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Retirement Planning Through Financial Literacy/Knowledge: A Bibliometric Analysis Perspective

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Abstract

Personal retirement planning is not a mandatory exercise; it is a voluntary preparation for the future. Regrettably, many are unprepared for this. Most people believe retirement planning is necessary just when they are approaching retirement or are too young to consider their retirement years. As such, retirement isn't only about relaxing in the "golden years." Instead, people must plan and invest for retirement to be financially secure during those years. This study will use bibliometric analysis to overview the published scientific literature on retirement planning. The Scopus database compiled all available retirement planning literature. The keyword search yielded 108 documents that were filtered out. In peer-reviewed journals or conference proceedings, all publications were authored in English. Most of these papers were in the subjects of Economics, Econometrics and Finance, Business, Management, Accounting, and Social Sciences. The bibliometric study summarises the literature on retirement planning and identifies future research opportunities.

Keywords: Retirement Planning, Financial Literacy, Financial Knowledge, Bibliometric Analysis, VOSviewer

Introduction

Retirement can be defined broadly as an effort to reallocate current resources for future use. In this case, it refers to a person's wealth and cash. Throughout the life cycle, an individual is required to make critical financial decisions as they progress through some of the important events in their lives. According to Drake (2021), job retirement, health care, and forced retirement are among the main expectations for individuals to consider. Without proper planning and awareness, an individual's socioeconomic situation can quickly turn upside down, degrading life quality and eventually their financial health.

The recent and ongoing COVID-19 pandemic is an excellent example of this. Afonso and Rault (2020) investigated the US households' financial health and found that a lack of awareness and implementation of a retirement plan has resulted in many households' wealth depletion. In another work by Lee and Kim (2016), argues that many individuals lack the propensity for a long term plan. In other words, an individual's skill and trait affect their level of commitment for retirement planning. This comprises an attitude and a sense of self-discipline. Another study has mentioned that an individual's dedication and timeliness affect their retirement strategy (Leinonen et al., 2020). In addition, Kimiyaghalam et al (2017) also suggest that family members and peers drive intentions for retirement planning and act as role models from a young age to their children at the family level. Most of the mentioned researches share similar notions, financial literacy as the foundation of retirement planning. A closer look by Boisclair et al (2017); Niu et al (2020) has explored the established link between retirement planning and financial literacy. According to their findings, individuals with high levels of financial literacy tend to have a high level of retirement planning.

Ironically, while financial literacy is critical, it is a fact that not everyone possesses it. According to Lusardi (2019), only around one-third of the global population understands the fundamental concepts of financial literacy: interest rates, inflation, and risk diversification. One of the reasons for poor financial literacy is the country's current state of social and economic development. For example, in the United States and Malaysia, the former scored 57 per cent while the latter scored only 36 per cent for financial literacy among adults (Hasler & Lusardi, 2017; Lusardi & Oggero, 2017; Klapper & Lusardi, 2019). The findings indicate that developed countries place a higher premium on financial literacy, producing a more financially literate population. Some developed countries, such as Denmark and the United Kingdom, score significantly higher than the United States, at 71 per cent and 67 per cent respectively. This discrepancy can be explained by the fact that populations are demographically diverse. According to Kadoya et al (2020), demographic variables such as gender, age, education, socioeconomic status, income, and occupation represent an individual's financial literacy level. As a result of the numerous factors that must be considered, it exacerbates the complexity of the world's financial literacy as the illiterate population is already at an alarming level.

Therefore, the analysis is aware of the comprehensive advancement of retirement planning via financial literacy/knowledge in the field of research and practice that led us to carry out this bibliometric analysis. We, therefore, want to review retirement planning via financial

literacy/knowledge studies on the Internet over the last 30 years and how this bibliometric analysis can influence future research. The following research questions are answered in this bibliometric review:

- What is the current trend in retirement planning via financial literacy/knowledge?
- Which are the most influential articles on retirement planning via financial literacy/knowledge?
- Which are the most popular themes of retirement planning via financial literacy/knowledge among scholars?
- Who are the most influential authors of retirement planning via financial literacy/knowledge?
- What is the current collaboration involving retirement planning via financial literacy/knowledge?
- What is the intellectual structure of current research on retirement planning via financial literacy/knowledge?

