



Trends and Themes in Financial Intermediation Research: A Bibliometric Approach

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ABSTRACT

This research was designed to examine research developments and look for research gaps regarding Financial Intermediation through a bibliometric analysis approach using VOS Viewer. The Publish or Perish application is used to retrieve the Google Scholar database in order to fulfil research data. The title of the article is used to guide the search process based on the keyword "Financial Intermediation". The search for publication data used as study material was carried out within the last 20 years, namely in the 2003-2023 period. The research results found that there were 989 relevant publications. The research results show that there are three terms that appear most frequently in connection with research publications regarding Financial Intermediation. The first term, namely the term "intermediation", has appeared 426 times with 120 links, and 508 total link strengths. The second term, namely the term "economic growth", has appeared 73 times with 39 links, and 157 total link strengths. The third term, namely the term "Nigeria", has appeared 57 times with 29 links, and 117 total link strength. Based on the results of the bibliometric mapping, it is still very possible for research related to Financial Intermediation to be researched further and linked to other terms which currently tend to still have a low level of relevance. It is hoped that the results of this research can inspire and develop themes for related articles in the future.

ARTICLE INFO

Article History:

Submitted/Received 05 Oct 2024

First Revised 25 Oct 2022

Accepted 07 Nov 2024

First Available online 02 Dec 2024

Publication Date 02 Dec 2024

Keyword:

*Bibliometric, Financial
Intermediation, Financial
Management, Research Trends,
Research Visualizations*

1. INTRODUCTION

Financial intermediation plays a central role in the modern economy by facilitating the transfer of funds from parties who have surplus funds to parties who need financing for investment and consumption. This process ensures that capital is allocated efficiently, bridging the gap between capital owners and those who need financing (Chatterjee, 2023; Magwedere et al., 2021; Sunaga, 2019). The financial intermediation process begins when individuals or companies deposit their money into financial institutions, such as banks, cooperatives, or investment institutions. This financial institution then uses these funds to provide loans to other parties who need capital. Thus, financial intermediation allows society to more efficiently use and allocate funds economically (Koziuk & Shymanska, 2023; Plamen Peev & Pavlina Dimitrova, 2017). This process also provides opportunities for financial institutions to generate income through the difference between the interest rates received from providing loans and the interest rates paid to depositors (Lessmann & Kalkuhl, 2024; Staikouras, 2003). The function of this institution is very important for the smooth operation of financial markets and the economy.

Financial intermediation also plays a role in creating liquidity in financial markets (Buch & Goldberg, 2024). By providing various financial products such as savings, time deposits, and certificates of deposit, financial institutions provide individuals with the option to store and access their funds easily. This creates flexibility for depositors and provides security against liquidity risks. The role of financial intermediation is not only limited to providing loans and raising funds. Financial institutions also act as risk assessors, conduct credit analysis, and provide various financial products and services according to market needs (Luo et al., 2022; Young In et al., 2020).

The importance of financial intermediation lies in its ability to reduce transaction costs and overcome information asymmetry (Gan, 2020; Gbadebo, 2024; Koziuk & Shymanska, 2023; Plamen Peev & Pavlina Dimitrova, 2017). By pooling resources, financial institutions provide economies of scale that enable the distribution of credit to various economic agents. Additionally, they act as supervisors ensuring borrowers comply with agreed terms, thereby reducing the risks associated with lending (Eisenbach et al., 2015; Georgescu, 2011). This mechanism contributes to economic stability and growth, making financial intermediation a key pillar in the financial system (Rogova & Zhezherun, 2022).

Over time, financial intermediation has evolved in response to changing regulatory environments, economic conditions, and technological advances. Financial market liberalization, globalization, and the integration of advanced technologies have expanded the scope and complexity of intermediation activities. Today, financial intermediaries not only facilitate traditional banking operations but also offer sophisticated investment and risk management products, meeting the diverse needs of the modern economy. Even today, the macroeconomic environment, political conditions, legal regulations, global economic competition, limited resources and financial infrastructure demand the development of financial intermediation. Recent innovative developments in financial intermediation have been influenced by the spread of digital trends, one example of which is FinTech (Boot et al., 2020; N. M. Pantelieieva et al., 2020). From the consumer lending segment, FinTech companies offer consumers new ways to obtain personal loans and assess credit risks (peer to peer lending, microfinance, big data analysis and consumer credit services). Other examples of financial intermediation innovations that are currently actively developing are digital payment systems, digital investment management (Mergenbaeva et al., 2019), financial trading, digital banking, and insurance (N. Pantelieieva et al., 2018). These entities have introduced innovative ways of providing financial services. Peer-to-peer lending, crowdfunding platforms, and digital payment systems are examples of how financial intermediation is adapting to the demands of the digital

economy. These changes emphasize the need for continued exploration and understanding of the dynamics of financial intermediation.

