled by robo-advisory services, which provide persona-based risk profiling and a personalised financial management solution. The academic research in robo advisors is still developing. This study employs bibliometric analysis to evaluate the scholarly literature related to robo-advisors. Bibliometric analysis has become a widely recognised approach for systematically examining and visualising the intellectual structure of a research area. It facilitates a deeper understanding of the evolution of academic knowledge, scholarly discussions and research trends within a particular area. The study seeks to address the following research questions.

RQ1: What are the publication growth trends of academic research on robo-advisors?

RQ2: Which authors, institutions, and journals have made the most significant contributions to the field of robo-advisor research?

RQ3: What major themes and keyword trends emerge within the robo advisor research domain?

This study examines research trends, key contributors, and thematic developments in the robo-advisory landscape. It also attempts to identify the key contributors and institutions within the field and examine the emerging trends to provide directions for future research.

Literature Review

Rico Pérez, H., Arenas Parra et al. (2022) investigated the main research themes, the most prominent authors and journals, and the countries contributing towards research on robo advisors. The study considered 219 research papers spanning from 2015 to 2022, obtained from Scopus and Web of Science. The review found that research on robo-advisors accelerated from 2018 onwards. The analysis of publication abstracts revealed three dominant research themes in the field: automation-driven aspects, human interaction-related aspects, and regulatory compliance.

Arenas-Parra, M., Rico-Pérez, et al. (2024) explored the elements of the investment advisory framework that have received the most academic attention on robo advisory research. The keyword' relational analysis' is employed to analyse bibliographic data derived from 195 papers complied

from Web of Science and Scopus. The results indicated that the researchers' attention is on human-related aspects of robo-advisory services. The major research interests include the digitalisation in risk profiling and investors' response to automated advisory practices.

Fahruri, A., Rusmanto, T., et al. (2024) conducted an econometric literature review of scholarly research on the acceptance of automated advisory services. This study examined the comprehensive Scopus database using VOS viewer and Biblioshiny. The analysis involved 383 documents and identified key metrics, including influential publication sources, frequently used keywords, countries, authors, and affiliations. The findings indicate that there is a growing academic interest and expanding opportunities for future research in the domain of robo advisors.

Mathew, L., Govindan, V. M., et al. (2024) studied the rapidly evolving domain of robo advisors utilising a robust data set extracted from Scopus. The extracted articles were screened systematically applying PRISMA model and select the relevant publications based on inclusion and exclusion criteria. The analysis was conducted using advanced bibliometric analysis tools such as Biblioshiny, CiteSpace, and VOSviewer. The analysis results established that the digital financial advisory domain is progressing with notable shifts in research trends and dynamics. The growing volume of publications demonstrates the enhancement of scholarly and practical attention towards the robo advisory services. The findings suggest that the technological advancement can transform the ways of delivering financial planning and investment management services.

Gulati, N., & Gupta, M. P. (2025) conducted study based on query formulation to retrieve information on Robo-advisors from the Scopus database. Bibliometric indicators like Keyword Co-occurrence Analysis, Co citation Analysis, Co-authorship Network Analysis, etc. have been used and analysis has been performed using VOSviewer and Biblioshiny. The findings revealed that publications on Robo-advisors have gained momentum since 2017. China, United States, and Germany are leading nations contributing to Robo-advisory theme. Keyword Co-occurrence analysis illustrates that "Robo-advisor", "Fintech" and "Artificial Intelligence" are commonly occurring keywords.

Methodology

A bibliometric method is applied in this study to investigate the progression of research on robo advisors. The bibliographic records used were sourced from the Web of Science database. The period examined was until March 7 2026. The data were collected by developing search queries using relevant keywords such as "robo advisors", "automated investment advice", "digital financial advice", and "AI-based financial advisory". The articles were filtered by language, and only publications in English were considered for analysis. Both articles and review articles were considered and refined by research area. A total of 154 documents were gathered. The retrieved records

