

A systematic and bibliometric review on Financial Literacy and Financial Well-being

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ABSTRACT

The study comprises a review of 1488 articles from the web of science database to identify the research trend regarding financial literacy and financial well-being during the last 23 years (2000–2023). Various graphs and networks are presented to understand the publication trends, influential papers, conceptual and intellectual structures and research collaboration status. This study employs a comprehensive methodology, merging systematic literature review techniques with bibliometric analysis, to distil the core areas and dimensions of financial well-being. Four clusters in the field of financial well-being were found: income, financial literacy, literacy and performance. Further, emerging themes in financial well-being were identified with a content analysis of the papers published during the last twenty-three years. This study will help financial planners, regulatory bodies and academic researchers in getting a better understanding of financial literacy and financial well-being and in identifying potential areas for future research. Prior to this study, no such comprehensive bibliometric analysis on financial literacy and financial well-being has been carried out to the best of the authors' knowledge. This gap motivated the authors to combine quantitative and qualitative methods to review the published research and do a content analysis, to identify prominent authors and publications.

Keywords: Financial Literacy, Financial Well-Being, Literacy, Financial Satisfaction

JEL Code: G53, I31, D14, D31

Statements and Declarations

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Data Availability: Data can be provided upon special request. Alternatively, you can collect the data directly from the Web of Science database by using the following search strings: ("Financial Literacy" OR "Financial Knowledge" OR "Financial Education") AND ("Financial Well-being" OR "Financial Wellbeing" OR "Financial Satisfaction" OR "Economic Well-being").

Authors Contribution: Miss. Bhavna Yadav and Dr. Bhushan Singh contributed equally to the conceptualization of the studied. Dr. Bhushan Singh performed the methodology and performed the formal

analysis while Bhavna yadav handled the software implementation and data curation. Both Bhavna Yadav and Dr. Bhushan Singh participated in the validation of the results and investigation of the research question. Bhavna Yadav prepared the original draft of the manuscript, and both Dr. Bhushan Singh and Dr. Suman Dahiya reviewed and edited subsequent versions. Visualization of the data was carried out by Bhavna Yadav. Supervision and project administration were overseen by Dr. Bhushan Singh and Dr. Suman Dahiya.

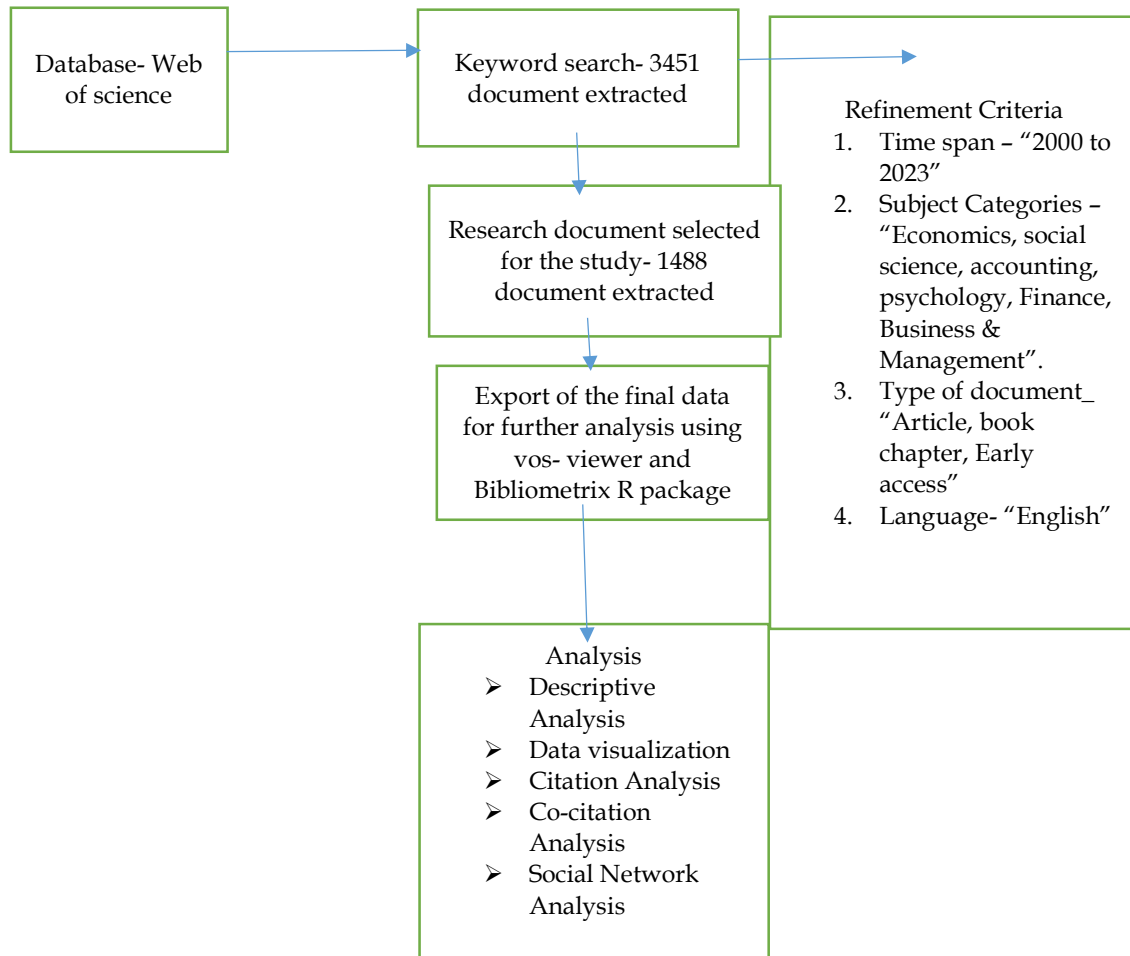
Introduction

Over the past few decades, financial well-being has drawn a lot of social and political attention, as observed by (Sorgente & Lanz, 2017). Scholars such as (Abrantes-Braga & Veludo-de-Oliveira, 2019) & (Oliveria & Faria, 2014) have examined this important topic as a result. Financial well-being is defined by (Kempson et al., 2017) as the capacity of an individual to fulfill their present financial obligations, trust in their future financial stability, and have the autonomy to make decisions that improve their quality of life in general. The Consumer Protection Bureau(CFPB) conducted a thorough analysis of the intricate notion of financial health in 2015. The four key characteristics under this paradigm were determined to be the capacity to effectively manage one's current financial holdings, resistance to economic volatility, attainment of financial goals, and have a rich and meaning life. Since financial well-being affects the dynamics of families, communities, and society at large, it is imperative to comprehend that it goes beyond personal financial contentment.(Strumpel, 1976) was the first to stress this point. There is no denying the unbreakable connection between a person's financial situation and general well-being, which highlights how critical it is to comprehend and address these related issues. Consequently, acquiring financial literacy is crucial for people to overcome challenges in the future. According to (Philippas & Avdoluas, 2019), enhancing life quality, guaranteeing retirement income stability, and lowering excessive debt are crucial consideration. A major discovery from a 2017 World Bank study that included 140 countries can be found in the Global Findex Database (Demirguc-Kunt et al., 2017). It was found that while nearly 80% of adults globally had bank accounts, a significant portion- nearly half of those with accounts – do not make frequent use of their money. As demonstrated by an OECD study from 2017 that raised concerns about the relatively lower levels in the global financial landscape, the importance of financial literacy cannot be overstated. Just 48% of respondents correctly answered 70% of the questions on financial comprehension, indicating a glaring lack of financial literacy in the poll. In early years of the twenty-first century, researchers pointed out that consumers needed to become more financially literate in order to improve their overall financial health and money management (Johnson & Sherraden, 2007).The work of (Brackin, 2014) & (Worthington, 2013) demonstrated the extensive amount of study that has been conducted since then to investigate the aspect of global financial literacy. Numerous facets of financial decision-making have been examined in relation to the complex relationship between financial literacy. Remarkably , studies have connected financial better financial practices(Barbić et al., 2019) as well as to the development of sound financial planning and basic money management abilities(Cobo, 2011). Moreover, studies by (Bourova et al., 2018) & (Van Rooji et al., 2011) have linked to the capacity to proactively prevent adverse outcomes associated to default and to efficient retirement planning. Prior research has primarily examined financial literacy, paying little attention to a comprehensive analysis of its connection to financial well-being. The current study attempts to explore the complex relationship between financial literacy and financial well- being with an emphasis on the literacy component and how it connects to well-being. This approach is predicated on both the objectives of the present investigation and the elucidations provided by previous studies. The article possesses the capacity to provide noteworthy perspectives that many impact the formulation of regulations concerning financial literacy and education.

Financial Literacy and Financial well-being

Financial well-being is defined as an individual's evaluation of their capacity to maintain their current standard of living and meet their anticipated future financial needs (Bruggen et al., 2017). The degree of satisfaction with one's own assessment of one's financial future determines one's path to financial stability. This objective can only be attained through the provision of sufficient resources and the diligent cultivation of responsible financial habits by individuals, thereby safeguarding the stability of their financial prospects. Notably, financial literacy emerges as a pivotal factor influencing these behaviors. (Lusardi & Mitchell, 2007) provides international evidence of a robust correlation between financial literacy and the ability to save for retirement efficiently is noteworthy. (Huhmann & McQuitty, 2009) emphasized the significant influence of numerical proficiency in finance on various aspects of financial management outcomes. This encompasses savings, borrowing, tax management, and more complex decisions, including credit score maintenance, retirement security, and overall financial well-being.

Figure 1. Flowchart outlining the document selection process for bibliometric analysis



Research questions

1. What are the preeminent publications and esteemed authors in the sphere of financial literacy and well-being?
2. What defines the intellectual framework within the scholarly community in this particular field of research?
3. What collaborative affiliations manifest within the domain of financial literacy and financial well-being?
4. What is the evolution of the conceptualization of financial literacy and financial well-being, and what are the prevailing themes investigated in contemporary scholarly inquiry?

The research objectives for this present study are derived from the aforementioned areas of research focus.

1. To discern the trends and patterns in the advancement of knowledge within the realm of financial literacy and well-being.
2. To explore the structure of knowledge and extract a comprehensive synthesis of information.