The continued interest in the role of financial intermediation in the economy cannot be ignored. By providing solutions to the problem of imbalance between those who have funds and those who need funds, financial institutions create an environment that supports economic growth and business development. Furthermore, financial intermediation is very important to encourage financial inclusion, especially in developing countries (Magwedere et al., 2021; Tadesse Tulu, 2023). By extending credit and other financial services to underserved populations, intermediaries play an important role in reducing inequality and promoting economic development. This aspect highlights the social dimensions of financial intermediation, making it an interesting subject for policymakers, researchers and academics. This emphasizes the importance of systematic approaches such as bibliometric analysis to analyze existing research trends and themes in this field.

In addition, bibliometric analysis can facilitate the identification of novelties and research gaps from publications that have been published in various parts of the world, as well as help researchers answer research questions regarding aspects of financial intermediation that have not yet been explored. This approach also allows researchers to map the development of knowledge regarding Financial Intermediation, providing insight into the past, present, and future directions of research. Therefore, to determine research topics related to Financial Intermediation in the future through visualization of research trends and themes, this research was carried out using a bibliometric analysis approach with the help of the VOS Viewer application, as well as the Publish or Perish application to obtain a database of Google Scholar indexed publications over a period of time. the last twenty years (2003-2023).

2. METHODS

The data used in this research are indexed publications Google Scholar. To access research data, databases Google Scholar accessed via the Application Publish or Perish Reference Manager. In accordance with the title of this article, the keywords used to search for publication data are "Financial Intermediation". Publications used as research study material are related publications Financial Intermediation published in the last twenty years, namely from 2003 to 2023. Data was obtained and processed in December 2023.

Then the VOSviewer application is used to visualize research trends and themes using a bibliometric map with the results of three visualizations, namely: network visualization, overlay visualization, dan density visualization. All three visualizations are based on emergence (co-occurrence) between existing themes. When creating a bibliometric map, keyword frequencies are set in such a way that at least the occurrence of the themes used has been found five times in the applicable period. In this way, in this research 157 related themes were found. However, of the 157 themes found, only 113 themes were considered the most relevant, and 44 themes that were considered less relevant to this research were removed.

3. RESULTS AND DISCUSSION

Database Search Result

Based on database search results Google Scholar via the application Publish or Perish Reference Manager, 989 publications were obtained that were relevant to the research criteria. The data obtained is in the form of publication metadata consisting of author name, title, year of publication, journal name, publisher name, number of citations, article links and related links. The number of citations for all articles used in this research is 129188, the number of citations per year is

6459.40, the number of citations per article is 129.71, the average number of authors in published articles is 2.25, all publications have an average h-index of 168 and g-index 334.

Development of the Number of Research Publications regarding Financial Intermediation

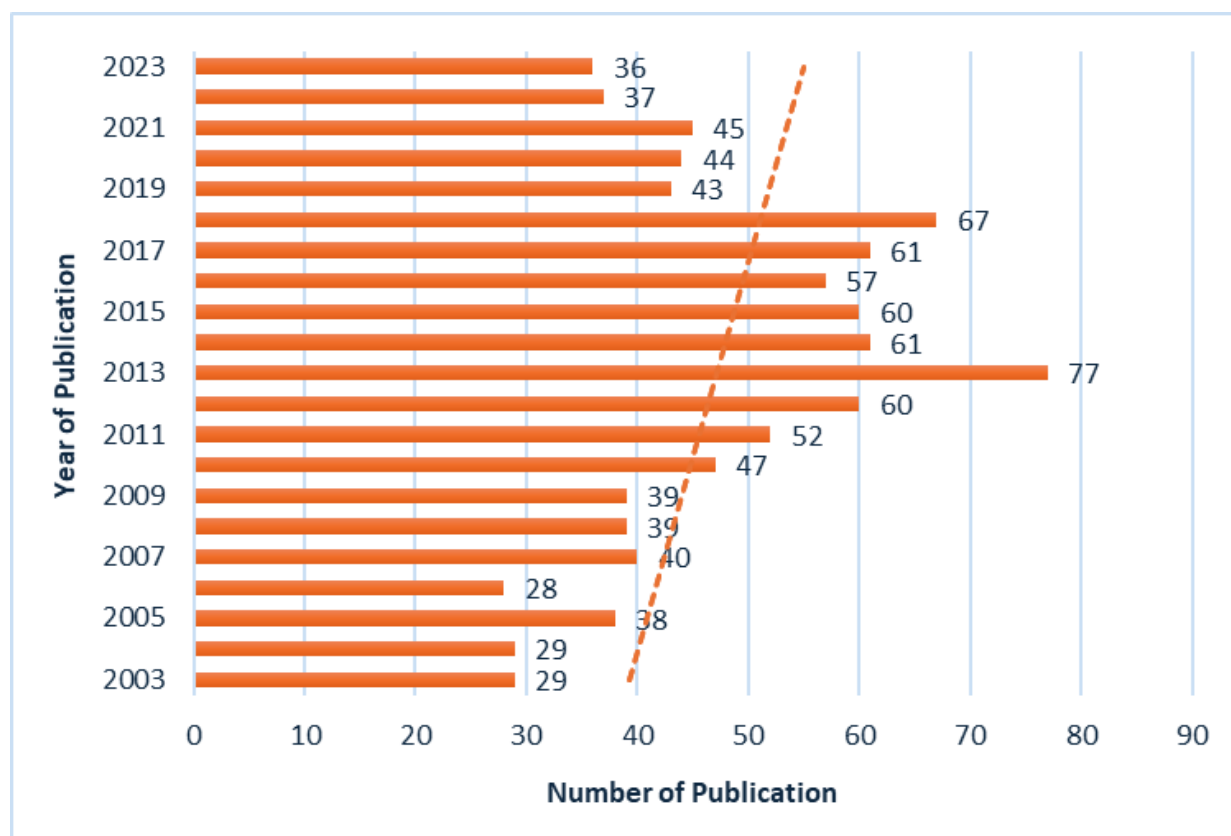
The development of the number of studies regarding *Financial Intermediation* published in Google Scholar indexed journals are shown in Table 1. Based on the data, it can be seen that in the last 20 years (2003-2023) the number of research publications regarding *Financial Intermediation* that was found is a total of 989 articles.

