

# Financial Literacy and its Determinants: A Systematic review

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## Abstract

Financial Literacy Surveys around the world have indicated that financial literacy levels are low in developed countries and lower in developing countries (S&P Global FinLit Survey, 2014). It is also noted that individual financial decisions are affected by factors such as age, schooling, investment period, marital status, employment, etc., but in different areas in differing capacities. Therefore, it's important to systematically assess the literature in the field of financial literacy and its determinants which is attempted in the study using bibliometric analysis on a final sample of 584 articles from the databases including Google Scholar, Microsoft academia and Crossref extracted using Publish or perish software application. Vosviewer and MS Excel were utilized for citation analysis, co-citation analysis and key word/term occurrence analysis. The study found the current significant researchable area in the field of financial literacy include "financial technology," "financial satisfaction," and "financial behavior". By bringing together dispersed studies in the area, emphasize key authors and documents, and analyzing the factors that influence financial literacy, the study makes a significant contribution. The current study informs research community about the most discussed aspects of financial literacy in the literature and points towards potential areas for further studies.

**Keywords:** Determinants of Financial Literacy, Bibliometric analysis, Vos Viewer software, Systematic review.

## 1. Introduction

Financial literacy comprises of financial awareness, financial knowledge, financial skill, financial attitude, and economic behavior required for making intellectual financial decision making and achieving financial well-being of individuals (OECD, 2013). As per Nababan and Sadalia, (2012) there are five key aspects of financial literacy which are Risk Management, Credit and Debt Management, Saving and Investment Management, and Basic Personal Finance. Financial literacy develops confidence and skills that help in managing complex financial products by enabling them to take effective financial decisions in their day to day lives. This financial confidence helps in protecting investor against exploitative financial schemes and unreasonable high interest rate charged by indigenous moneylenders. A well financially literate household

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makes investment in right channels thus it mobilizes the savings in economy as a whole. High level of financial literacy induces inclusive economic growth.

Financial literacy still lacked a defined learning environment in the 19th century. Money management, on the other hand, was just as critical then as it is now. One person from the era is James Gilbert, a manager with London and County Bank. Gilbert also dabbled in personal finance literature, publishing an essay titled "Ten Minutes' Advice about Holding a Banker" in 1849. Gilbert wrote extensively for his fellow bankers as well as the general public about banking and its benefits. The Smith-Lever Act of 1914 was one piece of legislation that had a big effect on financial literacy education. It developed university programs that conducted research and offered "useful and practical information" to the general public on a variety of topics, including personal finance. The first decade of the **twenty-first century** has seen a universal recognition for spreading financial literacy among people (National Strategy for Financial Education of India, n.d.). Schools and universities in many countries have offered financial education classes for decades. The subject has been taught in courses titled Personal Finance, Personal Financial Management, Financial Education, Home Economics or Family Economics, among others.

Concerns regarding the decreased level of financial literacy in the global financial environment were raised in the OECD's 2017 report. 70% of the questions about financial awareness could only be accurately answered by 48% of the population. Only three of the G20 nations—France, Canada, and China—reported average financial literacy scores that were higher than 14 on a scale of 21. Lack of financial literacy results in ineffective money management decisions. Also, the frequent entry of highly complex financial products in financial marketplace exposes individuals and businesses to higher risk. Lack of fundamental financial knowledge has a detrimental impact on a person's capacity to manage their money on a daily basis and to save for long-term goals like home ownership, higher education, or retirement funding. Financial literacy makes modern life easy, secure and successful. It acts as a corner stone for better economic well-being, for building entrepreneurship skill, for social mobility, for inclusive economic growth. So, national strategies need to emphasis and promote financial education to all the people including marginalized section of society, students and adults. In the fields of economics, finance, business, and management, several exploratory, conceptual, and empirical investigations on financial literacy and its determinants have been carried out. To yet, no attempt has been undertaken to offer a thorough scientific mapping of the region. As a result, it's occasionally vital to contribute to the bibliometric analysis used in the study to conduct a scientific assessment of the literature in the subject of financial literacy and its determinants. By examining recent papers in the field and identifying the most current research trends, the study examines the intellectual status of financial literacy.

## **2. Literature Review**

### **2.1. Financial Literacy and its Determinants**

Financial literacy is influenced by a number of things. Age, family size, family life cycle, gender, income, occupation, education, religion, generational race, nationality, and social class are all factors that affect financial literacy. Age, income, gender, education (Chen and Volpe, 1998; Al Tamimi, 2006; Agarwalla, et al., 2015; Bashir et al., 2013; Kiliyanni and Sivaraman, 2016; Margaretha and Sari, 2015; Van Rooij et al., 2007), work experience (Chen and Volpe, 1998; Kiliyanni and Sivaraman, 2016) previous online trading experience (Al Tamimi, 2006) nationality, race, academic discipline (Chen and Volpe, 1998) Investigate the difference source of information (Mirshekary and Saudagaran, 2005) marital status (Agarwalla et al., 2015; Bashir et al., 2013;

Kiliyanni and Sivaraman, 2016; Nababan and Sadalia, 2012; Margaretha and Sari, 2015), financial decision-making process, budgeting and expenditure (Agarwalla et al, 2015), religiosity (Bashir et al., 2013; Kiliyanni and Sivaraman, 2016), financial satisfaction, Retirement plan intention (Bashir T et al., 2013) parent's education and parent's occupation (Kiliyanni and Sivaraman, 2016; Margaretha and Sari, 2015) influences financial literacy. Numerous research, such as those by Nga et al. (2010), Baluja (2016), Lusardi (2008), and Bhabha et al. (2014), have shown that men are more financially knowledgeable than women are. Contrary to this, Bashir et al. (2013), found that women were more reluctant to take investment-related risks when compared to men. Females at their young age were seen to be less interested in personal financial matters compared to young males (Chen and Volpe, 2002). In general, it is noted that training aimed at financial understanding in the workplace may have a significant effect on financial literacy for both men and women related to retirement planning (Duflo and Saez, 2003; Bernheim and Garrett, 2003; Lusardi, 2004; Lusardi and Mitchell, 2007b).

