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A STUDY OF FINANCIAL LITERACY: A BIBLIOMETRIC ANALYSIS AND LITERATURE

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CHAPTER -1
INTRODUCTION

A Study of Financial Literacy

The concept of financial literacy first appeared in 1797 when John Adams, the second president of the United States, stated:

This explains why Adams is called the founding father of financial literacy in the US. He was the first to recognise the significance of financial literacy, and emphasize the necessity of a foundational knowledge of the essence of money (Goyal & Kumar, 2021). However, the term 'financial literacy' only appeared in research in the late 1990s due to the increasing regulation of financial markets and the ease of access to credit loans for the community (Marcolin & Abraham, 2006). Bakken (1967) and Danes and Hira (1987), who examine the need for special education in money management, conducted early studies on financial literacy among high school and college students. In 1992, the National Foundation for Educational Research defined financial literacy as the ability to make the right decisions regarding money management (Noctor et al., 1992). This concept became the starting point for the development of financial literacy studies until the recent boom.

The global economic crisis that occurred in 2008 was caused by increased housing transactions using bank credit and the inability of consumers to pay installments due to rising interest rates (Faulkner, 2015). Consumers who are financially literate will be more careful about taking credit, while those who are 1 financially blind may not know the risks they face later (Abdullah & Chong, 2014).

The Covid-19 pandemic that began in 2020 showed the public the importance of a personal financial budget in the event of an unexpected loss of income. The lack of financial literacy was shown in the global economic crisis and the recession caused by the global pandemic (Kurowski, 2021). Because of this, there are many financial issues.

Literacy studies have been carried out to see if people who have more knowledge about money can withstand crises or mitigate its effects. Studies on financial literacy have been carried out at both the individual and at the organizational or company level (Damayanti et al., 2018). Financial literacy for individuals involves managing personal finances, in terms of daily expenses, emergency funds, children's education and retirement (Kasman et al., 2018).
The pace of life in today's world and the fact that many individuals do not meet a decent standard of living underline the importance of financial literacy (Vitt et al., 2000). Financial inclusion, meanwhile, refers to public access to the various financial products and services offered by financial institutions (Kodongo, 2018). According to the World Bank, financial inclusion can reduce poverty and improve people's welfare (Singh & Gupta, 2020), underlining the need for individual financial literacy coupled with financial inclusion (Verma & Oum Kumari, 2016).

Financial literacy is also applied at the company or organizational level (Damayanti et al., 2018). Organizational financial literacy encourages managers and CEOs to better understand credit, debt, budget, insurance, and other financial dimensions related to a firm's operational activities (Adomako & Danso, 2014; Plakalović, 2015). Given its importance, it would be beneficial to carry out a bibliometric analysis and literature review of existing financial literacy studies from the past to the present to help people learn about managing their money.

NEED OF FINANCIAL LITERACY

a) Knowledge and skill: Increasing range and complexity of financial products has made it very difficult for an ordinary person to make an informed decision. Financial literacy imparts knowledge and skills and, thereby, confidence to the ordinary person to manage financial products and services and enabling him to have more control over his/her present and future financial well being.

b) Freedom from exploitation: Financial literacy helps protect the society and individuals against exploitative financial schemes and exorbitant interest rates charged by moneylenders.

c) Avoidance of over-indebtedness: Financial education will help avoid over- indebtedness, improve quality of services and promote wise financial decisions.

d) Promoting entrepreneurship: Awareness about financial products will help small entrepreneurs, who are educated and who already have business sense, understand dynamics of market mechanisms and improve their business dealings.

e) Positive spillover effects: Financial education can lead to multiplier effects in the economy. A household that is well educated in financial matters would resort to regular savings, which, in turn, would lead to investments in right channels and greater income generation. The financial well being of individuals will, in turn, increase the welfare of the society.

f) Reducing strain on social programmes: A financially aware person would be in a better position to assess his/her own requirements and make savings in appropriate schemes. It reduces strain on social programmes and pension plans and fosters a more resilient economy.

g) Behavioral change: The proliferation of financial products has led to its indiscriminate usage without users realizing their financial implications. In fact, the recent global financial crisis has raised the question whether individual's lack of financial knowledge led them to take out adjustable rate mortgages or incur credit card debt they could not afford.

SCOPE OF FINANCIAL LITERACY

A clear picture of your current financial situation entails knowing how much money you have, your assets, and your liabilities. It also involves knowing if you are spending your money in a way that meets your financial goals.

Setting Financial Goals:

Determine what you want your money to perform for you, whether saving for a house down payment or being able to have an early retirement. After identifying your objectives, you may create a plan to achieve them.

Managing Debt:

Not all debts are bad. A general rule of thumb is that if debt generates income, increases your net worth, or has future value, it is considered good debt. However, when debt becomes too much, that is when it becomes a burden. If you have debt, learn how to manage it properly by creating a budget and payment plan.

Investing:

When you understand financial concepts like the time value of money, you realize that it is never too early to start investing. Investing allows you to grow your money by understanding the risks and rewards associated with each investment option before engaging in one.

Retirement Planning:

Retirement is one of the most important financial goals that you will ever set. The earlier you start, the more time your money has to grow. With the proper understanding of finances, you will be able to gauge how much money you will need to save to retire comfortably.

Tax Planning:

Taxes are inevitable but knowing their ins and outs can aid in understanding the tax implications of different financial decisions. It also teaches you how to maximize deductions and minimize tax liability.