Table 1. Development of the number of research publications regarding *Financial Intermediation*

Year of Publication	Number of Publication
2003	29
2004	29
2005	38
2006	28
2007	40
2008	39
2009	39
2010	47
2011	52
2012	60
2013	77
2014	61
2015	60
2016	57
2017	61
2018	67
2019	43
2020	44
2021	45
2022	37
2023	36
Total	989
Average	47,095

Source: Google Scholar Database (2023)

Meanwhile, based on the calculation results in the Ms. application. Excel, research on *Financial Intermediation* In the last 20 years there has been a trend that tends to increase. However, if we look carefully, this increase actually occurred in the 2003-2013 period, whereas in the 2013-2023 period (the last ten years) the trend in research publications regarding *Financial Intermediation* has a downward trend, as shown in Figure 1.



Source: Data Processing Results – Ms. Excel (2023)

Figure 1. Research Trends Financial Intermediation

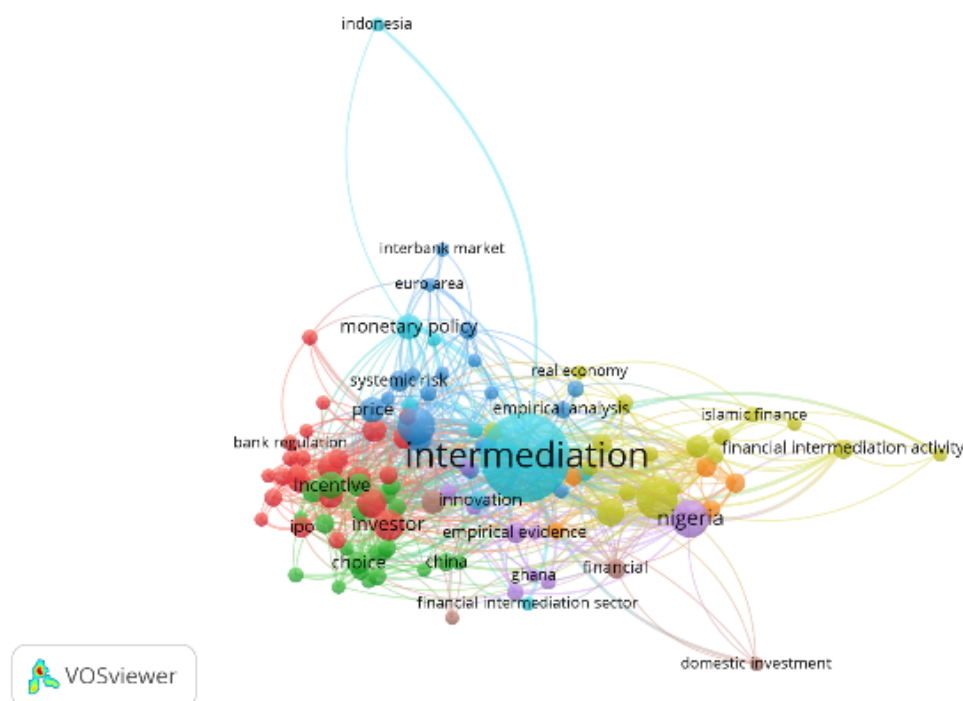
Results of Mapping Analysis and Visualization of Research Publications regarding Financial Intermediation using VOS Viewer