One can draw the conclusion that there is a gender difference in financial affairs globally after reviewing the S&P Global FinLit Survey 2014. Low income and improper income distribution are the main causes of the number of people who are having financial troubles. Financial literacy intelligence will assist in making the proper selections because a lack of it results in less intelligent money allocation. The degree of financial literacy increases with income and education levels. In this study, variables from four previous studies—Margaretha and Pambudi, 2015; Laily, 2013; Rachmasari, 2018; Giffari, 2018; and Firli, 2017—are combined. The five major variables—personal socio-demographic characteristics, financial knowledge, financial behavior, Financial Training and financial attitude—are used to classify the factors that influence financial literacy.

## **2.2. Rationale of the study**

Only a small number of literature studies on particular aspects of financial literacy had been released in the previous two decades before this review. Using a bibliometric method, Goodell et al. (2021) presented an overview of AI and ML research in finance using co-citation and bibliometric-coupling analysis. Patel et al. (2022) used a bibliometric citation meta-analysis to review the literature on financial market integration. Alshater et al. (2021) examines the Journal of Sustainable Finance and Investment from a bibliometric perspective. Most of the reviews are focused on a single topic like financial clusters Khan et al. (2021), Islamic microfinance Hassan et al. (2021), and waqf literature Alshater et al. (2021). None of them aims to cover all aspects of financial literacy and the factors that influence it.

Furthermore, we were unable to locate any work that looked at the conceptual and intellectual configuration hidden in this developing field of study. The analysis and modification of current policy measures aiming at increasing financial literacy consequently require ongoing study to determine the elements influencing financial literacy at various times and in various geographic locations. The current study attempts to determine the factors that influence financial literacy by conducting a comprehensive review of the relevant literature. This is the first in-depth bibliometric study of financial literacy and factors that influence it. This review summarises the most current developments in the field with the goal of eventually assisting practitioners, policymakers, educators, and scholars.

## **2.3. Research questions and Objectives**

The following research questions are addressed by this bibliometric analysis:

1. What is the distribution of financial literacy and its determinants research based on the number of citations and publications per year, and research areas from 2002 to 2021?
2. Which are the influential authors, top journals, and top publications in the research field of financial literacy and its determinants?
3. How have co-citation studies advanced resulting in meaningful clusters with a specific research focus?
4. What are the topmost active areas, recent research trends, and emerging themes in the research field of financial literacy and its determinants?
5. How has the idea of financial literacy and its determinants developed over time, and what are the most important factors that have been discussed in recent research?

The aforementioned research questions lead to the following research objectives for the current paper.

1. To elicit knowledge growth patterns and its determinants in the area of financial literacy.
2. To examine concept structure and develop a logical knowledge synthesis

A literature study and bibliometric analysis are used to achieve the aforementioned objectives. This study uncovers the contributions of academics, journals, and studies to the field of financial literacy and its determinants. Six identified clusters further underscore the significance of study on financial literacy, its drivers, and its future application. The analysis concludes by highlighting the most active research fields, current research trends, and new themes. The rest of this essay is broken up into the sections listed below. The methodology section comes next, followed by the data analysis and findings section. The last section includes the study's conclusions along with further research directions, recommendations, implications and limitations.

### **3. Research methodology**

This study's data collection starts with database discovery, then data collection based on the search strategy (Figure 1). Publish or Perish software was used to extract documents from free access databases including Google Scholar, Microsoft academia and Crossref wherein “financial literacy” AND “determinants” and “financial literacy” AND “factors” were searched in the title as a phrase and in English language with no other limiters. The initial search produced 887 results spanning a date range from 2002 to 2021. A total of 303 documents were found to be duplicate and thus were excluded. Finally 584 documents were assessed for bibliometric analysis. Bibliometric research studies analyse trends in previously published literature using mathematical and computational techniques (Singh and Dhir, 2019). The research uses a bibliometric technique (Rialti et al., 2019) as well as Pajek and Gephi for data visualization. This bibliometric study uses Publish or Perish along with VOSviewer. If the nature of the article remained vague after this initial evaluation, the article text was obtained and skimmed to establish its importance.