There are five key sections of the organization of this study: Introduction, Review of Literature, Data and Methods, Results and Discussion, and Conclusion and Limitation. A detailed descriptive analysis assists the Results and Discussion section by analyzing the types of documents and sources, the year of publication, the languages used in publications, the sources of publication, the geographical and institutional distribution, the subject area and the trend in the fundamental intellectual structure of the publication. Finally, we illustrate the findings, restrictions and suggest which areas should be investigated by future researchers.

Research Questions

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- Which are the most popular themes of retirement planning via financial literacy/knowledge among scholars?
- Who are the most influential authors of retirement planning via financial literacy/knowledge?
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Objectives of the Study

Literature Review

Financial literacy and Retirement Planning

Retirement planning commonly refers to the preparation of post-retirement to sustain the cost of living. Dennis & Fike (2012) believed the concept of retirement planning should change from financial goals for retirement to something beyond money; spiritual motives such as relatives and relationships. There is a shifting awareness that retirement planning is not only for post-career but also to fit an individual's life cycle. On the other hand, financial literacy, or interchangeably known as financial knowledge, can be defined as measuring how well an individual can understand and use personal finance-related information (Huston, 2010).

Personal financial skills such as money basics, borrowing, investing, and protecting resources is the primary indication of an individual's financial literacy level. Scholars point out that understanding the finance concept will reflect better control in money management in both the short and long term (Lusardi, 2019).

Scholars have frequently mentioned the relationship between retirement planning and financial literacy. A study by Boisclair et al (2017) revealed higher levels of financial literacy are associated with a higher likelihood for individuals to plan for retirement even with controlled demographic characteristics. At the same time, individuals who understand risk diversification have a higher probability of saving more. Niu et al (2020) also echoes similar findings in their research on China population and discovered that advanced financial literacy is a more important driver for retirement planning compared to basic financial literacy. In the study, advanced financial literacy focuses on the product of services available in the market and indirectly serves as an alternative asset for retirement portfolio. So, understanding financial assets reflect the ability to tailor a retirement plan.

Nevertheless, not every researcher is on the same page regarding the notions. Anderson et al (2017) suggest instead of actual financial literacy, retirement planning is driven by perceived financial literacy. The study shows that actual financial literacy scores are lower than perceived financial literacy, and those miscalibrated are more likely to think about saving. At the same time, this also shows overestimation among the respondents. This inconsistency reflects the need for more clarification on financial literacy and retirement planning relationships and a need to examine the domain so far.

Methodology

The bibliometric analysis is one of the methods used in this study. Wallin (2005) defines this method as an analysis that evaluates an unlimited number of publications from institutions, countries, and publisher databases. According to the scholar, bibliometrics enables researchers to quantify the value of specific topics' publications. This explains why bibliometric analyses are frequently included, such as citation and co-author analysis. In recent years, bibliometric analysis has grown in popularity, with academic publications totalling 1950 in 2020 alone (Donthu et al., 2021). Even though, there is empirical evidence of bibliometric analysis in the field of business management such as financial literacy (Goyal & Kumar, 2021), retirement planning (Gallego-Losada et al., 2021), supply chain management (Xu et al., 2020), and data analytics (Ardito et al., 2019), but the bibliometric is not limited to the business domain as it is also applicable to other domains as well (Liao et al., 2018).

In comparison to literature reviews and meta-analyses, bibliometric analysis is unable to address publication quality, focusing instead on its quantitative value (Wallin, 2005). Additionally, bibliometric analysis discusses only the interpretation of the figure as qualitative analysis. On the other hand, both meta-analysis and literature review outperformed bibliometric analysis by incorporating critical evaluation of qualitative data. This information recommends conducting bibliometric analysis in conjunction with meta-analysis or literature review to obtain a more rigorous analysis result, as observed in Gallego-Losada et al (2021) works. According to Donthu et al (2021), the primary goals of the bibliometric analysis are to (1) gain a comprehensive overview, (2) identify knowledge gaps, (3) generate novel research ideas, and (4) position their intended contributions to the field. According to them, there are

two types of bibliometric techniques: primary and enrichment techniques. The former includes performance analysis and science mapping, while the latter includes network analysis. Additionally, recent technological advancements have increased the efficiency of conducting bibliometric analyses by introducing new software for specific analyses. For instance, Moral-Munoz et al (2020) emphasized the importance of performance software (*CRExplorer*, *Publish* or *Perish*, and *ScientoPyUI*) and science mapping analysis (*Bibexcel*, *CiteSpace*, *Sci^2 Tool*, and *VOSviewer*).

