An Examination of the Growth of Scientific Inquiry in the Area of Financial Literacy

Mohsen Molapanah[1], Yousef Namvar*[2], Azam Rastgoo[3], Majid Ahmadloo[4], Turan Soleimani[5]

Received Date:15/09/2023 Accepted Date:11/12/2023

Pp: 243-261

Abstract

Introduction: This article examines the background and impact of financial literacy and the growth of scientific papers in the "Financial Literacy" field in the citation database "Web of Science".

Method: The methodology used is a meta-analysis of the "Scientometrics" type. The entire body of scientific literature published in the Web of Science reference database between 1900 and 2020 served as the study's statistical population. 2036 scientific papers on financial literacy published in this citation database formed the research sample in the first stage. In the second stage, 888 scientific documents with the keyword financial literacy in their titles were examined from the 2036 scientific documents to examine their conceptualizations.

Finding: The results of this study show that financial literacy has received much attention in the last decade and that the geographical and linguistic distribution of scientific production in financial literacy is significantly heterogeneous and oriented towards developed Western countries. Therefore, it is suggested to pay more attention to this issue in developing countries.

Key Words: financial literacy, financial behavior, financial instruments, scientometrics, meta-analysis

[1]PhD candidate in Educational Administration, Department of Educational Sciences, Ardabil branch, Islamic Azad University, Ardabil, Iran.
[2]Department of Educational Sciences, Ardabil branch, Islamic Azad University, Ardabil, Iran.
[3]Department of Educational Sciences, Ardabil branch, Islamic Azad University, Ardabil, Iran.
[4]Department of Educational Sciences, Ardabil branch, Islamic Azad University, Ardabil, Iran.
[5]Department of Educational Sciences, Ardabil branch, Islamic Azad University, Ardabil, Iran. * Corresponding Author: yosefy650@yahoo.com

Introduction

The field of scientometrics emerged in the 1960s due to Garfield's idea to develop indexes that enhance the process of information retrieval. This initiative culminated in establishing the science citation index in 1964, which proved an effective instrument for analysing scientific research. The "Organisation for Economic Co-operation and Development (OECD)" developed scientific output indicators, which were subsequently incorporated into patent and scientific publication databases. These indicators serve the purpose of standardising scientific statistics. The initial publication of science metrics' inaugural annual period occurred in 1972, as documented by Milojević and Leydesdorff (2013), under the auspices of the "National Science Board of the United States of America." Numerous advancements have occurred in scientometrics since the 1990s and the onset of the 21st century. There has been a significant increase in the accessibility and coverage of citation databases. One example of a comprehensive journal indexing and coverage platform is "Web of Science". In addition to its other content, this website also provides access to conference papers. Indeed, the extent of its coverage within social sciences and humanities remains constrained, and its coverage of books needs to be improved. Endeavours have been undertaken in this particular domain (Musavi chalak, alaee arani, salami, & Soheili, 2018).

Literacy is one of the diverse phenomena currently being examined in contemporary society. The term "literacy" typically evokes the primary notion of possessing the skills to read and write. The prevailing definition of literacy(Paiella, 2016), characterised as "clear", "objective," and "scientific," has become deeply ingrained in the educational context, shaping the dynamics of reading and writing in schools and influencing global discourse. However, this definition restricts literacy to formal educational activities and fails to acknowledge alternative knowledge acquired through socio-historical actions.

The word in question has acquired a multifaceted and dynamic nature due to its conceptualisation influenced by cultural values, educational institutional objectives, political, ideological, and economic contexts and educational theories throughout history. The literacy category has evolved, encompassing various concepts and definitions. Initially, literacy was understood as the essential ability to read and write. However, it has since expanded to include a broader range of ideas. These include literacy as a form of advanced cognitive ability, a mental skill, critical awareness, and a learning process(Grenfell, Bloome, Hardy, Pahl, Rowsell, & Street, 2013). During the second decade of the 21st century, the United Nations once again modified the notion of literacy. The third definition brought about a significant transformation in the essence of literacy. The announcement highlighted the significance of possessing particular abilities and skills as indicative of literacy. In this approach, a person who is successful in earning a doctorate in a university field has a literacy rate of roughly 5%.

Abilities include:

Emotional literacy: Family and friend bonding ability.

Communication literacy: Communication skills and social awareness.