The results of computational mapping analysis using VOS viewer found that there were 113 relevant themes. In mapping research data, each theme found concerns Financial Intermediation divided into eight clusters, namely:

- Cluster 1, marked in red and consists of 24 themes, namely: bank regulation, borrower, challenge, contract, debt, debt contract, financial innovation, fund, information asymmetry, initial public offering, investor, IPO, law, lender, manager, mutual fund, pricing, private equity, private information, public firm, return, shareholder, small business, and stock.
- Cluster 2, marked in green and consists of 23 themes, namely: agent, bank risk, capital requirement, capital structure, China, choice, deposit, deposit insurance, document, financial sector, firm performance, incentive, insurance, market discipline, monitoring, moral hazard, paper analyse, paper study, real effect, relationship lending, SMEs, trade, and venture capital.
- Cluster 3, marked in blue and consists of 20 themes, namely: bank competition, banking crisis, behaviour, central bank, crisis, effectiveness, empirical analysis, empirical investigation, Euro area, federal reserve, financial liberalization, foreign bank, great recession, interbank market, macroprudential policy, opportunity, price, securitization, systemic risk, and transparency.
- Cluster 4, marked in yellow and consists of 17 themes, namely: commercial bank, credit risk, economic growth, efficient financial intermediation, empirical study, financial development, financial inclusion, financial intermediation role, financial intermediation theory, financial intermediation activity, GDP, Islamic finance, Islamic finance intermediation, Nigerian economy, Pakistan, real economy, and saving.

- e) Cluster 5, marked in purple and consists of 10 themes, namely: asymmetric information, banking regulation, empirical evidence, financial intermediation function, financial service, Ghana, inefficiency, insurance company, Nigeria, and transaction.
- f) Cluster 6, marked with turquoise blue and consists of 10 themes, namely: account, credit market, financial intermediation sector, financial stability, fintech, Indonesia, innovation, intermediation, monetary policy, and regulator.
- g) Cluster 7, marked in orange and consists of 5 themes, namely: economic development, financial intermediation process, India, interest, and new evidence.
- h) Cluster 8, marked with brown colour and consists of 4 themes, namely: intermediary, corporate governance, domestic investment, and financial.

The relationship between one theme and other themes is shown in each existing cluster. Each theme is marked with a coloured label and circle. The size of the circle for each theme varies depending on the frequency of appearance of that theme. The larger the size of the circle, the more frequently the theme is found. In this research, three parts of the mapping visualization were analysed, namely: network visualization (Figure 2), density visualization (Picture 6), and overlay visualization (Figure 7).

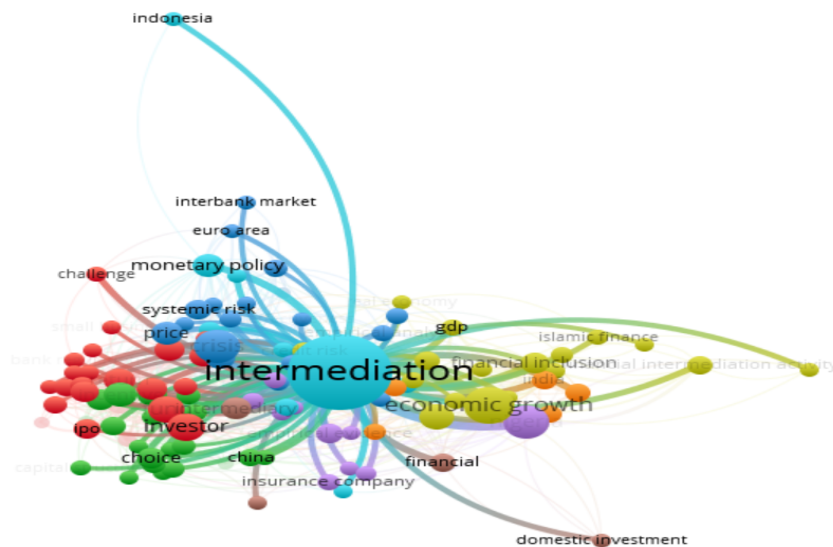


Source: Data Processing Results – VOS Viewer (2023)