This study investigates the impact of scholars, institutions, countries, publications, and studies on the topic of financial literacy and well-being research. The analysis culminates in the identification of the most dynamic research areas, prevailing trends, and emerging topics.

To accomplish these aims, both network analysis and descriptive analysis methodologies are utilized. The ensuing sections of this scholarly paper are organized as follows.

Research methodology

Data Search and Collection

This study adopts a comprehensive methodology, amalgamating systematic literature review (SLR), bibliometric analysis, and content analysis to address our research inquiries. Initially, we curated a set of

keywords pertinent to financial literacy and financial well-being. Table 2 delineates an assortment of terms and concepts employed in previous investigations within this domain. Subsequently, utilizing predefined inclusion and exclusion criteria, we retrieved sample papers from the Web of Science database.

This study commences its analysis by initially identifying the database and then proceeding with data collection through a predefined search strategy (see Figure 1). After choosing and identifying the right database, the vital information for this study was taken out. The next action was to run a search with a carefully selected list of essential terms. Software tools were used to analyse the final dataset following the establishment of the necessary inclusion and exclusion criteria. The sources, documents, and authors that were part of the dataset first were the subject of a descriptive analysis. Following that, methods for reducing the amount of data were used, such as principal component analysis and multiple correspondence analysis (MCA). In order to enhance data visualization, network maps were subsequently developed, emphasising the conceptual, intellectual, and social aspects of data. (Aria & Cuccurullo, 2017).

Analysis Method

Review of literature are crucial sources for figuring out where there are gaps in the field knowledge and (Paul & Benito, 2018) where a subject is going (Cassell & Symon, 2006). Researcher can lessen potential biases by employing evidence based secondary data analysis and systematic Literature Review (Inamdar et al., 2020) & (Tranfield et al., 2003). Other typologies include theory based structure review (Lim et al., 2021), theme reviews (Kahiya, 2018). A commonly employed quantitative analysis is bibliometric analysis (C et al., 2017). It offers practical guidance on how to analyse the structures and characteristics of a certain subject of study in a straightforward and logical manner. (Kamalski & Kirby, 2024). This technique is well renowned for its capacity to boost the conceptual framework comprehensibility.

This methodology is highly recognized according to (Castriotta et al., 2019), for its ability to make conceptual framework within a field of study clear and offers potential directions for further research (C & Jlusard, 2017). Our approach incorporates bibliometric analysis and systematic literature review, drawing inspirations by the method employed by (Goyal & Kumar, 2021). Using Bibliometrix R packages in conjunction with vos viewer, this work offers a novel bibliometric approach to uncover publication trends, influential authors and well known publication outlets. We performed content analysis using the best cluster analysis study that we are aware of (Aria & Cuccurullo, 2017).

Table 1: Summary of existing reviews in the financial literacy and financial well being

Author	The focus of the study	Type of the study	Period of the study	Database
(Deep et al., 2021)	Shows the connection between social capital theory, social exchange theory , social cognitive theory , financial literacy and Financial Well-being	Systematic literature review, bibliometric analysis	2001-2021	Web of Science
(Singh & Malik, 2022)	Financial Well being	Systematic literature review, bibliometric analysis	1996-2022	Scopus
(Ingale & Paluri, 2020)	Financial Literacy and Financial Behavior	Bibliometric Analysis	1985-2020	Web of Science
(Sang, 2022)	Financial well being	Bibliometric Analysis	1978-2021	Scopus
(Macwan & Patel, 2023)	Antecedents of Individual Financial Well being	Systematic Literature Review	2004-2021	Google scholar
(A et al., 2022)	Objective and subjective Financial well being	Systematic Literature Review	Not Specified	Scopus, PsycINFO, Econpapers
(Kaur et al., 2021)	Financial well- being	Systematic literature review, bibliometric analysis	1995-2019	Scopus
(Graña-Alvarez et al., 2024)	Financial Literacy in SME	Systematic Literature Review	Not specified	Scopus and web of Science
Our study	Financial Literacy and Financial well being	Systematic literature review, bibliometric analysis	2000-2023	Web of Science

Table 2: Definition of keywords in the literature

Keywords	Definitions	References
Financial Literacy	“Financial literacy as the knowledge of basic financial concepts and ability to do simple calculations”	(Lusardi & Mitchell, 2011) ,(Lusardi & Mitchell, 2007) , (Koenen et al., 2017)
Financial Knowledge	“Individuals who have the ability to use their knowledge to make appropriate decisions for the effective management of their financial resources tend to be more financially literate”	(Asaad, 2015) , (Babiarz et al., 2012)
Financial Education	A process where the user of financial services/investors improve their understanding for financial products, notions and risks and on the bases of information, instructions and objective advice develop the skills and confidence in strengthening information about financial risks and occasions, make decisions on the bases of good information, are acquainted with the fact where to find help and take other effective measures for improving their wealth.	(OECD, n.d.)
Financial satisfaction	“Financial satisfaction corresponds to the subjective sub-dimension of financial wellbeing and is a measurement of satisfaction with one’s present financial situation”	(Bruggen et al., 2017),(Joo & John, 2004),(Xiao et al., 2008), (Sorgente & Lanz, 2017)
Financial well-being	“Financial well-being was considered as a sub-dimension of the financial wellness” Financial well-being is a state achieved through the process of financial wellness	(Sorgente & Lanz, 2017), (Tagliabue et al., 2015),(Joo, 2008)
Economic well-being	“Economic well-being corresponds to the objective sub-dimension of financial wellbeing”	(Sorgente & Lanz, 2017)

Bibliometric Analysis

(Singh & Dhir, 2019) have demonstrated that bibliometric analysis is a research methodology that uses mathematical and statistical method to analyses body of literature. Bibliometric or Scientometric is a quantitative analysis application constructed of mathematical and statistical tool of analysis (Das & Singh, 2023). Numerous academic fields use bibliometric research to analyze and chart the trajectory of published works within these subjects. The study of financial literacy and well-being has gradually grown into an interdisciplinary field throughout time. Given this, a detailed examination of the corpus existing literature is required, with particular focus on determining the path that this field’s research is now pursuing. From this point on, the study makes use of bibliometric analysis technique to find patterns within the fragmented corpus of literature, therefore evaluating the principal trends in its intellectual, social, and theoretical underpinnings. The following research issues are intended to be addressed by the bibliometric analysis.

Selection of database

To do bibliometric analysis, a structured description of the indexed articles from the selected database is required. The data used in this study came from the Clarivate Analysis Web of Science (WoS). Consideration was given to its journal classification, publishing coverage, and compatibility with R-studio Bibliometrix software.

Insert Figure No. 1 Here.

According to (Rialti et al., 2019), most research endeavors in bibliometric analysis have favored the utilization of the WoS database over alternative sources. This preference stems from the WoS database's inclusion of highly esteemed journals spanning diverse categories while excluding articles from periodicals and non-technical journals.

Preparing Data for Analysis

Data in plaintext format was acquired from WoS to fulfill the software requirements. The selection of documents was carried out in accordance with specific search criteria applied on 31 October 2023.

Search Approach. key terms

("Financial Literacy" OR "Financial Knowledge" OR "Financial Education") AND ("Financial well-being" OR "Financial wellbeing" OR "Financial Satisfaction" OR "Economic well-being").

Refined by Web of Science Category: ("Social science OR Economics OR Finance OR Business Management OR Accounting OR Psychology") AND Document types ("Article OR Book chapter OR Early access") AND Language: English, Timespan: "2000-2023".

Document type selection

The dataset underwent additional refinement to align with the research objectives, specifically by incorporating articles, early access reviews, and book chapters. From this refined pool, a total of 3451 documents were selected for subsequent examination.

Language selection

The documents that had been shortlisted in the initial phase were subjected to a language filter, specifically set to "English." This process resulted in the extraction of the dataset, comprising 3205 documents.

Selection of subject category

To narrow down the search, specific subject categories were chosen. These categories encompassed areas such as business, management, select social sciences and finance. At this stage, a total of 1,537 items were retrieved. To streamline subsequent processing, Biblioshiny acquired data pertaining to these records, encompassing their "title," "authors," "abstracts," and "keywords," formatted in the standardized Microsoft Excel Worksheet (.xlsx). After undergoing a refinement procedure to mitigate redundancy and ensure format consistency, a total of 1488 documents were ultimately incorporated into the Bibliometric system.

Selection of bibliometric tool

This study employs a bibliometric methodology to carry out a thorough science mapping analysis. The scientific literature is analyzed statistically and mathematically as part of this we analyzed the research methodology. To increase the efficacy and efficiency of libraries, it has been extensively utilized in library and information science (Tella & Olabooye, 2014). This study utilizes Bibliometrix R-package, a program created in R by (Aria & Cuccurullo, 2017). This software program enables through an extensive bibliometric research, encompassing analysis and data visualization. As previously indicated, bibliometric analyses frequently entail complexity arising from access constraints associated with commercial software licenses and the requisite for extensive researcher training. In contrast, Bibliometrix distinguishes itself as open-source software meticulously crafted for comprehensive science mapping analysis. It possesses the capacity for continuous updates and seamless incorporation with additional statistical R packages. As such, it has gained widespread reputation among users and is especially pertinent in the constantly changing field of bibliometric analysis, meeting the needs of both network analysis and descriptive analysis. In this study, data analysis was carried out using Biblioshiny, an online tool that was easily included into the Bibliometrix package. Even anyone without any coding skills can use this easy-to-use tool. Its fundamental features, which are smoothly generated from the automated workflow of the Bibliometrix programme, enable science mapping analysis.

Table 3: Main information about data

Description	Results
Timespan	2000:2023
Sources (Journals, Books, etc.)	356
Documents	1488
Average citations per doc	14.78
Keywords Plus (ID)	2239
Author's Keywords (DE)	3499
AUTHORS	
Authors	3341
Authors of single-authored docs	171
Single-authored docs	185
Co-Authors per Doc	2.85
International co-authorships	31.72
DOCUMENT TYPES	
article	1414
article; book chapter	1
article; early access	73

Data Analysis and Findings

Descriptive Analysis: The objective of this study sections was to distil the bibliometric data downs to its most basic elements, which were determined to be “sources”, “journals”, “authors”, and “documentation”. The fundamental properties of the dataset were comprehended by the applications of descriptive statistics.