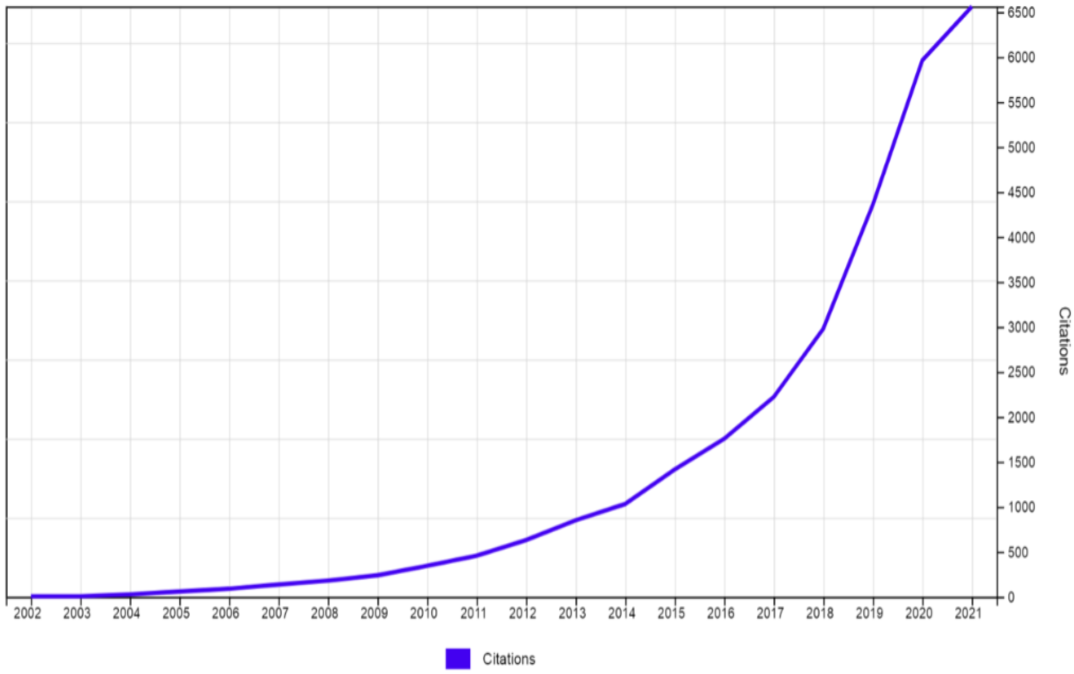

Figure 1: The annual citations between the period 2002–2022 retrieved from WOS. Source : Abdullah, M. A., and Chong, R. (2014).https://doi. org/10.24191/jeeir.v2i3.9631

CHAPTER -2

LITERATURE

REVIEW

We list below definitions of financial literacy over three decades to see how the concept has evolved. Noctor et al. (1992) define financial literacy as the ability to make sound judgments and to take effective decisions regarding the use and management of money. This three-decade old definition, which was still general in nature, only discusses financial literacy as the management of money, but did, however, spur further research. Huston (2010), meanwhile, defines financial literacy as the measure of how well individuals can understand and use information related to personal finance. This definition only focuses on individual and family financial literacy enhanced through financial education programmes, but it distinguishes financial literacy from financial literacy education. The following year, Lusardi et al. (2011) termed financial literacy as the knowledge of basic financial concepts and the ability to perform simple calculations. According to the authors, women and youth with low education levels in the US have low literacy levels, so the solution is to provide basic financial education. In a 2014 Organisation for Economic Co- operation and Development (OECD) working paper, a measurement of financial literacy is derived from Atkinson and Messy (2012) for almost every country, such as Albania, Armenia, Germany, Ireland, Malaysia, Norway, Peru, Poland, South Africa, the United Kingdom, and the British Virgin Islands. In the paper, financial literacy is defined as from some of the literature above, it is clear that the definition of financial literacy and how it is measured are still being developed and discussed today. Additionally, we also provide an overview of the evolution of the concept of financial literacy adopted by Muñoz-Céspedes et al. (2021). Based on the explanation above, the evolution of financial literacy is as follows: from 1797 to 1990, it pertained to the initial study of money management; the years 2000 until the 2008 crisis saw the boom of the term 'financial literacy'; from the post-crisis period until 2013, some definitions of financial literacy and indicators emerged; and lastly, from 2014 to 2021, financial literacy became a multidisciplinary study.

Financial literacy, defined as the understanding and competence in financial matters, is a crucial aspect of personal finance. Research has shown that there are disparities in financial literacy between genders, with women generally having less expertise than men. For example, a study by Danila, Shawan, Ali, and Djalaluddin (2019) revealed that less than 20 percent of middle-aged, college-educated women were able to respond correctly to financial queries, compared to 35 percent of college-educated men.
Similarly, a study by ANZ on Australian teenagers found that while most individuals are financially educated, certain subgroups still struggle with financial concepts. Moreover, financial literacy has been linked to various aspects of financial behavior. Individuals with greater financial knowledge tend to have more experience with financial products and services, as concluded by Hilgert in a telephonic survey.

In Zimbabwe, it was found that active participation in financial decision-making leads to an improvement in financial knowledge (Murendo and Mutsonziwa, 2017). Additionally, financially educated households tend to save more, while those who struggle with basic financial calculations, like interest rates on loans, tend to borrow more and accumulate less wealth.
Financial literacy also significantly influences investors' attitudes and decision-making. Ronaldo and Todesco (2012) found that gender does not significantly impact investors' attitudes towards financial terminology awareness and understanding. However, individual education and attitude play crucial roles in investment decisions.

Studies suggest that women, who often earn less and have poorer returns on investments, may need additional support in financial education to bridge this gap (Gale and Levine, 2011).

In conclusion, fostering good financial attitudes and increasing financial literacy among the population, especially among women and disadvantaged groups, is crucial for sound financial decision-making and wealth accumulation. Individual knowledge and behavior have been shown to influence investment decisions, emphasizing the importance of promoting financial education and awareness.

Why the need for a bibliometric analysis and literature review on theoretical models of financial literacy? A bibliometric analysis makes it easier and more useful to organize and study the growing number of publications. Both a bibliometric analysis and literature review can link past and more recent research, identify gaps in understanding, and suggest new research opportunities (Demartini & Beretta, 2020). Several literature reviews on the topic of financial literacy have been carried out by Abdullah and Chong (2014) on Islamic financial products, Fatoki and Oni (2014) on financial literacy in South Africa, Faulkner (2015) on definitions of financial literacy and why it matters, Kimiyaghalam and Safari (2015) on the concept of financial literacy and its measurements, and Garg and Singh (2018) on financial literacy among youth around the world. A bibliometric analysis has been carried out by Goyal and Kumar (2021) presenting quantitative and qualitative knowledge on the rapidly-evolving subject of financial literacy.

A bibliometric analysis is useful in examining the development of a published theme. One of the first articles to use the bibliometric method was written by Billings (1881) to review medical science literature. Initially, the bibliometric method was carried out using the application of mathematics and statistics for the study of literature in libraries (Nicholas & Ritchie, 1978; Pritchard, 1969). The bibliometric method was used to calculate the number of publications, the number of citations, and research groupings (Moed et al., 1985). Bibliometric research is generally used in quantitative studies of articles, journals, books, or other types of written communication (Heersmink et al., 2011). Bibliometric research is bibliographic research to present scientific concepts contained in an article as seen from the keywords that appear and the documents cited (Tupan et al., 2018).
The development of financial literacy research can be viewed from the theoretical models used. A theoretical model is an effort to simplify a problem into statistical concepts, such as variables, symbols (notations), and so on. However, we believe that a bibliometric analysis and literature review study that focuses on theoretical models, in terms of the different variables and statistical tools used, has never been carried out.

This article contains a comprehensive discussion of the Scopus- published theoretical models of financial literacy. Specifically, this study seeks to identify the total number of publications, the 10 most cited major journals, the most cited articles, the authors with the greatest number of theoretical models of financial literacy, and the variables used in those models.

Financial literacy, the ability to understand and effectively apply financial management skills, is increasingly recognized as a fundamental component of individual and societal well-being. In recent years, researchers, policymakers, and practitioners alike have turned their attention to examining the level of financial literacy among populations worldwide, seeking to understand its implications for economic stability, consumer behavior, and long-term financial security.