The bibliometric analysis conducted in this study includes the evolution of publication, document and source type, document language, subject area, the geographic distribution of publications and affiliations, authorship analysis, citation analysis, keyword analysis, and finally, a visualization map. Following that, each analysis is accompanied by a rigorous interpretation of the final result and conclusion.

At the moment, many researchers rely on databases to conduct searches and identify pertinent academic articles as sources of knowledge. The Web of Science, Scopus, and the newly emerging Dimensions database are popular databases. Scopus was the primary database for this study. Burnham (2006) lauded Scopus as the world's largest database of academic knowledge, citing its breadth of coverage. According to Singh et al. (2021), Dimension is currently the largest database of the three popular choices. Indeed, it contains 82.22 per cent more journals than Web of Science and 48.17 per cent more than Scopus, demonstrating the value of exhaustive knowledge sources. Dimensions have also outperformed Scopus in citation analysis (Afonso & Rault, 2020).

Furthermore, predatory publishing has also contaminated Scopus, with articles accounting for 17 per cent of the total (Machacek & Srholec, 2021). These findings, however, only merely reflect the quantitative worth of a database and do not indicate a lack of quality in the body of knowledge. On the other hand, Scopus's database is constantly updated to reflect changes in the world, most notably in politics, economics, social sciences, and technology (Kipper et al., 2020). Other recent researchers, including Yas et al (2020) on service quality and Maia et al (2019) on credit unions, use Scopus as their primary database. As a result, this justifies the use of Scopus as the platform for extracting prior literature work for this study. Similarly, this study benefited from Scopus's feature, which includes a wealth of detailed information, such as the type of access, the year, the author's name, the area topic, the type of text, the source's title, keyword, affiliation, country, source, and language.
This research relies on titles to specify articles relevant to retirement planning through financial literacy to extract relevant studies. As such, the following questionnaire was carried out: TITLE-ABS-KEY ("RETIREMENT PLANNING THROUGH FINANCIAL LITERACY/KNOWLEDGE"). The data was then narrowed down using PRISMA Flow Diagram as in Figure 1.

