

Financial Literacy and Investment Behavior of Women – A Bibliometric Analysis

Shaistha Tabassum^{1*}, Dr. S. L. Tulasi Devi²

^{1*}Research Scholar, Department of Management Studies National Institute of Technology, Warangal (NITW), India st23smr1s01@student.nitw.ac.in <https://orcid.org/0009-0008-6047-5223>

²Associate Professor, Department of Management Studies National Institute of Technology, Warangal (NITW), India sltdevi@nitw.ac.in <https://orcid.org/0000-0002-1285-4447>

Abstract

This research provides a bibliometric analysis of the materials available regarding the level of financial literacy and investment decisions of women. The paper investigates a systematic bibliometric analysis, including articles ranging from 2014 to 2024, from the Scopus and Web of Science databases. The bibliometric analysis was processed through RStudio and Biblioshiny to produce co-citation networks, keywords, and the depiction of themes over the years. This study highlighted increasing attention toward women investing; their knowledge and behaviour in the rapidly developing markets and sustainable investment. This involves age and marital status, affirming that young and single females exhibit a lower level of financial literacy than older married females because the latter acquire some financial literacy from managing finances in their homes. Also, employed women have relatively better financial literacy because women need to get the chance to manage some of the financial aspects independently. Thus, women have limited financial literacy.

Keywords: Financial Literacy, Gender Differences, Investment Behaviour, Investment, and Sustainable Investing

1. Introduction

Managing finance has been a crucial aspect of a person's financial planning, and investment. Financial literacy plays a central role in developing a stable and sustainable economy. The literature of the last few decades has paid more attention to the role of gender differences in financial literacy and investment behaviour, with cross-sectional studies pointing to the fact that women tend to have lower levels of financial literacy, invest less, and take less risk than men. The initiation of humanity started with history and acts that were mainly influenced by the environment. Human beings tend to carry the environmental effect and the established set of orders that were put in place before them (Yilmaz & Löschnigg, 2018). The main aim of the bibliometric analysis is to explore the overall connection related to the investment behaviour and the financial literacy among women.

Women's financial literacy depends on several factors, including education level, economic position, culture, and availability of financial resources. Khan et al., (2024), financial literacy is a mediator between retail investors' self-claimed financial beliefs and trading CNBC. Singh et al. (2020) and Owusu et al. (2023) stress education by female clients with higher formal education are observed to be financially more informed.

2. Methodology

2.1 Data Sources and Collection Methods

The data for the bibliometric analysis is undertaken from the database Scopus, that is well known for providing in-depth coverage of peer-reviewed literature. For gathering the necessary articles, the core focus was given to conducting a systematic search by undertaking the relevant keywords, which include "financial literacy," "investment behavior," and "women," and combining them with the Boolean operators for refining the overall results of the search. The search was then narrowed by

focusing on the current publications in different subject areas like social sciences, business, economics, and finance. There were 76 articles undertaken from the search results that were based on the relevance associated with the topic of the research. The bibliographic information, that consisted of title, years of publication, authors, names of journals, keywords abstracts, and counts of citations, was exported from Scopus and saved in a highly suitable format for analysis purposes. The data had undergone a cleaning process for removing duplicates, standardizing the author's keywords and names, and ensuring that proper completeness was initiated. Moreover, different bibliometric analysis tools were used to analyse the data, giving robust insights about the trends in publication patterns of authorship, the co-occurrence of keywords, and the citation networks. This systematic approach helps ensure an in-depth overview of the research landscape for financial literacy and investment behaviour among women.

2.2 Criteria for Inclusion and Exclusion

The inclusion and exclusion criteria were defined meticulously, ensuring a high level of quality and relevance connected with the article selection for the bibliometric analysis of the financial literacy and behaviour of investments among women. The inclusion criteria specified that articles should be distributed between 2014 and 2024, guaranteeing the examination covers the latest and essential exploration advancements in the last ten years. Only articles written in English were remembered to maintain consistency in language appreciation and work with precise examination. The articles were peer-assessed, ensuring the dependability and scholastic meticulousness of the sources. Also, the attention was on distributions inside the branches of knowledge of financial matters, money, business, and sociologies, as these fields are generally appropriate to the examination point.

Alternately, the exclusion criteria included discarding articles that fell external the predetermined time scope of 2014 to 2024, guaranteeing the review's contemporary significance. Non-English distributions were prohibited from avoiding language hindrances and guaranteeing the examination group's complete comprehension of the substance. Articles not peer-surveyed, for example, assessment pieces, publications, or non-insightful distributions, were mitigated by keeping an elevated expectation of scholarly quality. Moreover, the studies on financial proficiency or speculation conduct, as a rule, without explicit accentuation on women, were rejected to keep the examination lined up with the exploration centre. Copy articles were additionally removed to avoid overt repetitiveness in the dataset. By applying these thorough consideration and prohibition models, the review intends to give an engaged and top-notch bibliometric examination of the exploration scene relating to financial proficiency and investment behaviours among women.

2.3 Analytical Tools and Techniques Used

The analytical techniques and tools used within the bibliometric analysis are mainly taken to provide in-depth insights into the research landscape of financial literacy and investment behaviour among women.

Tool

The research has been inclined towards applying the analysis tool known as Bibliometrics. This open-source R package is designed to provide an in-depth scientometric and bibliometric analysis (Biblioshiny). Moreover, it helps in providing tools for the process of importing the data associated with a bibliography from various databases, including that of Web of Science and Scopus, with conducting a detailed examination.

Techniques

Descriptive Analysis: It involves summarising the standard set of features associated with the dataset, including the total number of publications done every year, followed by the distribution of the articles from journals and the geographical distribution of the research outputs.

Citation Analysis: This measures the overall impact of the authors, journals, and articles. The analysis of citations helps in correctly identifying the works that are highly cited, followed by getting journals that are influential within the field of literacy of finances and behaviour of investments among women.

Co-Authorship Network Analysis: This particular technique is inclined towards examining the pattern of collaboration among the researchers. The proper analysis of the co-authorship networks helps identify the authors that are influential and different research groups and also understand the research collaboration structure present.

Keyword Co-Occurrence Analysis: This technique helps identify the overall relationship between the different terms used in the literature. Moreover, it is highly helpful in unearthing the central theme of research and the current topics by analysing the co-occurrence and frequency of the keywords in the article.

Thematic Mapping: Thematic mapping is highly effective for categorizing the literature into different themes based on the co-occurrence of keywords. This is highly crucial for visualizing the crucial focus area within the field of research and correctly identifying the current trends or gaps.

3. Findings
3.1 Main information

Table 1: Necessary Information about Data

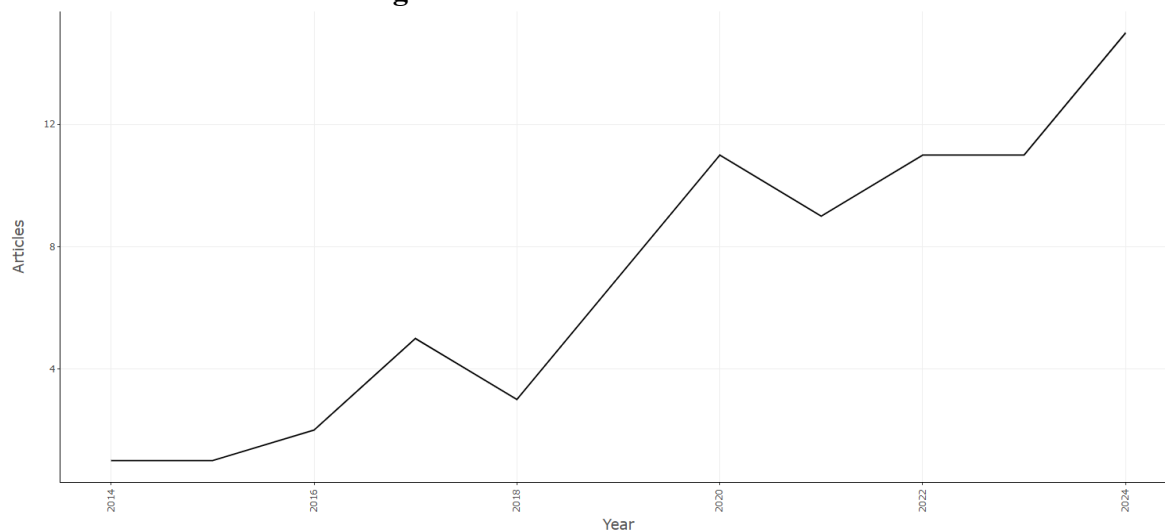
Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2014:2024
Sources (Journals, Books, etc)	65
Documents	76
Annual Growth Rate %	31.1
Document Average Age	2.99
Average citations per doc	9.618
References	0
DOCUMENT CONTENTS	
Keywords Plus (ID)	88
Author's Keywords (DE)	266
AUTHORS	
Authors	199
Authors of single-authored docs	6
AUTHORS COLLABORATION	
Single-authored docs	6
Co-Authors per Doc	2.67
International co-authorships %	17.11
DOCUMENT TYPES	
article	61
book chapter	8
conference paper	3
data paper	1
note	1
review	2