Financial literacy: Knowledge of saving and budgeting ways to manage home money.
Media literacy: Identifying media trustworthiness.
Educational literacy: The ability to upbringing children appropriately.
Computer literacy: Possessing fundamental computer proficiency.
Health literacy: Understanding healthy eating and disease prevention.
Racial and ethnic literacy: Respect and non-discrimination through race and ethnicity education.
Ecological literacy: Understanding methods for environmental conservation.
Analytical literacy: Ability to detect, evaluate, and argue against hypotheses without bias or preconceptions.
Energy literacy: The capacity to effectively regulate energy usage.
Scientific literacy: Besides academic literacy, people should be able to analyze and solve issues scientifically.
Among those abilities, financial literacy is considered in this study. According to Hung, Parker, and Yoong (2009), financial literacy is "the ability to use expertise and abilities to manage financial resources for an entire life of financial well-being." According to the Consumer Financial Protection Bureau (2017), "a state in which an individual can fully meet their immediate and ongoing financial responsibilities, feel comfortable in their financial future, and make decisions that allow them to enjoy life" (p. 6) is one of financial well-being. one must be financially literate to manage money effectively in your personal and professional life. A person's ability to handle their finances has a dynamic effect on him. It prepares the individual to respond effectively to economic events and problems. A person's performance can be enhanced by developing a happy attitude, making wise decisions, putting aside material concerns, and reaching well-being. Financial literacy refers to the capacity to read, evaluate, comprehend financial possibilities, manage economic challenges, and have a problem-free conversation about financial matters. It has an impact on how those individual lives and works. Financial literacy can be beneficial for managing money issues and increasing the income of the individual and the organisation (Sharma, 2013). Financial literacy is knowing the conditions, methods, laws, rights, social norms, and perspectives necessary to understand and perform these financial tasks. According to predictions made by(Bayrakdaroğlu & Şan, 2014; Lusardi & Oggero, 2017), as people's financial literacy increases, they will become more sensitive to savings and investment decisions and more adept at daily financial decisions. Given the significance of this issue in people's lives, one of the most crucial problems of research programmes in finance and marketing is conceptualising and quantifying the phrase "financial literacy" (Lusardi & Mitchell, 2011). Researchers from several academic disciplines have interpreted and assessed financial literacy throughout the past few decades(Ansari, Albarrak, Sherfudeen, & Aman, 2023; Mustafa, Islam, Asyraf, Hassan, Royhan, & Rahman, 2023; Sivaramakrishnan, Srivastava, & Rastogi, 2017). These studies have examined the term "financial literacy" using a variety of viewpoints, including the impact of parents on their children's financial socialisation (Van Campenhout, 2015), financial literacy in

the stock market (Sivaramakrishnan, Srivastava, & Rastogi, 2017), the impact of financial literacy on people's willingness to take risks with investments (Krische, 2019), its impact on economic well-being (Brüggen, Hogreve, Holmlund, Kabadayi, & Löfgren, 2017), and its impact on attitudes towards The need for more exact and uniform criteria to define and quantify financial literacy is demonstrated by the wide range of research that has been done (Remund, 2010). Divergent findings from numerous studies regarding the connection between financial literacy have been found. For instance, studies on the association between financial literacy have identified positive relationships (Silgoner, Greimel-Fuhrmann, & Weber, 2015) and neutral connections(Montagnoli, Moro, Panos, & Wright, 2017).

This article aims to research and analyse the development patterns and trends of scientific publications in financial literacy from 1900 to 2020 in the Web of Science reference database. One can gain insight into the future of research and development in this field, particularly for nations like Iran, by examining the pattern of scientific productions in this field, identifying the fundamental conceptualisations, carrying out experimental research, and introducing notable researchers in this field.

Research question

What is the growth trend of scientific research in the field of financial literacy?

Methodology

The scientometrics meta-analysis research approach was used in this study. Scientometrics is an effective technique for analysing a substantial body of literature and scientific output on a subject of study. The "quantitative method to scan and analyse the body of literature produced in a particular field of study" is the scientometrics method (Das, 2015).

Scientometrics uses statistical techniques to examine the traits, scope, and composition of ongoing research in a particular study area. It displays the patterns and trends in advancing science and research in that area. According to (Farahmand, Md Nor, Ghanbari Baghestan, Ale Ebrahim, & Matinnia, 2018), a scientometrics meta-analysis strives to provide system indicators describing research in the scientific communities of various institutions, scientific subjects, nations, et cetera. The more specific objectives of scientometrics, which have also been taken into account in this study, include a better evaluation of the trends and directions taken in this field of study, a correct assessment and ranking of the study and research conducted in this field of study, as well as aiding in the future formulation of scientific and research policy, particularly within the nation.

The scientific publications from 1900 to 2020 included in the Web of Science citation database make up the statistical population for this study. The Web of Science citation database, which includes 20,406 (2019) scientific publications from 86 (261) nations in five primary study fields and 256 thematic research topics is the most trustworthy source of scientific citations globally. The scientific and academic criteria of the Web of Science citation database can

justify adopting it for this research even though its publishing commercial model may restrict and steer the research outcomes.

The study's primary focus is financial literacy, and the sample chosen for analysis was chosen in stages. 2036 scientific papers on financial literacy were chosen for the first stage from the total number of scientific papers published in the Web of Science citation database. In the second stage, 888 scientific documents with the precise keyword "financial literacy" in the title and included in this citation database were chosen and examined with the intention of "coding".

First, all scientific productions were categorised according to the period of 1900–2020, and WOSviewer software was used to present them to demonstrate the conceptual growth in the field of financial literacy as well as to find international scientific networks. Additionally, some of the most significant scientific articles associated with each "concept and category" were extracted and qualitatively classified according to the significant concepts identified.

The regional spread of studies on financial literacy was displayed using the Star Plant software.

Research Findings

The Web of Science citation database was used to identify 2036 scientific papers on financial literacy that were published between 1900 and 2020. The trend of scholarly publications in financial literacy is depicted in Chart 1. As can be observed, the amount of research done in this area increased from 1 scientific paper in 1997 to 373 papers each year by 2020.