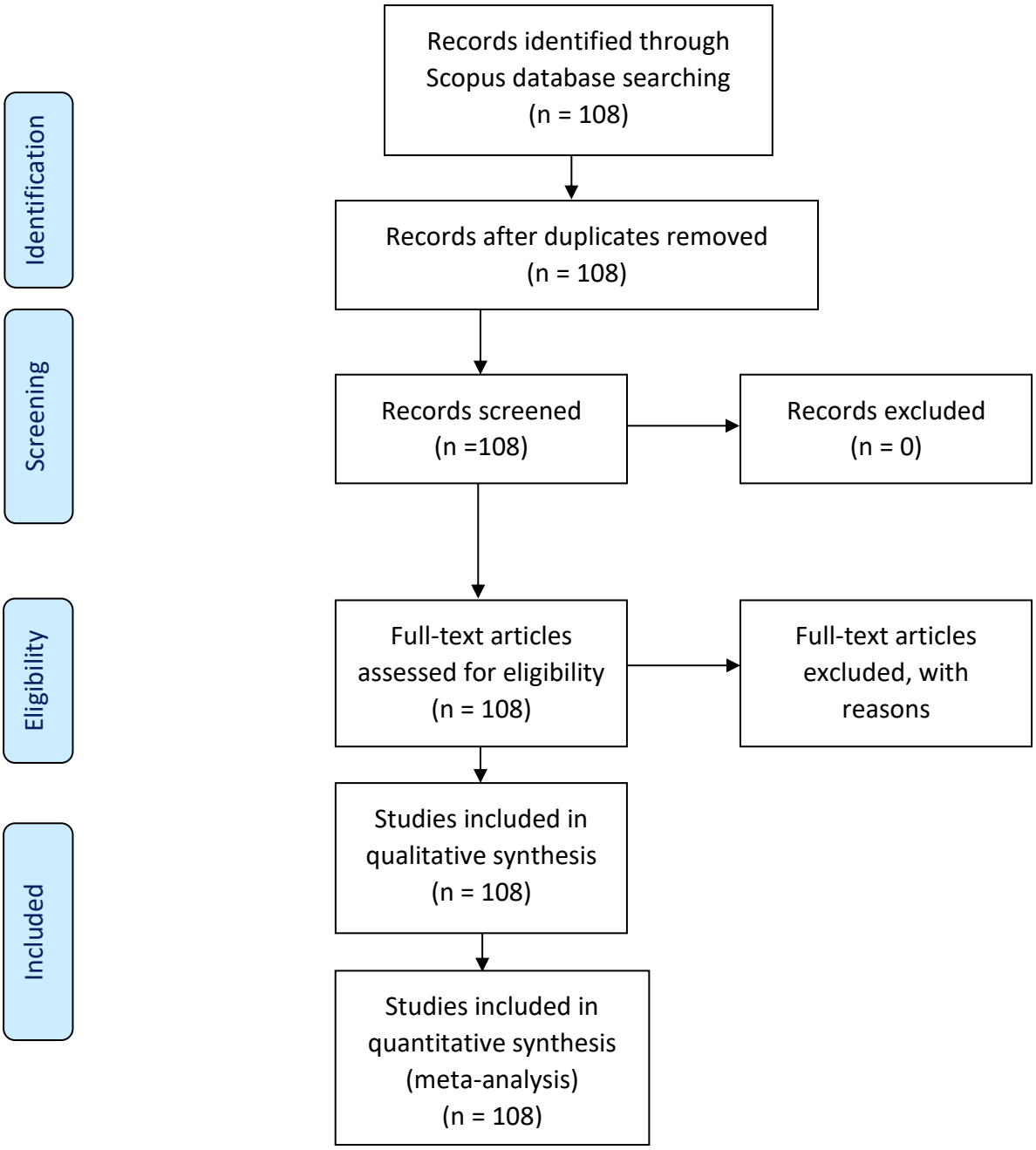

Figure 1. PRISMA Flow Diagram
Source: Moher, Liberati, Tetzlaff, Altman, The PRISMA Group (2009)

Data Analysis and Findings

As suggested by Singh et al (2021), this research conducted several analyses, including document types and source types, annual growth, document language, subject of area, keyword analysis, country productivity, authorship analysis, and citation analysis accordingly. The results are presented graphically and explain the frequency and percentage obtained. This study used data from 1990 to 2020 (30 years), as some of the results, such as annual growth data, its frequency, and cumulative percentage, are also denominated by year. This study also applies citation metrics for citation analysis and the most cited papers in web accessibility, with a similar time frame.

Evolution of Publication

For this study, 108 publications were compiled and filtered, spanning from the years 1990 to 2020. In general, as illustrated in Figure 1, publication on the topic of retirement planning through financial literacy has increased year after year, from one per year in 1990 to seventeen per year in 2020. Following these trends, the number of publications and interest in the body of knowledge is expected to increase steadily in the coming years. In 2011 and 2017, there was a dramatic increase, reaching a two-digit total of 12 and 16 publications respectively. However, in both cases, the number of publications per year drops to a single-digit the following year. Despite this, the number of publications reached and maintained a two-digit number for the first time in 2019 and 2020, with 17 publications each year. This trend can be interpreted as the topic's meteoric rise in popularity among researchers. If the number of publications remains above 15 per year, it is likely to exceed 30 in the next few years. Collectively, the body of knowledge is expected to grow even more significant.

