Research Article

Financial Inclusion for Sustainable Development in Industry 4.0: A Bibliometric Study

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Abstract: Financial inclusion has become a key driver in promoting sustainable development, especially in the era of Industry 4.0, which is characterized by rapid digitalization, technological innovation, and the transformation of financial services. Although academic interest in this topic continues to grow, research in this field has not been systematically mapped, resulting in limited understanding of global trends and thematic evolution. This study uses bibliometric analysis (BA) to explore developments, intellectual structures, and key research focuses in financial inclusion research. Data were collected from the Scopus database for the period 2015–2025, using keywords related to financial inclusion, thus ensuring a comprehensive dataset for analysis. Bibliometric methods were applied using analytical tools such as VOSviewer and R Studio to support the assessment. The results of the analysis show a consistent increase in the number of publications over the last decade, reflecting growing academic attention. The main contributions came from India, China, and the United States, with increasing participation from universities in Africa and Southeast Asia through international collaboration. The main research focus has shifted from microfinance and poverty alleviation to more digital-oriented themes, including fintech, digital finance, blockchain, and green finance. This study contributes by mapping the structure and trends of financial inclusion research and providing insights for policymakers and academics in developing inclusive financial systems that support national strategies such as the SNKI, MSME digitalization, and financial literacy programs in Indonesia to achieve sustainable development goals.

Keywords: Bibliometric; Financial Inclusion; Industry 4.0; Innovation; Sustainable Development

1. Introduction

Since the UN designated 2005 as the International Year of Microcredit, the term financial inclusion has become more widely known. The UN emphasized the importance of providing comprehensive, effective, and affordable financial services to everyone, including the poor and vulnerable. Since then, the concept of financial inclusion has been understood not only as access to formal financial products or bank accounts, but also as a crucial tool for enhancing social resilience. Inclusive financial access is believed to help individuals cope with economic hardship while enhancing long-term financial resilience (Sethi et al., 2025). The relevance of financial inclusion is increasingly evident when linked to the Sustainable Development Goals (SDGs) agenda, particularly in poverty eradication (SDG 1), promoting inclusive economic growth (SDG 8), strengthening infrastructure and innovation (SDG 9), and reducing inequality (SDG 10). Global developments also show quite rapid progress: according to the Global Findex report, the percentage of adults with formal accounts increased from 51 % in 2011 to 76 % in 2024. However, there are still around 1.4 billion adults who do not have access to financial services, especially in low-income countries and rural areas. This fact shows that despite significant achievements, financial inclusion still leaves a big challenge to be truly realized evenly.

Entering the Industry 4.0 era, digitalization has had a significant impact on the development of financial inclusion. Various innovations such as financial technology (fintech), digital wallets, mobile money services, and peer-to-peer lending platforms have

transformed the way people conduct transactions and opened up new opportunities for entrepreneurship. This technology provides opportunities for micro, small, and medium enterprises (MSMEs) to obtain financing in a faster, more flexible, and easier way compared to often complicated conventional banking procedures (Mungar-Jackpersad et al., 2025). At the same time, digital-based entrepreneurs can expand their markets and increase their competitiveness thanks to the support of financial technology. Global Findex data reinforces this trend, with mobile money account ownership increasing from just 2% in 2014 to 15% in 2024, and even reaching 40% in Sub-Saharan Africa. These figures confirm that digital innovation and entrepreneurship are crucial drivers in accelerating the expansion of financial inclusion in the Industry 4.0 era.

Despite the fact that digital innovation has made financial access more accessible, there are still several underlying issues with its development. One of these is the service gap between urban and rural areas, where the unequal allocation of financial resources creates a financial gap that is difficult to overcome (Zeng et al., 2023). Differences in the availability of information technology also create a digital divide, leaving low-income groups behind in utilizing modern financial services. Low digital financial literacy exacerbates the situation, while weak regulations in some cases actually give rise to unhealthy financial practices, including the phenomenon of "bad money driving out good money" (Lai et al., 2022). The Global Findex 2025 data verifies the discrepancy in the use of digital payments in South Asia, just 45% of low-income persons with accounts use digital payment systems, compared to 64% in high-income groups. A similar challenge exists in Indonesia, where rapid growth in fintech adoption and digital banking has not been matched by equal access in rural areas or among women. Although the latest National Survey on Financial Literacy and Inclusion (SNLIK) 2025 reports improvements with a financial inclusion index of 80.51% and a financial literacy index of 66.46%, the persistent usage gap shows that structural barriers must still be addressed to ensure that digital progress translates into truly inclusive finance.