Figure 2. Network Visualization Research Publications Financial Intermediation

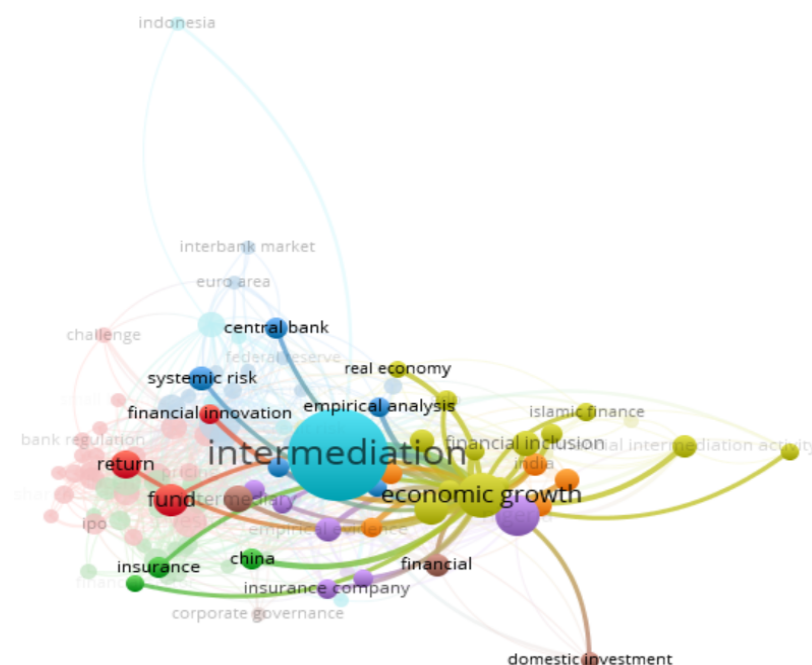
Figure 2 shows the cluster of each theme found and shows the relationships between these themes which are depicted in an interconnected network. Based on this visualization, it can be seen that there are three themes that appear most frequently related to research publications regarding Financial Intermediation for the last twenty years. The first theme is the theme "intermediation" originating from cluster 6, this theme has appeared 426 times with 120 links, and 508 total link strength (see Figure 3). The emergence of the theme "Intermediation" This is far dominant compared to the number of appearances of other themes, even very far from the number of appearances of

themes in second and third place. The second theme is the theme "Economic Growth" originating from cluster 4, this theme has appeared 73 times with 39 links, and 157 total link strengths (see Figure 4). The third theme is the theme "Nigeria" originating from cluster 5, this theme has appeared 57 times with 29 links, and 117 total link strengths (see Figure 5). That is, publications regarding Financial Intermediation quite widely researched in Nigeria.



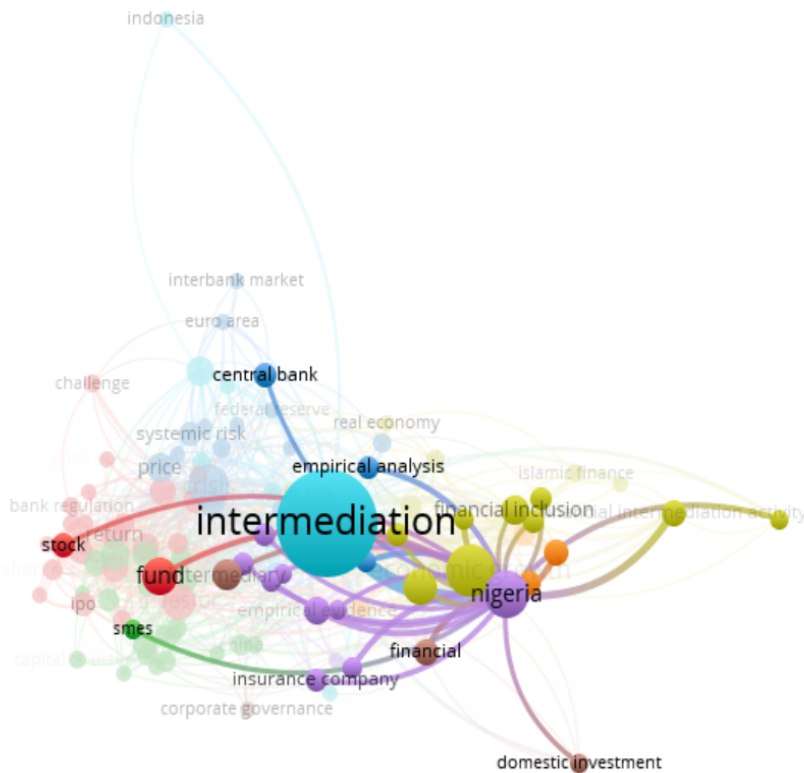
Source: Data Processing Results – VOS Viewer (2023)

