Global Research on Financial Literacy: A Bibliometric Analysis

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ABSTRACT

The paper presents bibliometric analysis of financial literacy research for the year (2011-2020). A sum of 2227 articles were found in the Scopus database. The findings indicate gradual increase in research over the years. The Journal of Financial Counselling and Planning has produced more articles followed by the Journal of Consumer Affairs and Sustainability (Switzerland). The research on financial literacy appears in multidisciplinary journals, including consumer studies, social and economic education, extension, and sustainability. Lusardi A of George Washington University has contributed the highest articles. The USA has emerged as the leading contributing country in financial literacy research. The keywords that appeared the most frequently were financial literacy, financial education, financial inclusion, and financial capability. This work would provide an overview of financial literacy research.

Keywords: Financial literacy; Financial education; Bibliometrics; Financial inclusion; Financial capability, Scopus

1. INTRODUCTION

Financial resources are an integral part of everyone's life for their well-being. Financial decisions should lead to financial security for one and all[1], and to do so, one should be financially literate. This literacy helps to use financial resources effectively.[2] Financial literacy is 'the ability to read, understand and process financial information as well as act upon it when making financial choice's.[3] It encompasses a set of skills and knowledge essential for all to make appropriate decisions on financial matters connected to economic activities and consequently to borrowing decisions of individuals.[4] Due to the worldwide financial crisis, financial literacy has become a significant issue for all.[5] As reported in the literature, it is a crucial determinant of the economic security of everyone.[6]

The interdependence of national economies, the increasing complication of financial things, and rapid growing, expansion in financial expertise has significantly impacted how individuals, communities and countries carry out the finance function.[7] The lack of required financial knowledge has made millions of consumers susceptible to misleading and fraudulent business practises, leading to national economic predicaments.[1] Therefore financial literacy for citizens has become significant for the nation's economic growth. Financial literacy awareness programmes in various forms and patterns can help gain financial confidence, and improve planning for prospect desires, consumer safety, and financial inclusion.[8]

Financial literacy has evolved as an interdisciplinary field. Many studies have reported on the topic, such as financial education and financial literacy in creative entrepreneurship[9], and retirement planning and financial literacy.[10] Perhaps the increased growth in the literature is due to the developments taking place, especially in the financial tools, facilities, and services by the financial institutions, and also financial dealings of people using technological tools and platforms. Moreover, educational institutes, government agencies, non-government organisations, media, increased literacy rate, etc. has impacted (through different means and forms) by contributing more awareness and discussions on financial literacy. Many studies have also discussed on consequences of financial literacy as well. Santini[11], *et al.* applied a meta-analytic approach to understanding the antecedents and consequences of financial literacy.[11]

This study aimed to find out the pattern of research publications taking place in various research journals, infer how the research in dealing with financial literacy issues, and also explore whether the global research literature on financial literature is growing year by year.

Given the extensive global research on financial literacy, this bibliometric analysis presents the trends and hotspots in financial literacy using 2227 articles from Scopus. Bibliometric analysis is a tool for examining literature patterns, the relationship between authors, publications, the impact of research, and prominent papers that have contributed to the evolution of the subject and study hotspots. This work would add to the body of literature on financial literacy in bibliometric perspectives.

2. METHODOLOGY

The bibliometric methods provide an overall picture of the research field[12] which are applied for performance analysis, science mapping, and development of the subject. They also reveal the significant contributing countries, journals, and authors on a topic and the accepted indicators are the number of publications and citations.[13]

By adopting a bibliometric approach, we investigated publication trends and deciphered influential research areas at the global level on financial literacy. The data was extracted from Scopus on October 11th 2021 by using the search terms ("finan* literacy" OR "Financial Education" OR "Finan* knowledge") + limited the time period 2011-2021 of the published articles only. Data were downloaded in CSV file format, capturing information about the year, journal, title of the paper, author name, author affiliation, corresponding author (s), abstract, author-supplied keywords,, index keywords and references. MS- Excel was used for data analysis wherever found necessary. The Pearson correlation coefficient of the data was computed to see the correlation between mean total citations per article and citable year. The keyword map supplied by the author was created using VOSviewer software.[14] The conceptual structure map and the country collaboration map were created using the R tool developed for mapping Science.[15] The Co-occurrence was used as a type of analysis, and author keywords as a counting method with a minimum of ten occurrences. Sixty- three keywords were selected for the creation of a 'author-supplied keyword map'.