Given these conditions, academic attention to financial inclusion is indeed growing. Several studies have been conducted, but most still emphasize service access or specific cases, thus failing to provide a complete picture of the direction of development (Sethi et al., 2025). To address this gap, this study attempts to map financial inclusion research trends for the 2015–2025 period using a bibliometric approach. Research data was collected from the Scopus database using relevant keywords for a more comprehensive coverage. Furthermore, analysis was conducted using VOSviewer and R Studio software to uncover publication patterns, collaborations between authors and countries, and the most frequently studied themes. The results of this study are expected to provide a clearer picture of research directions and offer input for academics and policymakers, particularly in Indonesia, which still faces challenges of digital literacy, gaps in rural access, and gender disparities in the Industry 4.0 era.

2. Literature Review
Financial Inclusion for Sustainable Development

Financial inclusion has been drawing growing attention among various focuses in the aspect of sustainable development in international communities. (Ozili, n.d.) reviews the recent evidence on financial inclusion from around the world, noting the new themes in the literature and ongoing policy discussions. Another systematic review conducted also notes that financial inclusion interventions do not only influence economic aspects, but also gender, social and behavioral dimensions, and thus extends our view on the role of financial inclusion in sustainable development (Duvendack et al., 2019). Moreover, evidence from the Asia-Pacific region reveals that a country's institutional quality is critical to the development of financial inclusion although the effect varies distinctively across high and low-income countries (Khan et al., n.d.). Educational factors are also crucial, (H. Chen et al., 2023) emphasize that compulsory education can improve financial literacy while strengthening low-income communities' and women's access to formal services.

Digitalization and Industry 4.0

Digital transformation in the Industry 4.0 era has brought significant changes to financial inclusion. (Gálvez-Sánchez et al., 2021) demonstrated a shift in research themes from microfinance to digital financial services in a bibliometric analysis of 1,731 articles from 1986 to 2020. (Bhatt et al., 2022) also found that digital services such as mobile money and e-wallets have become key instruments in expanding access to financial services, particularly in developing countries. (Bhattacharya, 2022) systematically reviewed the importance of user behavior in adopting digital services, demonstrating that trust and digital literacy are key determinants of the effectiveness of financial inclusion. However, it should be noted that digitalization also carries risks. (Lai et al., 2022) warned that the development of digital

financial inclusion in China has the potential to give rise to illegal fundraising practices if regulations are not strengthened.

Mapping the Research Landscape

Bibliometric studies show that the literature on financial inclusion has experienced a significant increase in both the number and diversity of research topics. (Afjal, 2023) in a bibliometric analysis of 695 Scopus articles, emphasized the crucial role of digital financial services in driving economic development. (Ghosh, 2024) also noted the global spread of financial inclusion research, albeit on fragmented themes. In their latest study, (Kamboj & Sharma, 2025) mapped 311 publications and identified nine major themes in digital financial inclusion research, providing an integrated framework for future research initiatives. These findings show that, despite the rapidly developing literature, an interdisciplinary approach is still required to integrate technology, regulation, and socioeconomic factors.

3. Research Method

Research Design

This study employs a bibliometric analysis approach to systematically map the development of research on financial inclusion in the Industry 4.0 era. The process began with a comprehensive search of the Scopus database, followed by filtering to exclude irrelevant documents and ensure that only peer-reviewed journal articles were retained. The dataset was then analyzed using bibliometric techniques such as performance analysis to capture publication trends and productivity, and science mapping to visualize intellectual structures and research networks. These analyses were carried out with the support of VOSviewer and R Studio software, which provided both statistical results and visual representations of author collaboration, keyword co-occurrence, and citation patterns. This approach is considered effective as it enables the identification of dominant research themes, influential authors, and international collaborations that shape the field (Donthu et al., 2021). To ensure transparency, the study also adopted the PRISMA flow framework, which illustrates the sequential stages of identification, screening, eligibility, and inclusion of articles. The complete selection procedure is summarized in Figure 1, offering readers a clear overview of how the initial dataset was refined into the final set of relevant publications (Passas, 2024).
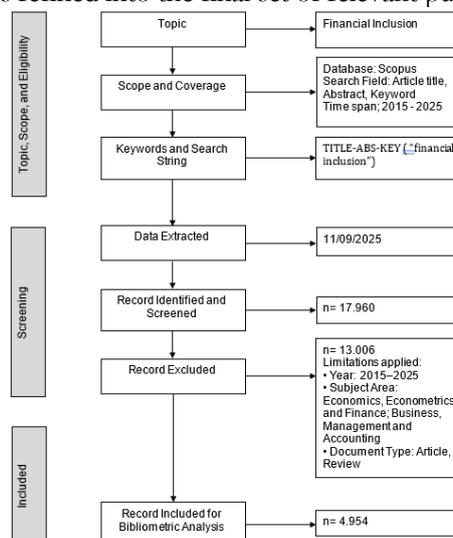

Figure 1. PRISMA diagram
Source: Scopus Database

The research design shown in Figure 1 demonstrates the systematic flow of article screening and selection. This process helps ensure that the selected documents are truly relevant to the research objectives. With structured stages, this research can be conducted more transparently and consistently. The research process becomes more focused and accountable. The framework also provides a strong foundation for the ongoing analysis process.