Scientific Mapping: Several visualization techniques including “network analysis”, “three-field plots”, and “thematic maps” were used in the scientific mapping part. The essential structures of the knowledge were extracted using these techniques. It so makes it easier to finish a thorough examination of the scholarly literature in a certain topic, which speeds up the bibliometric analysis process.

Specifically, scientific mapping entails a careful examination of knowledge systems through the use of visual aids including theme maps, network analysis, and three field plots. These visual aids considerably facilitated further analytical work.

3.1 Descriptive Analysis

Descriptive Analysis is the main focus of this part, which carefully looks at several factors that are crucial to looking at the data.

3.1.1 Dataset The dataset under consideration is presented in Table 3, providing an overview of bibliometric data comprising 1,488 documents meticulously identified through a systematic query within the Web of Science (WoS) database. These documents emanate from a diverse range of 356 distinct sources, exhibiting an average citation score of 14.78.

3.1.2 Three-fields plot

(Figure 2) presents a Sankey Plot depicting the interrelation among three distinct fields, with the size of each portion within the plot directly proportional to the respective node's value, as established by (P & B, 2005). The left side of the Sankey Plot delineates the authors, the central row signifies the keywords, and the right side encompasses the chosen sources earmarked for analysis. Each of the ten entries delineates noteworthy keywords, including "financial literacy," "financial education," and "financial well-being," alongside their respective sources and prolific authors. It is noteworthy that all ten influential journals center their thematic focus on "financial literacy," underscoring its essential contribution to augmenting "financial well-being." Additionally, these influential authors and journals delved into important sub-topics, including "financial satisfaction," "economic well-being," "financial capability," "household finances," and "financial inclusion."

Figure 2: Three field plot

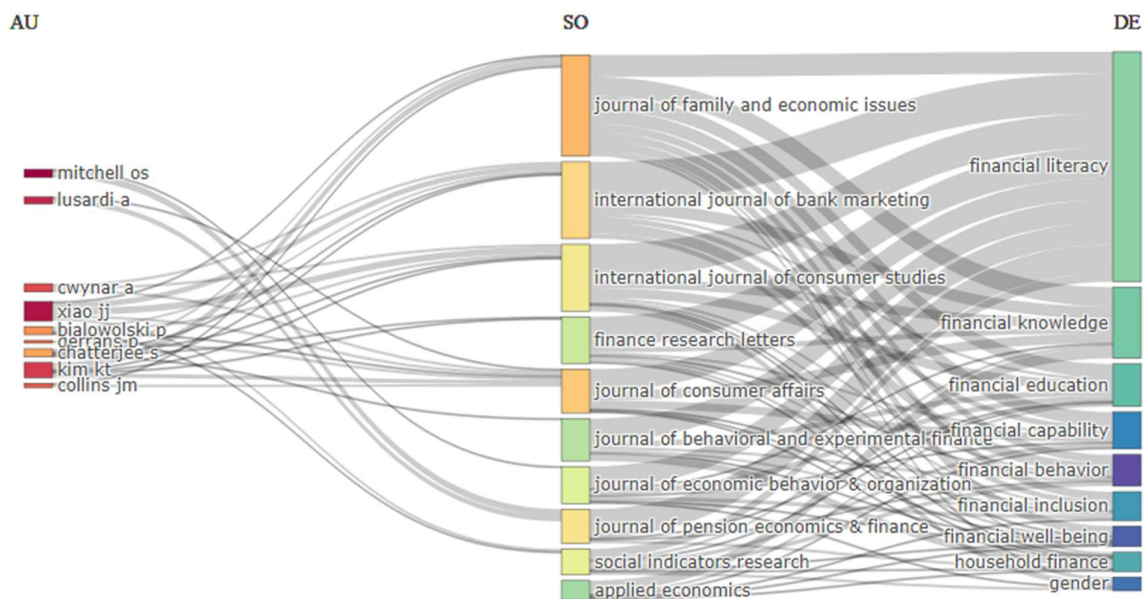
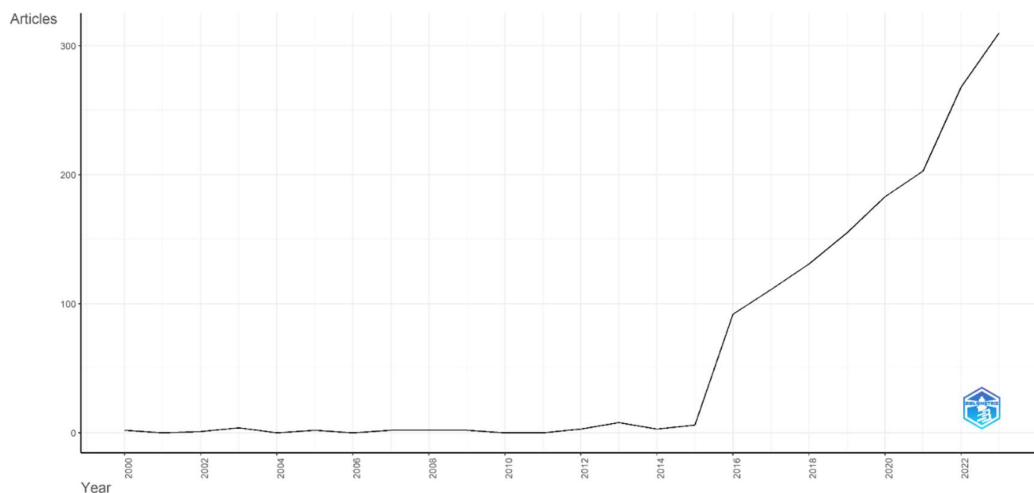


Figure 3: Scientific Productivity



Sources

The period spanning from 2015 to 2022 witnessed a discernible upward trajectory in scientific productivity within the research domain (Figure 3). (Yadav, 2019) Government initiatives like India’s Pradhan Mantri Jan Dhan Yojana and other efforts to boost financial literacy have spurred a surge in research articles. These initiatives raise awareness, stimulating research on their effectiveness and impact. Additionally, the digital era has eased data collection through online resources and surveys, further advancing research in this field. (Figure 4) A noteworthy observation is that the predominant portion of articles within this domain exhibited a temporal span exceeding six years. Notwithstanding the discernible and sustained increase in the volume of publications pertaining to this subject matter, it remained evident that the field had not yet attained a state of scholarly maturity. The evolution of a research within a particular field, as outlined by (Low & Siegel, 2019) , encompasses distinct phases: precursor, period of exponential expansion, consolidation of the body of knowledge, and a subsequent reduction in the number of publications.

(Figure 5) presents the top 20 most cited journals, offering a significant gauge of journal quality within the field. Leading the list is the Journal of Family and Economic Issues, closely trailed by the Journal of Consumer Affairs, establishing them as the foremost influential resources in the field. A more comprehensive examination of these scholarly journals reveals a predominant concentration of literature addressing the intersection of financial literacy and well-being within the academic domains of economics, banking and finance, financial services, and consumer and family studies. Additionally, valuable insights are gleaned from the field of social psychology.

Figure 4: Average Article citation per year

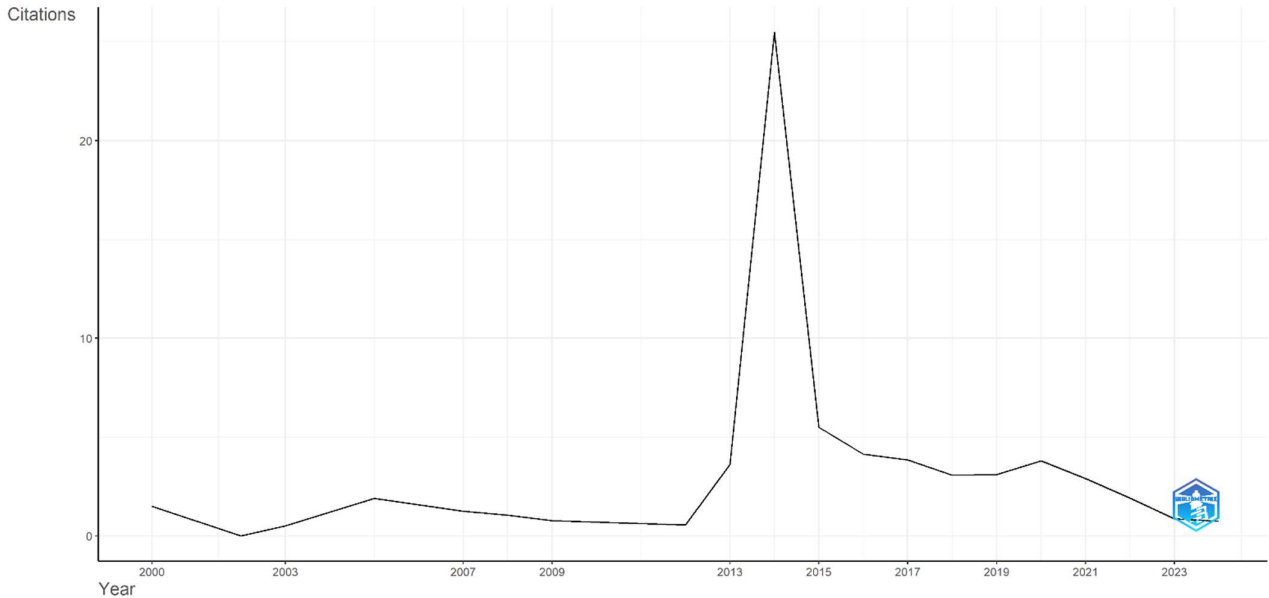
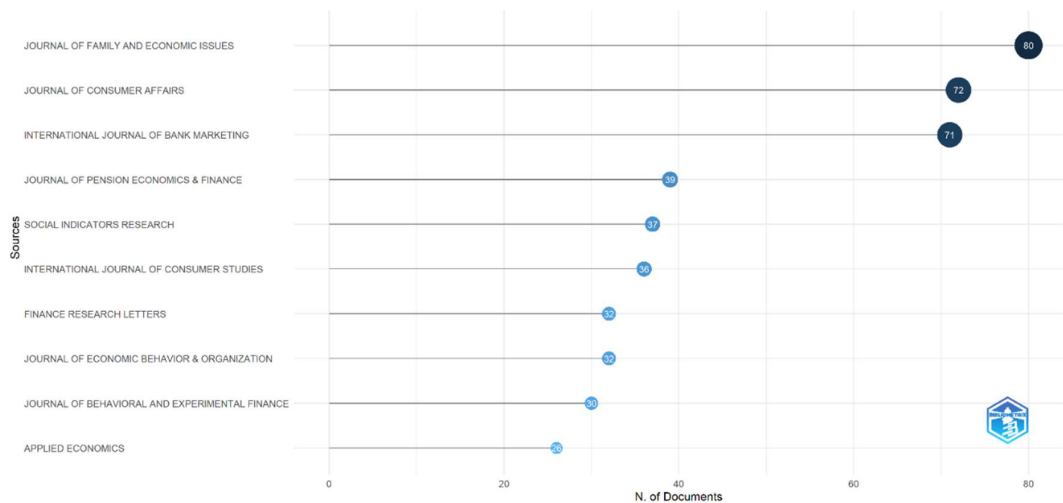