The importance of financial literacy stems from its role in empowering individuals to make informed decisions about their finances, navigate complex financial systems, and plan for the future effectively. A lack of financial literacy can lead to adverse outcomes, including excessive debt, inadequate savings, and vulnerability to financial scams and

exploitation. As economies become increasingly complex and financial products more diverse, the need for strong financial literacy skills becomes ever more pressing. In this context, researchers have embarked on numerous studies to assess the level of financial literacy across different demographic groups, identify factors influencing financial literacy, and explore strategies for enhancing financial education and awareness.
This study aims to contribute to the existing body of knowledge by examining the state of financial literacy in [specific region or country], analyzing the challenges faced by individuals in acquiring financial literacy, and exploring the implications of varying levels of financial literacy for economic development and individual well-being.

By shedding light on these issues, this research seeks to inform policymakers, educators, and financial institutions in their efforts to promote financial literacy and improve financial outcomes for all segments of society. In the following sections, we will delve into the current literature on financial literacy, discuss the methodologies employed in previous studies, present the findings of our own research, and offer recommendations for enhancing financial literacy initiatives. Through t

CHAPTER -3
RESEARCH METHODOLOGY

The focus of the present study is the theoretical models of financial literacy, with subject areas covering the social sciences, economics, econometrics and finance, business, management and accounting, and computer science. This study adopts a methodological approach similar to that of Bedi et al. (2019), Ingale and Paluri (2020), Goyal and Kumar (2021), Ansari et al. (2022), and Gallego-Losada et al. (2022). Based on this study, articles exploring theoretical models of financial literacy with the abovementioned domains were scanned, analysed, and curated to assimilate the data set.

We used a two-step approach to identify the articles to be analysed and reviewed. The first step is to determine the appropriate search terms to mine the Scopus database for relevant articles. This database was chosen for its comprehensive coverage of peer-reviewed research in leading journals and its pervasive presence within the academic community (Gan & Yusof, 2020; Pellegrini et al., 2020; Mubarrok et al., 2020). In the second step, we decided which articles to put in our database for bibliometric analysis by using certain criteria.
The collected databases were mapped and visualised graphically using the VOSviewer application for further analysis (van Eck & Waltman, 2010). The bibliographic coupling analysis shows the closeness of related articles. Bibliographic coupling means that the articles observed will be visualised and networked if other articles have the same references. Co-citation will visualise the references used by the article being observed. In co-citation, references will be linked if they are used in the same article. Co-occurrence displays a visualisation of the network between keywords presented in the abstract.
There are three visualisation displays in the VOSviewer application, namely network, overlay, and density visualisation, which show the network between the visualised terms, traces of research history, and density/emphasis on research groups, respectively. Density can also be used to see research groups that have received less attention.

Identifying Keywords for Database Searches

Past bibliometric analyses on the topic of financial literacy were reviewed to explore potential keywords for the database search. The keywords ‘financial literacy’, ‘financial knowledge’, ‘financial attitude’, ‘financial behavior’, ‘financial education’, ‘financial ability’, ‘financial abilities’, ‘financial skills’, and ‘financial training’ were selected to scan the selected database on February 4, 2022.

Selecting Articles for the Database

To compile research relevant to this study, we restricted our Scopus search to just articles, and excluded all other types of documents, such as reviews, conference papers, editorials, and book chapters. The range 2013 to 2021 was specified in the year of publication for inclusion in the final dataset. Furthermore, we only included articles in the database that were published in peer- reviewed journals across the categories of social sciences, economics, econometrics and finance, business, management and accounting, and computer science.

These criteria were applied to fulfill our research objective to consider management and related fields. Thus, we excluded other study domains, such as medicine, psychology, engineering, arts and humanities, environmental science, mathematics, energy, decision sciences, and material sciences.

We also applied the inclusion criteria to the publishing language, considering only English- language articles. The selection criteria for this article were used to compile a database of 73 articles on financial literacy theoretical models. The data were saved in a research information system (RIS) and comma- separated values format (CSV) with the necessary citations and bibliographic information for further analysis.

Results and Discussion

Descriptive Analysis:
This section will analyze the theoretical model of financial literacy, in terms of the number of publications, the 10 most published major journals, the 10 most cited articles, the most prolific proponents of theoretical models, and the countries where theoretical models are studied. Finally, we map the variables contained in these theoretical models. The theoretical models of financial literacy are divided into four parts: financial literacy as a moderating variable, as a mediating variable, as an independent variable, and as a dependent variable.

One of the software tools used to determine trends in a particular discipline or topic is VOSviewer. The application offers text mining functionality that can be used to build and visualise a network of shared events using key terms extracted from the literature. We use VOSviewer to see trends in theoretical models of financial literacy networks between variables in 73 articles from the Scopus database. We also use visualisation, overlay, and density networks in VOSviewer to see trends in the models. The visualisation of the variable network can be seen from the results of the VOSviewer analysis below. The labels in the image indicate keywords or variables that appear frequently, while the colors indicate clusters. Each circle represents a frequently-occurring keyword or variable. The bigger the circle, the more often the keyword or variable is being looked at.

In the Scopus database, studies using theoretical models of financial literacy have experienced a drastic increase. In the period of 2013 to 2021, financial literacy research with theoretical models produced a total of 73 articles. From 2013 to 2015, only one article was produced each year. However, in 2016, this increased to six articles, seven in 2017, and six in 2018. This increased again in 2019 with 16 articles, 23 articles in 2020, and 12 articles in 2021.

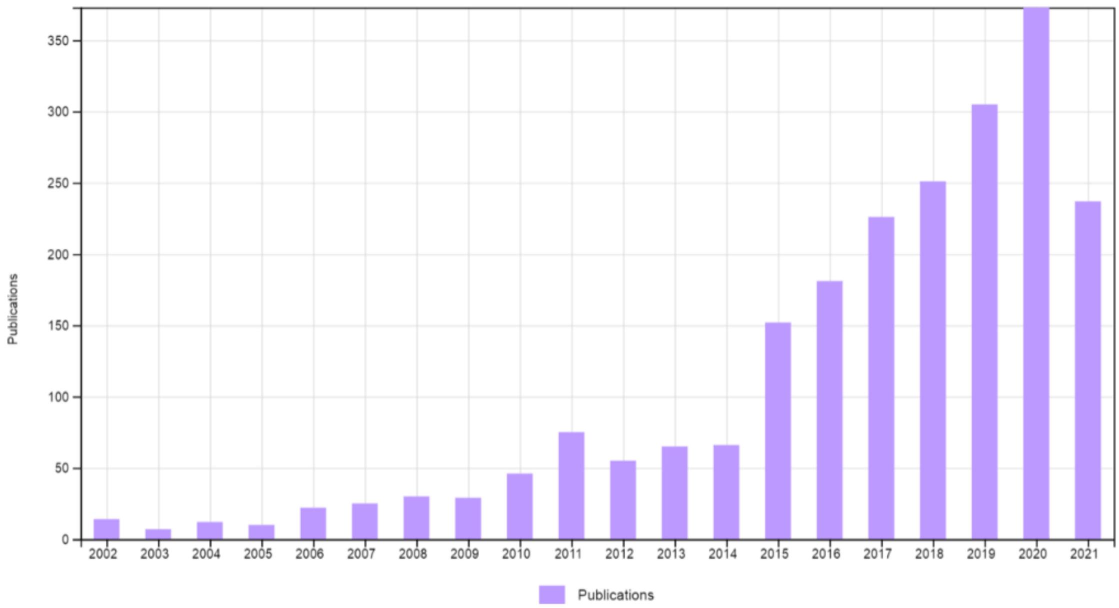

Figure 2: Number of articles published per year

SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). Financial literacy and financial planning: Implication for financial well- being of retirees. Business and Economic Horizons, 13(2), 224-236. https://doi.org/10.15208/beh.2017.17