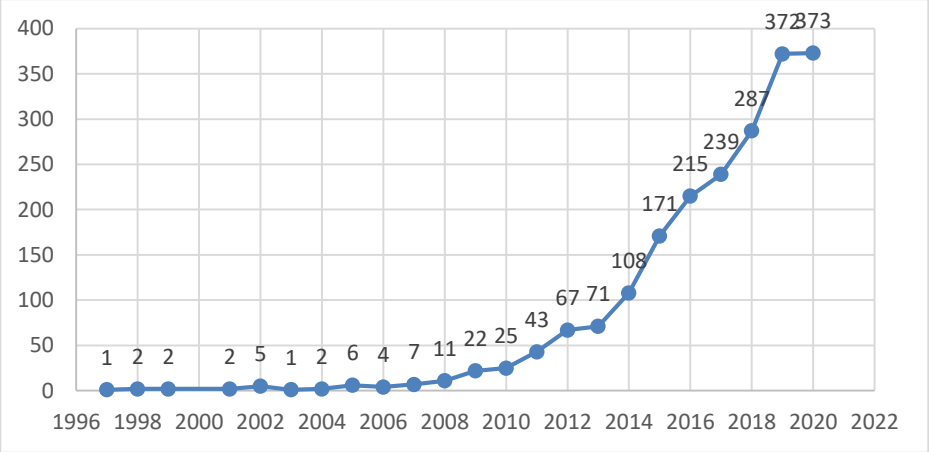

Diagram 1- shows how scientific advancements in the area of financial literacy have progressed.Source: Researcher's findings

It is clear that up until 2010, the trend of scientific production in this area remained almost unchanged, but from this year, it has begun to increase.

With 645 scientific productions, the United States of America has been the leading and most significant nation in creating scientific documents on financial literacy from a geographical standpoint. In other words, from 1900 to 2020, more than 31.7% of research publications on financial literacy were produced

in the United States alone. Following that are Australia with 129 scientific papers, England with 124 papers, Germany with 110 manuscripts, the Czech Republic with 107 papers, and Italy with 95 papers in the rankings. Iran, which ranks 49th, has seven scientific papers.

Table 1- Ranking of nations based on the number of financial literacy-related scientific publications indexed on the Web of Science website between 2020 and 1900. Researcher's findings as a source

Rank	Country	The number of scientific outputs 1900-2020	Percentage of scientific output 1900-2020
1	U.S. A	645	31.7
2	Australia	129	6.3
3	England	124	6
4	Germany	110	5.4
5	Czech Republic	107	5.2
6	Italy	95	4.7
7	China	85	4.1
8	Malaysia	72	3.5
49	Iran	7	0.3

.

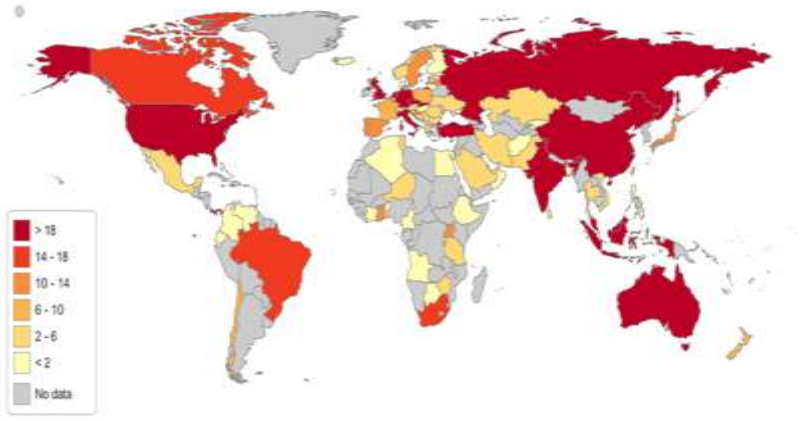

Diagram 2 - Demonstrates the geographic distribution of research outputs on the topic of financial literacy. One rationale is that, between 1900 and 2020, 86 nations were found to have produced at least one research paper in the field of financial literacy.

European and industrialised nations have established numerous efforts and projects in this area due to their quicker realisation of the value of financial literacy. However, in developing and underdeveloped nations, this is rare.

Topics of financial literacy research

One of the study's most significant findings was understanding the various research topics related to financial literacy. With 339 scientific documents, the category "Economy" has the most enormous financial literacy output (38.176%). Following that are the fields of economics with 173 scientific publications (19.482%), employment with 172 scientific papers (19.369%), and educational research with 165 scientific papers (18.581%) (Table 2).

Table 2- Areas identified concerning financial literacy Source: Researcher's findings

Research field	Number	Out of 100%
Economics	۳۳۹	۳۸/۱۷٦
Investment	۱۷۳	۱۹/٤۸۲
Employment	۱۷۲	۱۹/۳٦۹
Educational Research	۱٦٥	۱۸/٥۸۱
Management	۷۷	۸/٦۷۱
Social Sciences	۳٤	۳/۸۲۹

Palaeontology	١٩	٢/١٤
Psychology	١٧	١/٩١٤
Sociology	١٦	١/٨٠٢
Educational Science	١٥	١/٦٨٩
Library Science	١٣	١/٤٦٤
Social Work	١٣	١/٤٦٤
Computer Science	١٢	١/٣٥١
Development Studies	١٢	١/٣٥١
Engineering	١١	١/٢٣٩

All research papers produced in this field were narrowed down for an in-depth review of the documents related to financial literacy. Only those papers that specifically contained the term financial literacy in their titles were identified and subjected to a deeper analysis. 888 scientific documents—out of the 2036 primary identification documents—had the phrase "financial literacy" in their titles. According to the Web of Science global standard, which uses an average Web of Science standard index of 1, this set of publications was cited a total of 16,476 times (an average of 8.09 references per document) and is therefore rated as "good" concerning Field Wight Citations of Web of Science standard index of 1.