3. RESULTS AND DISCUSSION

3.1 Information on Data and Trends in Publication

A total of 2227 articles on financial literacy between 2011 and 2020 with an average of 220 articles per year. These articles have been published in 960 journals. Six thousand two hundred and thirty authors have authored these articles. Almost 17.91 % (399) of the articles are contributed by a single author and the remaining articles with 2.08 coauthors per article. The author's collaboration index is 2.43, indicating that a significant number of articles are written in collaboration.

Bibliometric analysis usually identifies trends in a particular topic.[16] Figure 1 provides the year-wise distribution of articles on financial literacy, citations, and average citations recorded. It affirms that research activities on financial literacy have been growing over the years. A sharp surge in the volume of research after 2016 is, in particular, fairly evident.

Citations are considered as an indicator of the quality of articles[17], although there are counter-arguments, too. The articles published in 2011 have received more citations than recent ones. However, articles in 2014 received an average of 26 citations. This is because two highly cited articles were published in the year.[18-19] Figure 1 confirms that articles on financial literacy were cited late in new articles on the said area. Figure 2 provides a picture of the citable year and citations per article. To find the mean total citations per article and the citable year to the articles, we used Pearson's correlation and found an R-value of 0.8773. It indicates a strong positive correlation between mean total citations per article and citable year.

3.2 Productive Journals

Table 1 provides the productive journals on financial literacy during 2011-20. The Journal of Financial Counseling and Planning has contributed a significant number of articles (64 articles; 2.87 %) followed by
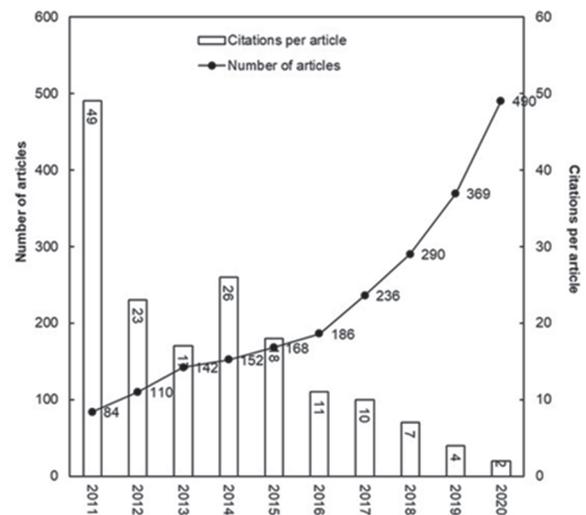

Figure 1. Numebr of articles and average citations per article during 2011-20.
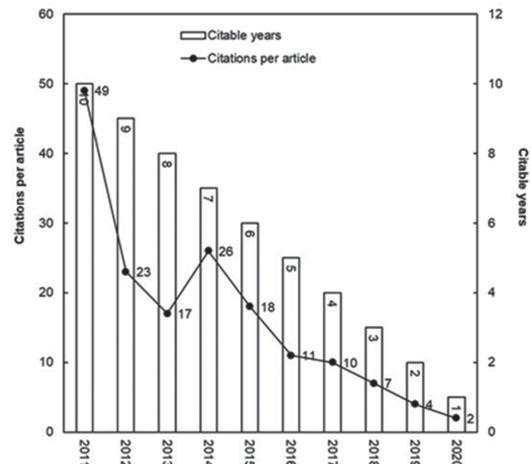
Figure 2. Average citations per articles and citable years during 2011-20.

the Journal of Consumer Affairs (63 articles; 2.83%) and the International Journal of Consumer Studies (43 articles; 1.93%). These top eleven journals have published almost 17 % of articles on financial literacy during 2011-20. It was also observed that the Journal of Financial Counseling, Planning, and Journal of Consumer Affairs and Sustainability have started publishing more articles on the said area in recent times.