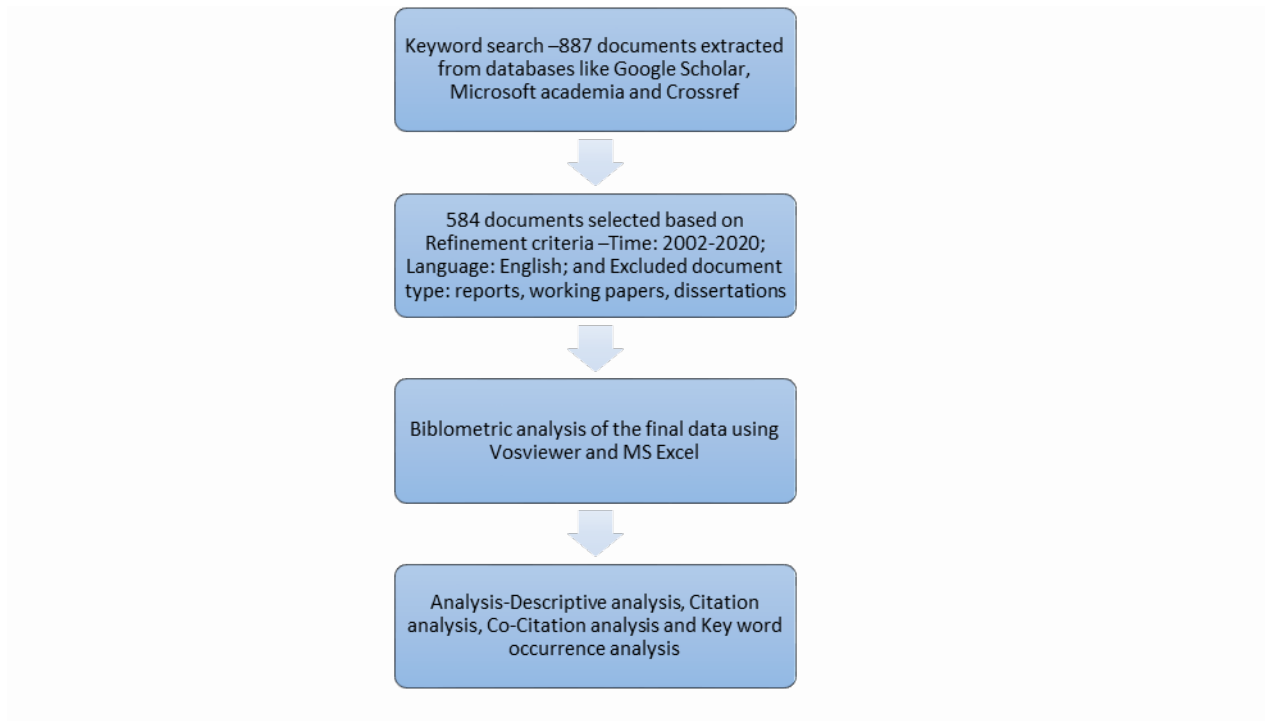


Fig. 1. Flowchart showing Research methodology.

#### 4. Data analysis

##### 4.1. Descriptive analysis

Descriptive research examines bibliometric data in terms of the data set's basic characteristics, such as (1) sources/journals, (2) authors, and (3) records.

*Documents:* A valid search query on the selected databases yielded a bibliometric data frame of 887 documents. The research used documents published in 548 sources with an overall citation score of 7.102 and a GSrank of 88.36.

*Document type:* Majority of documents included journal articles and book chapters (Figure 2).

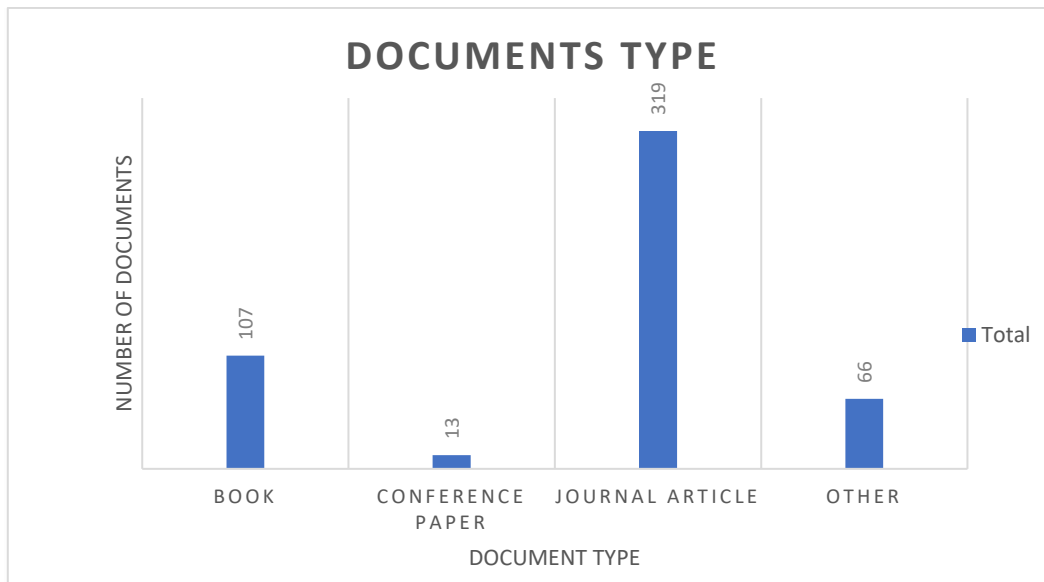


Fig. 2. Types of Documents published related to financial literacy and its determinants during 2002-2020

Source: Author's calculation

*Year-wise Publications:* Figure 3 shows the total no. of documents published in the selected databases in the field of financial literacy and its influencing factors year-wise starting from 2002 and rising slowly till 2016. In 2017 it raised from 60 documents published to 127 documents. In recent years, there has been an increasing acknowledgment of the significance of financial literacy for individuals and society. This recognition may have led to a greater focus on studying financial literacy and its determinants, resulting in more publications in the field during 2017. Thereafter, its number decreased and remained in the range of 60-70 documents per year. However, as the field became more saturated, the number of publications might have decreased in subsequent years.

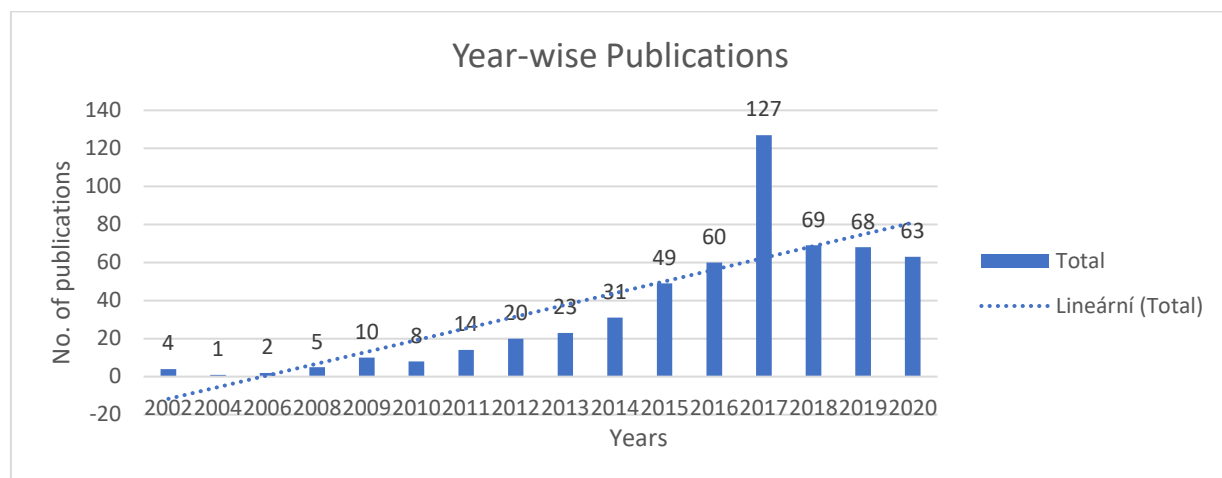


Fig. 3. Year wise publications of documents related to Financial literacy and its determinants

Source: Author's calculation

*Documents age:* Most of the documents aged 4-6 years (Figure 4). This is because there was gradual rise in the number of documents published in the field till 2016 as seen in the figure 4.