Figure 5: Most cited sources



(Figure 6) introduces the top 20 influential academic periodicals within the field, assessed through the application of the h- index metric. This metric serves as a valuable tool for evaluating journal quality by considering both citation impact and productivity. Within this context, the h-index assumes significance as it represents the maximum whole number of “n” for which “n” journals have individually disseminated “n” articles, each amassing a minimum of “n” citations. It is imperative to underscore that neither the journals boasting the highest volume of publications nor those accruing the most citations in isolation can comprehensively encapsulate a journal’s significant contribution to the discipline. In this regard, the h-index emerges as a more holistic metric, effectively encompassing facets of both quality and quantity, thereby affording a more comprehensive evaluation of a journal’s overarching impact.

(Figure 7) employs” LOESS” or” locally estimated scatterplot smoothing” to show the source dynamics of the top 5 journals and the number of articles during the time period. Based on the data, it is evident that there is a notable surge in publications across all journals, with a particularly pronounced increase observed in the Journal of Consumer Affairs starting from the year 2018. Publications in the remaining journals have also witnessed a noteworthy upswing in recent years, notably beginning around 2015 and onwards. This implies the advent of an interdisciplinary research domain. The extensively cited journals encompass both specialized ones, such as Economics and Finance, and those addressing interdisciplinary topics like consumer studies and marketing. The abundance of journals in

Figure 6: Source Impact

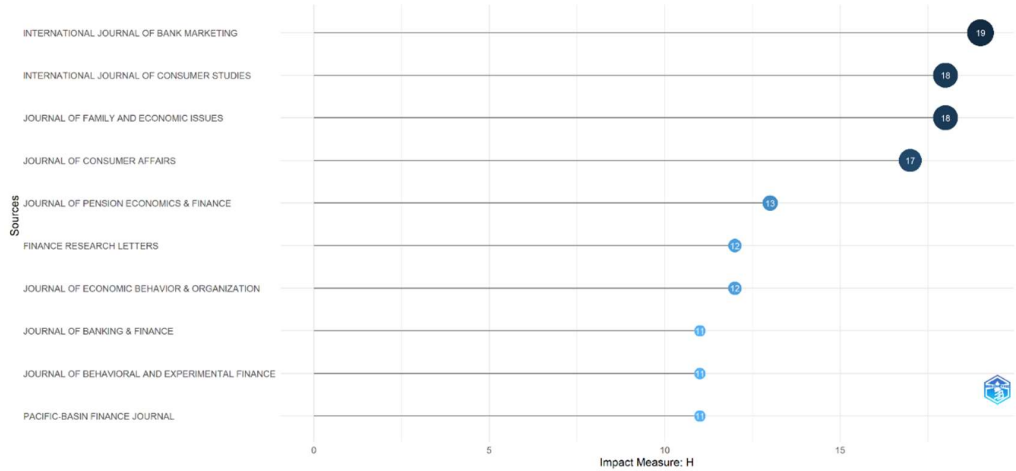
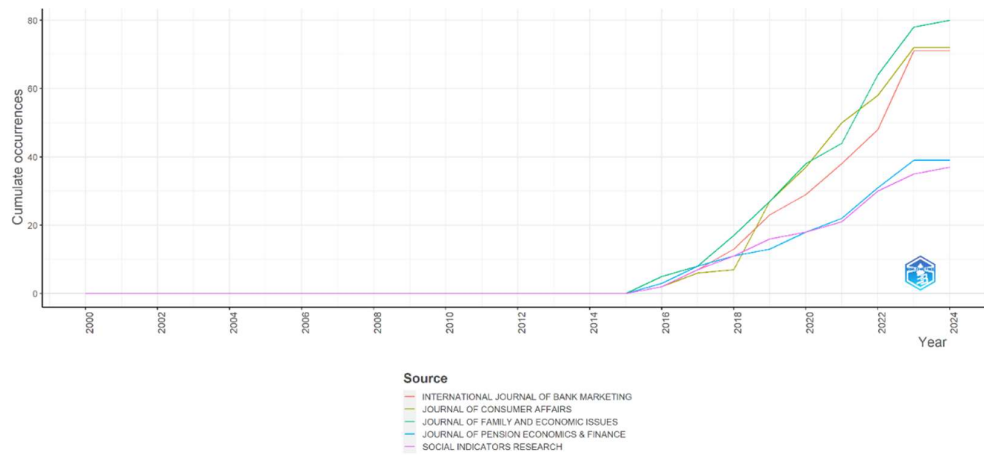


Figure 7: Source Dynamics



This research domain signifies a broad spectrum of research themes, emphasizing the multidisciplinary nature of this field (Low & Siegel, 2019).

3.1.4 Authors

In (Figure 8), it's evident that the authors Mitchell O., Xiao J.J., Lusardi A., and Kim KT have displayed exceptional productivity, with Michell having contributed over 25 articles in this field. Furthermore, a scrutiny of the authors' h-index, as illustrated in (Figure 9), underscores the significant impact of Lusardi, and Mitchell and Xiao. Their contributions are seminal and bear paramount significance for subsequent research endeavors within this domain.

Country-wise contributions

Table 4 elucidates the analysis, delineating the contributions of distinct nations to this particular field, underscoring that developed countries have served as the principal contributors to the scholarly discourse within this domain. It's important to highlight that the greater number of publications typically aligns with a higher count of citations received by the articles. In contrast, Canada and India are situated towards the lower end of the table, indicating a relatively lower level of research productivity in this context. Moreover, upon a deeper exploration of bibliometric data, a distinct trend comes to light, the United States consistently emerges as the predominant leader on a global magnitude in terms of citation count. garnered. Subsequently, we observe Germany, the Netherlands, China, and the UK, all of which, although still receiving citations, do so at a comparatively reduced rate.

Table 4: Leading 10 nations in terms of productivity and citation impact.

Country's scientific production		Most cited countries	
Region	Frequency	Region	Frequency
USA	1145	USA	7670
China	352	China	1747
Australia	208	Germany	1640
Germany	198	Netherland	1445
Italy	188	United Kingdom	1245
UK	188	Sweden	930
Netherlands	133	Italy	671
Canada	101	India	642