Kingdom, Island, Malaysia, Poland, Hong Kong, and Brazil. The articles contributed by Mitchell, O.S. and Lusardi, A., have received the highest average citations on financial literacy.

3.4 Top Productive Countries in Financial Literacy and Collaboration Map

An effort was made to trace the top productive

Table 1. Productive journals on financial literacy during 2011-20

Journals	Number of articles	%	Cite score (2020)
Journal of Financial Counselling and Planning	64	2.87	2.1
Journal of Consumer Affairs	63	2.83	2.7
International Journal of Consumer Studies	43	1.93	4.2
Journal of Family and Economic Issues	40	1.80	2.1
International Journal of Bank Marketing	34	1.53	6.2
Journal of Pension Economics and Finance	33	1.48	2.2
Citizenship Social and Economics Education	22	0.99	1.5
Journal of Extension	21	0.94	0.7
Journal of Financial Services Marketing	19	0.85	1.7
Malaysian Journal of Consumer and Family Economics	18	0.81	0.2
Sustainability (Switzerland)	18	0.81	3.9
Total	**375**	**16.84 %**	

3.3 Most Productive Authors and Distribution of Publications

Table 2 indicates the most productive authors of articles on financial literacy in 2011-20. Lusardi, A., of George Washington University, has published the highest number of articles on financial literacy, followed by Xiao Jj of the University of Rhode (20) and Bennett Da of London Metropolitan Business School (16). In many cases, the first author is usually the corresponding author. Among all the authors, the first author and corresponding authors are prominent and have made significant contribution.[20-21] Lusardi, A. and Xiao, J.J. lead in contributing more papers as the first author as well as the corresponding author. Next to the said authors Sabri MF and Zhu AYF also have produced a larger number of papers as corresponding authors. These authors are playing a leading role in financial literacy research during 2011-20.

We identified the h-index of the top 14 authors. Lusardi, A., Xiao, J.J., Mitchell, O.S., and Bennett, D.A. has the highest h-index in increasing order. It confirms that these authors are more productive and their articles significantly impact fellow researchers in the domain. Of 14 influential authors on financial literacy, eight are from the U.S.A, and the remaining are from the United

countries in research on financial literacy (Table 3). U.S.A. tops the list of the most productive countries. It is ranked first in total publications (n=779), total citations (n=15444), first author articles (n=669), corresponding author articles (n=537) and h-index (57). In total publications, the U.S.A is followed by India (145), Malaysia (137), and the United Kingdom (123). However, there is an unequal distribution of citations to those articles as the U.S.A tops in getting more citations (15484), whereas the two other top-most countries, viz. India and Malaysia have received fewer citations (614 and 675, respectively) than the U.S.A. A similar finding was found in the study using Web of Science.[22]

3.5 Geographical Distribution and Collaboration

Since the issue of financial literacy is assuming a global attention, the number of international research collaborations has been on the rise in recent times. The country collaboration map presented in Figure 3 indicates that the U.S.A dominates and is playing a leading role in scholarly enquiry. It collaborates with the most of the countries. Researchers from the U.S.A. are found to be having strong collaborations, and this indicates that they intend to work across disciplines, institutions, and borders in the financial literacy domain.
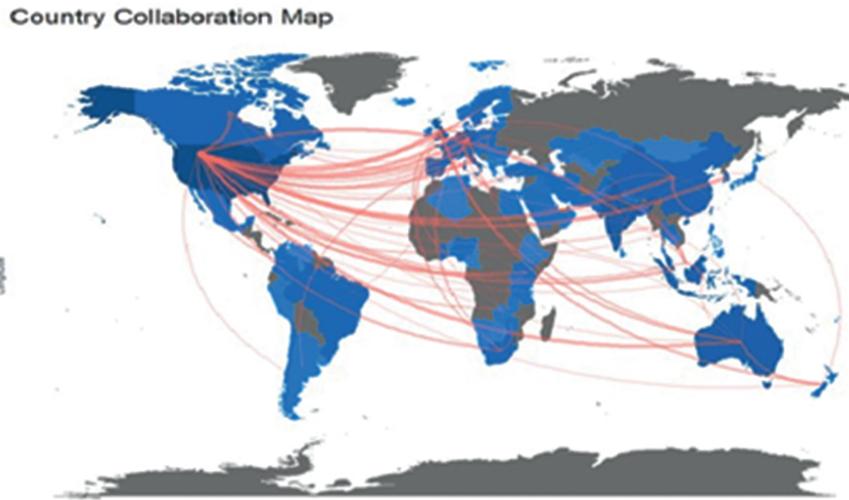
Figure 3. Country collaboration map of financial literacy research during 2011-20.