The above table 1 is from 2014-2024, covering 76 customers from around 65 sources, with a higher annual growth rate of 31.1%. The average age for every document is were published around 2.99 years (the identified documents being analysed were published approximately 2.99 years ago), with the average being around 9.618 documents. A total of 199 authors were present, with international co-authorships of 17.11%. The dataset includes 61 articles, 8 book chapters, 1 data paper, 1 note, and <http://jier.org>

3 papers from conferences and 2 reviews. The focus on collaboration is highly imperative, with around on average of 2.67 authors were worked on every document (each document was written by approximately 2 to 3 authors). Keywords Plus (88) and Author's Keywords (266) highlight the overall level of diversity connected with the research topics. The lack of references suggests that there is either a focus on the metadata analysis or the data is incomplete.

3.2 Annual Publication Output

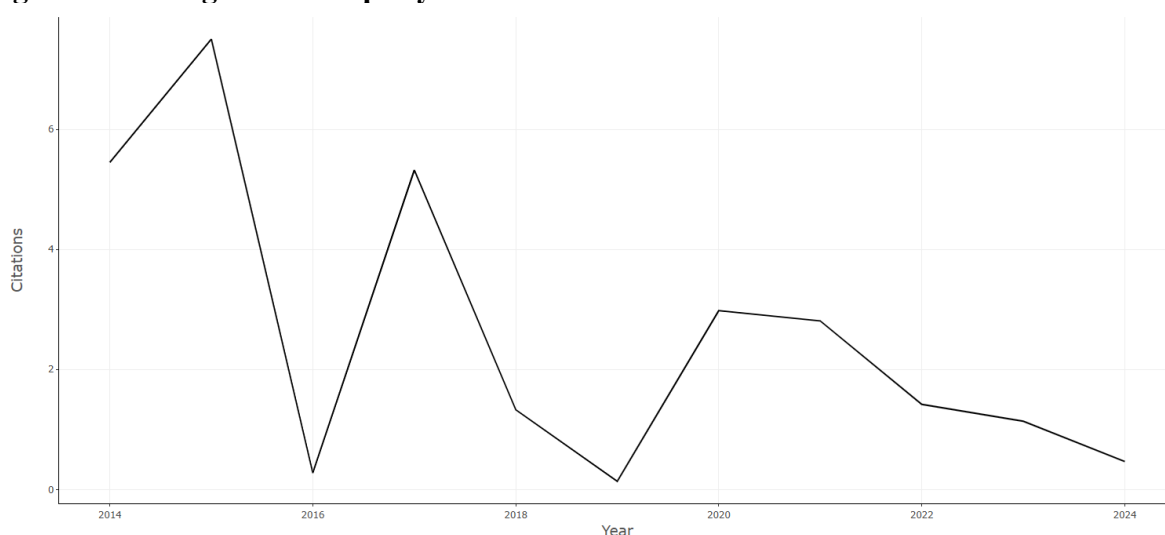
Figure 1: Annual Scientific Production



The line diagram in the figure 1 represents the number of articles published yearly from 2014 to 2024. At first, distribution rates were low and stable, with negligible movement until 2016. A recognizable increment starts in 2017, arriving at the top in 2019. After a slight rise in 2020, the quantity of articles bounced back, keeping a vertical pattern through 2021 and 2022. The sharp rise occurred in 2024, indicating a strong surge in research activity.

3.3 Average Citations Yearly

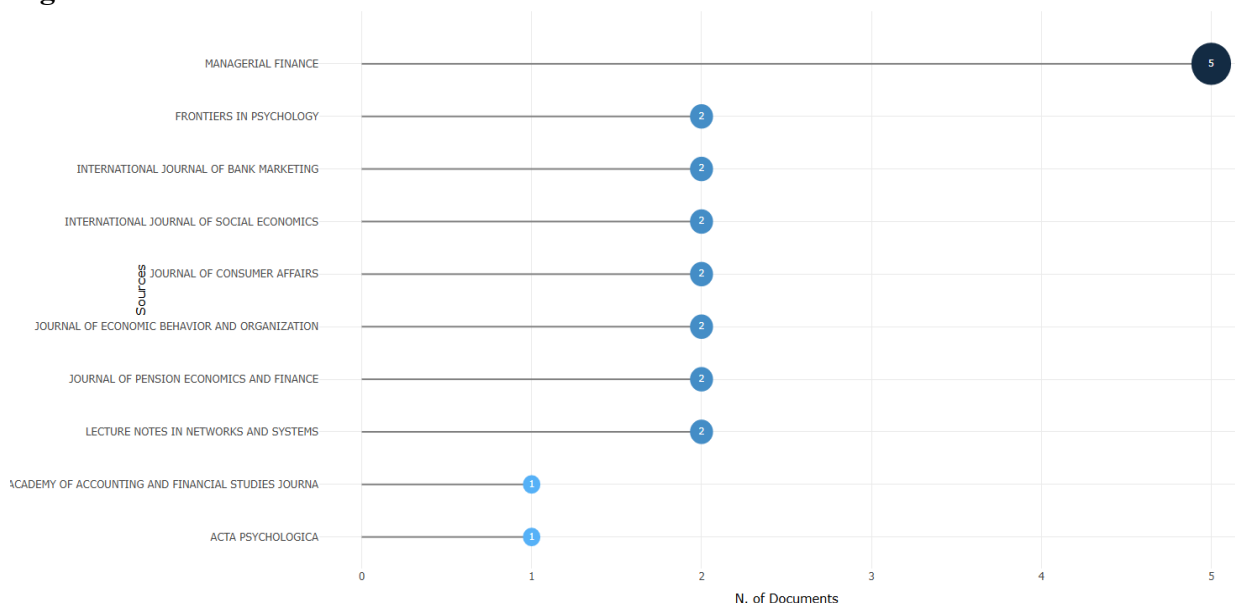
Figure 2: Average citations per year



The line diagram in the figure 2 shows a fluctuation of references from 2014 to 2024, with an underlying sharp rise happening in 2016, followed by a sharp decline till 2018. References then, at that point, resurge reasonably from 2018 to 2020 before retaking a decline by 2024.

3.4 Most relevant sources

Figure 3: Most Relevant Sources



The dot plot in the figure 3 helps understand the total number of documents across the different journals. “Managerial Finance” is the one that has stood out with the highest count, consisting of 5 documents, followed by different journals that have 2 sets of documents each. “Academy of Accounting and Financial Studies Journal” and “Acta Psychological” are the articles that have the lowest number of counts with having 1 document. The visualization aspect helps compare the frequency of effective documents among the journals listed.