Figure 8: Most Relevant Authors

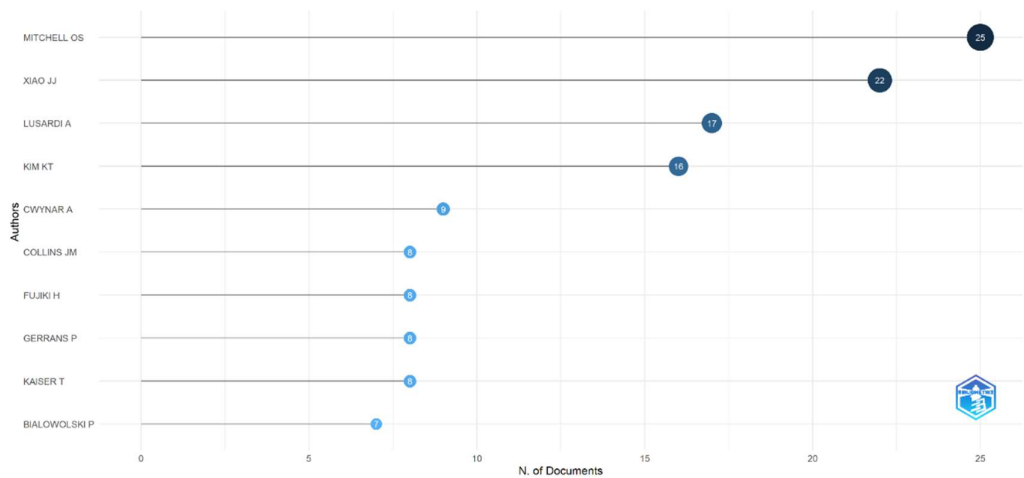


Figure 9: Author Impact

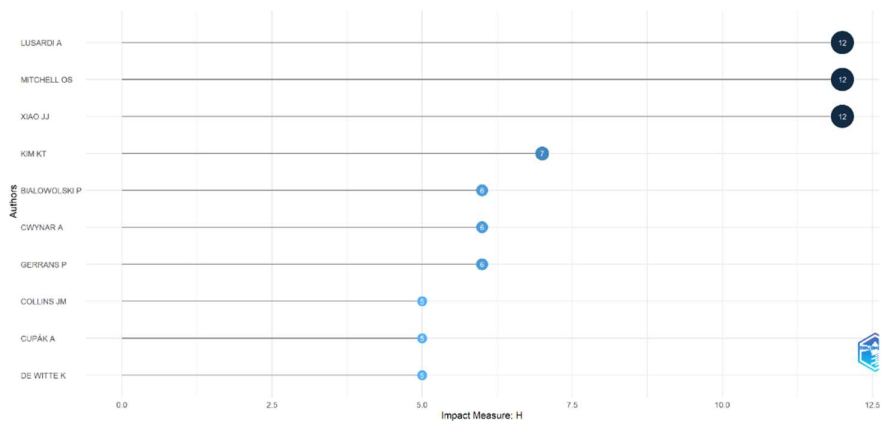
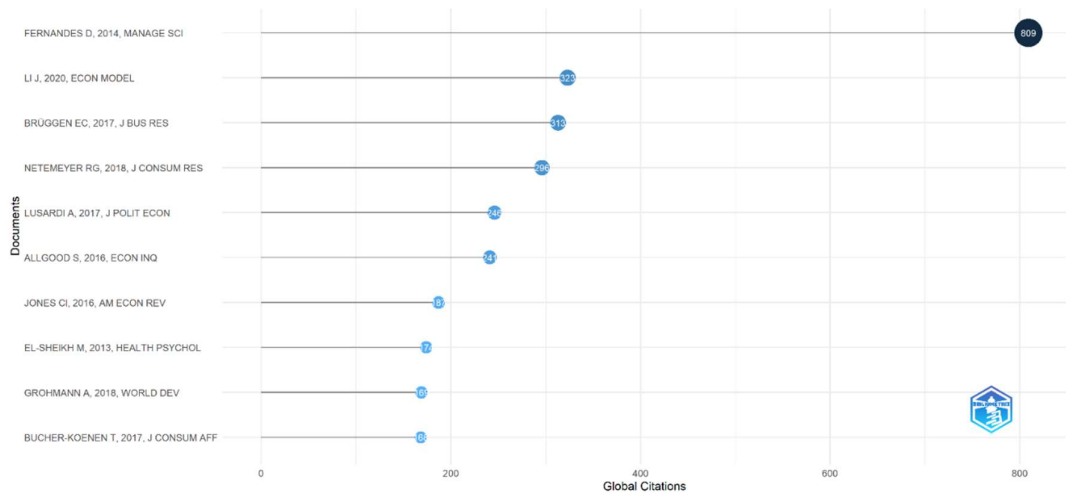


Figure 10: Most Cited Documents



Documents

The top 10 sources in this field, each of which has received more than 100 citations, are shown in Figure 10. Notably, the top four publications, authored by Fernandes D., Li J, Bruggen EC, and Netemeyer RG, stand out as significant contributions that have laid a strong foundation for this discipline.

Keywords

An examination of keyword frequencies within the articles revealed that the term "financial literacy" was the most prevalent, occurring 298 times. It was followed by the terms "literacy," "education," "behavior," "impact," "knowledge," "health," "de-terminates," "income," and "risk" in descending order of frequency. Figure 11, a word cloud, visually represents the occurrence of words in the document, with the size indicating their literacy significance. Beyond these aspects, the analysis accentuated the importance of economic and financial variables such as wealth, income, consumption, savings, credit, and retirement. Additionally, noteworthy influence was observed from psychological and behavioral variables, encompassing factors like overconfidence, self-capability, risk propensity, safety, self-discipline, mindset, and outlooks. Starting in 2015, there has been a remarkable surge in word frequencies. From this word cloud analysis, it becomes evident that these studies have delved into various factors contributing to financial literacy, including education and attitude. The majority of these studies focused on assessing the effects of financial literacy on decision-making in areas such as investments, retirement planning, wealth management, and credit utilization.

Trend topics

Figure 12 provides a visual depiction of the changing trends in popular topics over time, using a two-dimensional plot. It shows the logarithmic frequency of these topics on the vertical axis, while the horizontal axis represents the publication years. An examination of topics from the past five years reveals a noteworthy pattern. In 2016, the predominant themes centered around benefits, predators and industry. The years 2018 and 2019 saw a transition towards economic and financial facets, with an emphasis on depression, personality, prices, growth, decision and trends. On the other hand, a behavioral viewpoints was highlighted in 2020 by the emergence of health, risk and income choice, preferences and financial literacy as major concerns. Ultimately, in 2022, issues, like impact, growth in income, discrimination, and increase gained prominence.

3.1.9 Data Visualization

In terms of research and interest, the connection between financial literacy and wellbeing has gained increasing traction recently. An overview of this domain's thematic evolution and some insight into how the topics are changing within it are given in this section. We quantify this evolution through data visualization tools, particularly network analysis. This approach assesses factors such as cluster formation, event frequency, linkages between different objects under investigation, overall link intensities, and number of citation (Low & Siegel, 2019).

This approach involves creating a arrange of tactics using various units of analysis, like documents, authors, and keywords, in order to construct networks. These networks are made up of links and nodes that are connected.

These networks consist of nodes and links. Statistical analysis is applied to the generated maps to uncover various networks wide parameters. Three different knowledge structures are revealed by the networks analysis used in scientific mapping: conceptual, intellectual and social.



Figure 11: Word DynamicsFigure 12: Trend Topics

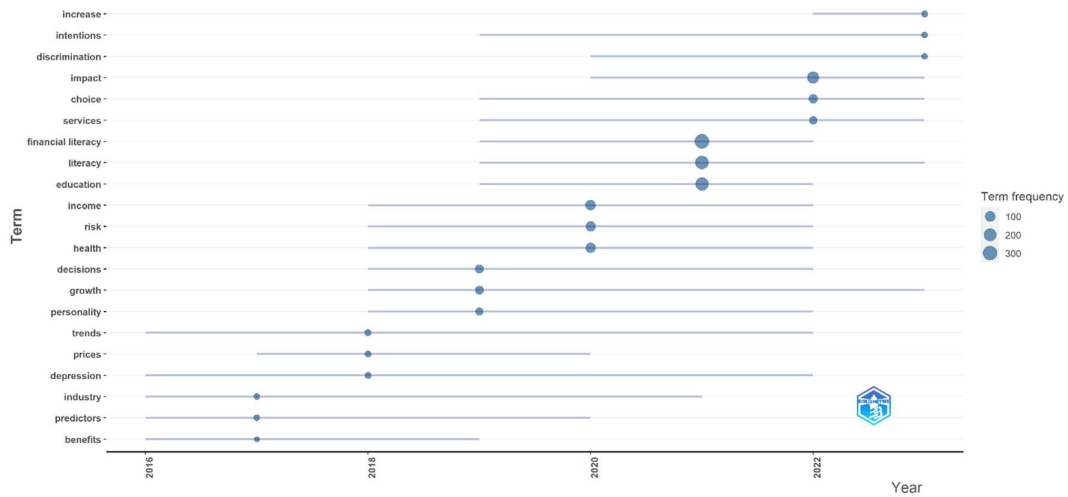
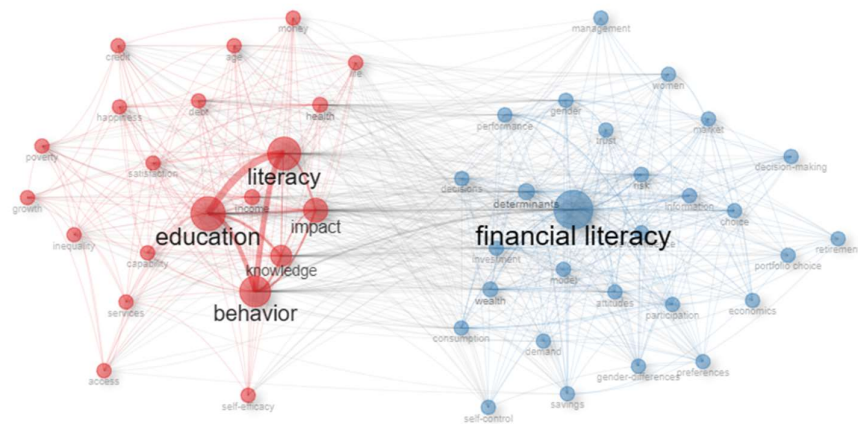


Figure 13: Co-Occurrence Network



Conceptual Structure

The conceptual framework in a line through the relationship between themes, subjects and trends using co-occurrences network and co word analysis. This methods make unique use of data from research paper by centering the unit of study around concepts, catchphrases, or themes that emerges concurrently across the network (Li et al., 2018). The Bibliometrix programme using multiple correspondence analysis(MCA) as a method to make the conceptual framework of the research topic more clear. MCA makes it easier to analyses multivariate nominal data numerically and graphically providing a thorough method for comprehending the nuances of the field and enabling a thorough assessment of the state of research.

(Greenacre & Blascius, 2006)Generating a keyword co-occurrence network for both keywords and units of analysis, utilizing default settings including automatic layout and normalization by association with the Louvain clustering algorithm applied to 50 nodes, resulted in the network displayed in Figure 13. These” Keyword Plus” terms are algorithmically derived from common words found in document titles and reference lists. They are favored because they provide a deeper and more diverse representation of the document’s content (Garfield & Sher, 1993). Figure 13 reveals the presence of three well-defined clusters, each distinguished by its own distinctive color: red, blue, and green. These distinct colors play a vital role in helping us distinguish and categorize these clusters, while the closeness of nodes within each cluster provides valuable insights into their interconnectedness. Each node in the figure is represented by words, and the size of these nodes corresponds to the frequency of occurrence. The red cluster primarily revolves around the concept of financial literacy, indicating a strong association with this topic. The purple cluster, on the other hand, prominently features education and behavior-related terms. Meanwhile, the blue cluster is characterized by words related to income and health.