Table 2. Most productive authors on financial literacy during 2011-20

Authors	Articles	Citation	Average citations	H index	First author articles	Corresponding author articles	Institutional affiliation
Lusardi A	29	4240	146	20	14	10	The George Washington University, U.S.A.
Xiao JJ	20	652	33	13	12	12	University of Rhode Island
Bennett DA	16	351	22	10	0	1	London Metropolitan Business School, UK
Boyle PA	15	335	22	9	1	1	Rush Alzheimer's Disease Centre, United States
Sabri MF	15	87	6	6	7	9	Universiti Putra Malaysia, Malaysia
Mitchell OS	14	2104	150	11	0	1	University of Pennsylvania, U.S.A.
Serido J	14	456	33	9	2	2	University of Minnesota-Twin Cities, U.S.A.
Yu L	14	235	17	8	1	1	Rush Alzheimer's Disease Center, U.S.A.
Shim S	13	454	35	9	5	3	School of Human Ecology, , U.S.A.
Chatterjee S	12	170	14	6	1	5	Department of Financial Planning, U.S.A.
Cwynar A	10	45	5	4	6	6	Institute of Public Administration, Poland
Vieira KM	10	98	10	5	2	3	K.M.Roraima, Brazil
Zhu AYF	10	43	4	4	8	9	Hong Kong University
Zia B	10	445	45	8	0	3	Harvard Business School, U.S.A.

3.6 Conceptual Structure Map

The conceptual structure map provides the interaction between themes, topics, and trends using co-word analysis.[16] In simple words, a concept map is a diagram that illustrates the relationship between concepts. It is a visual depiction of concepts, ideas, theories, etc., that offers a wealth of information at a glance. The conceptual structure map of publications on financial literacy during 2011-20 is presented in Figure 4. It is evident from Figure 5 that the central concept is financial literacy which, in turn, branches out into other related concepts such as financial knowledge, financial risk tolerance, financial capability, financial inclusion, financial well-being, financial socialisation, financial education, personal finance, behavioural finance, etc.

Table 3. Top productive countries in financial literacy during 2011-20

Country	Articles	Citations	Average citations	First author articles	Corresponding author articles	h-index
U.S.A.	779	15484	20	669	537	57
India	145	614	4	79	81	14
Malaysia	137	675	5	119	96	14
United Kingdom	123	2171	18	80	66	23
Australia	122	1167	10	98	81	17
Germany	93	1491	16	65	59	23
Indonesia	90	204	2	84	60	7
China	70	682	10	49	49	14
Italy	67	914	14	35	36	13
Canada	61	795	13	42	42	14
Netherlands	55	3063	56	31	22	20
Spain	51	268	5	43	28	8

Figure 4. Conceptual structure map of author-supplied keywords of financial literacy during 2011-20.