There has been an increase in the production of these scientific documents between 1900 and 2020 (Diagram 3). As can be observed, there has been a noticeable increase in the production of these documents since 2010.

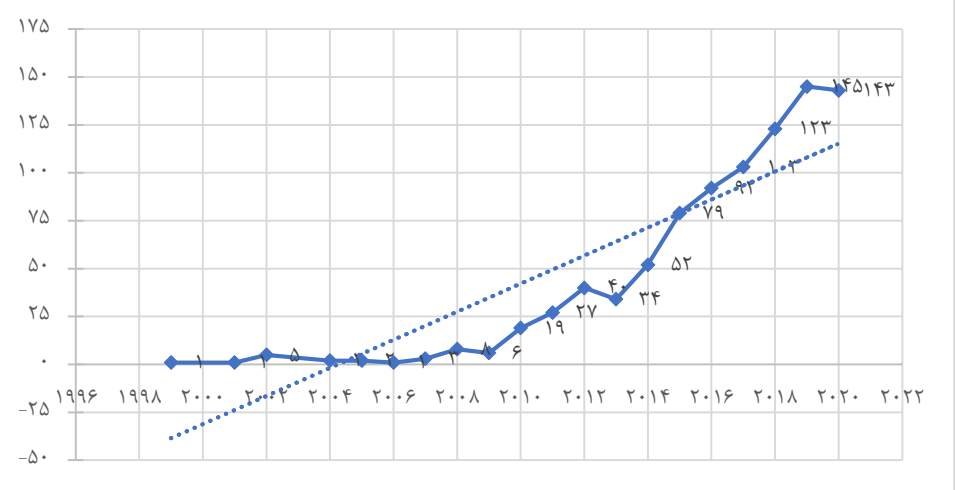

Diagram 3- The process of creating scholarly literature on financial literacy between 1900 and 2020 Source: Researcher's findings

More than 70% (632 documents) of the scientific productions in financial literacy took the form of articles. According to the type of scientific document produced, books, papers for seminars and conferences, and other types of scientific production have been among the most significant in financial literacy. 95.6% of scientific works on financial literacy were written in English. Czech comprised 1.4% (13 papers), while Russian comprised 0.7%. Table 3 reveals that among the languages in which few academic papers on financial literacy have been published are Slovak, Portuguese, Spanish, Turkish, Afrikaans, Croatian, French, and Hungarian.

Table 3- Language and format of scientific documents produced in the field of financial literacy Source: Researcher's findings

Language	Affluence	Per cent	Format	Affluence	Per cent
English	849	95.6	Article	632	71.17
Czech	13	1.46	Seminar Paper	195	21.95
Russian	7	0.77	Chapter of a book	54	6
Slovak	7	0.77	Early Access	30	3.3
Portuguese	3	0.33	Editorials	21	2.3
Spanish	3	0.33	Abstracts	18	2.02
Turkish	2	0.23	Review articles	15	1.6
Afrikaans	1	0.11	Book	5	0.56
Croatian	1	0.11	Article from a book	4	0.45
French	1	0.11	Literature	2	0.22
Hungarian	1	0.11	Corrective	1	0.11

Total	888	100	News	1	0.11

It is clear that the majority of the most promising researchers in financial literacy are from advanced and European nations based on the geographical and linguistic distribution of scientific productions in that area. The top 30 researchers and researchers in financial literacy worldwide are listed in Table No. 3, along with the 30 scientific papers on the topic with the most significant number of citations. This table demonstrates that these thirty scholars were responsible for producing and publishing nearly 25% of the scholarly works on financial literacy listed in the Web of Science citation database.

Table 4 - Top 30 financial literacy researchers and 30 most-cited scholarly papers Source: Researcher's findings

	Researchers	**Number**	**Out of 100%**		**Total**	**Average citations per year**
1	LUSARDI A	**22**	**2.64%**	Lusardi& Mitchell.2006	**600**	**42.86**
2	NICOLINI G	**17**	**2.04%**	Lusardi& Mitchell.2014	**590**	**84.29**
3	BONGOMIN GOC	**10**	**1.20%**	fernandes&lynch&neteme yer	**346**	**49.43**
4	MITCHELL OS	**10**	**1.20%**	Lusardi& Mitchell.2010	**338**	**30.73**
5	BENNETT DA	**9**	**1.08%**	Huston,2010	**313**	**28.45**
6	BOYLE PA	**9**	**1.08%**	Lusardi& Mitchell.2008	**309**	**23.77**
7	MUNENE JC	**9**	**1.08%**	Lusardi& Mitchell.2011	**301**	**30.1**
8	OPLETALO VA A	**9**	**1.08%**	van rooij,lusardi&alessie,2011	**253**	**25.3**
9	KVINTOVA J	**8**	**0.96%**	van rooijlusardi&alessie,2012	**205**	**22.78**
10	JAMES BD	**7**	**0.84%**	Lusardi& Mitchell.2011	**167**	**16.7**
11	NTAYI JM	**7**	**0.84%**	Remund,2010	**158**	**14.36**
12	SVOBODA M	**7**	**0.84%**	hating,madrian&skimmyh om,2013	**156**	**19.5**
13	GATHERGO OD J	**6**	**0.72%**	Willis,2008	**147**	**11.31**