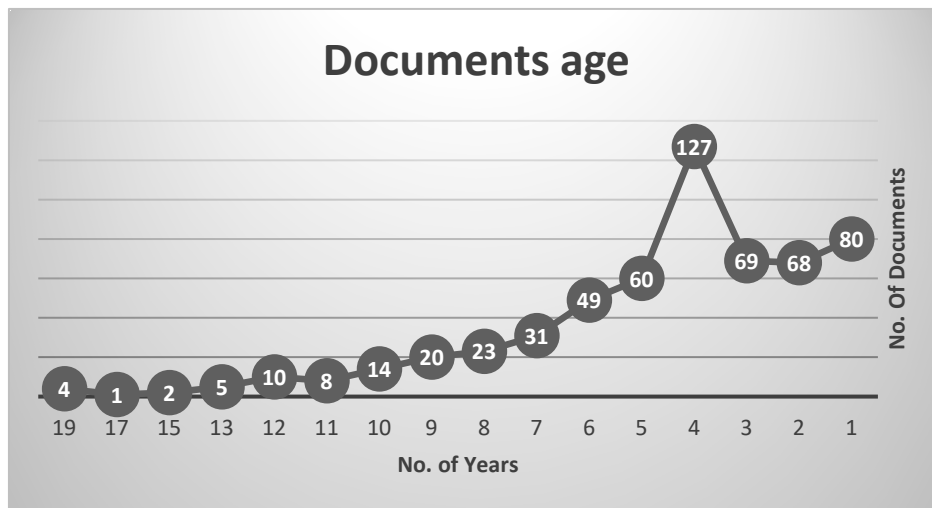


Fig. 4. Relevant age of documents related to Financial literacy and its determinants

Source: Author's calculation

*Average citation per year:* During the period 2002–2020, scientific efficiency in the research domain grew (Figure 5). It witnessed a rapid increase in volume after 2012, with a marginal decrease in 2019.

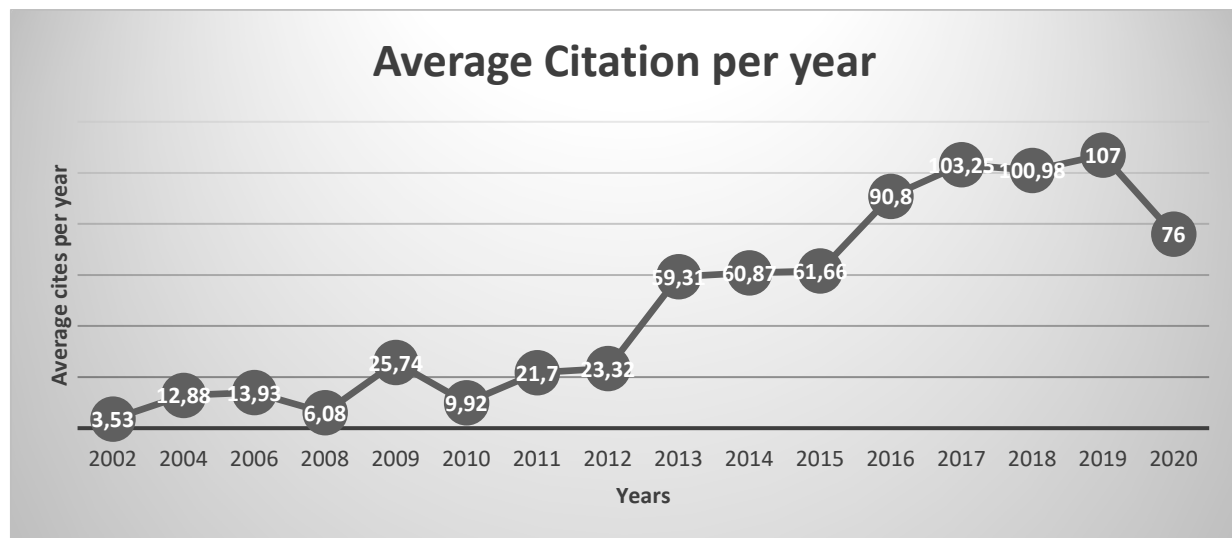


Fig. 5. Average citations per year related to Financial literacy and its determinants

Source: Author's calculation

*Journal/Sources:* Figure 6 depicts the top 12 most cited journals in the sector, which are representative of journal quality. The most cited source is Journal of Family and Economic Issues, which is followed by Journal of Applied Social Psychology. A closer examination of these journals

shows that the bulk of the literature on financial literacy and its determinants is concentrated in economics, finance, banking, consumer and family studies, and social and economic psychology.