3.7 Author-supplied Keyword Analysis

Authors specify a set of keywords in their research publications. In the authors' opinion, such author-supplied keywords reflect the contents of their documents. Network visualisation based on the author-supplied keywords is presented in Figure 5 and it is clear that the most frequently appearing keyword is financial literacy followed by financial education, financial inclusion, and financial capability. The total author-supplied keywords from 2227 articles on financial literacy during 2011-20 yielded 4451

keywords. A large portion of the research was related to financial planning, financial decisions, risk tolerance, and retirement planning. Another significant part of the research was related to investment, saving, life insurance, and pensions and also related to financial crises, poverty, Uganda, Ghana, financial inclusion, financial services, young adults, and money management. Another key portion of the research was about financial behaviour, financial attitudes, and college students. These keywords indicate the issues that are focused by the authors of 2227 papers
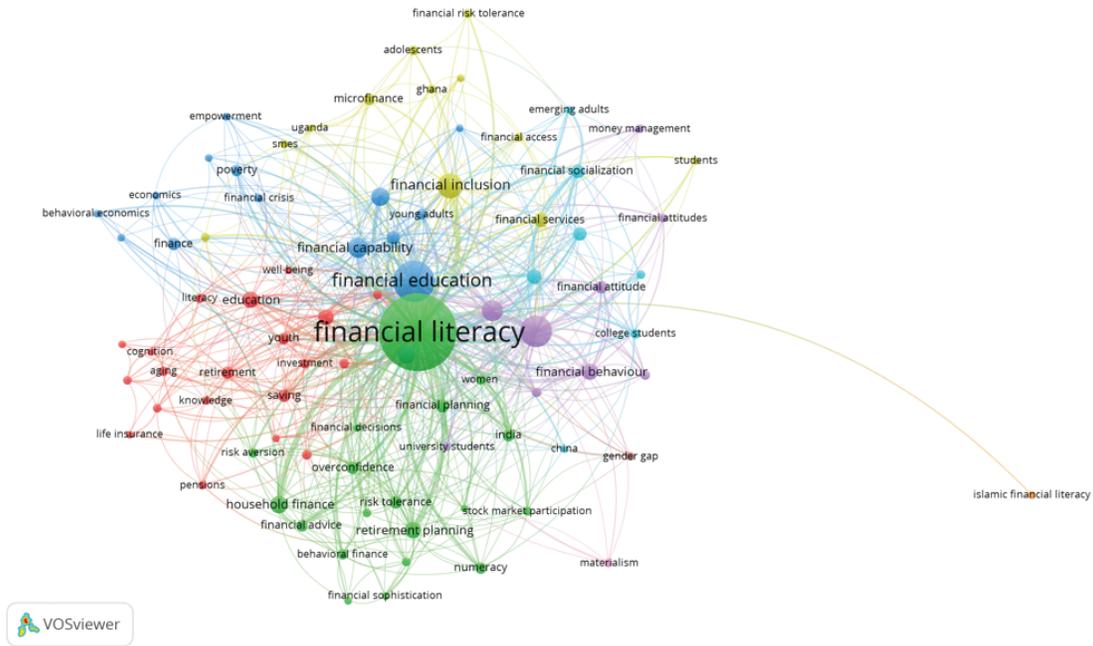
Figure 5. Author-supplied keywords map of financial literacy research during 2011-20.

4. CONCLUSION

This bibliometric study examined the research studies on financial literacy published in various global journals from 2011 to 2020 using Scopus. This study applied bibliometric techniques and has a contemporary relevance as it provides a review of financial literacy research in the decade, i.e., 2011-2020. The study found that the said area of study is growing year by year. Research appears in multidisciplinary journals, including consumer studies, social and economic education, extension, and sustainability. The *Journal of Financial Counselling and Planning* has published many articles. Lusardi A of George Washington University tops the list of authors who have published the highest number of papers on financial literacy. Countrywise productivity reveals that the USA tops the list of productive country. Financial literacy followed by financial education, financial inclusion, and financial capability are the top author-supplied keywords. Over all, these major indicators reveal how financial literacy is valued as a potential research area, as financial literacy is among the most critical determinants of the financial well-being of the population of any nation. Because of its contemporary relevance, this study would be helpful to researchers and policymakers to gain fresh insights on research trends in financial literacy for effective decision making and preparation of research proposals for grants, publications in the best productive journals, and also furthering research in the domain of financial literacy.

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His contributions to the study are: Data collection and analysis, preparation of figures and tables, and writing the introduction part and results.