The theoretical model articles in the Scopus database began to increase from 2016 onwards, which shows that the topic of financial literacy is still in demand today. With regard to the subject area of research, business, management and accounting had the most publications with 28 articles, followed by economics, econometrics and finance with 24 articles, social sciences with 15 articles, and computer science with five articles (see Figure 3).

Figure 3: Subject areas of theoretical models of financial literacy

SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). Financial literacy and financial planning: Implication for financial well- being of retirees. Business and Economic Horizons, 13(2), 224-236.

https://doi.org/10.15208/beh.2017.17

The journals that published the most articles on theoretical models of financial literacy are *Sustainability (Switzerland), Malaysian Journal of Consumer and Family Economics,* and *International Journal of Scientific and Technology Research* with three articles each. Other journals published the same number of articles (see Figure 4).
Figure 4: Journals with the highest number of articles

The articles on the theoretical model of financial literacy with the highest impact are those with the most citations in the Scopus database. Of the 10 most cited articles, Gerrans et al. (2014) was the most frequently cited with 65 citations, followed by Ying et al. (2019) with 46 citations, and Adomako et al. (2016) with 45 citations. Many of the articles with a lot of citations were written in 2016 and 2017. Three of the top 10 articles discussed financial literacy as a moderating variable, and four as an independent variable.

Of the authors who wrote the most articles using theoretical models of financial literacy in the Scopus database, John C Munene authored six articles, George Okello Candiya Bongomin authored five, and Joseph Mpeera Ntayi authored four. All three authors are from the same university in Uganda. Four authors with three articles each are from the same university in Indonesia, I Made Candiasa, Nyoman Trisna Herawati, Naswan
Suharsono, and I Ketut Yadnyana. The list is completed by Muhammad Anwar from

Pakistan with three articles, and finally Muhammad Fazli Sabri from Malaysia with three articles.

Bibliographic coupling refers to the analysis of the relationship between authors by counting the number of references that a group of documents has (documents A and B are combined if both cite article C). Figure 4 shows the results of this analysis. A large circle indicates the author has more articles. Figure 5 shows the bibliography of coupling countries, for all countries, and the total link strength calculated. The countries with the largest number of publications, number of citations, and total link strength were selected. Number one is Indonesia, with 20 publications, 57 citations, and 1,010 total link strengths. The other countries are Malaysia (14; 68; 1,222), China (8; 89; 1,218), Uganda (8; 94; 685), and the United States (5; 24; 521).

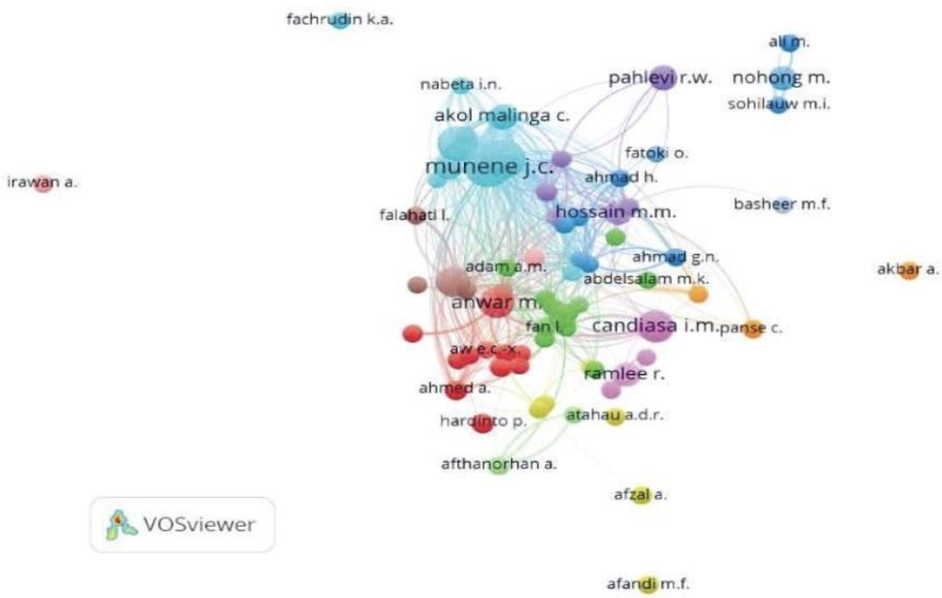

Figure 4: Bibliographic coupling authors

SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). Financial literacy and financial planning: Implication for financial well- being of retirees. Business and Economic Horizons, 13(2), 224-236. https://doi.org/10.15208/beh.2017.17

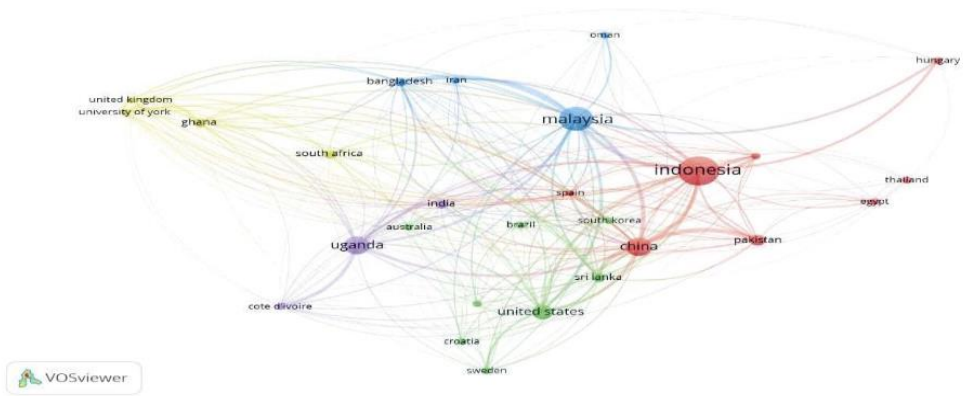

Figure 6: Interaction topic of financial literacy

SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). Financial literacy and financial planning: Implication for financial well- being of retirees. Business and Economic Horizons, 13(2), 224-236. https://doi.org/10.15208/beh.2017.17