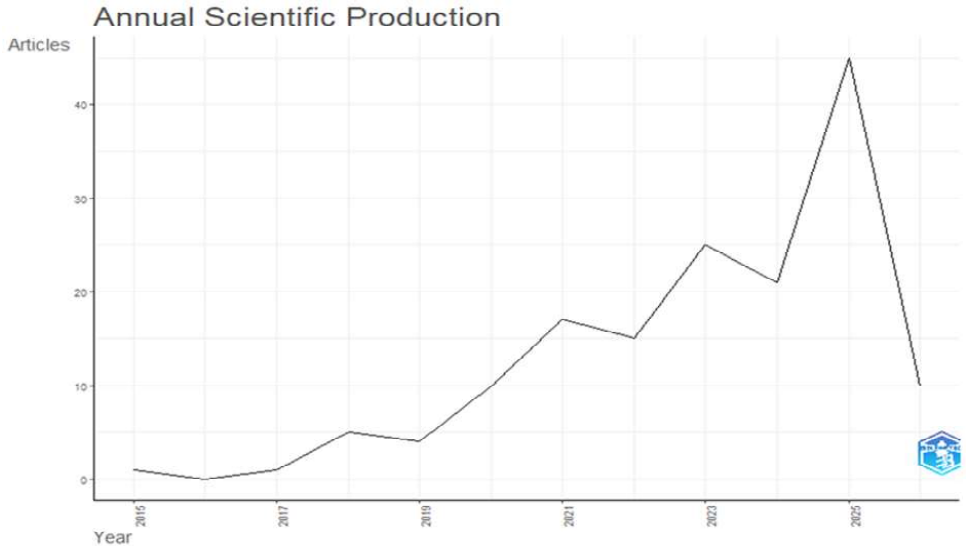
indicated that the oldest publication was issued in the year 2015. R software was used for analysing the extracted data. Biblioshiny, an application that provides a web-based interface for performing bibliometric analysis within the R software, is utilised in this study.

Results And Findings

Annual Scholarly Output

Figure 1 depicts that the number of publications were remained very low during the initial years (2015-2017). A progression on annual production of research articles began in the year 2018 and a slight fluctuation occurred in 2019. The scholarly engagement with robo advisory increased from 2020 onwards. The number of publications reached at its peak in 2025 (approximately 45 articles). It is evident from the figure that the research on robo-advisors has experienced substantial growth over the past decade.

Figure 1. Annual Scholarly Output

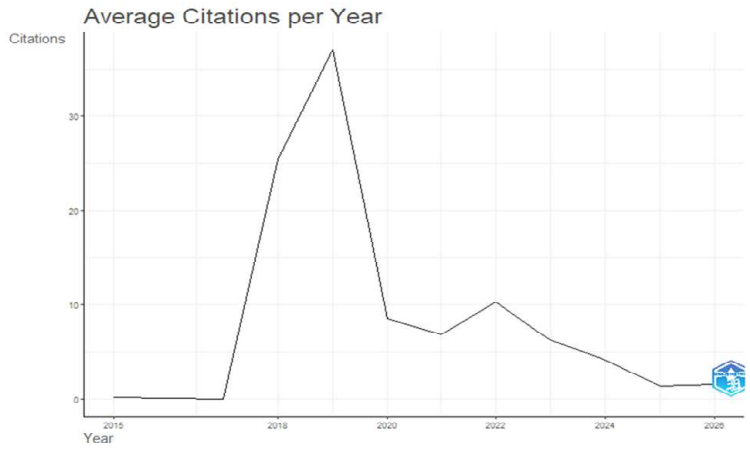


Source: Author's Analysis using Biblioshiny

Average Citations per Year

Figure 2 clearly shows that the average citation rate was remained minimal during first few years, reflecting availability of limited number of publications for citation and early stage of research. The citation count increased at the beginning of 2018 as influential studies were published during this period. From 2019 onwards the citation impact was observed to decline compared to the earlier increase. This decline is due to articles published recently having less time to accumulate citations.