3.5 Core sources by Bradford’s Law

Figure 4: Core Sources

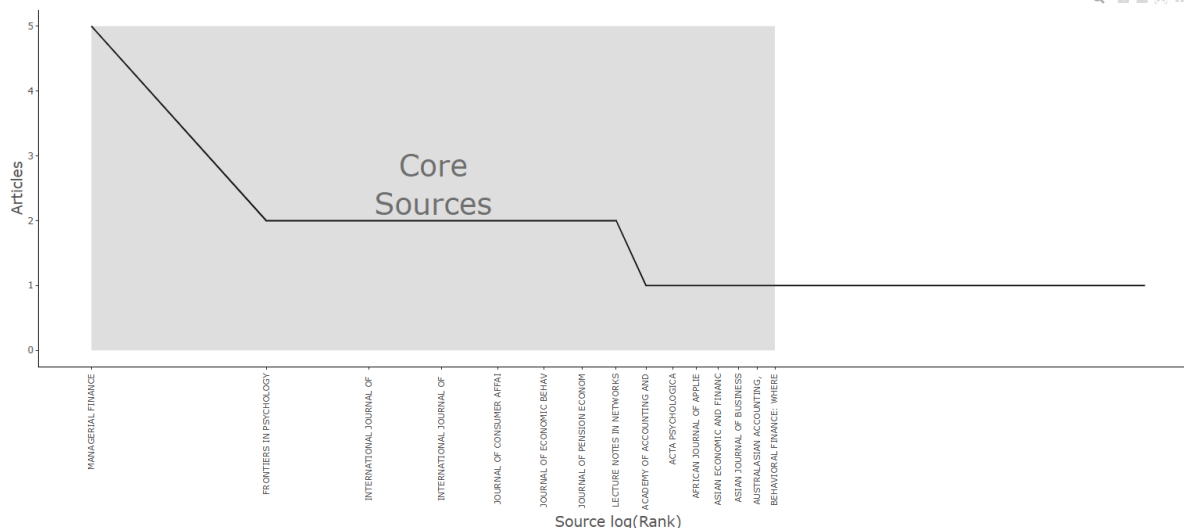


Figure 4 shows the core sources, and the graph is inclined towards illustrating the Bradford Law, which helps show the core-periphery structure. The horizontal axis presents the journals by the impact of citation, and the vertical axis tends to show the total number of articles, that is highly imperative for highlighting the dominant nature of impactful journals.

3.6 Sources' Local Impact

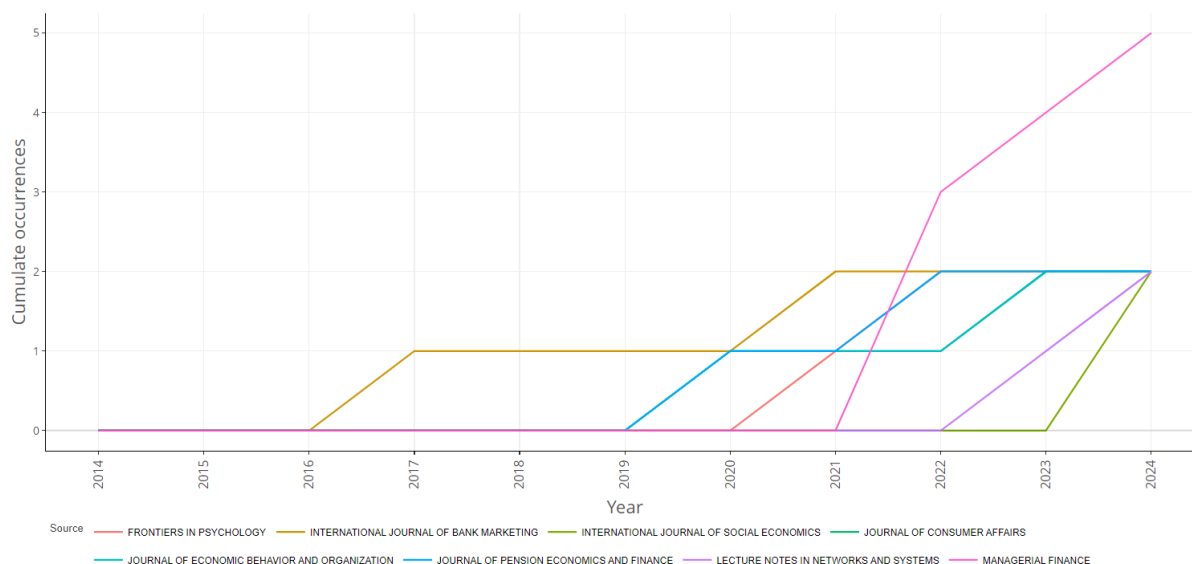
Figure 5: Local Influence of Sources



The dot plot presented in the figure 5 helps compare the H-index of the journals from the different fields of psychology, finance, economics, and marketing. “Managerial Finance” is the article that has the strangest and highest impact present within the H-index of 3. Several sets of journals have an H-index of 2, with most of the exhibits tending to be probing an H-index of 1 or 2.

3.7 Sources' Production over Time

Figure 6: Production of Sources over time

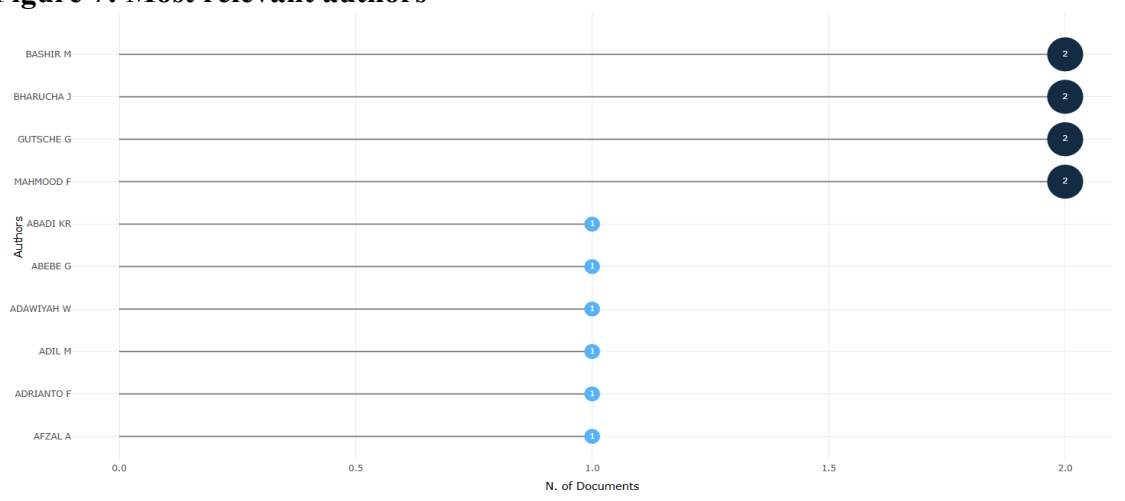


The figure 6 shows aggregate production of sources from 2014 to 2024 for different classifications. It features consistent development for specific lines, while others show quick increments followed by levels. Extraordinarily, 2023 tracks a defining moment with critical expansions in events for a few lines. This gives a near outline of particular development and security designs among the classifications.

4. Authorship analysis

4.1 Leading Authors in the Field

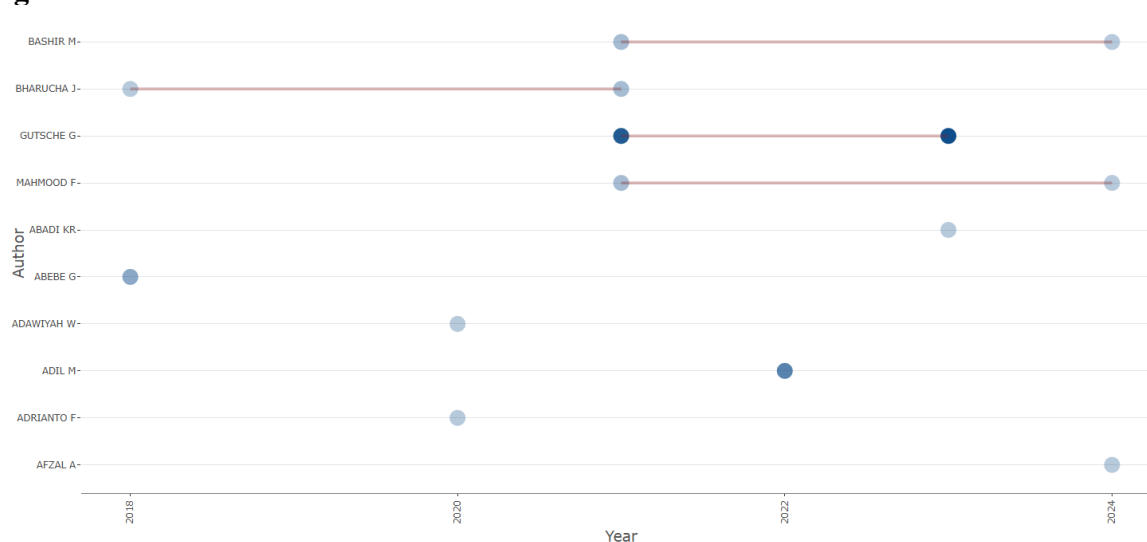
Figure 7: Most relevant authors



The dot plot in the figure 7 helps illustrate the total number of documents that different authors contribute. The horizontal axis helps represent the total number of records present, ranging from 0-2, with the vertical axis helping list the total authors. The plot further helps reveal that the maximum number of authors have been inclined towards contributing to one document, as shown by the blue dots, that are aligned at the mark of 1.0 within the horizontal axis.