Thematic Map

A thematic map represents typological subject area themes through a two-dimensional plot (Cobo, 2011).Utilizing co-word analysis , we identify clusters of keywords that, in turn, give rise to themes within the research domain. Through an evaluation of their density and centrality, these themes can be classified into four quadrants on a two dimensional graph, where centrality and density set act as a defining dimensions. The map illustrates different themes with bubbles, encompassing concepts such as “health”, “financial Literacy”, “literacy” and “determinants” (Figure 14). The theme “literacy, behavior and education” positioned in the upper right quadrant, stands out as a central and extensively discussed topic,

Figure 14: Thematic map

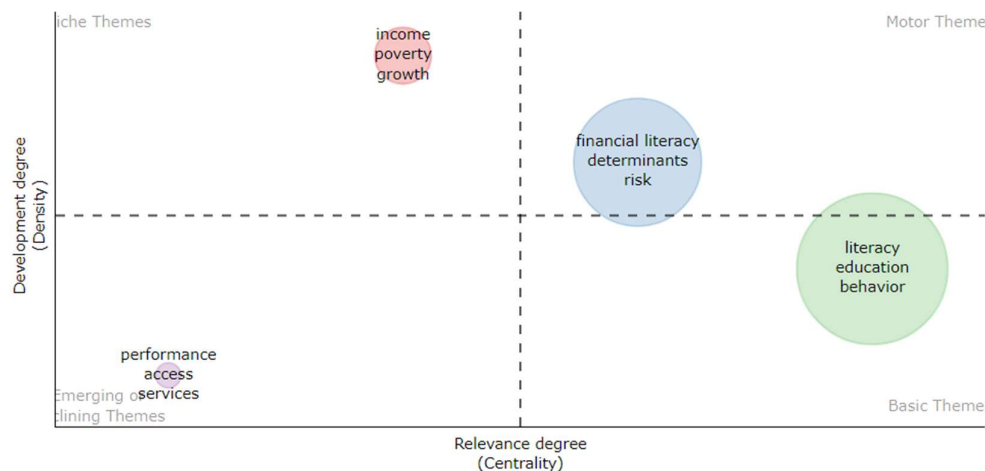


Figure 15: Time slice- Thematic evolution during 2000-2009

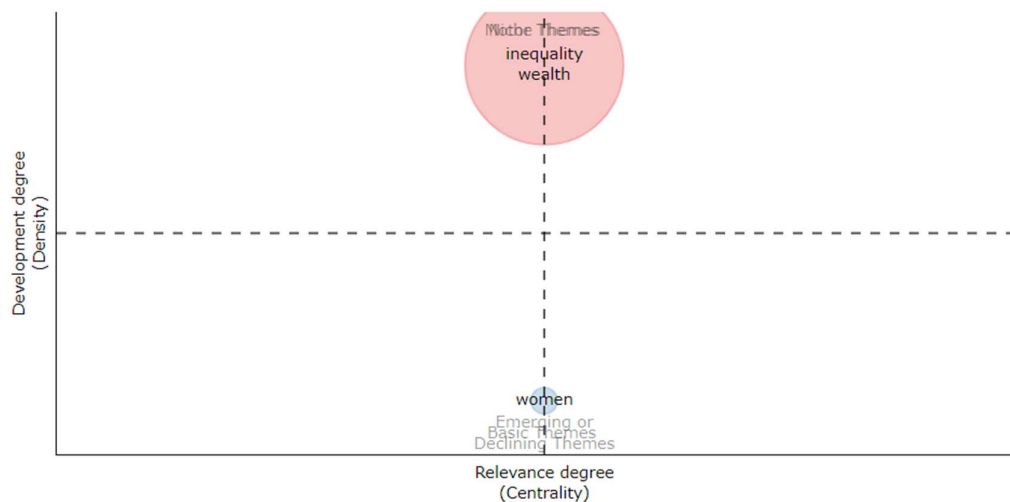
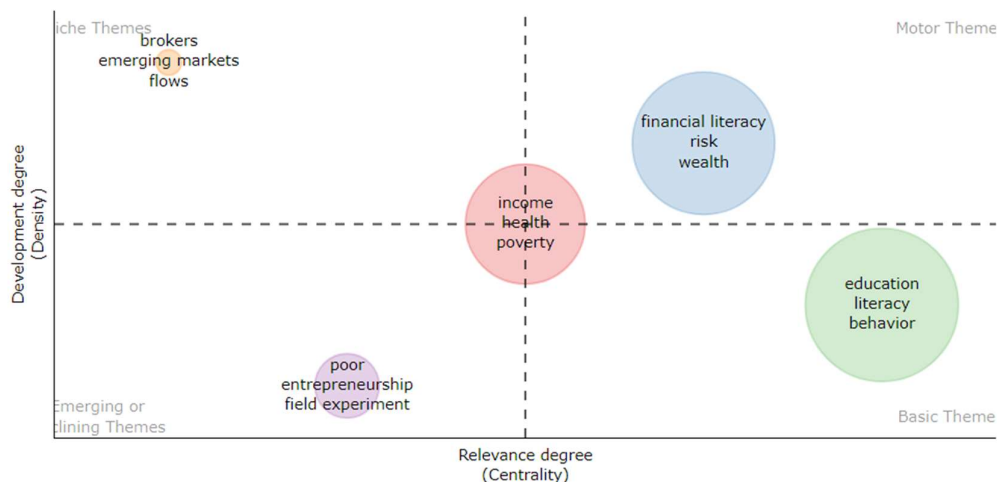


Figure 16: Time slice 2 - Thematic evolution during 2012-2020



displaying both high density and centrality, signifying its core role in the discipline. “performance, access and service,” located in the bottom left quadrant, is recognized as a fundamental subject area, indicating its importance, although it requires further development. In the upper left quadrant, “income, poverty and growth” emerges as a niche theme, well-developed internally but lacking strong external connections, making it of marginal significance. Conversely, the theme “financial literacy, determinants and risk” situated in the bottom right quadrant, is weakly developed and holds less importance, reflecting both emerging and diminishing association (Aria & Cuccurullo, 2017).

Thematic Evolution

Thematic evolution analysis in this study provides a comprehensive perspective on the field’s development over time. It achieves this by segmenting the entire timeframe into distinct time periods, allowing for a closer examination of how the research area evolves. This analysis is guided by assessing the centrality and density of both keywords and their associated fields (as discussed in (Chen et al., 2019)). In this particular investigation, we employed a 100-word count threshold encompassing keywords and fields, with a minimum cluster frequency of five. This approach was applied across three time slices, with breakpoints set at 2010 and 2020, as depicted in Figures 15 to 17.

The study identifies a dynamic evolution of themes within the specified time periods. Notably, “inequality and wealth” emerged as a prominent theme from 2000 to 2009, while “income, health and poverty”

gradually gained increased attention from 2012 to 2020, positioning it- self between motor and basic themes. “Earnings” and “poverty” began developing as specialized themes over this duration,

Figure 17: Time slice 3- Thematic evolution during 2021-2023

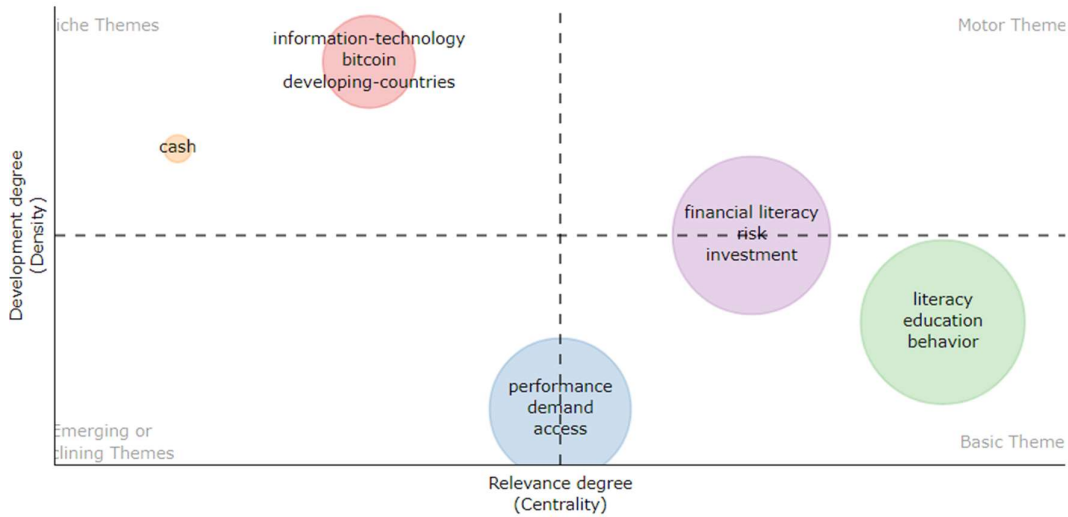
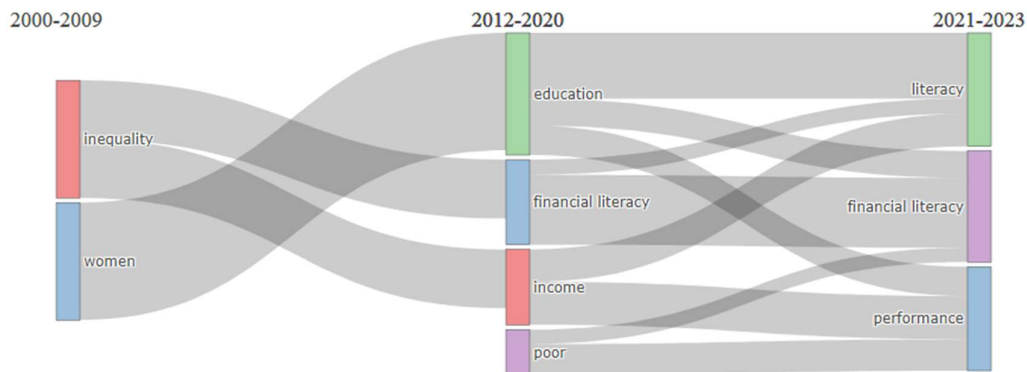


Figure 18: Thematic evolution -Three field plot



generating growing interest. “Financial literacy” became a motor theme, potentially influenced by the global financial crisis. “Health” evolved into a central and well-developed theme. In the period from 2021 to 2023, “financial literacy” re-emerged as a motor theme, reflecting a transition from theoretical understanding to practical application in income-related decision-making. It amalgamated sub-themes, signifying its major role. The three-field plot in Figure 18 highlights the emergence of broad and core themes, emphasizing thematic evolution. A closer examination of inter-linkages over three-time spans (2000-2009, 2012-2020, and 2021-2023) underscores this evolution, revealing a shift from two major theme in the first period to four themes in the second period, including “financial literacy,” “education,” “literacy,” “income,” “poverty,”. The third period features “literacy”, “financial literacy” and “performance” as a major theme, illustrating the relationship among the themes from the second period and recognizing the growing importance of financial literacy.