Data Search and Identification

The data in this research comes from the Scopus database, widely recognized as one of the world's most comprehensive and reputable scientific repositories. Scopus was chosen not only because it offers a broad range of journals but also because it excels in citation accuracy. Nearly all articles indexed in it have undergone peer review, ensuring the quality and validity of the analyzed data. Another advantage of Scopus is its ability to provide a variety of bibliometric metrics, ranging from author productivity and institutional analysis to

international collaboration, making it highly suitable for supporting bibliometric research (Donthu et al., 2021).

In this study, the article search was conducted using the main keywords "financial inclusion". The search period was set from 2015 to 2025. This period was chosen based on the research context, namely the period when the development of Industry 4.0 was increasingly prominent and began to have a real impact on the global financial system. Furthermore, this period also overlapped with the implementation of the Sustainable Development Goals (SDGs), which were officially launched in 2015. Therefore, the collected data is expected to reflect the dynamics of the current literature relevant to the issues of digitalization and sustainable development. Articles that did not meet the inclusion criteria, such as conference proceedings, editorials, and short notes, were systematically excluded from the dataset to ensure a more focused and representative analysis (Passas, 2024).

Data Extraction and Statistical Analysis

The next stage is data extraction from selected articles by extracting metadata available in Scopus, including title, author name, affiliation, publication year, keywords, number of citations, and country of publication. The data is downloaded in CSV format for easy processing, then subjected to a general review to ensure there are no duplicate articles or irrelevant information, ensuring consistent analysis results (Kumar, 2025). The analysis process was conducted using VOSviewer and R Studio (Biblioshiny) software. VOSviewer is used for co-citation mapping, collaboration networks, and keyword relationships, while R Studio supports descriptive analysis and thematic map creation. The combination of these two tools allows for more comprehensive analysis results, as it not only displays statistical figures but also provides informative and easy-to-understand visualizations.

4. Results and Discussion

The results of the bibliometric analysis conducted in this study provide a comprehensive overview of the development direction of the financial inclusion literature. Findings are presented across several dimensions, ranging from publication trends, key journals, influential authors and institutions, to country contributions and emerging research themes. With the support of Biblioshiny and VOSviewer, these results provide both a statistical map and a conceptual structure emerging in this field. The following sections outline how financial inclusion research is evolving in a global context influenced by digitalization, technological innovation, and the sustainable development agenda.

Publication Trends in Financial Inclusion Research (2015–2025)

The initial analysis in this bibliometric study begins by exploring the general characteristics of publications that form the basis for the development of research on financial inclusion. The metadata summary presented in Figure 2 provides a comprehensive overview of the research scope for the period 2015–2025, including the number of documents, annual growth, author involvement, and citation impact. This information is important because it demonstrates how the issue of financial inclusion has evolved from mere policy discourse to an academic topic receiving widespread attention across disciplines.

Figure 2. Main Information Overview
Source: Data processing using R Studio

Based on the summary in Figure 2, the number of publications on financial inclusion between 2015 and 2025 reached 1,978 documents spread across 585 scholarly sources. This figure indicates that over the course of a decade, the related literature has experienced significant expansion. The annual growth rate of 30.81% is a strong indication that financial inclusion has transformed into a highly dynamic research field. This growth does not stand alone but is aligned with several global momentums. First, the adoption of the 2015 SDGs, which emphasize the role of financial access in poverty alleviation and inclusive development. Second, the rapid development of fintech, which has revolutionized access to financial services, particularly through the digitization of payments, mobile banking, and digital wallets. Third, the impact of the COVID-19 pandemic in 2020–2021, which forced the acceleration of financial digitalization and simultaneously increased the urgency of research on the resilience of inclusive financial systems during times of crisis.