4.2 Authors' Production over Time

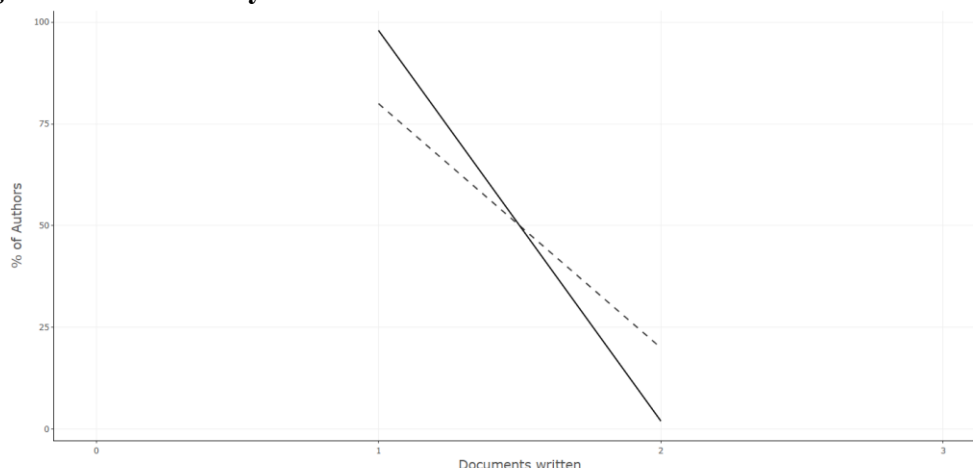
Figure 8: Production of Authors over time



The scattered plot in the figure 8 shows the distribution action of a few researchers from 2018 to 2024. Each of the dots addresses a distribution by a creator in a particular year. The plot uncovers changing distribution designs among the researchers. A few researchers, such as GUTSCHE G, have exhibited predictable distribution movement, with various distributions in 2020 and 2022. Others, like BHARUCHA J and MAHMOOD F, were distributed once during the notice period. The year 2022 seems to be more helpful for a few researchers, as demonstrated by the bunching of specks in that year. The plot gives a visual outline of distribution patterns, featuring contrasts in distribution recurrence and timing among the researchers.

4.3 Author Productivity through Lotka's Law

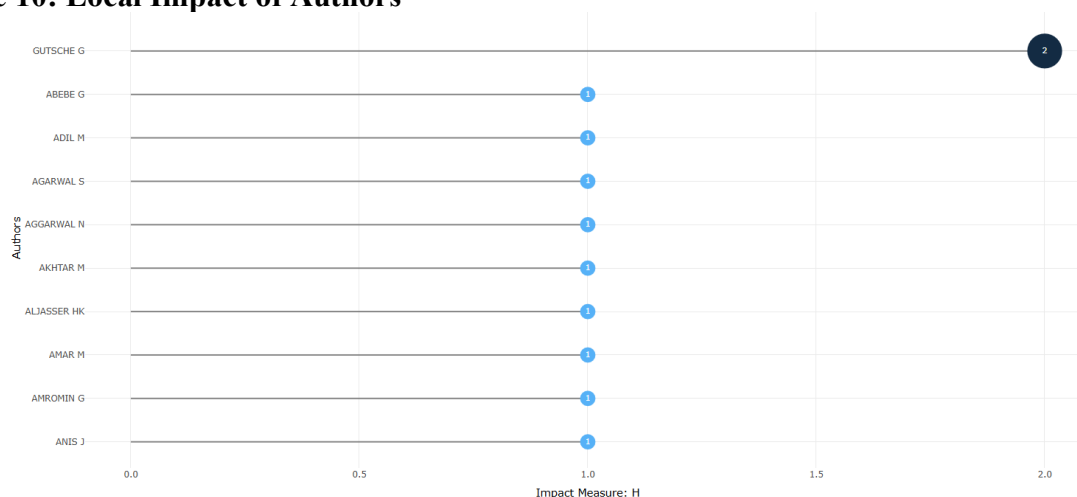
Figure 9: Productivity of Authors



The figure 9 represents Lotka's Law that depicts the connection between the level of writers and the number of records composed. The x-pivot addresses the quantity of reports, going from 0 to 3, while the y-axis addresses the level of researchers. The diagram includes a descending slanting line, showing a negative connection between the two factors. This recommends that as the number of records composed expands, the number of researchers contributing to those reports diminishes. However, a modest extent of writers are liable for composing a more significant number of records. The chart likewise incorporates a graph given by Lotka's Law, perhaps addressing a point of reference or a theoretical distribution. The inconsistency between the noticed and expected circulations recommends that the noticed information veers off from the ideal Lotkaian pattern, conceivably because of variables, for example, changing exploration fields, distribution inclinations, or coordinated effort designs. The graph visualizes creator efficiency, featuring the centralization of report creation among a small group of authors.

4.4 Authors' local impact

Figure 10: Local Impact of Authors

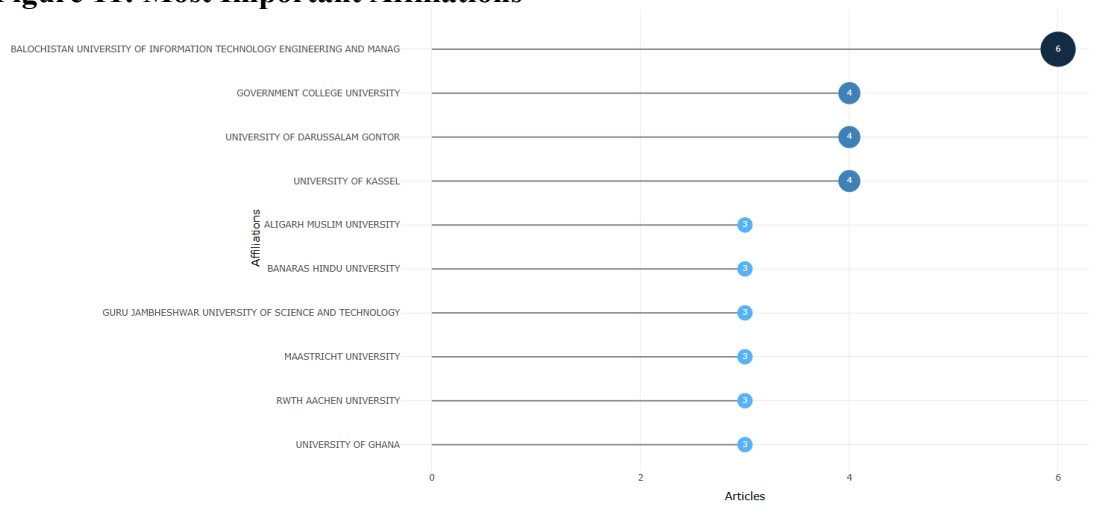


The plot in figure 10 reveals the H-index used as an impact measure for several authors. The horizontal axis depicts the H-index value from 0 to 2, whereas the vertical axis includes the authors' names. Regarding the researcher's H-index, that refers to the number of papers the author has published and the number of citations for each of them, the plot shows that the H-index of most of the listed authors is 1, that means that the authors have published at least one paper that was cited at least once. However,

one scholar's performance is significantly different: "GUTSCHE G" has an H-index of 2, so the author is more involved in highly cited publications. In general, the dot plot gives the viewer an idea of the productivity of the authors and the dispersed level of impact presented by the listed authors.