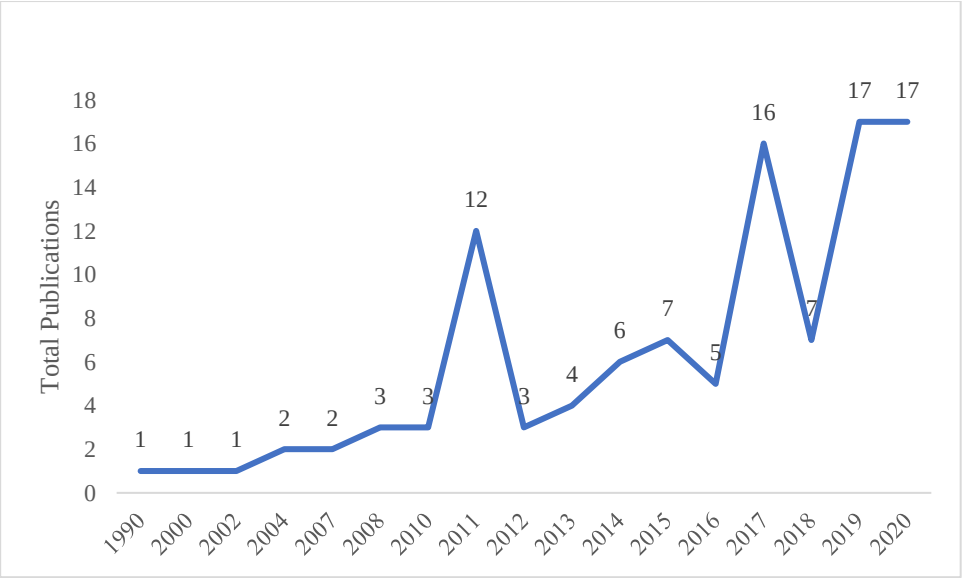

Figure 2: Retirement Planning via Financial literacy/knowledge Publications, 2000-2020 (n=108)

Document and Source Types

Five document types related to retirement planning and financial literacy were identified through document and source type analysis, out of a total of 108 publications. This includes articles (77.8 per cent), book chapters (9.3 per cent), conference papers (6.5 per cent), reviews (4.6 per cent), and notes (1.9 per cent), as illustrated in Table 1. The most frequently cited source type is a journal (86.1 per cent), followed by the book (7.4 per cent), conference proceedings (4.6 per cent), and book series (1.9 per cent). In terms of access type, most publications (45.4 per cent) are in open access, while the second-highest percentage (32.4 per cent) is in green access. Meanwhile, gold access accounted for 12.0 per cent of the total, while bronze access accounted for 10.1 per cent

Table 1
Document, Source and Access Types

Document Type	NP	%	Source Type	NP	%	Access Type	NP	%
Article	84	77.8	Journal	93	86.1	All Open Access	49	45.4
Book Chapter	10	9.3	Book	8	7.4	Gold	13	12.0
Conference Paper	7	6.5	Conference Proceeding	5	4.6	Bronze	11	10.1
Review	5	4.6	Book Series	2	1.9	Green	35	32.4
Note	2	1.9						

Note: NP = No. of Publications

Languages of Documents

As shown in Table 2, the total number of document languages across the 108 total publications is 108. The result indicates that English is the primary language, with a 100 per cent coverage rate. This is reasonable as English is the language of science, a global medium to communicate and align the body of knowledge. As interest grows, as illustrated in Figure 2, it may also expand and create opportunities for other non-English languages to serve as the alternative mode of communication.

Table 2
Languages

Language	NP	%
English	108	100.0

Note: NP = No. of Publications

Subject Area

For over 30 years, Table 3 illustrates the subject of retirement planning through financial literacy across 16 categories. The subject matter of this area ranges from the ostensibly business-related topics of business, management, and accounting to the uncommon fields of immunology and microbiology. The majority of publications on retirement planning through financial literacy are in Economics, Econometrics and Finance (42.6 per cent), followed by Business, Management, and Accounting (42.6 per cent) and Social Sciences (36.1 per cent). The remaining subject areas are as follows: Medicine (14.8 per cent), Psychology (12.0 per cent), and Computer Science (6.5 per cent). Meanwhile, Nursing and the Arts and Humanities report a similar 5.6 per cent, while Engineering, Environmental Science, Decision Science, and Energy all report a similar 2.8 per cent. The remaining subject areas scored below 2 per cent; Biochemistry, Genetics and Molecular Biology, and Energy each scored 1.9 per cent, and the remaining subjects (Health professionals, Immunology and Microbiology, and Mathematics) all scored 0.9 per cent

Table 3
Subject Area

	Subject Area	NP	%
1	Economics, Econometrics and Finance	57	52.8
2	Business, Management and Accounting	46	42.6
3	Social Sciences	39	36.1
4	Medicine	16	14.8
5	Psychology	13	12
6	Computer Science	7	6.5
7	Arts and Humanities	6	5.6
8	Nursing	6	5.6
9	Decision Sciences	3	2.8
10	Engineering	3	2.8
11	Environmental Science	3	2.8
12	Biochemistry, Genetics and Molecular Biology	2	1.9
13	Energy	2	1.9
14	Health Professions	1	0.9
15	Immunology and Microbiology	1	0.9
16	Mathematics	1	0.9