Cluster	Topic
Cluster 1	Access to finance, finance, firm performance,
growth Cluster 2	Financial decision, materialism,
moderation (*wasatiyyah*),	
	retirement planning, saving attitude
Cluster 3	Financial attitude, financial behaviour, financial
	education, financial self-efficacy, parental
	socioeconomic status
Cluster 4	Business experience, competitive
	advantage, MSME performance, SME
	performance
Cluster 5	Entrepreneurial performance, financial literacy, financial risk
	tolerance, risk tolerance
Cluster 6	Financial planning, financial satisfaction, financial well-being,
	gender
differences Cluster 7	
Financial inclusion	
Cluster 8	Investment

Table 4: The frequency of occurrence and the total link strength

SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). Financial literacy and financial planning: Implication for financial well- being of retirees. Business and Economic Horizons, 13(2), 224-236. https://doi.org/10.15208/beh.2017.17

Keyword/variable	Occurrences	Total link strength
Financial literacy	68	95.00
Financial inclusion	8	16.00
Financial behaviour	7	14.00
Access to finance	5	11.00
Financial self-efficacy	4	11.00
Materialism	4	11.00
Growth	3	8.00
Retirement planning	3	8.00
Competitive advantage	4	7.00
Financial attitude	3	7.00
Financial decision	2	7.00
Moderation (*wasatiyyah*)	2	7.00
Saving attitude	2	6.00
Financial well-being	2	5.00
SMEs performance	3	5.00
Financial planning	2	4.00
Financial satisfaction	2	4.00
Firm performance	2	4.00

SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). Financial literacy and financial planning: Implication for financial well- being of retirees. Business and Economic Horizons, 13(2), 224-236. https://doi.org/10.15208/beh.2017.17

The keyword or variable ‘financial literacy’ ranks first with 68 occurrences and a total link strength of 95. Following in second place, ‘financial inclusion’ had eight occurrences, ‘financial behavior’ had seven occurrences, and ‘access to finance’ had five occurrences. Details of the occurrence and total link strength of keywords or variables can be seen in Table.

In addition to network visualisation, visualisations can also be displayed as overlays. The colour of the circle can indicate the year in which the article had the keyword or variable studied. The darker the colour in the circle, the longer the variables are discussed in the study, and conversely, the brighter the colour in the circle, the more actual the variables. The overlay visualisation can be seen in Figure 7

Figure 7: Visualisation by overlay

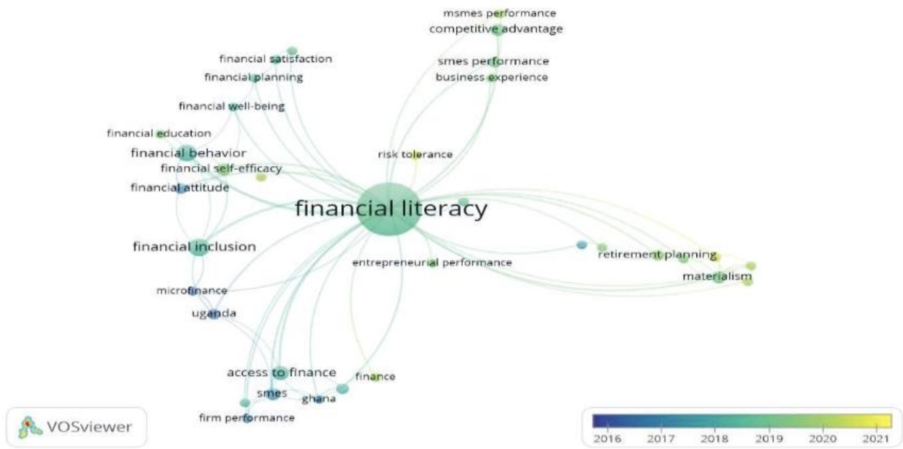

Figure 7 above shows that the variables financial attitude, firm performance, and investment are represented by a purplish-blue circle and were discussed from 2016 to 2017, while the variables financial literacy, financial inclusion, financial well-being, financial planning, financial satisfaction, access to finance, growth, and financial behavior are represented by a dark green circle and were discussed in 2018. The light green circle for gender differences, financial education, financial self-efficacy, business experience, SME performance, competitive advantage, entrepreneurial performance, retirement planning, and materialism shows that it was discussed in 2019.

While the yellow circle for MSME performance, risk tolerance, parental socioeconomic status, and financing shows that it was discussed in 2020. In Figure 8, the results of the density visualization show that the number of keywords or variables that often appear can be seen in the purple hue surrounding the financial literacy, risk tolerance, and entrepreneurial performance variables. This area is a variable that has been extensively studied. This Different From the variables represented as yellow, such as MSME performance,competitive advantage, SME performance, and business experience.

MSMEs have a unique characteristic in that there tends to be cooperation rather than competition among business actors. The MSMEs that are aware of the benefits of working together are the ones who will be able to make their business survive and even develop in the midst of a swift current of change.

Financially literate or experienced managers can identify new opportunities that lead to high performance, organize resources that drive firm performance, as well as understand the market and customer demands, which allows them to perform better and gain a competitive advantage. Educated and educated entrepreneurs easily recognise new opportunities for future business growth.