4.5 Most Relevant Affiliations

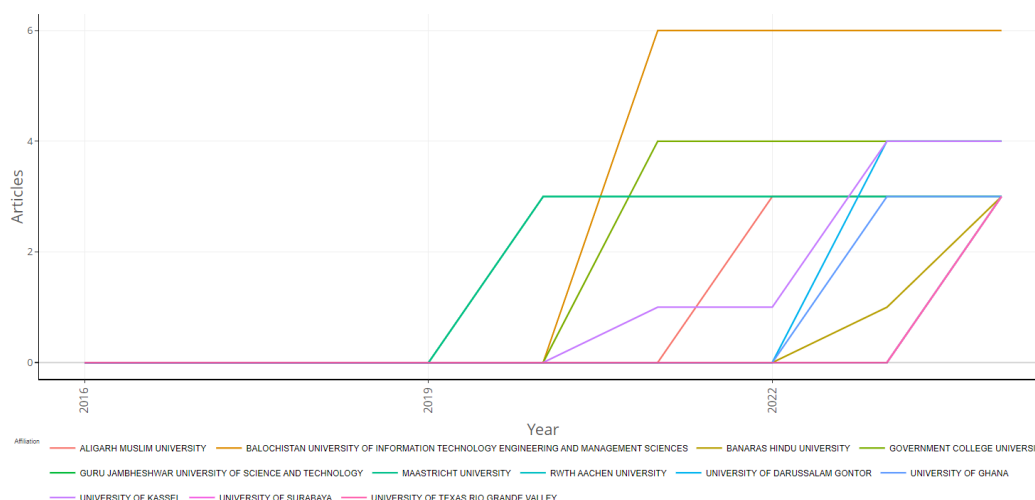
Figure 11: Most Important Affiliations



From the figure 11, it is clear that article contributions from different universities were analyzed, and the university that has contributed the most is the Baluchistan University of Information Technology Engineering and Managing with six articles. "Government College University" and "University of Darussalam Gontor" have 4. Several universities provided 3 articles, for instance, Maastricht University and RWTH Aachen University. This is because the chart exhibits the different productivity rates of the institutions listed.

4.6 Affiliations' Production over Time

Figure 12: Production of Affiliations over time



The line graph in the figure 12 indicates the total article publications of the given authors/research groups within the given year range of 2016-2022. It reveals diverse patterns: Some contributors demonstrate general growth, while others display sudden spikes and relatively gradual slowing afterward, and others have a beginner's spike published later. Thus, the prior and post-converted diagrams focus on the contrasts between the research output and publications of the contributors depicted.

4.7 Countries' Scientific Production

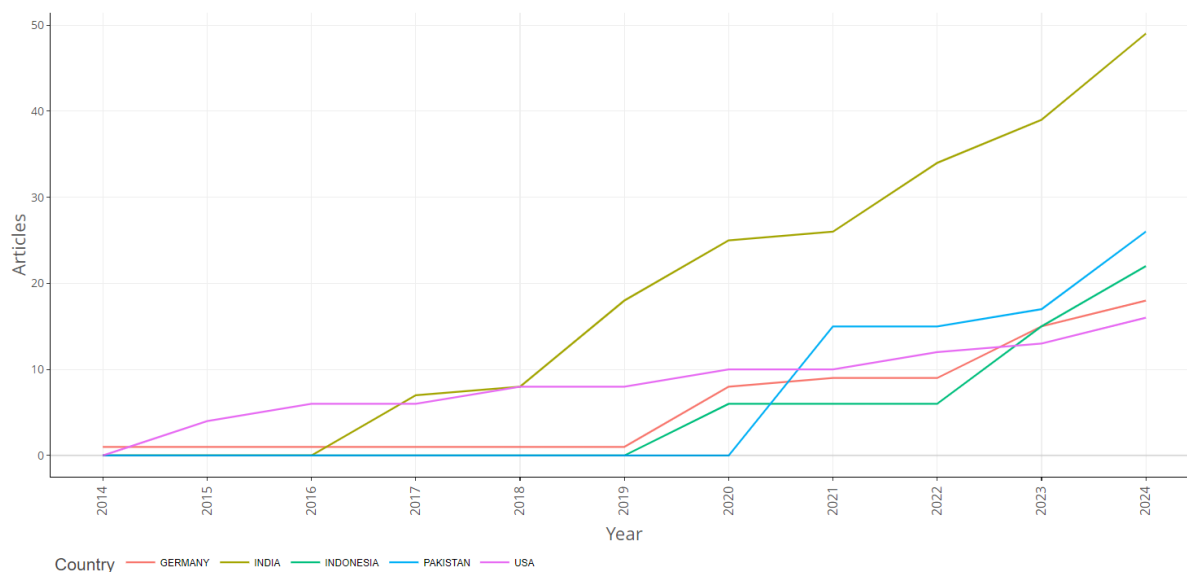
Table 2: Scientific production of countries

Country	Freq
INDIA	49
PAKISTAN	26
INDONESIA	22
GERMANY	18
USA	16
CHINA	10
UKRAINE	6
ITALY	5
SOUTH KOREA	4
TANZANIA	4
AUSTRALIA	3
CHILE	3
FRANCE	3
GHANA	3
ISRAEL	3
JAPAN	3
SAUDI ARABIA	3
CANADA	2
ETHIOPIA	2
HONDURAS	2
LITHUANIA	2
MALAYSIA	2
OMAN	2
THAILAND	2
TUNISIA	2
TURKEY	2
IRAN	1
SINGAPORE	1
TOGO	1
UK	1

The table shows that India has the highest scientific contributions, followed by Pakistan and Indonesia; Germany, the USA, and China still have their positions. It demonstrates the diversified works in the field of science performed by countries in Europe, Asia, Africa, and South America. These elements are essential in any comprehensive examination to get insights into the international scientific production trends, such as quality or specialization of the research, field, and cooperation.

4.8 Countries' Production over Time

Figure 13: Production of Countries over Time



The line chart in the figure 13 shows fluctuating research outputs over the ten years between the countries or the regions. Each country have constant year ongoing growth while others have experienced highly elevated growth recently or very low productivity in first years with a high increase later on, making the implication of factors like policy shift or funding boosts clear. This implies various research capabilities as well as growth trends among the entities.

5. Citation Network Analysis

5.1 Most Cited countries

Figure 14: Most cited countries

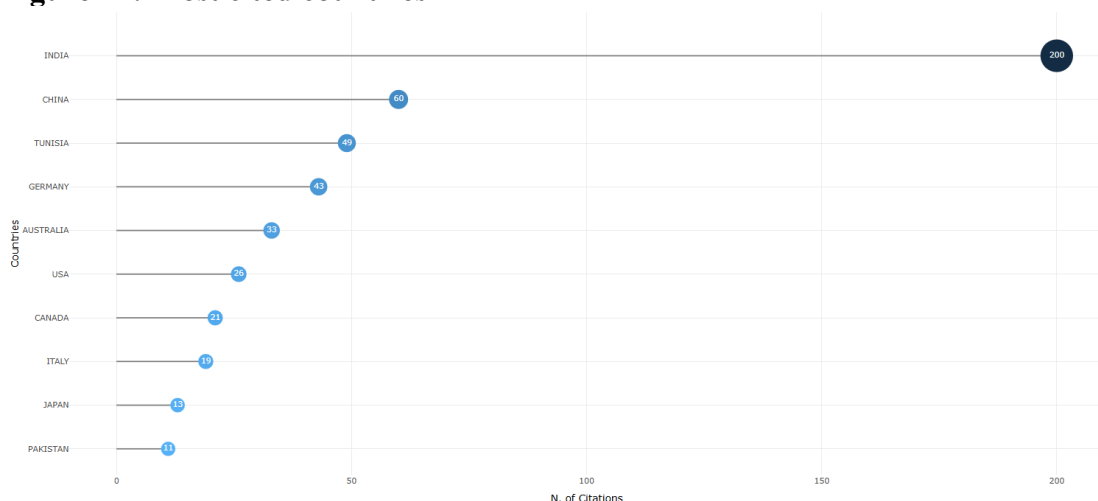
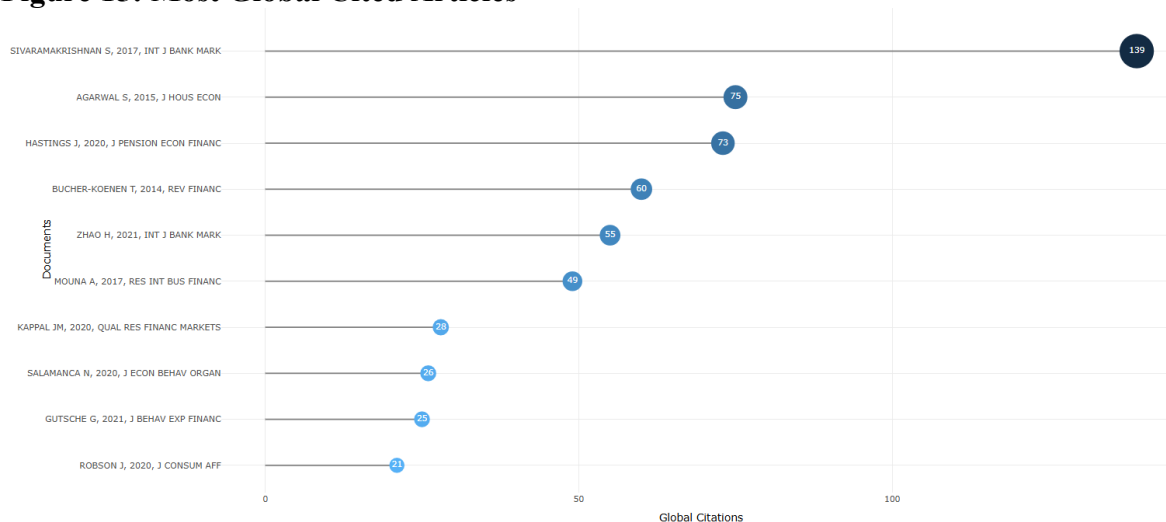


Figure 14 provides a plot graph representing the number of citations from different countries. China is the most mentioned country, with many citations, followed by India. Moderate levels of citations can be noted for Germany, Tunisia, and Australia. The countries outside the mentioned list and with lower CIT include the United States, Canada, Italy, Japan, and Pakistan. The plot raises questions and underlines the differences in the citation index of the noted countries; notably, China and India take the lead in the research impact.