Intellectual Structure

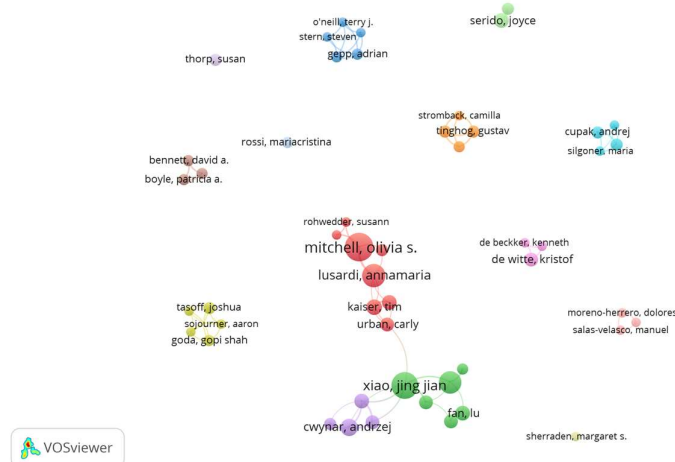
Through an analysis of writers' contributions within the context of author and nation collaborations, the notion of intellectual structure investigates the influence of different authors in the scientific community. This method highlights the degree of collaboration between research groups and the larger research community by highlighting their connections to various institutes and institutions. (Mendes et al., 2017) The intellectual structure is eliminated by citations and co-citations analysis, revealing a diverse range of varying perspectives and evolving schools of thoughts that have not only changed over time but also grown more sophisticated.

Citation Analysis and co-citation analysis

(Rodríguez-Ruiz et al., 2019) quantitative methods includes co-citations and citations analysis. The premise that writers would credit source they feel that are significant to their work forms the basis of citation analysis. A higher number of citations indicates increased relevance and quality within the academic community and serves as gauge of the value (Ruggeri et al., 2019). A scholarly link is established when a document is referenced, discussed or included in each other's bibliographies (Egghe & Rousseau, 1990). The primary goal of co-citation analysis is to investigate the relationship between publication that both cite and cited by other authors. The frequency of co-citation reveals how often a specific set of articles is referenced together, suggesting a shared thematic connection among them (Hu et al., 2013). The co-citation strength metric gauges the extent of association among articles, as perceived by the authors who cite them (Small, 1978). Betweenness, a key metric in social network analysis (SNA), reflects the extent to which a particular article assumes a central role in connecting and influencing other articles within the network (Hu et al., 2013). Within cluster 1, Mitchell emerges as the foremost influential author, boasting the highest betweenness centrality scores.

In the analysis, we've established certain criteria for authorship, with a maximum limit of 15 authors per document, and a minimum requirement of 3 papers and 3 citations as the threshold for inclusion. Out of a total of 3516 authors, only 176 authors meet these criteria. For each of these 50 authors, we aim to evaluate the strength of their reference links to other authors. Our goal is to identify the top 50 authors with the most substantial overall link strength. To gauge author's impact and influence, we are considering the annual average of their publications. Notably, articles authored by Lusardi and Mitchell stand out as they receive significantly more citations from their peers.

Figure 19: Co-citation network-papers



Social Network Analysis

Low and Siegel (2019) utilized Social Network Analysis (SNA) to unveil the intricate interconnections within the research domain. In this context, nodes serve as representations of various actors, including authors, institutions, or publication sources, and sets of nodes signify the interrelated relationships within the social network. The dynamics of this network are vividly depicted through ties that establish connections between these distinct domains. Furthermore, an examination of geographical dispersion and collaborative efforts was undertaken by constructing collaboration networks, which were derived from data spanning 30 different countries. The research revealed that the majority of contributions to the study domain originate from the United States, with China, Italy, England, the Netherlands, France, and Canada following closely in terms of author contributions. In Figure 21, the collaborative network among institutions highlights the prevailing influence of the cluster, spearheaded by the nber, univ penn and University of Georgia.

Conclusion

This article illuminates the evolution of the financial literacy and financial well-being domain from 2014 to 2023. It conducts a comprehensive assessment of the conceptual, intellectual, and social dimensions within this research realm. The primary merit of this study lies in its adept synthesis of a fragmented body of literature, bringing attention to significant sources, authors, and seminal works. Employing the versatile and user-friendly Bibliometrix R-package facilitated this analysis. The dataset, drawn from the Web of Science (WoS) database, was chosen for its structured data, high-quality research sources, and compatibility with the analysis software. Scholarly contribution in this field are primarily from the United States, with China and the United Kingdom trailing closely behind. Since, their beginning cooperatives ventures in developing economies have advanced to a more expensive stage, leading to the addition of new writers and countries, which has diversified the social landscape within this field of study. In this sense, the conceptual framework demonstrates a logical growth. It has gone beyond examining measurements, causes and correlations between them and demographic information. Instead, a more in- depth analysis of financial and economic factors is covered, including literacy, wealth, income and effect.

In this field, the United States is the main contributor of scholarly works, closely followed by China and United Kingdom. Collaborative initiatives in emerging economies have evolved from their beginning to a more expansive phase, bringing new authors and countries to the field and broadening the social scene. In this sense, there is a clear growth in the conceptual framework. It is now more looking into measurements, causes, and correlations with demographic information. Rather, a more comprehensive analysis of financial economic factors is covered, including effect, income, wealth and literacy

This report provides insightful information on current trends that policymakers can use to develop successful financial education initiatives, policy interventions, and proactive engagement strategies. This study provides insights into growing difficulties for professionals in the banking and financial services business, as well as investment advisors and financial planners. This deeper comprehension might result in a deeper understanding of their respective professions. To put it succinctly, this publication highlights the research field's progress and helps build a foundation of knowledge by illuminating previously unknown aspects of the relationship between financial literacy and financial well-being.

Figure 20: Geographical collaboration network

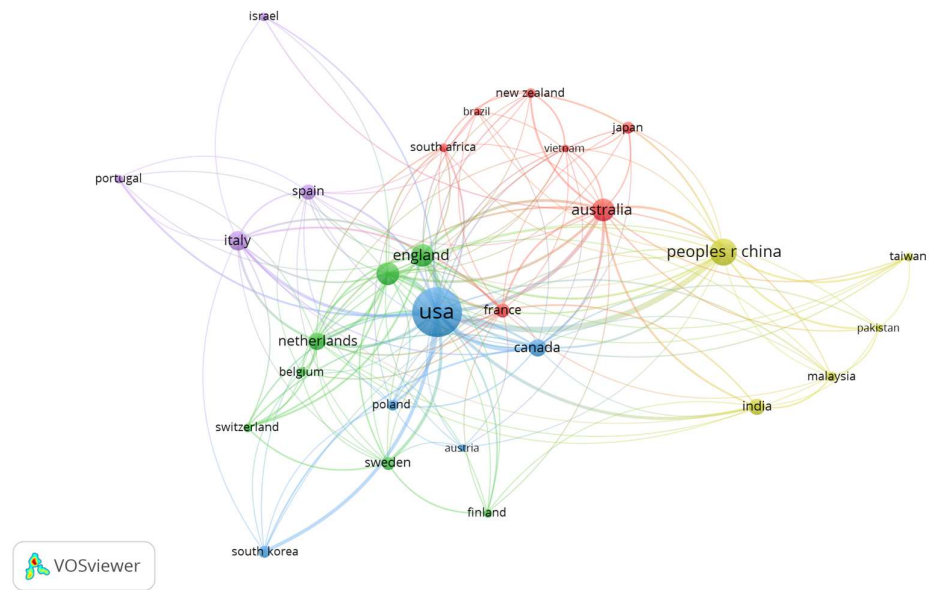
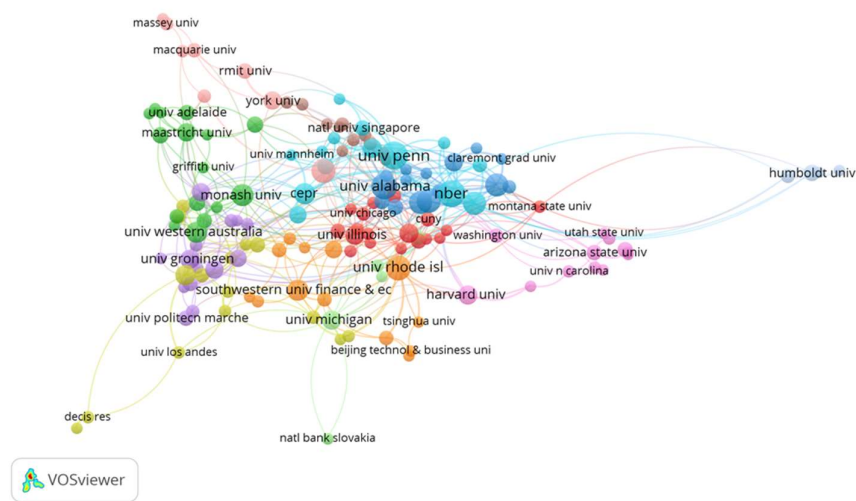


Figure 21: Institutional collaboration network



Future research directions

This section highlights the gaps identified in this study, which encompass the following aspects: 1. The use of the WoS database for this bibliometric study. Future research could consider the utilization of alternative databases for data extraction. Additionally, the keyword search criteria might be refined to include supplementary keywords, thus broadening the scope to encompass a more comprehensive array of relevant publications in this field. 2. Enhancing scientific mapping with a combination of abstract reading and manual article selection, followed by in-depth examination of full texts, offers a pathway to achieve a more profound and nuanced comprehension of the research domain. This method paves the way for future researchers to engage in literature reviews and meta-analyses, thereby expanding insights into the antecedents and outcomes associated with the domain and enriching the foundational knowledge crucial for empirical studies. 3. A comprehensive content analysis of articles within this research domain holds the potential to unveil deeper insights into relevant theories and models, contributing to an elevated understanding of the overall field. 4. Investigating the participation of academic scholars and practitioners in this field is crucial for advancing both theoretical knowledge and practical applications. This exploration will contribute to the holistic development and progress of the discipline. 5. A longitudinal analysis of the field is warranted.