Figure 3. Network Visualization for Theme Intermediation



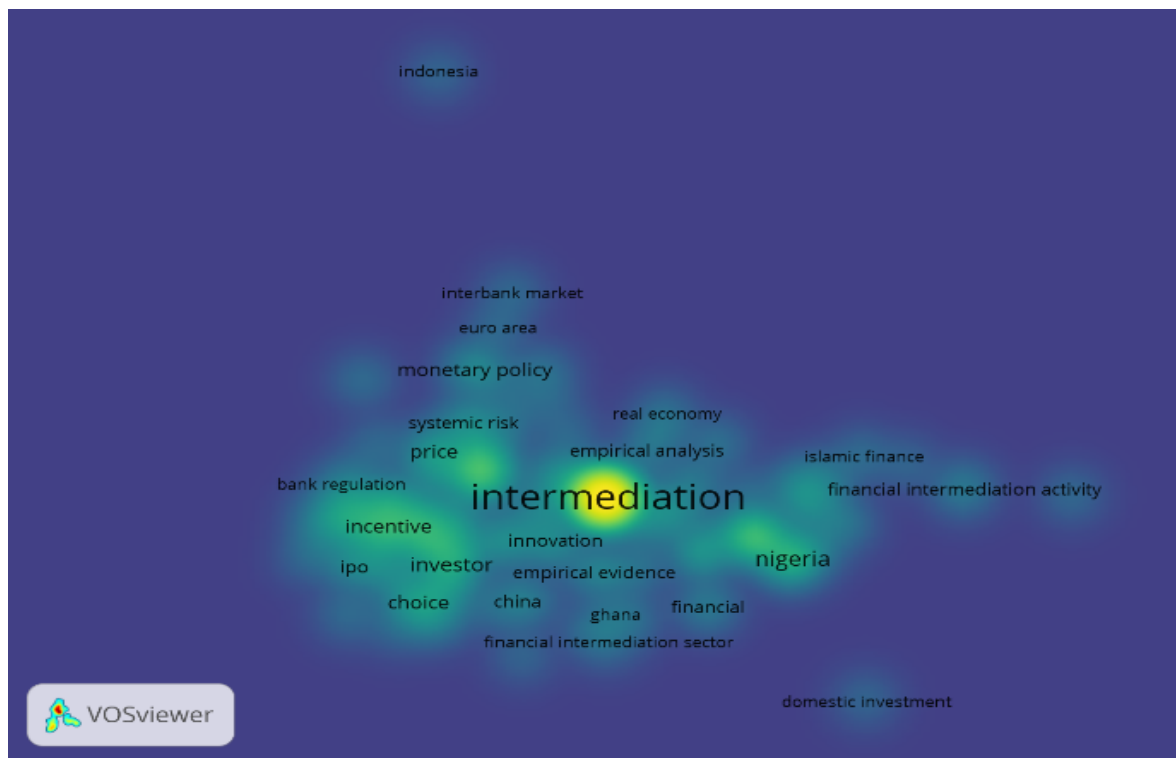
Source: Data Processing Results – VOS Viewer (2023)

Figure 4. Network Visualization for Theme Economic Growth



Source: Data Processing Results – VOS Viewer (2023)

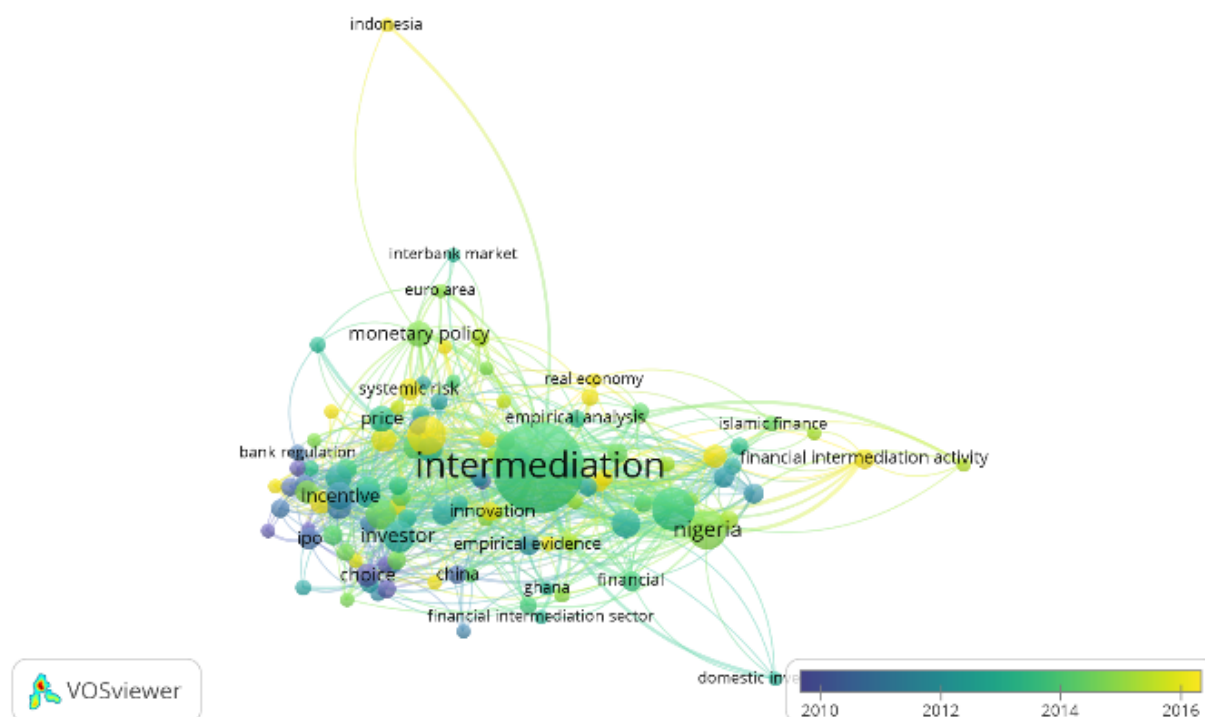
Figure 5. Network Visualization for Theme Nigeria