Figure 2. Average Citations per Year

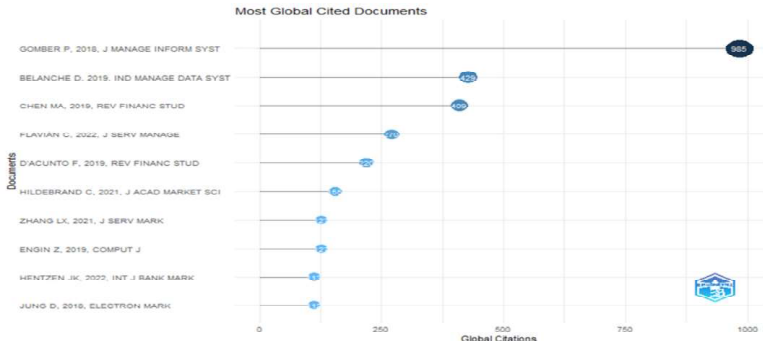


Source: Author's Analysis using Biblioshiny

Most Global Cited Documents

The findings indicate that the study by Gomber, P. (2018) published in the Journal of Management Information Systems is the highly cited document (985). The second most cited document is by Belanche D (2019) with (429) citations in Industrial Management and Data Systems. Chen M A (2019) comes in the third place with 409 citations in the Review of Financial Studies. The citation distribution indicates that foundational studies published in leading journals have significantly contributed to the domain of robo-advisory research.

Figure 3. Most Global Cited Documents



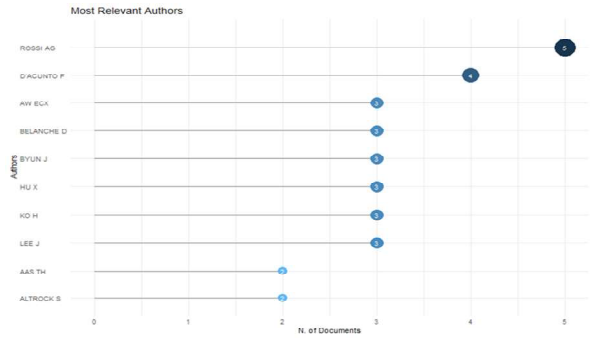
Source: Author's Analysis using Biblioshiny

Major Scholarly Contributors

Figure 4 depicts the prominent authors in the research domain, identified by the volume of documents they have contributed. Rossi A G is the most productive author in the field, with 5 publications, followed by D'Acunto F, who contributed 4 publications to the literature. Other authors,

such as A W ECX, Belanche D, Byun J HU X, etc., have published 3 documents. The research field of robo-advisory is characterised by contributions from multiple authors. It indicates the growing interest among researchers towards the automated advisory services research domain.

Figure 4. Major Scholarly Contributors

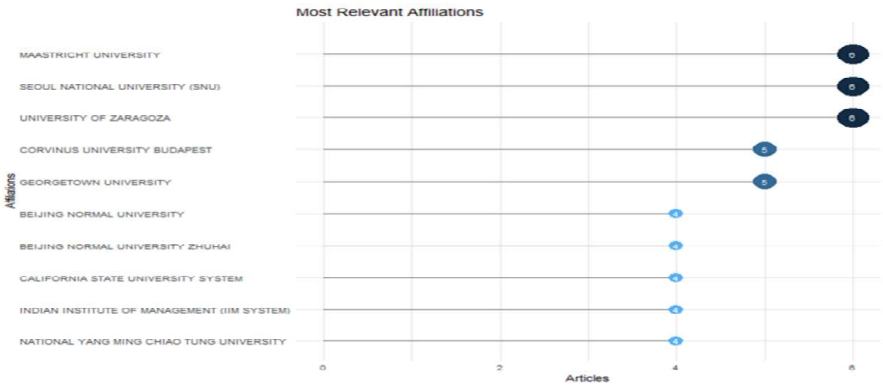


Source: Author's Analysis using Biblioshiny

Prominent Institutional Affiliations

Figure 5 presents the leading affiliations contributing to the field of robo-advisory research. The analysis indicates that Maastricht University, Seoul National University and University of Zaragoza are the prominent institutions contributing to the robo advisory research domain, with a contribution of 6 publications each. The institutions contributing to the field include Corvinus University of Budapest, Georgetown University, Beijing Normal University, etc.

Figure 5. Prominent Institutional Affiliations



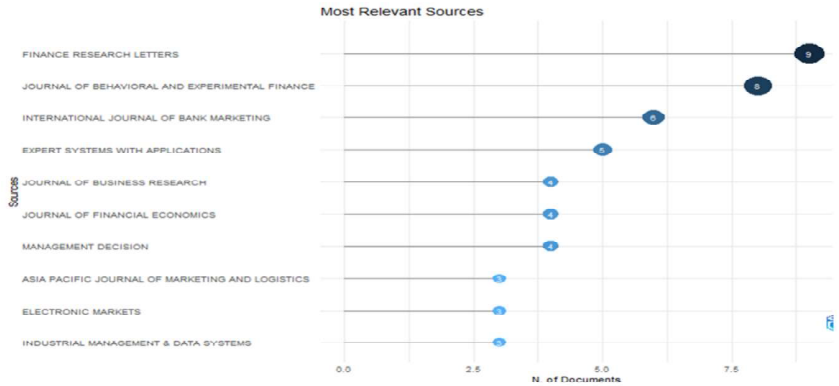
Source: Author's Analysis using Biblioshiny