References

- Abrantes-Braga, F. D. M. A., & Veludo-de-Oliveira, T. (2019). Development and validation of financial well-being related scales. *International Journal of Bank Marketing*, 37(4), 1025–1040. <https://doi.org/10.1108/IJBM-03-2018-0074>
- Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975.
- Barbić, D., Lučić, A., & Chen, J. M. (2019). Measuring responsible financial consumption behaviour. *International Journal of Consumer Studies*, 43(1), 102–112. <https://doi.org/10.1111/ijcs.12489>
- Bourova, E., Anderson, M., Ramsay, I., & Ali, P. (2018). Impacts of Financial Literacy and Confidence on the Severity of Financial Hardship in Australia. *Australasian Accounting, Business and Finance Journal*, 12(4), 4–23. <https://doi.org/10.14453/aabfj.v12i4.2>
- Brackin, T. (2014). *Taxation as a Component of Financial Literacy: How Literate are Australians in Relation to Taxation* [Griffith thesis, Griffith University]. <https://doi.org/10.25904/1912/2318>
- Bruggen, E., Hogreve, J., Holmlund, M., Kabadayi, S., & Lefgran, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research*, 79, 228–237. <https://doi.org/10.1016/j.jbusres.2017.03.013>
- C, L., K, W., & J, W. (2017). A bibliometric analysis of research on haze during 2000–2016. *Environmental Science and Pollution Research International*, 24(32). <https://doi.org/10.1007/s11356-017-0440-1>
- Cassell, C., & Symon, G. (2006). The role and status of qualitative methods in management research: An empirical account | Request PDF. *ResearchGate*. <https://doi.org/10.1108/00251740610650256>
- Castriotta, M., Loi, M., Marku, E., & Naitana, L. (2019). What's in a name? Exploring the conceptual structure of emerging organizations. *Scientometrics*, 118(2), 407–437.
- Chen, X., Lun, Y., Yan, J., Hao, T., & Weng, H. (2019). Discovering thematic change and evolution of utilizing social media for healthcare research. *BMC Medical Informatics and Decision Making*, 19(2), Article 2. <https://doi.org/10.1186/s12911-019-0757-4>
- Cobo, M. J. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of Informetrics*, 5(1), 146–166. <https://doi.org/10.1016/j.joi.2010.10.002>
- Das, S. C., & Singh, S. (2023). *Unlocking Innovative Work Behaviour Through Bibliometric Analysis*. <https://mdim.ubitech.solutions/>
- Demircuc-Kunt, A., Klapper, L., & Singer, D. (2017). *Financial Inclusion and Inclusive Growth: A Review of Recent Empirical Evidence*. <https://doi.org/10.1596/1813-9450-8040>
- Egghe, L., & Rousseau, R. (1990). *Introduction to Informetrics. Quantitative Methods in Library, Documentation and Information Science*. Elsevier Science Publishers. <https://documentserver.uhasselt.be/handle/1942/587>
- Garfield, E., & Sher, I. H. (1993). KeyWords Plus™—Algorithmic derivative indexing. *Journal of the American Society for Information Science*, 44(5), 298–299.

- Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. *International Journal of Consumer Studies*, 45(1), 80–105. <https://doi.org/10.1111/ijcs.12605>
- Greenacre, M., & Blasius, J. (2006). *Multiple Correspondence Analysis and Related Methods*. Chapman and Hall/CRC. <https://doi.org/10.1201/9781420011319>
- Hu, C.-P., Hu, J.-M., Deng, S.-L., & Liu, Y. (2013). A co-word analysis of library and information science in China. *Scientometrics*, 97(2), 369–382. <https://doi.org/10.1007/s11192-013-1076-7>
- Huhmann, B. A., & McQuitty, S. (2009). A model of consumer financial numeracy. *International Journal of Bank Marketing*, 27(4), 270–293. <https://doi.org/10.1108/02652320910968359>
- Inamdar, Z., Raut, R., Narwane, V. S., Gardas, B., Narkhede, B., & Sagnak, M. (2020). A systematic literature review with bibliometric analysis of big data analytics adoption from period 2014 to 2018. *Journal of Enterprise Information Management*, 34(1), 101–139. <https://doi.org/10.1108/JEIM-09-2019-0267>
- Johnson, E., & Sherraden, M. S. (2007). From Financial Literacy to Financial Capability Among Youth. *The Journal of Sociology & Social Welfare*, 34(3), 7. <https://doi.org/10.15453/0191-5096.3276>
- Kahiya, E. T. (2018). Five decades of research on export barriers: Review and future directions. *International Business Review*, 27(6), 1172–1188.
- Kamalski, J., & Kirby, A. (2024). Bibliometrics and urban knowledge transfer | Request PDF. *ResearchGate*. <https://doi.org/10.1016/j.cities.2012.06.012>
- Kempson, E., Finney, A., & Poppe, C. (2017). *Financial Well-being: A Conceptual Model and Preliminary Analysis* | School of Geographical Sciences | University of Bristol. <https://www.bristol.ac.uk/geography/research/pfrc/themes/capability-behaviours-wellbeing/financial-wellbeing-conceptual-model/>
- Li, T., Bai, J., Yang, X., Liu, Q., & Chen, Y. (2018). Co-Occurrence Network of High-Frequency Words in the Bioinformatics Literature: Structural Characteristics and Evolution. *Applied Sciences*, 8(10), Article 10. <https://doi.org/10.3390/app8101994>
- Lim, W. M., Yap, S.-F., & Makkar, M. (2021). Home sharing in marketing and tourism at a tipping point: What do we know, how do we know, and where should we be heading? *Journal of Business Research*, 122(C), 534–566.
- Low, M. P., & Siegel, D. (2019). A bibliometric analysis of employee-centred corporate social responsibility research in the 2000s. *Social Responsibility Journal*, 16(5), 691–717. <https://doi.org/10.1108/SRJ-09-2018-0243>
- Lusardi, A., & Mitchell, O. S. (2007). Financial Literacy and Retirement Preparedness: Evidence and Implications for Financial Education. *Business Economics*, 42(1), 35–44. <https://doi.org/10.2145/20070104>
- Mendes, G. H. S., Oliveira, M. G., Gomide, E. H., & Nantes, J. F. D. (2017). Uncovering the structures and maturity of the new service development research field through a bibliometric study (1984–2014). *Journal of Service Management*, 28(1), 182–223. <https://doi.org/10.1108/JOSM-07-2015-0230>
- Oliveria, T., & Faria, Mi. (2014). Extending the understanding of mobile banking adoption: When UTAUT meets TTF and ITM. *International Journal of Information Management*, 34(5), 689–703. <https://doi.org/10.1016/j.ijinfomgt.2014.06.004>
- P, R., M, H., & B, F. (2005). *Interactive Sankey diagrams*. <https://ieeexplore.ieee.org/document/1532152>
- Paul, J., & Benito, G. R. G. (2018). A review of research on outward foreign direct investment from emerging countries, including China: What do we know, how do we know and where should we be heading? *Asia Pacific Business Review*. <https://www.tandfonline.com/doi/abs/10.1080/13602381.2017.1357316>
- Philippas, N., & Avdoluas, C. (2019). Financial literacy and financial well-being among generation-Z university students: Evidence from Greece | Request PDF. *ResearchGate*. https://www.researchgate.net/publication/342391953_Financial_literacy_and_financial_well-being_among_generation-Z_university_students_Evidence_from_Greece
- Rialti, R., Marzi, G., Ciappei, C., & Busso, D. (2019). Big data and dynamic capabilities: A bibliometric analysis and systematic literature review. *Management Decision*, 57(8), 2052–2068. <https://doi.org/10.1108/MD-07-2018-0821>
- Rodríguez-Ruiz, F., Almodóvar, P., & Nguyen, Q. T. K. (2019). Intellectual structure of international new venture research: A bibliometric analysis and suggestions for a future research agenda. *Multinational Business Review*, 27(4), 285–316. <https://doi.org/10.1108/MBR-01-2018-0003>

- Ruggeri, G., Orsi, L., & Corsi, S. (2019). A bibliometric analysis of the scientific literature on Fairtrade labelling. *International Journal of Consumer Studies*, 43(2), 134–152. <https://doi.org/10.1111/ijcs.12492>
- Singh, S., & Dhir, S. (2019). Structured review using TCCM and bibliometric analysis of international cause-related marketing, social marketing, and innovation of the firm. *International Review on Public and Nonprofit Marketing*, 16(2), 335–347. <https://doi.org/10.1007/s12208-019-00233-3>
- Small, H. G. (1978). Cited Documents as Concept Symbols. *Social Studies of Science*. <https://doi.org/10.1177/030631277800800305>
- Sorgente, A., & Lanz, M. (2017). Emerging Adults' Financial Well-being: A Scoping Review. *Adolescent Research Review*, 2(4), 255–292. <https://doi.org/10.1007/s40894-016-0052-x>
- Strumpel. (1976). *Economic means for human needs: Social indicators of well-being and discontent*. APA PsycNET. <https://psycnet.apa.org/record/1978-20862-000>
- Tella, A., & Olabooye, A. A. (2014). Bibliometric analysis of African Journal Of Library, Archives and Information Science from 2000-2012. *Library Review*, 63(4/5), 305–323. <https://doi.org/10.1108/LR-07-2013-0094>
- Tranfield, D., Denyer, D., & Smart, P. (2003). *Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review*. APA PsycNET. <https://doi.org/10.1111/1467-8551.00375>
- Van Rooji, M., Lusardi, A., & Alessie, R. (2011). Financial literacy and retirement planning in the Netherlands. *Journal of Economic Psychology*, 32(4), 593–608. <https://doi.org/10.1016/j.joep.2011.02.004>
- Worthington, A. C. (2013). Financial Literacy and Financial Literacy Programmes in Australia. *Journal of Financial Services Marketing*, 18(3), 227–240. <https://doi.org/10.1057/fsm.2013.18>
- Yadav, S. (2019). *A Study on the Initiatives Taken by Banker's for Promoting Financial Literacy in Bangalore, India*. <https://papers.ssrn.com/abstract=3605982>