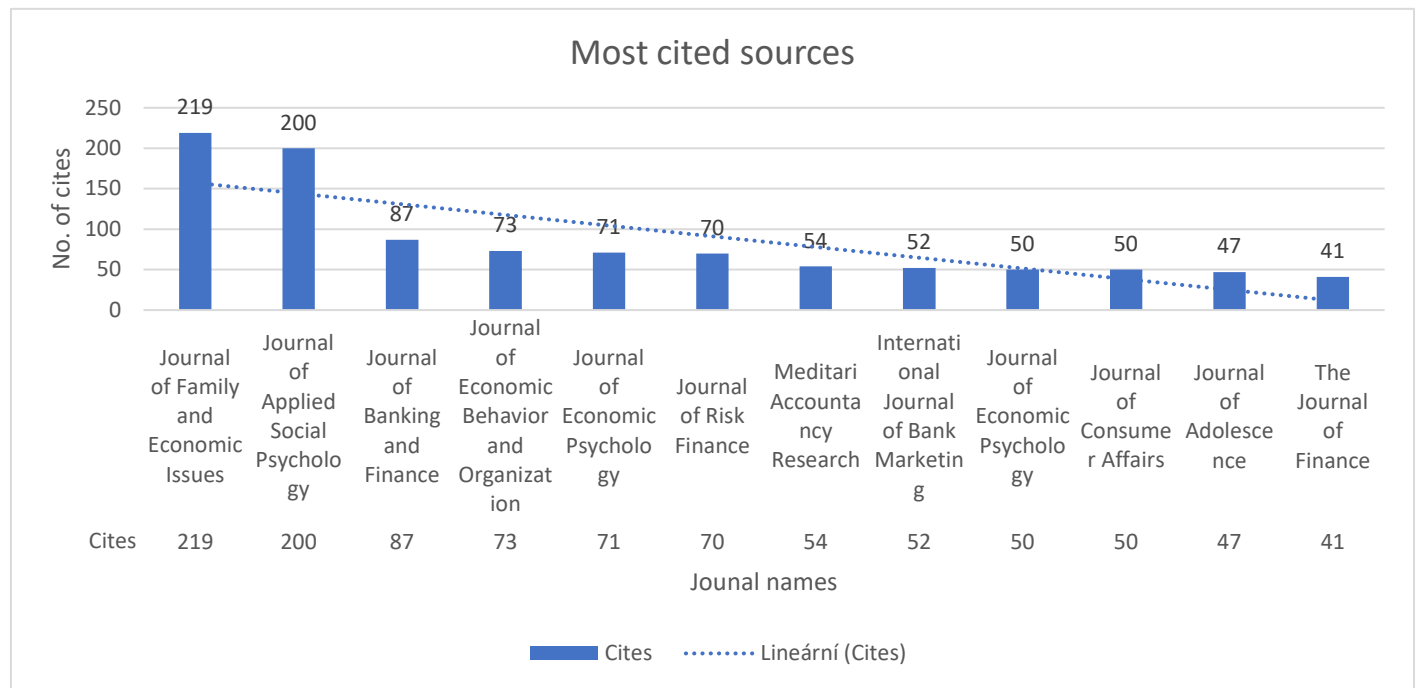


Fig. 6. Cites of documents related to Financial literacy and its determinant for top sources  
Source: Author's calculation

*Authors:* The authors with the most publications in the field were Gianni Nicolini, Chris Arthur, Ali Saeedi, and Meysam Hamed (Figure 7). These articles are important in terms of potential research in this field.

The 15 most cited documents in the field are shown in Figure 8. There are more than 50 citations in each of these journals. With 219 citations, the top paper was written by S. Joo (2004), showing S. Joo's pioneering contribution to the field, followed by J. M. Norvilitis (2006) with 200 citations. Both of these articles address the significance of financial literacy and the factors that influence it. These papers with the most citations are considered main reference articles in the field.

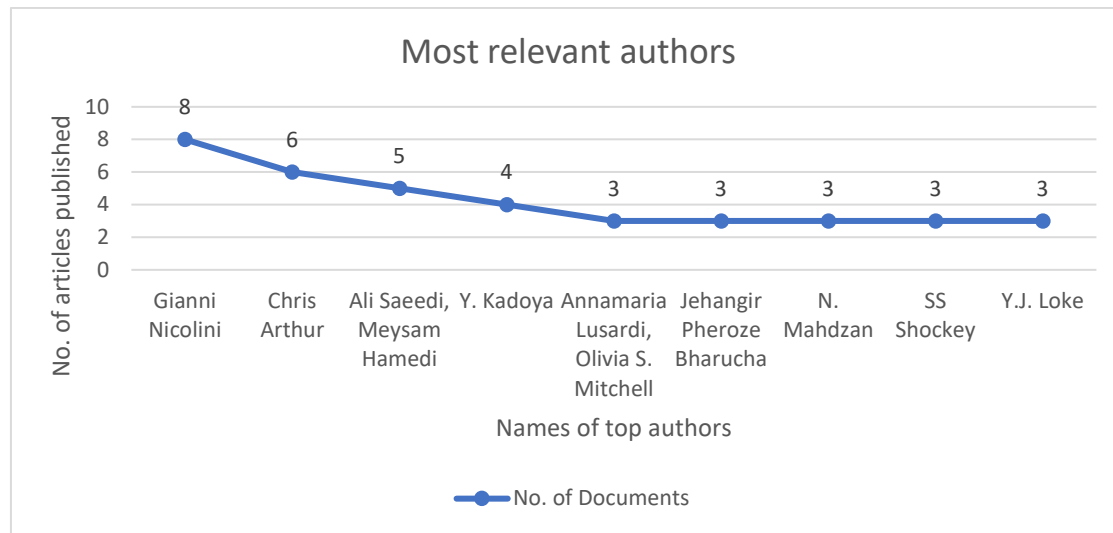


Fig. 7. Number of Documents related to Financial literacy and its determinants published by top authors  
Source: Author's calculation