14	SVOBODOVA L	**6**	**0.72%**	gathergood,2012	**145**	**16.11**
15	KADOYA Y	**5**	**0.60%**	van rooij,lusardi&alessie,2011	**127**	**12.7**
16	KHAN MSR	**5**	**0.60%**	jappelli&padula,2013	**117**	**14.63**
17	LACE N	**5**	**0.60%**	Finlayson,2009	**117**	**9.75**
18	NESLEHA J	**5**	**0.60%**	drexler,fischer&schoar,2014	**112**	**16**
19	NGUYEN TAN	**5**	**0.60%**	jorgensen&savla,2010	**111**	**10.09**
20	YU L	**5**	**0.60%**	mcdaniel,martin&maines	**111**	**5.84**
21	AREN S	**4**	**0.48%**	bucher-koenen&lusardi,2011	**101**	**10.1**
22	BLUE LE	**4**	**0.48%**	fonseca,mullen&zamarro,2012	**99**	**11**
23	CHMELIKOVA B	**4**	**0.48%**	behrman,mitchell&soo,2012	**91**	**10.11**
24	GERRANS P	**4**	**0.48%**	von&hans-martin,2015	**87**	**14.5**
25	HEDVICAKOVA M	**4**	**0.48%**	fornero&monticone,2011	**78**	**7.8**
26	HUCULOVA E	**4**	**0.48%**	servon&kaestner,2008	**77**	**5.92**
27	KANTNEROVA L	**4**	**0.48%**	klapper,lusardi&panos,2013	**76**	**9.5**
28	MABULA JB	**4**	**0.48%**	alessie,van rooij&lusardi,2011	**73**	**7.3**
29	MALINGA CA	**4**	**0.48%**	allgood&walstad,2016	**71**	**14.2**
30	MESQUITA A	**4**	**0.48%**	disney&gathergood,2013	**71**	**8.88**

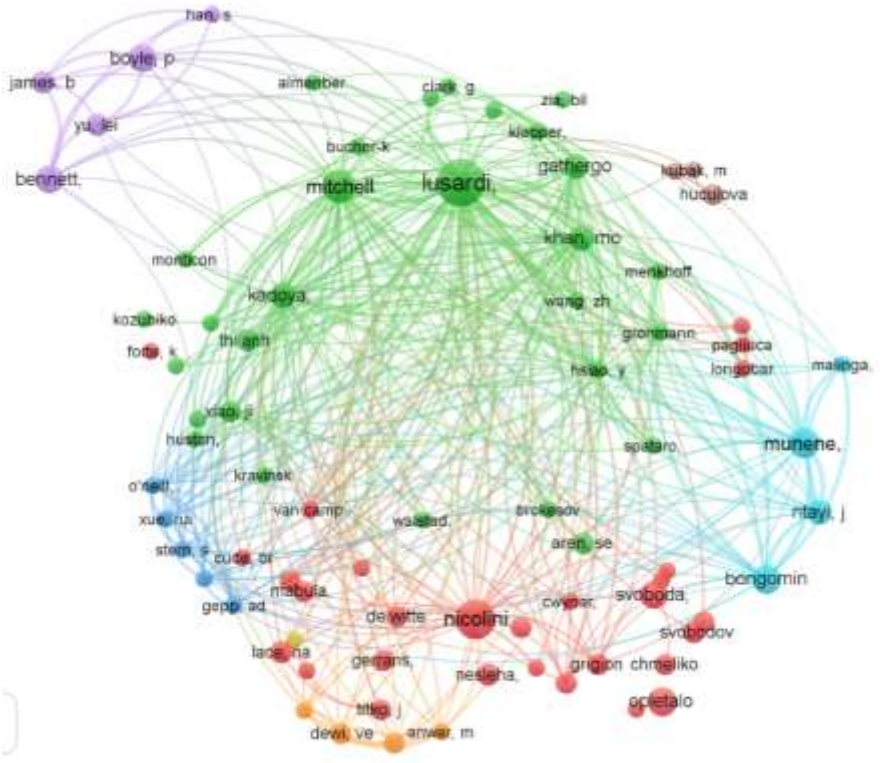

Diagram 4- Active researchers in the field of financial literacy Source: Researcher's findings

Based on this, it can also be deduced that Lusardi and Mitchell's articles, who have both been regarded as pioneer researchers in the area of financial literacy in the U.S. since the early 2000s (Chart-4), have the most scientific publications in the field and the most citations to their publications.

Diagram 5- The most active scientific journals in the area of financial literacy
Source: Researcher's findings

The Web of Science citation database discovered 888 journals that published papers in this area (at least one document) concerning the publication of scientific products in financial literacy. The JOURNAL OF CONSUMER AFFAIRS has published 29 scientific papers. The JOURNAL OF PENSION ECONOMICS FINANCE, which has published 24 scientific papers, and the INTERNATIONAL JOURNAL OF CONSUMER STUDIES, which has published 20 scientific papers, has been on top in the interim period (Diagram 5).