Note: NP = No. of Publications

Geographic Distribution of Publication and Affiliation

Next is the analysis of the geographical distribution of publications and affiliations. The top four countries that contributed to the publication on retirement planning and financial literacy are listed in Table 4. The United States dominates the list with 56 total publications, followed by Malaysia with 9 total publications, the Netherlands with 6 total publications, and Australia with 5 total publications. The United States also topped the list of number cited publications (NCP) with 49, followed by the Netherlands with 6 NCP, Malaysia with 5 NCP, and Australia with 4 NCP. Additionally, the United States ranked first in total citations (TC) with 2957 TC, followed by the Netherlands with 566 TC. On the other hand, Australia and Malaysia achieved 58 TC and 15 TC, respectively.

For both h-index and g-index analyses, the United States dominates both categories, indicating collective studies cited more frequently than those conducted by other countries. Malaysia is in a unique position, as the only Asian and developing country that is able to get in the list and ranks second in terms of total publication, but scores poorly in total citations, h-index, and g-index. In other words, Malaysia underperforms in terms of quality in comparison to the Netherlands and Australia, despite outpacing them in terms of the total publication. Figure 3 illustrates the massive differences in quantity between the United States and the rest of the list.

Table 4
Top 4 Countries Contributed to the Publications

	Country	TP	NCP	TC	CP	C/CP	h-Index	g-Index
1	United States	56	49	2957	52.8	60.3	22	54
2	Malaysia	9	5	15	1.7	3.0	3	3
3	Netherlands	6	6	566	94.3	94.3	5	6
4	Australia	5	4	58	11.6	14.5	4	5

Notes: TP=Total number of publications; NCP=Number of Cited Publications; TC=Total Citations; C/P=Average Citations per Publication; C/CP=Average Citations per Cited Publication; h = h-index; and g = g-index

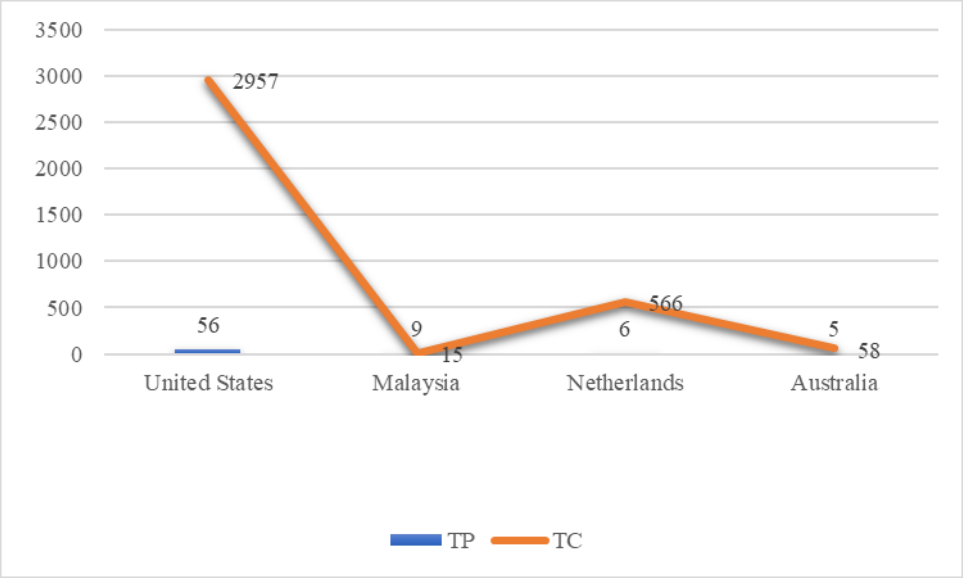

Figure 3: Total Publications and Citations by Countries

Authorship Analysis

The most influential authors in retirement planning and financial literacy are also analyzed in this study. As shown in Table 5, the top five productive authors are those with the most publications, the most cited publications, the most citations per publication, and the highest h-index and g-index. Lusardi leads the authors with 14 total publications, followed by Hershey and Mitchell with five each, Alessie with four publications, and Allen with two publications. Lusardi ranks first with 14 NCPs. Lusardi also leads with 1934 total citations, leaving a massive gap between her and Mitchell's runner-up, who has 688 citations and has made the greatest contribution to the body of knowledge regarding retirement planning and financial literacy, ranking first in terms of quantity. Even her h-index and g-index are higher than those of the other authors, indicating the high quality and significance of her work as a cornerstone for other researchers in the field