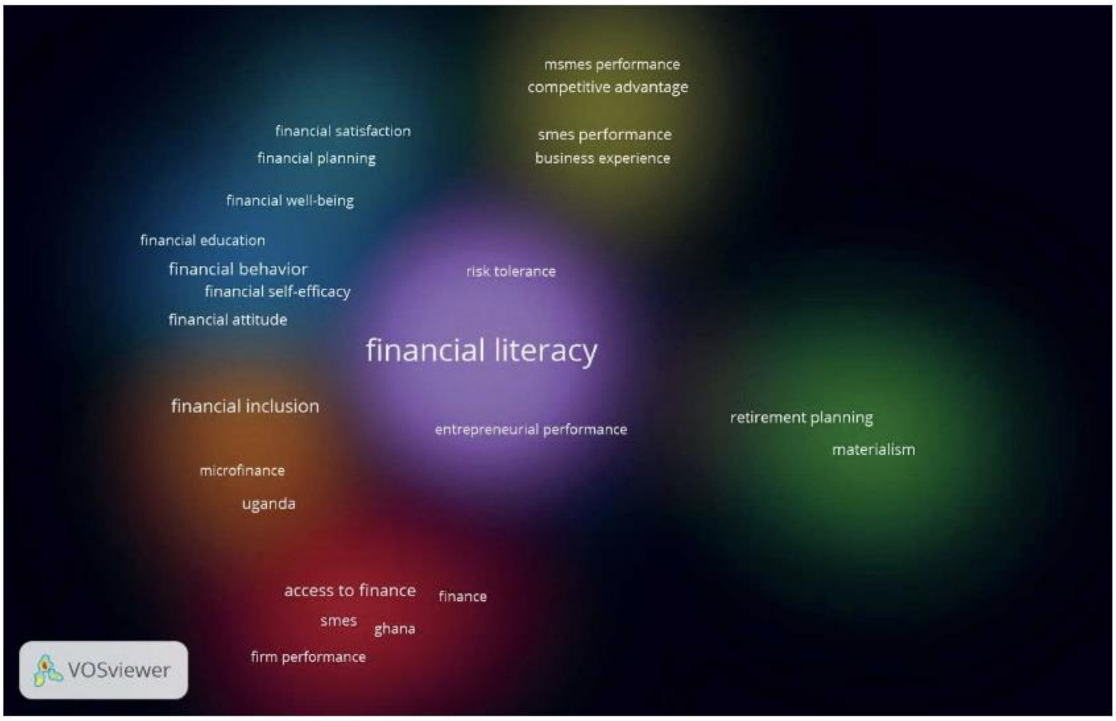

Figure 8: Visualisation by density

With regard to the MSME performance, competitive advantage, SME performance, and business experience variables in financial literacy research, this study suggests that if business actors have adequate financial literacy skills, then the financial and business decisions that are determined will be directed at better developments from time to time, which will increase the company's ability to survive in crises and be more sustainable in the long term. These variables have not been extensively studied much, and there is ample opportunity for further research. Based on the resource-based view (RBV) theory, with competitive advantage, business experience, performance, and financial literacy, a firm faces changes in the business environment.

MSMEs have a unique characteristic in that there tends to be cooperation rather than competition among business actors. The MSMEs that are aware of the benefits of working together are the ones who will be able to make their business survive and even develop in the midst of a swift current of change.
Financially literate or experienced managers can identify new opportunities that lead to high performance, organize resources that drive firm performance, as well as understand the market and customer demands, which allows them to perform better and gain a competitive advantage. Educated and educated entrepreneurs easily recognise new opportunities for future business growth.

After mapping theoretical models of financial literacy and identifying future research opportunities based on descriptive analysis using VOSviewer, we also investigated the variables built into financial literacy models as a moderating variable, as a mediating variable, as an independent variable, and as a dependent variable.

Theoretical Model with Moderating Variables:
In general, the moderating effect shows the interaction between the independent and the moderating variables in influencing the dependent variable (Baron & Kenny, 1986; Henseler & Fassott, 2010). Moderated regression analysis (MRA) is a common technique used in multiple linear regression analysis by incorporating a third variable as a moderating variable in the form of a multiplication between two independent variables.

This will result in a nonlinear relationship, in which the measurement error of the MRA estimate coefficient utilizing the latent variable will be inconsistent and biased. A good solution is to use a structural equation model,which can fix this measurement error by taking into account the interaction effect.

Table 5 shows the studies using a theoretical model with financial literacy as a moderating variable. The independent variable most commonly used is access to finance (Adomako et al., 2016; Okello Candiya Bongomin et al., 2017; Mohd Zukime et al., 2019; Fatoki, 2021).

These studies found a positive relationship between access to finance and company performance by including financial literacy as a moderating variable. Financial literacy helps owners and managers access financial services, such as loans from banks, to develop companies (Okello Candiya Bongomin et al., 2017).

The explanation above is based on the RBV theory that financial literacy facilitates financial access and company performance (Adomako et al., 2016). As we can see in Table 5, other independent variables, such as education, demographics, cognition, enterprise risk management, entrepreneur passion, financial resource availability, artistic orientation, and intellectual capital were investigated with financial literacy as a moderating variable.

The popular dependent variables in this model are performance and growth. In addition, other dependent variables such as investment decisions, financial risk tolerance, financial inclusion, competitive advantage, entrepreneurial persistence, and resource acquisition were examined. Testing was carried out using hierarchical regression and structural equation modeling (SEM). The subjects in this theoretical model are CEO/owner, senior finance managers, active investors, entrepreneurs, adults, and managers.

Table 5: Theoretical models with financial literacy as the moderating variable

Year	Author(s)	Independent variable	Moderating variables	Dependent variable	Method	Subjects
2019	Al Issa et al.	Entrepreneur passion	Financial literacy	Entrepreneurial persistence	PLS-SEM	Malaysian entrepreneurs
2019	Mohd Zukime et al.	Access to finance	Financial literacy	SME performance	PLS-SEM	SMEs in Pakistan
2019	Owusu et al.	Financial resource availability	Financial literacy	SME growth	Regression	SMEs in Ghana
2019	Purnomo	Artistic orientation	Financial literacy	Entrepreneurial performance	Hierarchical regression	Small creative business entrepreneurs in Yogyakarta, Indonesia
2019	Ying et al.	Intellectual capital	Financial literacy	Resource acquisition	SEM	SME owners/ managers in Pakistan
2021	Fatoki	Access to finance	Financial literacy	SMME performance	Hierarchical regression	SMME owners in South Africa

In , financial literacy is used as an independent variable with differing moderating variables. One of the more popular moderating variables is gender. It was found that men have higher financial literacy than women (Kirbiš Škreblin et al., 2017), which contrasts with the finding that working women have better financial literacy and ability than men (Sabri et al., 2017).

Such findings are interesting and warrant further research. Other moderating variables include patient financial responsibility, financial capital availability, networks, private organisation support, and government support. The dependent variables tested were patient engagement, firm performance, financial inclusion, financial satisfaction, financial capability, retirement planning, small firm.

Theoretical Model with Mediating Variables :

The mediating effect is the relationship between the independent variable and the dependent variable through a connecting variable. This implies that the influence of the independent variable on the dependent variable could be direct or indirect through a connecting variable or mediation.

By adding a third variable called the mediating variable, which is also called the intermediary or intervention variable, mediation tries to find and explain the mechanism or process behind the relationship between the independent variable and the dependent variable (Baron & Kenny, 1986).

Table 6 shows that SEM and regression are the most common methods used to test the financial literacy mediation model. SEM is a multivariate statistical analysis technique used to analyse structural relationships. This technique combines factor analysis and multiple regression analysis, and is used to analyse structural relationships between measured variables and latent constructs.

This method is preferred by researchers because it estimates many interrelated dependencies. In this analysis, two types of variables are used, namely endogenous variables and exogenous variables. The endogenous variable is the same as the dependent variable, while the exogenous variable is the same as the independent variable.

Suggestions for Enhancing Financial Literacy Integration into School Curriculum:

To cultivate a culture of financial literacy from an early age, basic concepts related to financial literacy should be integrated into the school curriculum. Topics such as saving, budgeting, investing, and understanding financial risks can be introduced at the primary level and gradually expanded upon in higher grades. By teaching children about financial concepts, schools can also play a crucial role in reaching parents who may be illiterate or have limited financial knowledge.

Advanced Education at Higher Levels: Building on the foundation laid in schools, higher education institutions should offer specialized courses in financial literacy and financial planning. These courses can cover advanced topics such as investment strategies, retirement planning, taxation, and financial regulations. By equipping students with in-depth knowledge, universities and colleges can produce a workforce capable of making sound financial decisions and contributing to the country's economic growth.