Title	Number
JOURNAL OF CONSUMER AFFAIRS	۲۹
JOURNAL OF PENSION ECONOMICS FINANCE	۲٤
INTERNATIONAL JOURNAL OF CONSUMER STUDIES	۲۰
FINANCIAL LITERACY IN EUROPE ASSESSMENT METHODOLOGIES AND EVIDENCE FROM EUROPEAN COUNTRIES	۱۳
ROUTLEDGE INTERNATIONAL STUDIES IN MONEY AND BANKING	۱۳
INTERNATIONAL JOURNAL OF BANK MARKETING	۱۲
GERONTOLOGIST	۱۱
ADVANCED SCIENCE LETTERS	۱۰
EDULEARN PROCEEDINGS	۱۰
FINANCIAL LITERACY EDUCATION ADDRESSING STUDENT BUSINESS AND GOVERNMENT NEEDS	

Qualitative Findings

One of this study's most noteworthy qualitative findings is finding the most significant ideas and coding theorisations after studying these pieces of financial literacy publications. The most crucial ideas in financial literacy are highlighted in Diagram 6.

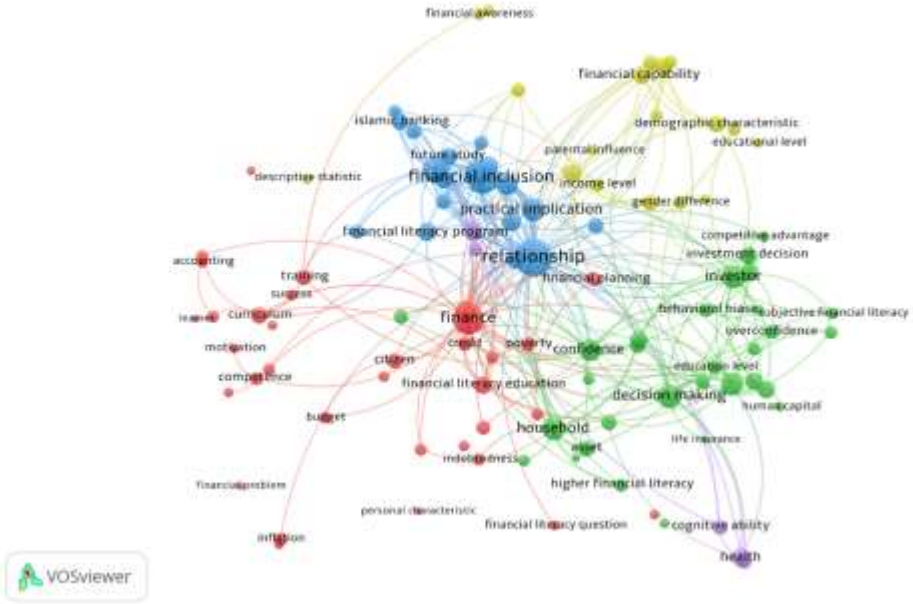

Diagram 6- Conceptualisation of financial literacy in this field's published scientific works
Source: Researcher's findings

The main points and axes of financial literacy can be recognised in this graph based on their prominence and hue. As can be observed, the critical axes in the conception of financial literacy have been the ideas of "communication", "financial motivation", "health", "inherent ability", "Islamic banking", and "investment".

Conceptual change over time: new ideas emerging and old ones fading

Diagram 7 depicts the conceptual development over time and the rise and fall of new ideas in financial literacy research and development. This diagram uses various colours to represent financial literacy's fundamental notions and conceptualisations. The phrases and concepts highlighted in yellow and red in this diagram represent conceptualisations recently (after 2010) added to the literature on financial literacy. The notions and conceptualisations depicted in green and blue, on the other hand, are the ones that are being dropped from the literature on financial literacy.

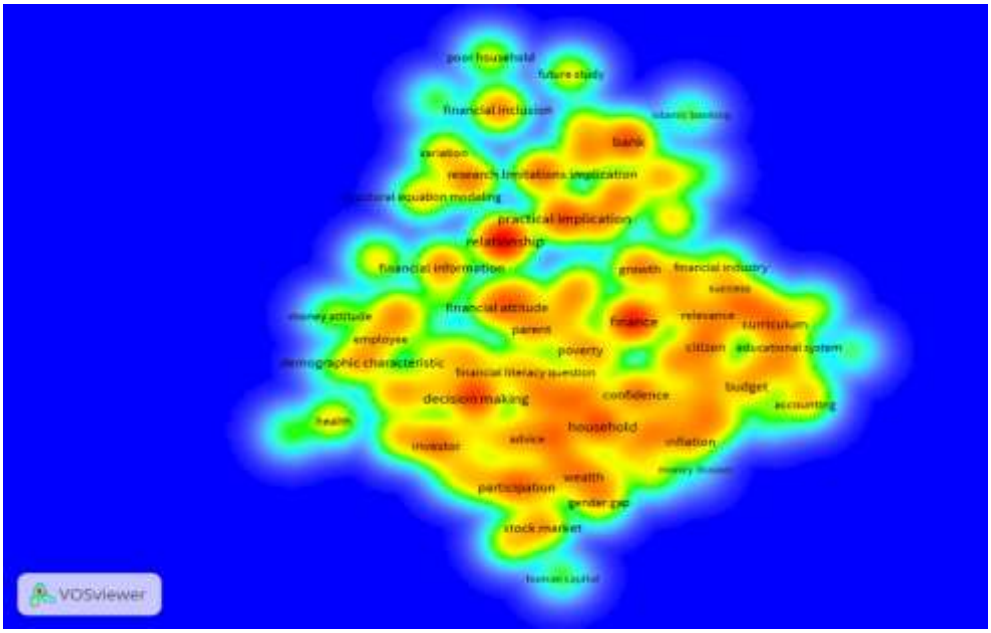

Diagram 7- Showing the emergence and decline of new concepts in the field of financial literacy after 1970. Source: researcher's findings.