5.2 Most Global cited documents

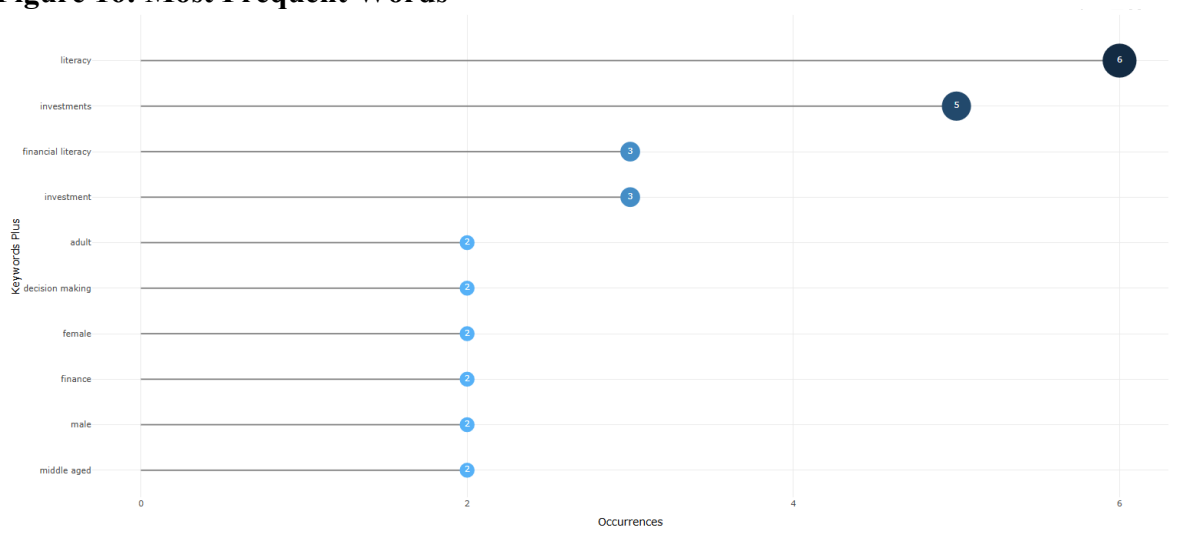
Figure 15: Most Global Cited Articles



The dot plot in the figure 15 indicates that both the number of documents and global cites increase positively, meaning that highly cited papers have more documents. As for the authors' influence, "SIVARAMAKRISHNAN S" yields the most significant degree of citations/di document, more than "AGARWAL S" and even "HASTINGS 3." Besides this, articles such as Mouna & Anis (2017), Zhao & Zhang (2021), and Salamanca et al. (2020) occupy a position of less citation and document values.

5.3 Most Frequent Words

Figure 16: Most Frequent Words



The dot plot in the figure 15 represents the input data wherein the occurrence of different keywords is depicted. Looking at the most frequently used keywords, it is possible to see that 119 occurrences were dedicated to "literacy", while "investments" – 58. In the study of Putri & Adawiyah (2020), Mohta & Shunmugasundaram (2024), and Zhang & Sidik (2024), moderate frequency of the keyword is found such as "financial literacy", "investment", "adult", "decision making". Lower frequencies are evident in the terms, including "female," "finance," "male," and "middle-aged." The dot plot proved to help visualize the keywords' distribution and the relative importance of concrete terms in the established context.

Figure 17: Word Cloud



Figure 1817: TreeMap



regional indicators like ‘developing world’ or ‘Africa’ point to the social status and gender differences in financial tendencies.

5.6 Word’s Frequency over time

Table 3: The frequency of words over time

Year	LITERACY	INVESTMENTS	FINANCIAL LITERACY	INVESTMENT	ADULT	DECISION MAKING	FEMALE	FINANCE	MALE	MIDDLE AGED
2018	1	0	0	1	0	0	0	0	0	0
2019	1	0	0	1	0	0	0	0	0	0
2020	1	0	0	1	0	0	0	0	0	0
2021	1	1	1	1	0	0	0	0	0	0
2022	2	1	1	1	0	0	0	0	0	0
2023	3	2	2	1	0	0	0	1	0	0
2024	6	5	3	3	2	2	2	2	2	2

From the table 3, it can also observe that there is an increase in the use of terms such as ‘Literacy,’ ‘Investments,’ and ‘Financial Literacy’ within the years of 2018 to 2024, hinting at growing research focus. The numbers assigned to ‘Investment’ and Its correspondent ‘Adult’ are relatively high. At the same time, values corresponding to such terms as ‘Decision Making,’ ‘Female,’ ‘Finance,’ ‘Male,’ and ‘Middle Aged’ differ significantly and reveal a streaked pattern, indicating irregular interests in these topics. This stub points to the dynamism of research activities over a given period.

6. Conceptual Structure

6.1 Co-Occurrence Network

Figure 18: Co-occurrence network



Figure 19 shows the co-occurrence network and displays identified terms concerning financial literacy and investments are connected. The two central terms connected under links are “financial literacy” and “investments”, and as a result, other related terms such as “risk tolerance, finance”, and “literacy” would be obtained as being relevant to the domain of financial decisions. The chosen visualization is rather helpful in presenting the interactions between these ideas.

Figure 20: Density of Co-Occurrence Network



The distribution of the co-occurrence network is low, revealing that there are not many relations between the terms. Although investment and investments share similar meanings, the other terms seem distinct. This means the correlation between the two keywords within the context was somewhat restricted, and most links were positive.

Table 4: Co-Occurrence Network

Node	Cluster	Betweenness	Closeness	PageRank
literacy	1	1.000	0.500	0.243
investment	1	0.000	0.333	0.149
finance	1	0.000	0.333	0.108
investments	2	1.000	0.500	0.243
financial literacy	2	0.000	0.333	0.149
risk tolerance	2	0.000	0.333	0.108

These centrality metrics displayed in the table 4 and that are related to different network nodes. Stepping thus into the second path, two clusters seem to be distinguishable, with “Literacy” and “Investment” as the nodes most central in their clusters. This means that these terms are essential within the network and probably act to signal or set up a reinforcement process. As for the centrality scores, other nodes on the network, such as ‘Financial Management’, ‘Risk Tolerance’, and ‘Decision Making’, feel relatively less essential but play an equally important role in defining the network structure.