Periodic Evaluation of Initiatives: Regulatory bodies should conduct regular assessments of their financial literacy initiatives to gauge their effectiveness and identify areas for improvement. This evaluation can involve surveys, focus groups, and performance metrics to measure changes in financial knowledge, attitudes, and behaviors among the target population.

By monitoring progress and adjusting strategies accordingly, policymakers can ensure that resources are allocated efficiently and interventions are aligned with the evolving needs of the population. Innovative Policy Interventions: Recognizing that financial literacy is not a static concept, government policies should adapt to changing economic realities and emerging trends.

Recognizing that financial literacy is not a static concept, government policies should adapt to changing economic realities and emerging trends. Innovative approaches, such as leveraging technology for digital financial education, incentivizing financial institutions to promote literacy programs, and integrating financial literacy into social welfare schemes, can help reach underserved populations and bridge the existing knowledge gap. Additionally, public-private partnerships can enhance the scalability and sustainability of financial literacy initiatives by leveraging the expertise and resources of both sectors.

Enhancing financial literacy is essential for promoting financial inclusion, stability, and overall economic well-being in India.

By incorporating basic concepts into the school curriculum, providing advanced education at higher levels, conducting periodic evaluations of initiatives, and implementing innovative policy interventions, India can improve the financial literacy of its citizens and pave the way for a more prosperous future.
It is imperative for regulatory bodies, educational institutions, government agencies, and other stakeholders to collaborate effectively in this endeavor to ensure sustainable progress and inclusive growth for all segments of society.
Developing a comprehensive financial literacy framework is indeed crucial for ensuring consistency in international studies and providing guidance for research in this field. In India, efforts have been made to address this need through initiatives such as the National Strategy for Financial Education and the establishment of Financial Literacy Centres (FLCs).
Additionally, the Reserve Bank of India (RBI) has released a Financial Literacy Guide to standardize the curriculum for imparting financial education. The National Strategy for Financial Education aims to create awareness and educate consumers about various aspects of financial services, products, and their features.
It also seeks to influence attitudes to translate knowledge into behavior and enable consumers to understand their rights and responsibilities as clients of financial services. This strategy serves as a guiding framework for financial literacy initiatives in the country, providing a roadmap for stakeholders to collaborate and implement effective programs.

Year	Author(s)	Independent variable	Mediating variables	Dependent variable	Method	Subjects
2017	Adams et al.	Retirement planning	Financial literacy	Financial well-being	PLS-SEM	Pensioners Association in Cape Coast Metropolis, Ghana
2017	Okello et al.	Institutional framing	Financial literacy	Financial inclusion	SEM	Poor households in Uganda
2019	Rahmawati et al.	Family economic education	Financial literacy	Financial inclusion	Regression	Students from several universities in Indonesia
2019	Sabri and Aw	Preferences for media, preference for financial planners, preferences for family and peers, use of the internet in managing finance	Financial literacy	Income allocation for investment, having a financial planner	Regression	Malaysian public sector employees, private sector employees, Felda/rural residents, and youth in institutions of higher learning

Table 6: Theoretical models with financial literacy mediator variables
SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017).
Financial literacy and financial planning: Implication for financial well- being of retirees.
Business and Economic Horizons, 13(2), 224-236. https://doi.org/10.15208/beh.2017.17

2020	Aeknarajindawat	Trust	Financial literacy	Risk tolerance, risk perception	PLS-SEM	Financial advisors of the banking sectors
2020	Herawati et al.	Financial learning quality, parental SES	Financial literacy	Financial self-efficacy	Regression	Accounting students in Bali
2020	Tan and Singaravelloo	Socio-demographic	Financial literacy	Retirement Planning	PLS-SEM	Malaysian government officers
2020	Widyastuti et al.	Financial education	Financial literacy	Financial behaviour	PLS-SEM	Teachers of senior high school and vocational school in Greater Jakarta, Indonesia
2020	Yuesti et al.	Financial attitude, financial behaviour	Financial literacy	Financial well-being	PLS-SEM	Household heads in Denpasar, Indonesia
2020	Zhao and Zhang	Financial socialisation	Financial literacy	Financial behaviour, financial well-being	SEM	US adult population
2021	Fan and Zhang	Financial education	Financial literacy	Emergency savings	Regression	US adults
2021	Larisa et al.	Ages, education, income	Financial literacy	Retirement planning	PLS-SEM	Workers in various locations in Indonesia
2021	Setiawan et al.	Government support	Financial literacy	Fintech adoption	PLS-SEM	Fintech users

Table 7: Theoretical models with financial literacy mediator variables
SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017).
. https://doi.org/10.15208/beh.2017.17

Uganda, students from several universities in Indonesia, citizens from various sectors in Malaysia, the Consumer Empowerment Index survey of the Korea Consumer Agency, financial advisors from the banking sector, accounting students in Bali, Malaysian government officers, teachers of senior high school and vocational schools in Greater Jakarta, household heads in Denpasar, American adults, workers in various locations in Indonesia, and fintech users. A popular independent variable is financial education. Other independent variables tested were retirement planning, institutional framing, preference for media, preference for financial planner, preference for family, use of the internet in managing finance, trust, financial learning quality, parental SES, socio-demographic, financial attitude, financial behaviour, financial socialization, age, education, income, and government support. In this model, the popular dependent variables are financial well-being, financial behaviour, financial inclusion, and retirement planning. Other dependent variables tested were income allocation for investment, sound personal finance, risk tolerance, risk perception, financial self-efficacy, retirement planning, emergency savings, and fintech adoption. Table 8 shows that the mediating variables were designed and tested on the theoretical model for different subject backgrounds. The popular mediating variables were financial self-efficacy, access to finance, wasatiyyah, financial risk attitude, and risk tolerance.

The financial self-efficacy variable can mediate financial literacy and financial inclusion (Mindra & Moya, 2017). Consumers with a high level of financial self-efficacy are more confident in choosing their own financial products and services (Kartawinata et al., 2021). Other mediating variables studied are access to finance and financial risk attitude. These variables can mediate financial literacy on SMEs sustainability (Ye & Kulathunga, 2019), while access to finance and financial risk attitude can mediate financial literacy on SMEs performance (Buchdadi et al., 2020).

Other mediating variables such as wasatiyyah can mediate financial literacy on financial decisions (Ramlee et al., 2019; Husain et al., 2021). Popular dependent variables such as financial well-being, financial performance, financial inclusions, financial decisions, and SMEs performance.