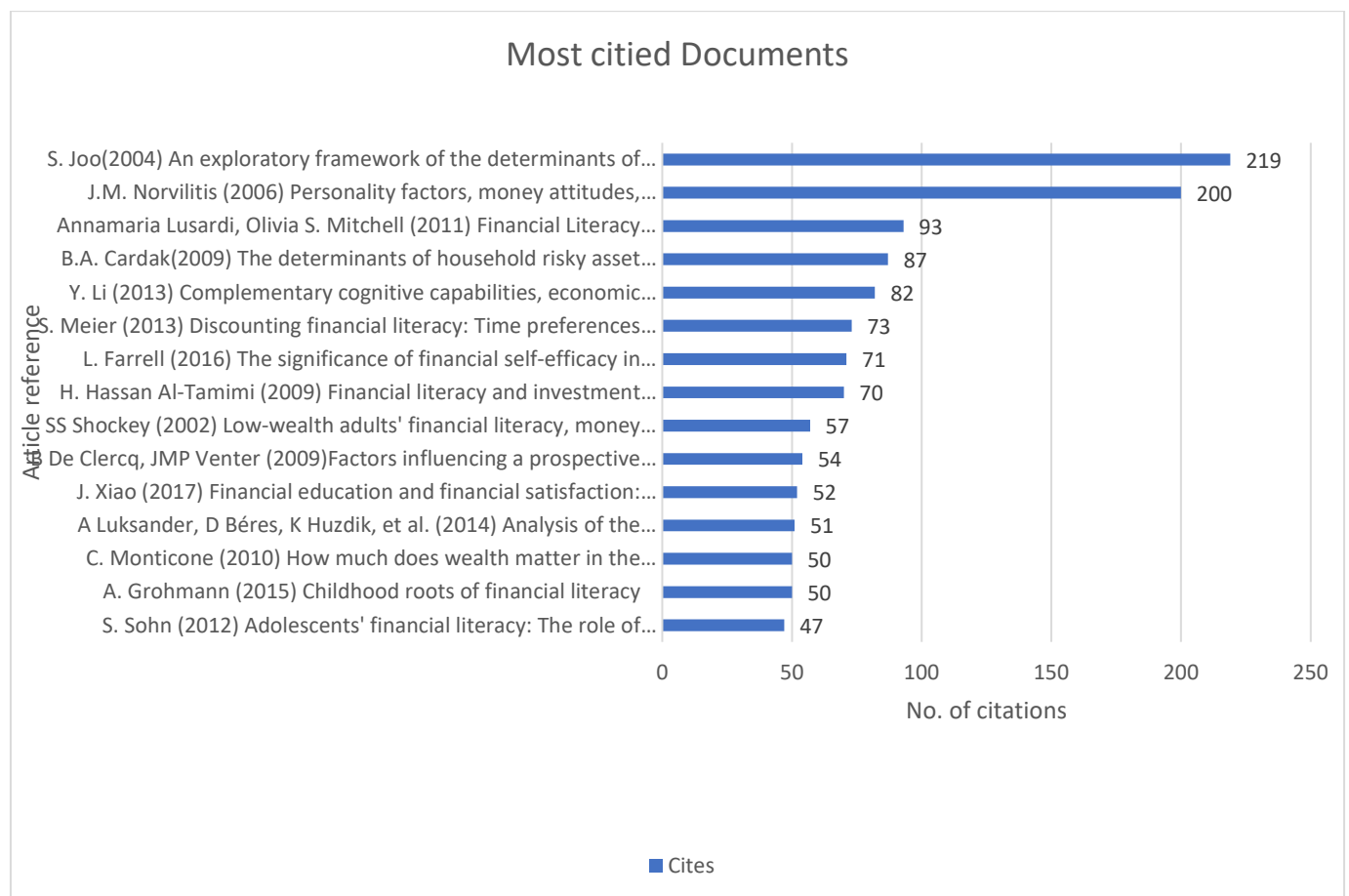


Fig. 8. Citations for top articles published related to Financial literacy and its determinants  
Source: Author's calculation

## 4.2. Data Visualization

Further, data visualization is done through Keyword frequency analysis, Network analysis, Co-authorship analysis and Key term co-occurrence map.

*Keyword Frequency:* The keywords frequency analysis showed that the term “student” appeared 88 times, followed by “financial literacy performance”, “effect”, “financial knowledge”, “financial behavior”, “gender”, “finance”, “consumers”, “university students”, “young people”, “gender difference”, “influence financial literacy”, “educational level”, “college student”, “faculty” and “parents education”. A density word cloud, as shown in Figure 9, is a visualisation of the intensity of terms in the documents, as indicated by the width of the term. It can be used as a stand-in for the literary sense of the term. Aside from these, variables that measure financial literacy level, such as financial awareness, financial attitude, financial education, financial conduct, finance, and financial literacy efficiency, were also found to be important.

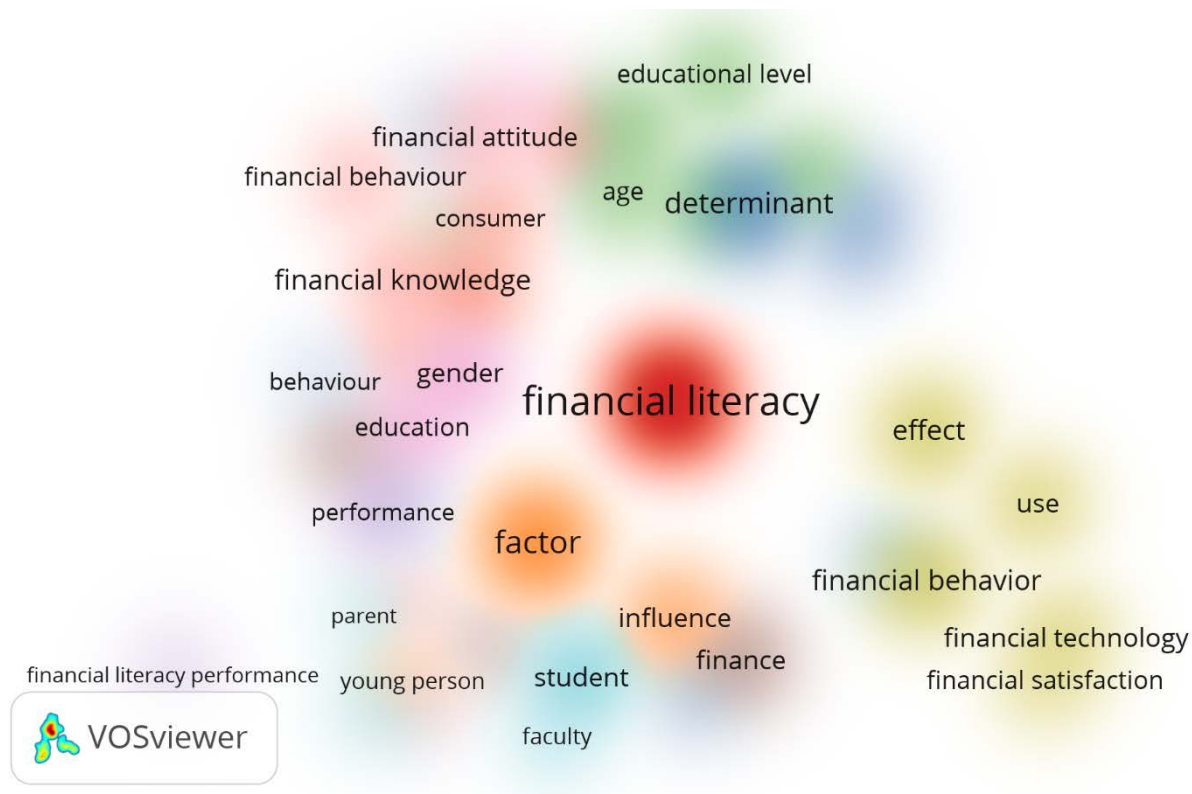


Fig. 9. Density Word Cloud for key words related to Financial literacy and its determinants  
Source: Vosviewer output