Figure 2119: Degree Plot of Co-Occurrence Network

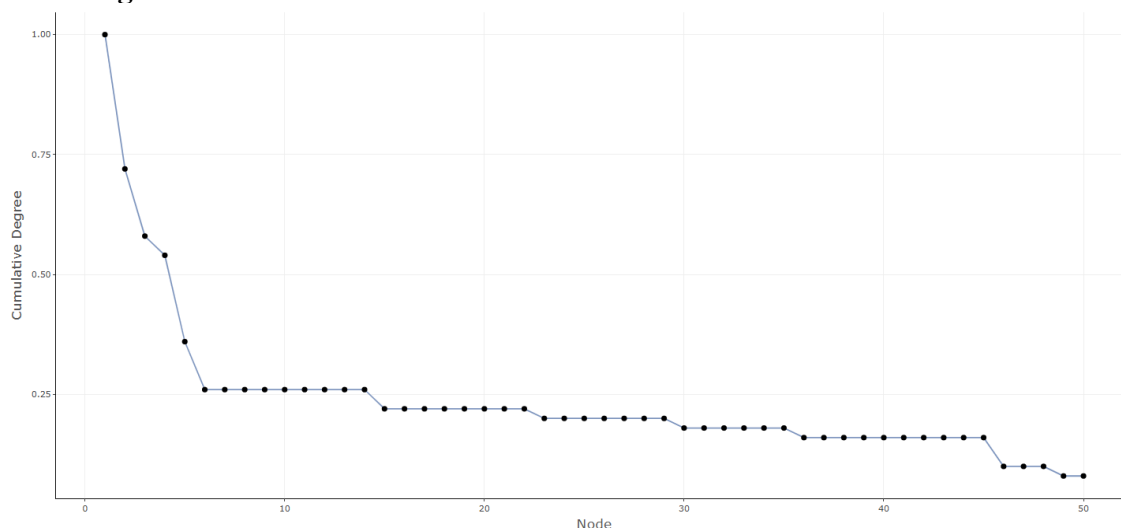
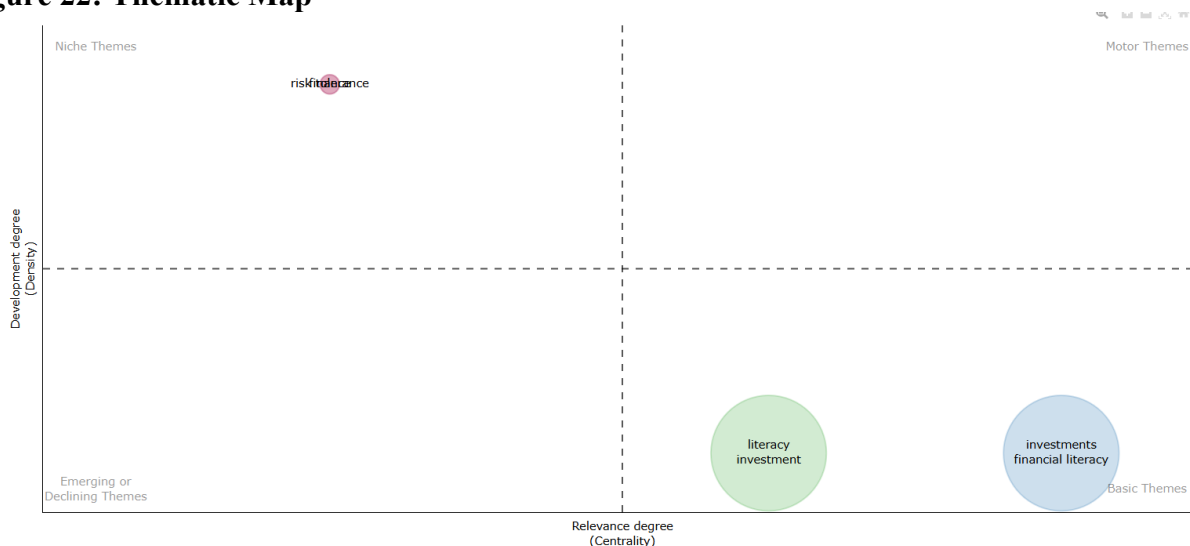


Figure 21 represents degree plot and displays a vertical decline of cumulative degree, that states that there are many nodes with lesser degree values compared to a few with greater degree values. This indicates that the network is scale-free, and thus, many densely connected nodes exist.

7. Thematic Analysis

7.1 Thematic Map

Figure 22: Thematic Map



A thematic map in the figure 22 describes how a particular theme is distributed across a geographic region. It uses color, scale, or even symbols on a chart to present data with a view of being in a position to identify variations or even peculiarities. However, to be practical, key elements such as legends, scales, and data representation must depict the information correctly.

7.2 Thematic Network

The thematic network visualizes the interconnections between crucial themes, such as literacy and other investment forms. Two significantly different clusters can be identified with “literacy” and “investments” at the core. Even though “literacy” is related to the domains that include “education” and “culture,” “investments” are associated with the concepts of “finance” and “risk,” The network shows the interconnection of these ideas and provides directions for further research.

7.3 Thematic Table

Table 5: Description of themes

Occurrences	Words	Cluster	Cluster_Label	btw_centrality	clos_centrality	pagerank_centrality
All	All	All	All	All	All	All
2	finance	1	finance	15.000	0.005	0.014
5	investments	2	investments	2,392.346	0.009	0.045
3	financial literacy	2	investments	178.000	0.005	0.026
5	literacy	3	literacy	1,383.500	0.007	0.041
3	investment	3	literacy	469.500	0.006	0.026
2	risk tolerance	4	risk tolerance	65.000	0.005	0.018

The table 5 contains the words’ frequency, clustering, and centrality values. Two main clusters emerge: “Investments” is most connected to “Literacy”, especially “Financial Literacy”, where a noticeable interaction can be observed. The “literacy” concept revealed a higher betweenness centrality that hints at the possibility of its positions where it may connect one concept with the other.

“Risk tolerance” may also be seen as a separate cluster forming an individual topic. Altogether, it is possible to conclude that the data does contain information regarding the interconnection between these terms in light of the provided context.

7.4 Centrality and Frequency of Clusters

{Insert Table 6 here}

The table 6 presents centrality and density metrics for four clusters: The terms “finance,” “investments,” “literacy,” and “risk tolerance.” In the context of centrality, researchers see that “investments” and “literacy” are more significant, as women appear to be valuable nodes inside the network. However, lower centrality is observed for ‘Finance’ and ‘risk tolerance’ to a degree and contributes to the framework. This is suggested by the data showing a collocation of these terms and their inclusion in the same topics and journals; thus, higher degree analysis is needed to determine their exact meaning and correlation.

8. Discussion

8.1 Determinants of Women’s Financial Literacy

Financial literacy effectively mediates the relationship between retail investors’ financial beliefs and their trades (Khan et al. 2024). Women’s financial literacy sources include education, economic status, culture, and financial assets (Singh et al., 2020; Owusu et al., 2023). Education is one of the significant factors because financially literate women with higher levels of formal education show higher results. Programs introduced at an earlier stage of student learning can help foster necessary skills in intuitive and structured accounts; thus, financial education is enhanced when incorporated into the school curriculum from the primary level (Omosa, 2023). Socio-economic status has also been attributed to affect women’s financial literacy levels (Loibl & Hira, 2016). Women also get better practical coverage of financial products and services than the lower income groups, hence the above results (Kaur & Bharucha, 2021).

Similarly, women from less privileged backgrounds may not be able to acquire these items to enable them to learn about financial aspects. Cultural and demographic characteristics continue to influence financial literacy. Some cultures still define roles for men and women, and this may mean that females are allowed little contact with the financial management processes.

The revelation about the efficacy of financial education programs cannot in any given way be overemphasized. Hence, through imparting monetary skills among women, aimed programs can span the lack of knowledge to equip the ladies with abilities and confidence in financial functions. These programs are particularly appropriate when women are developed within cultural competency and because of the situations facing women. The internet and mobile banking have made financial information more accessible, though variations in people’s abilities present particular difficulties. Other factors influencing financial literacy are psychological, categorized as financial self-confidence and perception of money. There is a positive relationship between self-efficacy and financial literacy. Thus, women with high self-efficacy and financial literacy engage in financial planning and investing (Bucher-Koenen & Ziegelmeyer, 2014). Lastly, social and family factors significantly contribute to the total (Zhang & Huang, 2018). The work shows that women who discuss finances with relatives or friends have high financial literacy. Studies include peer networks and community support groups, through the people can learn more and become more financially literate. Knowledge of these determinants is of utmost importance in helping formulate ways. It means that women’s financial literacy should be increased to achieve higher financial well-being and autonomy.

8.2 Investment Behaviour Patterns Among Women

Over the past few years, there has been a surge in the analytical consciousness of investors' behaviour in emergent stock markets (Jalilvand et al., 2018). People are expected to lock up their excess funds in a savings account to use the money when women reach old age instead of investing in a higher-return form of investment (Meyll et al. 2020). Sustainable investment, that refers to investment processes that consider ESG factors, has emerged globally in recent years with a massive market share rate of growth (Gutsche et al. 2021). Women have preferences, risk-taking abilities, and decision-making profiles driving their investments, that differ from men's (Sangeetha et al. 2018). Women are significantly less likely to take risks and invest, preferably in safer forms of securities than in more risky securities. This is evident in the fact women shy away from high-risk investments, considering their investments as safer and less risky, consisting of savings accounts, bonds and real estate investments (Hoechenberger et al., 2023). Also, women are more inclined to diversify their investments in different securities and classes depending on the risks and returns. Global and national economic crises have shifted focus toward more discussion in the scientific literature of problems associated with bank liquidity and financial stability. Another factor determining women's investment decisions is their ability to tolerate risks. Research indicates that women exhibit relatively lower risk tolerance than men because of financial objectives, family financial management responsibilities, and culturally imbibed attitudes (Akhtar & Malik, 2023). This painful experience creates very low-risk tolerance, and therefore, people aim more at the sources of financial security and not at fleeting profit-making. Hence, women are more inclined to invest in those assets and businesses, producing assured, stable, but low gains (Worasatepongsa & Deesukanan, 2022).