Year	Author(s)	Independent variable	Mediating variables	Dependent variable	Method	Subjects
2013	Sabri et al.	Financial literacy	Financial stress	Financial well-being	SEM	Employees in Malaysia
2014	Gerrans et al.	Financial literacy	Financial satisfaction	Personal well-being	SEM	Individuals in Western A
2015	Henager and Mauldin	Financial literacy	Saving behaviour	Financial well-being	Regression	Households in the Unite
2016	Okello Candiya Bongomin et al.	Financial literacy	Social capital	Financial inclusion	Regression	Rural poor househol
2017	Mindra and Moya	Financial literacy	Financial self-efficacy	Financial inclusion	SEM	Adult individuals in u
2018	Mabula and Ping	Financial literacy	Use of financial services	Firm performance	PLS-SEM	Tanzania SMEs
2018	Malinda et al.	Financial literacy	work engagement	Financial performance	PLS-SEM	Active agents in Palemb Indonesia
2018	Potrich and Vieira	Financial literacy	Materialism; compulsive buying	Propensity to indebtedness	SEM	Brazilian residents
2019	Citradika et al.	Financial literacy	Attitude of non- cash transactions	Interest of non-cash transactions	PLS-SEM	Batik SMEs in Pekalong Indonesia

Table 8: Theoretical models with financial literacy mediator variables SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). . https://doi.org/10.15208/beh.2017.17

Table 8 shows several theoretical models with mediating variables. In this theoretical model, financial literacy acts as the dependent variable. The independent variables tested were prevention, promotion, parental income, parental education level, parental profession, and gender, while the mediating variables include power, prestige, retention time, distrust, anxiety, supply chain management, and financial anxieties.

According to Pereira and Coelho (2020), the relationship between regulatory focus theory and financial literacy is partly mediated by money attitude carried out by students from Portuguese public universities. Another research model made in Radianto et al. (2020) shows that supply chain management mediates the relationship between parental income, parental education level, parental profession, and financial literacy for young entrepreneurs or students who start businesses at universities in Indonesia.

Year	Author(s)	Independent variable	Mediating variables	Dependent variable	Method
2019	Ramlee et al.	Financial literacy	*Wasatiyyah*	Financial decisions	SEM
2019	Resmi et al.	Financial literacy	Business growth	Competitive advantage	SEM
2019	Ye and Kulathunga	Financial literacy	Access to finance; Financial risk attitude	Sustainability in SMEs	SEM
2020	Aeknarajindawat	Financial literacy	risk tolerance; risk perception	Asset allocation	PLS-SEM
2020	Anwar et al.	Financial literacy, Business Experience	Opportunity recognition	SMEs performance	SEM
2020	Buchdadi et al.	Financial literacy	Access to finance products; Financial risk attitude	SMEs performance	SEM
2020	Dewi et al.	Financial literacy	Financial perception	Financial behaviour	SEM
2020	Kengatharan et al.	Financial literacy	Financial planning	Financial satisfaction	SEM

Table 9: Theoretical models with financial literacy mediator variables SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017). . https://doi.org/10.15208/beh.2017.17

Tinghög et al. (2021) shows that the relationship between gender and financial literacy can be mediated by financial anxiety in Swedish women.MSMEs have a unique characteristic in that there tends to be cooperation rather than competition among business actors. The MSMEs that are aware of the benefits of working together are the ones who will be able to make their business survive and even develop in the midst of a swift current of change. Financially literate or experienced managers can identify new opportunities that lead to high performance, organize resources that drive firm performance, as well as understand the market and customer demands, which allows them to perform better and gain a competitive advantage. Educated and educated entrepreneurs easily recognise new opportunities for future business growth.

Year	Author(s)	Independen t variable	Mediating variables	Dependent variable	Method	Subjects
2020	Pereira and Coelho	Prevention, promotion	Power-prestige, retention-time, distrust, anxiety	Financial literacy	SEM	Students from a Portuguese public university
2020	Radianto et al.	Parental income, parental education level, parental profession	Supply chain management	Financial literacy	PLS-SEM	Entrepreneursh ip education undergraduates in an Indonesian university
2021	Tinghög et al.	Gender	Financial anxiety	Financial literacy	Regression	Women in Sweden

Table 10: The theoretical model with the mediator variable and financial
SOURCE : Adam, A. M., Frimpong, S., and Boadu, M. O. (2017).
. https://doi.org/10.15208/beh.2017.17

LIMITATION

When delving into the limitations of a study on financial literacy, it's crucial to approach it with a reflective and critical mindset. Here's how you might structure your discussion:

1. Scope and Generalizability: Address the limitations concerning the scope of your study. For instance, if your study focused on a specific demographic or region, acknowledge that the findings might not be universally applicable. Discuss how this could impact the generalizability of your results.

2. Data Limitations: Discuss any constraints related to data availability, quality, or reliability. This could include issues like incomplete datasets, data biases, or outdated information. Acknowledge how these limitations might have influenced your analysis and interpretation of results.
3. Methodological Limitations: Reflect on the methodologies employed in your study. Are there any inherent weaknesses or biases associated with your chosen research methods? Discuss alternative approaches that could have been used and how they might have affected the outcomes.
4. Sample Size and Selection: Consider the size and representativeness of your sample. Did you encounter challenges in recruiting participants or obtaining a diverse sample? Discuss how these limitations could have

impacted the reliability and validity of your findings.
5. Time Constraints: Acknowledge any time constraints that may have influenced the depth or breadth of your study. Reflect on whether more time would have allowed for a more comprehensive analysis or a broader literature review.

6. External Factors: Discuss any external factors beyond your control that may have influenced the outcomes of your study. This could include changes in the economic or regulatory environment, which might affect the applicability of your findings.

CHAPTER -5
CONCLUSION

This research is based on bibliometric analysis and a literature review of theoretical models of financial literacy. A theoretical model isarepresentationoftheproblemdomainusing general rules and concepts, as well as a simplified and idealized understanding of alternative solutions. The variables, research methods, and research subjects of theoretical models of financial literacy research in 73 studies from 2013 to 2021 are reviewed here. It was found that studies with theoretical models of financial literacy have increased in number from 2019. The subject area of research is dominated by business, management, and accounting, and the countries with the highest number of publications are Indonesia and Malaysia.

It is suggested that more studies are carried out on the least- occurring variables related to financial literacy, such as MSME performance, competitive advantage, SME performance, and business experience. With regard to SME performance, it is known that managers have good financial literacy and business experience and are mediated by opportunity recognition. Nonetheless, financial literacy can increase SME performance by mediating access to finance products and financial risk attitudes. Regarding the competitive advantage variable, it can be a mediating variable in a theoretical model that links financial literacy with SME performance. Although there was ample discussion on the role of financial literacy as a mediating and moderating variable, as well as an independent variable, there have only been a handful of papers on financial literacy as a dependent variable.

Additionally, as this study focuses on Scopus, it is also recommended that analyses be carried out on databases like GoogleScholar, Crossref, WoS, and ProQuest. This study only provides a static overview of a highly dynamic area, but several implications can be drawn from the financial literacy literature. This study contributes to the field by providing past, current, and future research directions with potential and important insights.

CHAPTER -6
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