As seen in the diagram above, although "communication," "assets," "bank," etcetera. Continue to be the primary focal axes of conceptualisations related to financial literacy, more specialised and detailed areas, such as "human capital," "gender difference," "family," "Islamic banking," "financial attitude," and so on, have also been added to the scope of concepts in this field over time. These areas correspond to the late consequences of new technologies.

One of the most significant outcomes of this research was the presentation of a global network for collaborative research on financial literacy. In 2014, one in four scientific documents (or 25% of all scientific articles), according to UNESCO figures, were generated internationally with the involvement of academics from multiple nations (UNESCO, 2015). This rate is 50% in certain industrialised nations like Canada, but it is approximately 46 per cent in the European Union (Seyd Abulhasanian et al., 2019). Diagram No. 8 displays a network of several nations whose scholars have worked together most frequently to produce academic papers in financial literacy. As the diagram shows, the United States is the network's centre, while nations like Australia, Italy, England, Germany, etcetera also participate.

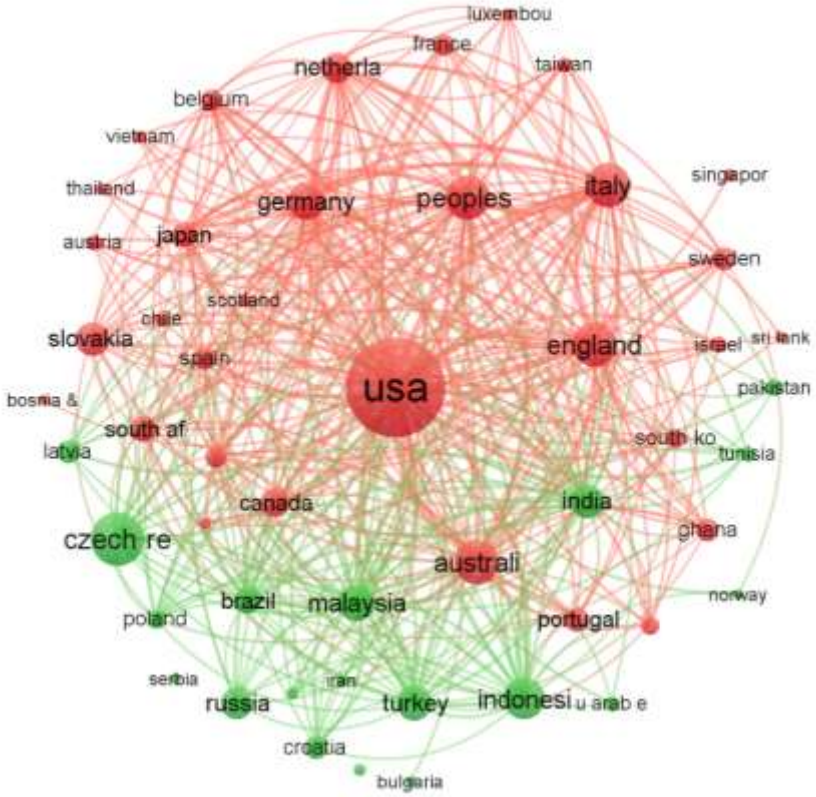

Diagram 8- Network of international collaboration in the creation of scholarly works on the subject of financial literacy Source: Researcher's findings

Notably, 87% of Iran's overall scientific output has involved collaboration between Iranian scholars and scientists from other nations. This nation's foreign collaboration has seen an average annual increase of 6%. Iranian researchers have worked with colleagues from 179 other nations, with researchers from five nations—the United States of America, Canada, England, Germany, and Australia—producing more than 64% of the joint works. The fields of electrical engineering, transdisciplinary materials science, and applied mathematics saw the most international partnerships among Iranian researchers(Pătru-Stupariu & Nita, 2022).

The most critical aspect of Diagram 8 is the absence of scientific papers in English from developing nations like Iran in the international network of scientific paper production and publication, and as a result, their lack of contribution to the global development of literature in this field. The most obvious way to increase the participation of developing and less developed countries to play a role in the field of literature production and conceptualisation in the area of financial literacy may be through networking with countries of the same level, defining and conducting joint research in the field of financial

literacy, and exchanging the experiences of experimental research in developing countries.

Discussion and conclusion

Due to the term's long history, a review of study documents on the academic website Web of Science from 1990 to 2020 reveals that more attention has been given to it in recent years, as evidenced by the growth in both the scope and number of documents that have addressed this issue. In fact, this issue demonstrates the significance of financial literacy in today's societies.

A few years ago, having background and knowledge in the area of financial flows and the type of financial management did not appear to be very important, but the fact that the reviewed documents placed the most emphasis on the areas of economy, investment, and employment demonstrate that having financial literacy and its examination has become more critical in recent years for a better quality of life.

Scientific publications and products on financial literacy are dispersed geographically and linguistically and tend to focus on developed Western nations. The conceptualisations of financial literacy have focused on the content areas of "financial ability," "gender difference," "behaviour," "Islamic banking," "investment," etcetera. However, new areas of theoretical and empirical research on financial literacy have been added due to the development of new communication technologies and their unavoidable effects.