Most Productive Journals

Figure 6 illustrates the most influential sources in the robo-advisory research domain, ranked by the number of published documents. The findings show that Finance Research Letters is the most prominent source, with 9 publications, and plays a significant role in disseminating research on

fintech and automated investment advisory services. The other journals include Journal of Behavioural and Experimental Finance (8 publications), International Journal of Bank Marketing (6 publications) etc.,

Figure 6. Most Productive Journals



Source: Author's Analysis using Biblioshiny

Country Scientific Production

Table 1 shows the geographic contributions of different countries to the academic literature on robo-advisory services. China and the United States are the leading countries contributing to the field of robo-advisory research. This can be explained by the presence of the advanced financial markets, technological infrastructure and significant investment in artificial intelligence in these countries. India's contribution to the literature is 23 publications. Germany, South Korea, and Australia are also making notable contributions to the field. The results reveal that robo advisory research is globally distributed but dominated by a few leading countries.

Table 1. Country Scientific Production

Region	Freq
CHINA	74
USA	62
GERMANY	29
INDIA	23
SOUTH KOREA	21
AUSTRALIA	18
MALAYSIA	16
SPAIN	16
UK	16
FRANCE	14
NETHERLANDS	12
ITALY	11
HUNGARY	6
POLAND	6

Source: Author's Analysis using Biblioshiny

Most Frequent Keywords

Word Cloud visualisation highlights dominant keywords in the literature on robo-advisory research. The dimensions of each word reflect its prevalence within the dataset. The dominant keywords in the visualisation are "robo advisor", "Fintech", "trust", and "artificial intelligence". The presence of "fintech" among the relevant keywords exhibits the technological environment and the financial innovations facilitate the functioning of robo advisory services. Artificial intelligence is one of the prominent terms which indicates the technological foundation of automated advisory services. The appearance of "trust" in the word cloud reflects the critical factor influencing the adoption and acceptance of digital financial advisory services among the investors. The other keywords include "adoption", "financial advice", investors", "decision making", etc., emphasising multiple dimensions of robo advisory research.

Figure 7. Word Cloud Visualisation

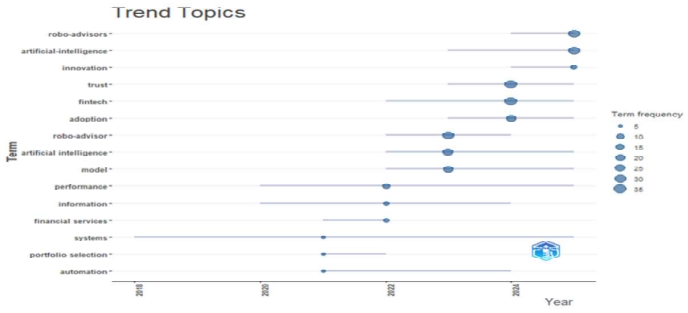


Source: Author's Analysis using Biblioshiny

Trend Topic Analysis

The trend topic analysis presents the frequency and duration of prominent keywords occurred during different years. The horizontal lines represent the time span during which each term appeared in the literature and the dimensions of the circles indicate the number of occurrences of the keyword. The topics such as automation, systems and portfolio selection were gained scholarly attention during the initial years of research. Then the research interest shift towards investigating the efficiency and effectiveness of robo advisory platforms in financial decision-making context. The relevance of fintech, trust and adoption growing recently indicating the shifting of research focus towards exploring user perceptions, behavioural factors and the acceptance of digital financial advisory services. The trend analysis reveals the transition in robo-advisory research from technological development to user-centred issues.