Source: Data Processing Results – VOS Viewer (2023)

Figure 6. Density Visualization Research Publications Financial Intermediation

Figure 6 shows *density visualization* research publications *Financial Intermediation*. This visualization shows that the more often a theme appears, the brighter the yellow color will be, and the larger the circle diameter. This means that there has been a lot of research on related themes. On the other hand, if the amount of research on a theme is still relatively small, then the colors on that theme will fade closer to the background color. Based on Figure 6, we can see that the theme “*intermediation*” in research publications *Financial Intermediation* has a high number of studies.



Source: Data Processing Results – VOS Viewer (2023)

Figure 7. Overlay Visualization Research Publications Financial Intermediation

Figure 7 shows *overlay visualization* research publications *Financial Intermediation*. The color that appears in the mapping results *overlay visualization* shows the level of popularity of the appearance of a particular theme. The brighter the colors of a theme, the more popular the theme is. On the other hand, the darker the color of a theme, it means that the theme is no longer popular.

Based on this visualization we can see that although the theme *intermediation*, *economic growth*, and *Nigeria* are the three themes that appear most frequently in related research *Financial Intermediation* for the last twenty years, but the peak of its popularity has been long overdue, namely in the 2014-2016 period. Meanwhile, themes such as *financial intermediation activity*, *real economy* and *Indonesia* is bright yellow, which means the theme is currently popular. Therefore, this can be used as a basis for finding research gaps (*research gaps*) and or novelty (*novelty*) to increase the publication of related research *Financial Intermediation*.

Discussion

Based on the results of bibliometric mapping of collected publication data, it can be concluded that the research is related *Financial Intermediation*. It is still very possible for it to be researched further and linked to other themes which currently tend to still have a low level of relevance. Determining new themes for further research can be done either based on the very small number of

appearances, and/or based on their level of popularity. Several themes that can be researched further in this article include: theme *financial intermediation activity*, *financial intermediation sector*, *domestic investment*, *real economy*, *Islamic finance*, and Indonesia. Thus, it is hoped that further research related to this theme will have a higher impact on the novelty of research trends and themes *Financial Intermediation*.

Financial intermediation activity is a theme that has great potential for further research because of its significant role in distributing funds efficiently in various economic sectors. This activity includes the process of collecting and distributing funds by financial institutions to ensure that capital can be allocated to sectors that need it. (Chatterjee, 2023; Magwedere et al., 2021; Sunaga, 2019). However, until now, in-depth studies on the operational efficiency of this activity have rarely been carried out. Further research could explore how financial intermediation activities can increase financial inclusion, especially in remote or less developed areas (Magwedere et al., 2021; Tadesse Tulu, 2023), as well as how digitalization can accelerate people's access to financial services (Anakpo et al. al., 2023; Buteau et al., 2021; In addition, financial intermediation activities can pay attention to the impact of intermediation activities on systemic risk management, which is an important element in economic stability (Craig & Ma, 2022).

In a global context, financial intermediation activities also face challenges in the form of competition with FinTech (Boot et al., 2020; N. M. Pantielieieva et al., 2020). FinTech offers a faster and more flexible alternative intermediation model, which can revolutionize traditional ways of distributing funds (Saini, 2023). Further research could focus on integration between digital technologies and traditional intermediation activities to create a more inclusive and efficient financial ecosystem. This is very relevant for developing countries, where technology penetration still faces various obstacles such as limited infrastructure and low levels of financial literacy. Thus, understanding the role of intermediation activities in this context can provide innovative solutions to improve people's access to financial services.