What needs to be addressed most, though, is the fact that developing nations, including Iran (7 papers), need to be more present in conceptualising and commenting on this topic through international research and development networks. Financial literacy-related problems and effects are not limited to Western nations. All nations, particularly developing and less developed nations, are impacted by the widespread use of modern communication and social networks and their inescapable effects. Therefore, by drawing on the theoretical underpinnings and body of work in this area, conducting empirical research based on the text and cultural and communicative context of their society, and publishing the results in international scientific circles, researchers from these countries should play a more significant role in the development of literature related to financial literacy.

The picture of the state of financial literacy in Iran is consistent with the picture of the research process in this area on a global scale, both in terms of positive aspects, such as the degree to which modern communication technologies are used in daily interactions, and negative aspects, such as the problems and difficulties associated with it and the neglect that has been done concerning its dimensions and effects.

References

Ansari, Y., Albarrak, M. S., Sherfudeen, N., & Aman, A. (2023). Examining the relationship between financial literacy and demographic factors and the overconfidence of Saudi investors. *Finance Research Letters, 52*, 103582.

Bayrakdaroğlu, A., & Şan, F. B. (2014). Financial literacy training as a strategic management tool among small–medium sized businesses operating in Turkey. *Procedia-Social and Behavioral Sciences, 150*, 148-155.

Brüggen, E. C., Hogreve, J., Holmlund, M., Kabadayi, S., & Löfgren, M. (2017). Financial well-being: A conceptualization and research agenda. *Journal of Business Research, 79*, 228-237.

Bureau, C. F. P. (2017). Financial well-being in America.

Das, A. K. (2015). Introduction to research evaluation metrics and related indicators. In *Open access for researchers, module 4: research evaluation metrics* (pp. 1-18): UNESCO, Paris.

Farahmand, E., Md Nor, M., Ghanbari Baghestan, A., Ale Ebrahim, N., & Matinnia, N. (2018). Five Decades of Scientific Development on'Attachment Theory': Trends and Future Landscape. *Pertanika Journal of Social Sciences & Humanities, 26*(3), 1-16.

Grenfell, M., Bloome, D., Hardy, C., Pahl, K., Rowsell, J., & Street, B. V. (2013). *Language, ethnography, and education: Bridging new literacy studies and Bourdieu*: Routledge.

Hung, A., Parker, A. M., & Yoong, J. (2009). Defining and measuring financial literacy.

Krische, S. D. (2019). Investment experience, financial literacy, and investment-related judgments. *Contemporary Accounting Research, 36*(3), 1634-1668.

Lusardi, A., & Mitchell, O. S. (2011). Financial literacy and retirement planning in the United States. *Journal of Pension Economics & Finance, 10*(4), 509-525. doi:https://doi.org/10.1017/S147474721100045X

Lusardi, A., & Oggero, N. (2017). Millennials and financial literacy: A global perspective. *Global Financial Literacy Excellence Center, 5*, 17. doi:https://gflec.org/wp-content/uploads/2017/07/Millennials-and-Financial-Literacy-Research-Paper.pdf

Milojević, S., & Leydesdorff, L. (2013). Information metrics (iMetrics): A research specialty with a socio-cognitive identity? *Scientometrics, 95*, 141-157.

Montagnoli, A., Moro, M., Panos, G. A., & Wright, R. (2017). Financial literacy and attitudes to redistribution.

Musavi chalak, A., alaee arani, M., salami, M., & Soheili, F. (2018). Meta-Analaysis Approach to Study the Prevalence of Information Databases Use in Scientometric Reseaches. *Iranian Journal of Information Processing and Management, 34*(1), 89-112. doi:10.35050/jipm010.2018.004

Mustafa, W. M. W., Islam, M. A., Asyraf, M., Hassan, M. S., Royhan, P., & Rahman, S. (2023). The effects of financial attitudes, financial literacy and health literacy on sustainable financial retirement planning: The moderating role of the financial advisor. *Sustainability, 15*(3), 2677.

Paiella, M. (2016). Financial literacy and subjective expectations questions: A validation exercise. *Research in Economics, 70*(2), 360-374.

Pătru-Stupariu, I., & Nita, A. (2022). Impacts of the European Landscape Convention on interdisciplinary and transdisciplinary research. *Landscape Ecology, 37*(5), 1211-1225.

Remund, D. L. (2010). Financial literacy explicated: The case for a clearer definition in an increasingly complex economy. *Journal of Consumer Affairs, 44*(2), 276-295. doi:10.1111/j.1745-6606.2010.01169.x

Sharma, M. S. (2013). *To study the level of financial literacy and its impact on investment decision–An In-depth analysis of investors in Gujarat state.* Ganpat University,

Silgoner, M., Greimel-Fuhrmann, B., & Weber, R. (2015). Financial literacy gaps of the Austrian population. *Monetary Policy & the Economy Q, 2*, 35-51.

Sivaramakrishnan, S., Srivastava, M., & Rastogi, A. (2017). Attitudinal factors, financial literacy, and stock market participation. *International Journal of Bank Marketing*.

Van Campenhout, G. (2015). Revaluing the role of parents as financial socialization agents in youth financial literacy programs. *Journal of Consumer Affairs*, 49(1), 186-222.