Table 5
Top 5 Productive Authors

	Author	TP	NCP	TC	CP	C/CP	h-Index	g-Index
1	Lusardi, A.	14	14	1934	138.1	138.1	11	14
2	Hershey, D.A.	5	5	333	66.6	66.6	4	5
3	Mitchell, O.S.	5	4	688	137.6	172.0	4	5
4	Alessie, R.	4	4	555	138.8	138.8	4	4
5	Allen, S.G.	2	2	12	6.0	6.0	2	2

Notes: TP=Total number of publications; NCP=Number of Cited Publications; TC=Total Citations; C/P=Average Citations per Publication; C/CP=Average Citations per Cited Publication; h = h-index; and g = g-index

Citation Analysis

This study conducted and gathered data on citation analysis using Harzings's Publish or Perish software for citation metrics assessment. All data imported from the Scopus database is transformed into citation metrics by the software. As shown in Table 6, there are several subcategories, including the number of authors, the number of citations per paper, the number of papers per author, and the domains' overall h-index and g-index.

Table 6
Citations Metrics

Metrics	Data
Publication years	1990-2020
Citation years	30 (1990-2020)
Papers	108
Authors	199
Citations	3191
Citations/year	102.94
Citations/paper	29.55
Citations/author	16.04
Papers/author	0.54
Authors/paper	1.84
h-index	24
g-index	56

Keywords Analysis

The VOSviewer software was used to construct and visualize a bibliometric network of retirement planning through financial literacy. As illustrated in Figure 4, keywords, font size, colour, and thickness indicate the relationship between the keywords. There are three primary colours (red, blue, and green), indicating three distinct keywords frequently associated in a study. Financial literacy, retirement planning, financial knowledge and education are commonly used interchangeably (green). Among the keywords (green), the line connecting retirement and financial literacy is the thickest, implying a stronger association than the others

Visualisation Map

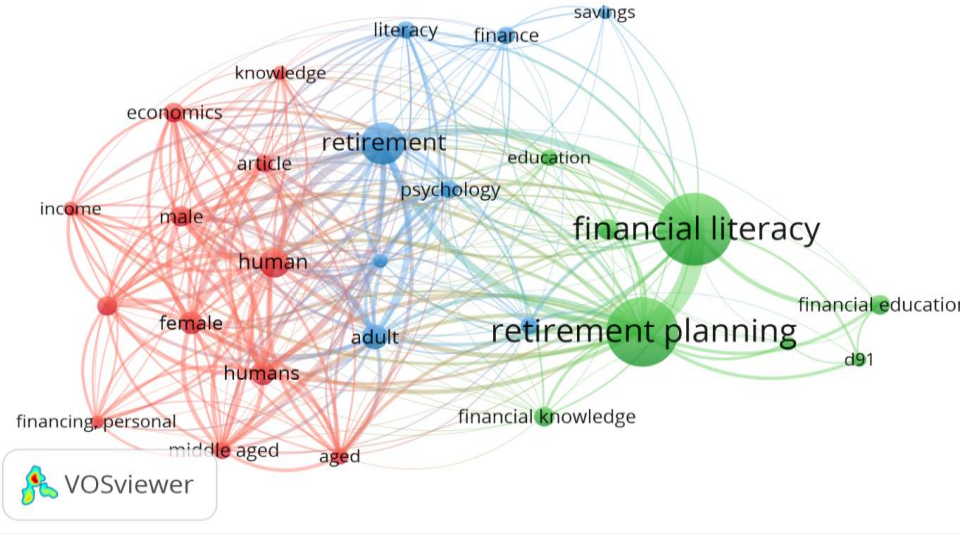

Figure 4: Network visualization map of the author keywords

The following keywords were excluded before conducting the keyword analysis: TITLE-ABS-KEY ("RETIREMENT PLANNING THROUGH FINANCIAL LITERACY /KNOWLEDGE"). As a result, it indicates that the domains contain 13 top keywords. Over 5 per cent of the top five keywords are financial literacy (23.5 per cent), retirement planning (21.9 per cent), retirement (10.9 per cent), human (6.5 per cent), and adult (5.3 per cent). By and large, the majority of the top keywords are either indirect or only partially related to the core keywords, indicating a common foundation shared by all keyword studies.