*Network analysis:* The number of clusters that appear, the frequency of instances and links between various units of analysis, total link strengths, and citation counts are all measured using network analysis in data visualisation (Low and Siegel, 2019). Using a co-occurrence network, co-word analysis, or co-authorship analysis, the conceptual framework portrays the connection between themes, subjects, and patterns.

*Co-authorship analysis:* The Vosviewer software uses the total link strength of nodes to generate Network visualization of the most linked co-authors. Thus, the unit of study is authors. The co-authorship network visualisation is shown in Figure 10.

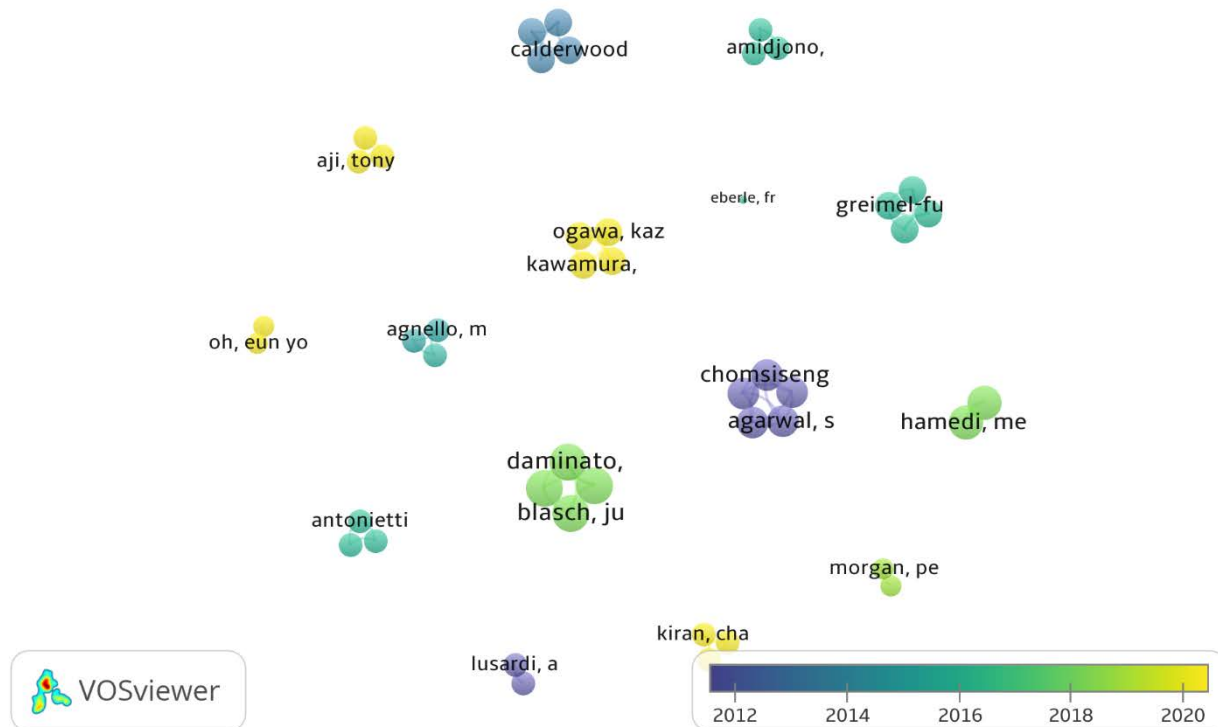


Fig. 10. Co-Authorship Network Visualisation related to research on Financial literacy and its determinants

Source: Vosviewer output

Figure 10 shows that fourteen small clusters of co-authors working together from 2012-2020. The cluster with highest link strength includes authors Blasch, Julia; Boogen, Nina; Daminato, Claudio and Filippini, Massimo is green cluster representing their co-authorship in 2018. The two yellow cluster: 1. Calderwood, R; Cameron, Mp; Cox, A; Greimel-Fuhrmann, Bettina; Kawamura, Tetsuya; Lim, S; Mori, Tomoharu; Motonishi, Taizo; Ogawa, Kazuhito; Silgoner, Maria; Taborsky, Martin and Weber, Rosa and 2. Agnello, Mary Frances; Aji, Tony Seno; Amidjono, Dwi Sulistyorini and Antonietti, Alessandro are Co-working closely within their cluster in the field of financial literacy and its determinants during 2020.

*Key term co-occurrence map:* The Vosviewer software uses the content of research papers i.e the title and the abstract to generate Network visualization of the most frequently co-occurring terms. The keyword co-occurrence network with default options–automatic layout and Lig/Log modularity–as shown in Figure 11.