Women investors' decision-making style is usually collective and information-driven (Mahmood et al. 2024). In investment decisions, women are more comprehensive in their research and consulting financial advisors, family, and friends than men (Magoma, 2022; Abebe et al., 2018). These people place a high premium on detail and are more willing to spend considerable time understanding investment products and markets. Such an approach to investing brings more rational and cautious decisions, but at the same time, it may prolong the decision-making process. Behavioural finance proposes that women admit less overconfidence as male investors do, overconfidence that causes high trading costs (Nia et al. 2024). Women are also less likely to develop their own 'favourite stock' or pet investment and stick to the financial plans laid out to meet the goals set. Implementing this style can improve long-term investment yield (Adrianto & Hamidi, 2020; Zhao & Li, 2024). Also, concerning the sourcing of funds and portfolio management, women have continued to use technology and online platforms to invest, a proven tendency towards a more financially independent position. Knowledge of these investment behaviour patterns is critical for financial institutions and advisors seeking to develop relevant financial services and products to support women's investment needs and preserve the atmosphere of non-discrimination and increased sensitivity (Murhadi et al., 2024).

8.3 Gender Gaps in Financial Literacy and Investment

Gender differences in financial literacy and investment decision-making processes are widespread and vie different dimensions, thus defining women's economic status and their chances in the labour market (Preston & Wright, 2023; Marinelli et al., 2017). A concept known as financial skills, that involves the performance of assorted financial tasks, is relatively inferior in the female gender compared to the male gender (Robson & Peetz, 2020; Agarwal et al., 2015). An inconsistency was observed in this area regardless of clients' age, education level, and income bracket. For this reason, the following factors help to explain the above disparities: the amount of financial literacy, the socio-economic status of a country, and gender roles where women are often excluded from the decision-making process (Kaur and Vohra, 2017; Rusou et al., 2017).

Many researchers believe educational factors are imperative for internal taxation (Xu et al. 2024). It is widely acknowledged that female clients have had relatively poor access to formal financial education and have had less financial literacy. Although contemporary attempts try to equalize this

gap, the consequences of such discrimination persist in the present generation (Maharani et al., 2023). Socio-economic status also influences financial literacy in equal measure; subjects such as women, especially those from low-income backgrounds, are likely to lack adequate funds and financial consultation services. In the traditional setting, men take up challenging roles while women are confined to clerical roles, thus creating a gap. In many cultures, it is observed that men make most financial decisions while women have limited assistance. This dynamic of limited experience lowers women's practical experience in handling money, therefore reducing their financial literacy (Ramanathan & Meenakshisundaram, 2017).

Furthermore, women are likely to spend money on the immediate needs of the family and fail to invest in their knowledge concerning financial management, thus making them financially dependent. When it comes to investments, men and women also exhibit differences in the levels of risk-taking abilities and preferred investments (Sharma et al., 2024). It is a well-known fact that women, as a class, are less risk-takers and more inclined to invest in instruments that, while offering a lower capacity for returns, also have a lower potential for risk. This age can be characterized by lower financial optimism, self-efficacy, and higher perceived barriers related to money risks. It, therefore, can be attributed to lower financial confidence, greater fear of loss, and greater importance for saving. Hence, women invest a smaller percentage in risky but lucrative assets like stocks, that may make them more constrained than men in wealth creation. Closing these gender gaps necessitates financial literacy initiatives, financial inclusion, and the social transformation that would encourage women to be financially inclusive by participating in the decision-making processes regarding financial matters (Gutsche et al., 2023). Creating financial literacy and raising women's financial agency can help eradicate these gaps and improve gender parity in the financial sector, as well as the financial stability of women financially.

8.4 Impact of Financial Literacy on Women's Financial Well-being

It has been known that financial literacy has a significant effect on women by enhancing or impairing women's financial decisions, financial and resource management, and economic self-sufficiency (Younas & Rafay, 2021; Adil et al., 2022). Education in money matters enables women to manage their personal finances, earnings, expenses, savings, investments, and planning for their post-working years, either in retirement or for the next phase of life (Kumar & Kumar, 2022; Baig et al., 2021). Another impressive impact of group maturity is evident in women's saving and investing practices (Gupta & Singh, 2023). This knowledge is essential in enhancing women's financial vulnerability and managing challenges and opportunities in finance. The clear benefit of financial literacy probably concerns the capability to make sound decisions on expenditure, savings, and investments (Fazal et al., 2021; Al Azizah & Mulyono, 2020). Financially literate women can prepare and follow through with budgets, costs, and goals to determine the essential expenditures, savings, and investments. This is a disciplined method of handling money to ensure that it is saved for future use and acts as a buffer to other life incidents that might tamper with the financial situation (Kappal & Rastogi, 2020).

Financial literacy also facilitates women's capacity to manage financial assets through comprehending financial tools and services (Shanti & Murty, 2018). Understanding different aspects of banking, such as service, investment, insurance, and credit, empowers women to make the right decision while selecting the various products women wish to engage in. For example, knowledge of interest rates, charges, and conditions linked to different products enables women to make sound financial decisions to avoid getting into expensive credit traps or making poor decisions on financial products in the marketplace (Koti, 2018; Karaa, 2018). Investment decisions are another essential Lacuna that ends up affected by financial literacy (Kar & Patro, 2024). Female investors with better financial knowledge have a higher chance of participating in investments in the stock market, real estate, and retirement savings plans. Researchers agree on distributing their risks and returns on investment and making wise investment decisions. Such an active approach to spending leads to

capital formation, which is associated with creating wealth and becoming financially secure (Farida et al., 2023).

Furthermore, it was also seen that financial literacy has a bearing on Singaporean women's perceived control over their financial affairs. It is worth acknowledging that liberal knowledge concerning the concepts and principles of personal finance leads to increased confidence and lesser anxiety and stress regarding financial performance among women (Le Fur & Outreville, 2022). This confidence helps women negotiate better salaries, employment benefits, and provisions for future needs. Education, particularly financial literacy, passes wealth between generations (Sivaramakrishnan et al., 2017). Education in this area makes women more equipped to teach the young ones and ensure women learn what is good about finances to develop good habits. This contributes to the future of generations and the cycle of financial enhancement.

9. Conclusion

The bibliometric analysis of the study on "Financial Literacy and Investment Behavior of Women" outlines the state of knowledge in the field. This case explained the intellectual topology of the field, the essential topics, the vital authors, and the central documents. One of the main conclusions from this research is that the focus on financial literacy and the linkage between it and women's investment decisions is an emergent field among academics. The findings conclude that financial literacy has become a necessary factor for women's investments, given the overall importance of the subject. This has not been explored well enough, with still much room for discovery despite the increasing interest in the field. The research indicated that a large volume of studies has concentrated on the aspect of women's financial literacy. However, the concentration on investment behaviour is a growing field. Thus, future studies should focus more on the type of investments made by women, the experience of their risk preferences, and the role of the financial professionals. Additionally, the study revealed a dearth of research on the link between social factors, cultural factors, and women's investment decisions. Thus, relating these variables to navigate women's financial lives requires a more complex understanding of the importance of working together.

The thematic analysis revealed the critical communication components, such as financial literacy, investment behaviour, and the gender factor. Subsequently, the literature has established significant improvements in identifying factors influencing women's financial literacy. Conducting more complex studies on how these factors impact investment is now essential. From the point of view of methodological developments, the use of bibliometric tools to conduct the research has been very effective in identifying the trends of the research as well as the gaps. Nevertheless, it is possible to envision future research integrating other qualitative methods into the calculation and shed more light on female attitudes and experiences. Thus, it can be stated that the present bibliometric analysis has provided the conceptual foundation for the subsequent studies of women's financial literacy and investment. Another way this study benefitted empirical research is in exposing emerging themes, research voids, and trends that can assist in the continued endeavours towards enhancing women's finance literacy and financial products.

10. Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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