Table 7
Top 13 Keywords

	Keyword	Total Publications (TP)	%
1	Financial Literacy	58	23.5
2	Retirement Planning	54	21.9
3	Retirement	27	10.9
4	Human	16	6.5
5	Adult	13	5.3
6	Humans	12	4.9
7	Female	11	4.5
8	Financial Planning	10	4.0
9	Male	10	4.0
10	Economics	9	3.6
11	Financial Education	9	3.6
12	Financial Knowledge	9	3.6
13	Financial Management	9	3.6

Discussion

Bibliometric analysis examines significant patterns in Scopus papers on retirement planning from 1990 to 2020. The evolution of publication, document and source types, document languages, subject areas, most productive countries, most productive authors, citation metrics analysis and the thematic regions were identified in the publications on this research

topic. As a result, this study did a bibliometric analysis of retirement planning to determine what has been learnt thus far and what other academics may take in the future. We observed that all authored articles were written in English, an academic language (100 per cent).

Overall, the United States ranked first with 56 publications, Malaysia with 9, the Netherlands with 6, and Australia with 5. The United States had the most citations (2,957), followed by the Netherlands (566), Australia (58), and Malaysia (15). For 30 years, research on retirement planning has accumulated in fields ranging from Economics, Econometrics, and Finance, to Business, Management, Accounting, and Social Sciences (the top three areas of research on retirement planning), to Mathematics, Immunology, and Microbiology, and Health Professions (Bottom 3). This demonstrates the significance and importance of retirement preparation to academics worldwide.

The top five active retirement planning themes are all written by Westerners (Lusardi, Hershey, Mitchell, Alessie, and Allen). They are the most productive and quoted academics in this field, having written 30 articles on retirement planning. The cumulative citation count indicates how other Scopus-indexed journals cite other publications. Most academics employ terminology associated with retirement planning, including financial literacy, retirement, human, and adult.

Finally, throughout the last three decades (1990-2020), 108 publications have been published, authored by 199 individuals, and have received a total of 3,191 citations. Furthermore, the average number of citations per year, article and author, is 102.94, 29.55, and 16.04, respectively. The average number of publications per author was approximately 0.54; the average number of authors per article was approximately 1.84. The h-index was 24, and the g-index was 56, respectively.

Conclusion

Using bibliometric analysis, we tracked the evolution of the field's seminal work, prolific authors, affiliated countries, productive publications, keywords used, and work interrelationships. In developing countries, notably in Africa and Asia, retirement planning research is still infancy. Numerous additional studies on retirement planning remain undocumented, particularly post-COVID-19 and the use of fintech in retirement plans, all of which merit further investigation.

The technique is increasingly being utilized to elucidate the interactions of diverse scientific groups (Barth et al., 2014). Bibliometric approaches, usually referred to as "analysis," have developed into scientific specialities and are an integral part of the methodology for evaluating research, particularly in scientific and practical domains. All bibliometric analyses attempt to reduce an intangible term (scientific quality) to a manageable unit. In contrast to peer review, which is limited in scope, bibliometric methods enable the evaluation of an endless number of publications.

We might infer that the number of publications employing the bibliometric method for scientific study has steadily increased over the past several years. This could be attributed to a variety of variables, among which are the following: To elicit bibliometric research, a substantial volume of literature must be written in a field, and big data sets are now

frequently used. Numerous scientific communities and policymakers, and funding organizations will very certainly expand their demand for these types of assessments to evaluate research and production. The bibliometric method is gaining acceptance, particularly among scientists, as a valuable tool for appraising scientific output. The new study indicates how bibliometric analysis is gradually gaining respect as a valuable tool for the professional world, rather than just as an academic tool for bibliometrics.

Limitation and Study Forward

The analysis is limited by the database we used. As a result, despite Scopus being one of the largest databases, unindexed manuscripts may have gone undiscovered. Moreover, the document title was the main focus of this study on retirement planning. The term was not used in the title of any other retirement planning literature. Remember that no search query is perfect and false-positive and negative results arise. Future research could include databases like Web of Science and Google Scholar. Combining these three datasets may yield more valuable findings.

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