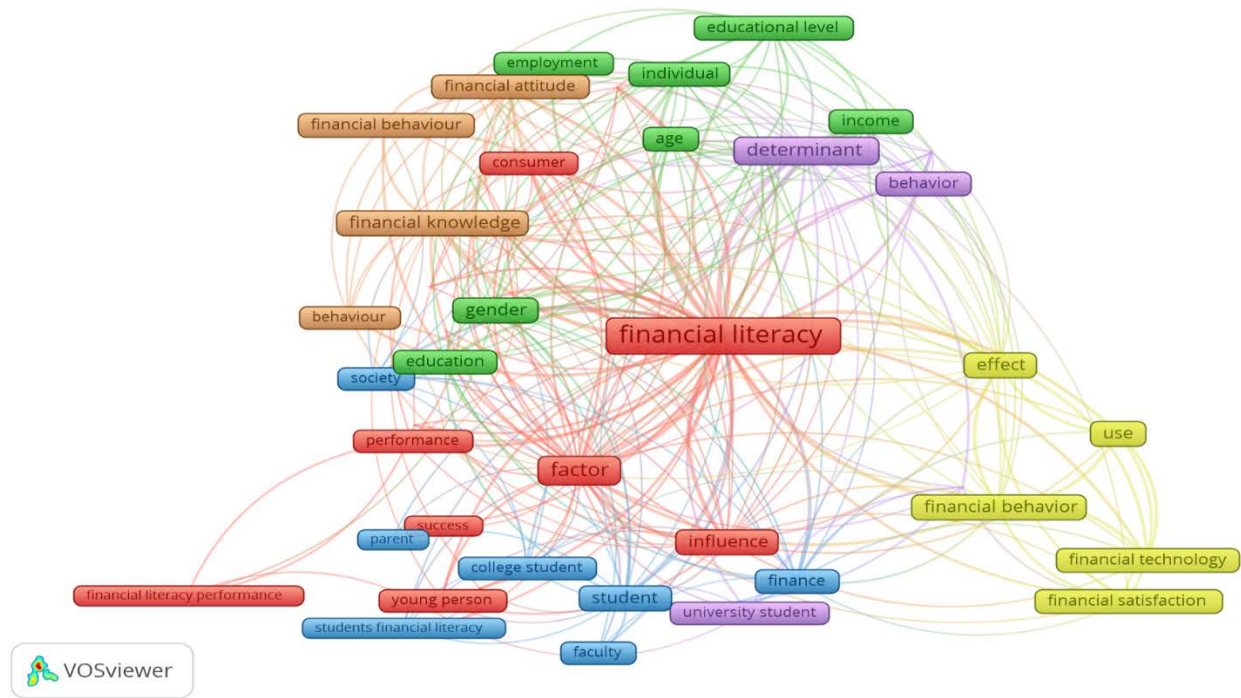


Fig. 11. Keyword Co-Occurrence Network where keywords are related to research on Financial literacy and its determinants

Source: Vosviewer output

As seen in Figure, six clusters indicated in red, blue, yellow, orange, purple and green emerged from the data. Green cluster is dominated by the economic and demographic factors; red cluster highlights financial literacy performance level; purple cluster display financial behavior of college students; orange cluster indicates dimensions for measuring financial literacy levels; while the blue cluster integrates the factor affecting college students and finally yellow cluster shows most recent relevant terms in the study which are “financial technology”, “financial satisfaction” and “financial behavior”. These terms provide direction for future research as these shows currently significant researchable area in the field of financial literacy.

## 5. Findings

The field of financial literacy and its influencing factors have evolved over a period of time. It was also noted that individual financial decisions are affected by factors such as age, schooling, investment period, marital status, occupation, parents’ education, place of residence, etc., but at different geographical locations in differing capacities. Beginning in 2002 and gradually increasing until 2016, the total number of documents published in selected databases in the field of financial literacy and its influencing factors. It increased from 60 to 127 documents in 2017. After that, the amount of documents issued per year decreased to about 60-70. Scientific productivity in the research domain increased from 2002 to 2020. Following 2012, it experienced a dramatic rise in volume, followed by a small decline in 2019. Journal papers and book chapters made up the majority of records.

The majority of the documents that were found were between the ages of 4-6 years. Journal of Family and Economic Issues receives the most citations, followed by Journal of Family and

Economic Issues. Gianni Nicolini, Chris Arthur, Ali Saeedi, and Meysam Hamedei were the writers with the most publications in the domain. The top paper, written by S. Joo (2004), had 219 citations, demonstrating S. Joo's outstanding contribution to the field, followed by J. M. Norvilitis (2006), who had 200 citations. Both articles discuss the importance of financial literacy as well as the factors that affect it. Six clusters were identified in the keyword co-occurrence network study, which were coloured red, blue, yellow, orange, purple, and green. The economic and demographic variables are dominant in the green cluster; the financial literacy output level is highlighted in the red cluster; and the dimensions for measurement of financial literacy are shown in the orange cluster. The blue cluster combines factors that may influence the financial literacy level of the college students, and the yellow cluster displays the study's most recent relevant words, which include "financial technology," "financial satisfaction," and "financial behaviour." These terms reflect a current significant researchable area in the field of financial literacy, so they provide guidance for future study.

## **6. Conclusion**

Continuous research aimed at identifying the factors affecting financial literacy at different times in different geographical areas is therefore important for the analysis and adjustment of existing policy interventions aimed at enhancing financial literacy. The present study aims to systematically review the literature pertaining to the field of financial literacy and identifying its determinants. This is the first comprehensive bibliometric analysis of financial literacy and its determinants. This review encapsulates the most recent advancements in the field, intending to assist practitioners, policymakers, educators, and academics eventually. The current study tells research community about the most discussed aspects of financial literacy in the literature and points towards potential areas for further studies. By bringing together dispersed studies in the area, emphasize key authors and documents, and analysing the factors that influence financial literacy, the study makes a significant contribution. The terms such as "financial technology," "financial satisfaction," and "financial behavior" reflect a current significant researchable area in the field of financial literacy, so they provide guidance for future study.

Since this is a systematic examination of bibliometric research, the drawbacks that come with such studies apply. A systematic analysis of literature using other data sources such as Scopus and Web of Science, which cover a broad variety of high-quality journals, will be useful for potential researchers to derive a clear conceptual framework. Databases for this study is limited to the Google Scholar, Microsoft Academia and Crossref database owing to its open access and wider coverage of research articles have been used. Researchers may decide to conduct a literature review and a meta-analysis on the subject in the future. Financial capacity, financial inclusion, financial literacy with an emphasis on tax and insurance, and digital financial education are emerging themes for more study from other studies in the area (Goyal and Kumar, 2020). The current study tells research community about the most discussed aspects of financial literacy in the literature and points to potential areas for further studies.

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