The financial intermediation sector involves various actors, such as banks, microfinance institutions, and digital platforms, which together form a financial ecosystem (Almosov et al., 2021; Ekpo et al., 2022). However, interactions between actors in this sector have not been widely explored, although effective collaboration can improve the efficiency of the financial sector as a whole. Further research can identify how traditional financial institutions and digital entities can complement each other to overcome existing challenges, such as unequal access to financial services in remote areas. For example, microfinance institutions can partner with digital platforms to expand their reach to underserved segments of society.

The impact of regulation on this sector is also an interesting area to research. Excessive regulation can hinder innovation, while too loose regulation can increase systemic risk (Chen et al., 2021). Research on the influence of policy on the financial intermediation sector can help formulate a balanced regulatory framework, which supports the growth of this sector without compromising financial stability. Thus, research on this sector is not only academically relevant but also has major practical implications for policy makers.

Domestic investment is another theme that is rarely discussed but has great significance in the domestic economy (Amade et al., 2022; Oli & Xie, 2021). Financial intermediation plays an important role in encouraging domestic investment by providing the capital needed for productive projects (Ikeobi et al., 2016). Further research could explore how financial institutions can direct funds to sectors that have great potential for economic growth, such as manufacturing, agriculture, and technology. This study can help in designing strategies to increase the efficiency of capital allocation, which in turn can accelerate domestic economic growth.

In developing countries, the main challenge in increasing domestic investment is limited access to financing. Research could explore the role of financial intermediation in overcoming these barriers, for example through the development of innovative financial products that suit local needs. In addition, the relationship between domestic investment and economic sustainability can also be a research focus. How financial intermediation can support environmentally friendly or sustainable investments is an important area that can be explored further.

Real economy is another theme that requires more attention in research on financial intermediation. Although financial intermediation is often associated with the financial sector, its impact on real sectors such as production, consumption and investment is rarely studied in depth. Research in this area could explore how changes in financial intermediation mechanisms, such as the adoption of digital technology or monetary policy reform, affect the real sector. For example, how digitalization of banking can accelerate investment in the agricultural or manufacturing sectors could be an interesting research question. In addition, research on the real economy can also explore the impact of financial intermediation on reducing economic inequality. By increasing access to credit for small and medium enterprises (SMEs), financial intermediation can help create jobs and increase people's incomes. Therefore, further research could provide useful insights for policy makers and industry players.

Meanwhile, Islamic finance offers a unique approach to financial intermediation that is based on sharia principles, such as the prohibition of usury and fairness in transactions (Izaty et al., 2024; Jatnika et al., 2024). Although Islamic finance has developed rapidly, research on sharia-based financial intermediation is still limited. A more in-depth study could explore how these principles are applied in various contexts, such as small business financing, infrastructure development, or risk management. Additionally, research on the efficiency of Islamic finance compared to conventional financial systems can provide valuable new insights. Amid increasing interest in sustainability and financial inclusion, Islamic finance has great potential to contribute to these goals. For example, the concepts of zakat, waqf and sharia-based microfinance can be effective tools for reducing poverty and encouraging financial inclusion. Thus, further research between Financial Intermediation and its relationship to Islamic Finance is not only academically relevant but also has a significant social impact.

Finally, the relevance of the Indonesian theme to Financial Intermediation research, as one of the largest financial markets in Southeast Asia, offers a unique context for research on financial intermediation. Even though it has great potential, challenges such as low levels of financial inclusion, regional economic disparities, and lack of financial literacy are still major obstacles. Further research could explore how financial institutions in Indonesia can utilize technology to expand access to financial services to remote areas. In addition, research on financial intermediation in Indonesia can also explore how government policies, such as financial inclusion programs or economic digitalization, influence the efficiency and effectiveness of the financial sector. By understanding these dynamics, research can make a significant contribution in formulating strategies to support sustainable economic growth in Indonesia.

By exploring these themes in more depth, research in the field of financial intermediation can open new insights that are not only relevant for academics but also for practitioners and policy makers. It is hoped that the results of this research can make a real contribution in encouraging inclusive and sustainable economic development.

4. CONCLUSION

This research examines the development of research trends and themes regarding Financial Intermediation through bibliometric mapping analysis using *YOUR Viewer*. The publication theme

taken in this research is "Financial Intermediation". The articles used are taken from *data base Google Scholar* with the help of the application *Publish or Perish Reference Manager*. The results of the data search found that there were 989 relevant articles published in the period 2003 to 2023. The results showed that the research trend *Financial Intermediation* tends to increase in the 2003-2013 period and actually tends to decrease in the 2013-2023 period. Besides that, based on the results of bibliometric mapping, related research *Financial Intermediation* It is still very possible for it to be researched further and linked to other themes which currently tend to still have a low level of relevance. Thus, further research related to themes such as: *financial intermediation activity, financial intermediation sector, domestic investment, real economy, Islamic finance*, and Indonesia, is expected to have a higher impact on research novelty *Financial Intermediation* in the future.

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