Figure 8. Trend Topics Analysis



Source: Author's Analysis using Biblioshiny

Thematic Structure of the Literature

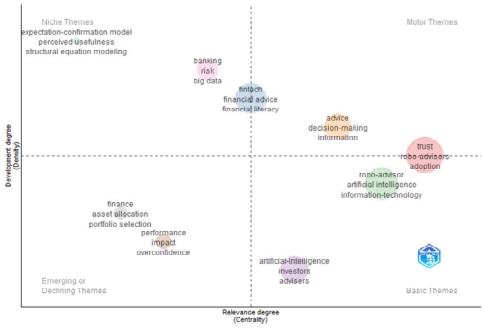
Thematic map illustrates the intellectual organisation of the research on robo advisors by categorising keywords based on centrality and density. Density measures the internal development of the themes and the centrality assesses the relevance of each theme within the research domain. The thematic map categorises themes into basic, emerging/declining, motor, and niche.

The basic themes represent the foundational structure of the research field but may require further theoretical development and investigation. The keywords such as robo-advisor, artificial intelligence, and information technology are the foundational themes pertaining to the field of automated advisory research.

The emerging/declining themes quadrant includes topics such as finance, asset allocation and portfolio selection, and performance and overconfidence. It may represent either newly emerging research areas still developing or topics whose relevance in the literature has declined over time.

The motor themes quadrant represents well-developed, highly relevant topics, including trust, robo-advisors, and adoption. These topics are the central drivers in automated advisory services. This quadrant incorporates other themes, such as advice, decision-making, and information, suggesting a growing focus on research into how robo-advisory platforms influence investor decision-making processes. The niche theme quadrant contains specialised and well-developed areas. The themes in this quadrant include the expectation-confirmation model, perceived usefulness, and structural equation modelling, indicate methodological and theoretical approaches frequently used to examine the technological acceptance and user behaviour in the context of robo advisory services.

Figure 9. Thematic Structure of the Literature



Source: Author's Analysis using Biblioshiny

Discussions

The present study provides a bibliometric assessment of the current body of knowledge on robo-advisors by examining publications indexed in the Web of Science using the Biblioshiny software. The document analysis reveals that research on robo-advisory was relatively low during the early years between 2015 and 2017. The most significant growth occurred in 2025. The growth in academic research on robo-advisory services is driven by the rapid advancement of the financial technologies. The key contributors to the research field are Rossi A G and D'Acunto F based on their publication output. The institutions, including Maastricht University, Seoul National University and University of Zaragoza, are identified as prominent affiliations contributing to the research domain of robo advisors. Finance Research Letters, Journal of Behavioural and Experimental Finance, and International Journal of Bank Marketing are the major scholarly publication sources that disseminate research on robo-advisory and fintech innovation. China and the United States have made the highest research contributions on robo-advisory services. This may be attributed to their advanced technological infrastructure and substantial investment in AI technologies. The most frequently used keywords identified in the analysis are "robo-advisor", "fintech", "artificial intelligence", and "trust", emphasising the technological and behavioural determinants of robo-advisory service adoption.

The trend topic analysis revealed that the research attention was focused on the technological foundation during the early stages of research and later the attention expanded to investigate the performance and effectiveness of robo advisory in delivering financial services to their clients. The foundational framework of the robo advisory research domain consists of artificial intelligence and information technology. The well developed and relevant topic in the field are trust and adoption. The specialised themes include expectation-confirmation model, perceived usefulness, and structural equation modelling. Thes themes indicate the framework and methodologies applied for exploring the behavioural patterns of investors towards the digital advisory platforms. The emerging/declining themes suggest that while the topics such as asset allocation, portfolio selection were relevant during

earlier stages of research, then the scholarly attention is gradually shifting towards behavioural and technological acceptance perspectives.

The findings confirm that the landscape of robo-advisory research has evolved from a technology-oriented domain to a multidisciplinary field that integrates finance, information technology and behavioural science.

Conclusion

The bibliometric analysis of robo-advisory services examined the publication trend, most influential authors, institutions and journals and explored the key thematic areas shaping the research domain of robo advisors. The keyword and thematic analyses revealed that topics such as fintech, artificial intelligence, trust, and technology adoption are central themes in the existing robo-advisory literature. This highlights that the current research focuses on investor trust and the adoption of technology-driven advisory services. The research landscape of robo-advisory services has evolved from a technological domain to a focus on their behavioural aspects. This research contributes the existing literature by mapping intellectual structure and research trends and the findings provide valuable insights to researchers, practitioners, and policymakers by emphasizing major developments and emerging themes in the domain.

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