In terms of authorship patterns, the data demonstrates a predominance of scientific collaboration, with 7,362 authors contributing to publications, an average of eight authors per article, while only two documents are authored solely. This condition confirms that the topic of financial inclusion is viewed as a multidisciplinary issue that demands synergy across perspectives ranging from economics, technology, public policy, and social development. The high rate of international collaboration (27.1%) also demonstrates that research in this field has become a global agenda, where cross-border engagement allows for the exchange of experiences and empirical data that enriches analysis and broadens the research impact. The relatively young nature of the literature, with an average age of 2.88 years, indicates that financial inclusion research is still in a phase of rapid growth and new discourses continue to emerge. This is reinforced by the average 19.72 citations per document, indicating that despite its relative infancy, publications in this field are highly relevant and serve as important references in the development of knowledge. Overall, these findings indicate that financial inclusion research is developing rapidly, supported by strong international collaboration and high academic relevance, thus providing an important foundation for further bibliometric analysis of publication patterns, primary sources, and emerging research themes.

Most Relevant Journals and Source Growth

In bibliometric studies, identifying primary publication sources plays a crucial role because it provides an overview of the dominant channels of knowledge dissemination in a field. Each journal has a distinct scholarly orientation, so this mapping helps understand how financial inclusion issues are positioned within the broader academic discourse, whether from a socioeconomic, public policy, or purely financial perspective. Figure 3 provides an analysis of relevant publication sources, not only indicating the most productive outlets but also reflecting thematic trends and emerging research directions.
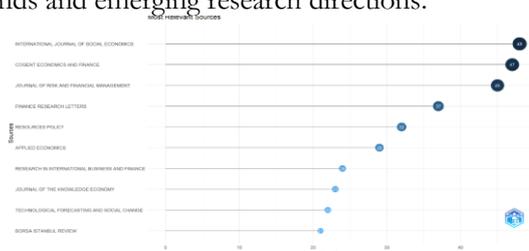

Figure 3. Most Relevant Sources
Source: Data processing using R Studio

According to the results of Figure 3, publications related to financial inclusion are spread across a number of reputable journals, dominated by the International Journal of Social Economics (48 papers), Cogent Economics and Finance (47 papers), and the Journal of Risk and Financial Management (45 papers). These top three positions indicate a balance between journals focused on social economics, open-access multidisciplinary journals, and journals focused on risk management and finance. Furthermore, journals such as Finance Research Letters (37 papers), Resources Policy (32 papers), and Applied Economics (29 papers) demonstrate that financial inclusion issues also find a place in broader research related to resource policy, applied economics, and international finance. This diversity of outlets demonstrates that financial inclusion is not merely a narrow theme within banking studies, but has become a cross-disciplinary topic closely related to development, public policy, and global economic dynamics.

Institutional Contributions

Academic institutions play a crucial role in shaping the direction of research on financial inclusion, as they often serve as hubs for author collaboration and platforms for the dissemination of ideas. The affiliation analysis in Figure 4 provides an overview of the universities or research institutions most actively publishing related work and also demonstrates the global distribution of contributions.
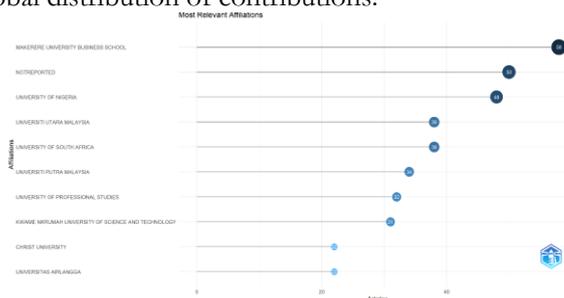

Figure 4. Most Relevant Affiliations
Source: Data processing using R Studio

Based on the results in Figure 4, Makerere University Business School tops the list with 58 articles, indicating its central role in financial inclusion research, particularly in the African context. Next comes publications with no reported affiliation (50 articles), followed by the University of Nigeria (48 articles), Universiti Utara Malaysia, and the University of South Africa, each contributing 38 articles. In the next group are Universiti Putra Malaysia (34 articles), the University of Professional Studies (32 articles), and Kwame Nkrumah University of Science and Technology (31 articles). Interestingly, contributions also came from universities in Asia and South Africa, including Christ University and Airlangga University (22 articles each). These findings indicate that financial inclusion research is not solely confined to developed countries but is also growing rapidly in developing countries where the issues of financial literacy, banking access, and the digitalization of financial services are highly pressing. The dominance of universities in Africa and Southeast Asia reflects the real-world context of financial inclusion challenges, where empirical practice is more prevalent. Thus, the contributions of institutions from the Global South are a crucial element in enriching the global discourse.

Country Contribution and International Collaboration Patterns

The analysis of country contributions provides insight into the global distribution of financial inclusion research and demonstrates patterns of international collaboration among researchers from various countries. By combining publication production data and collaboration networks in Figure 5, we can see not only who produces the most scientific work but also how interactions between countries shape broader knowledge networks.
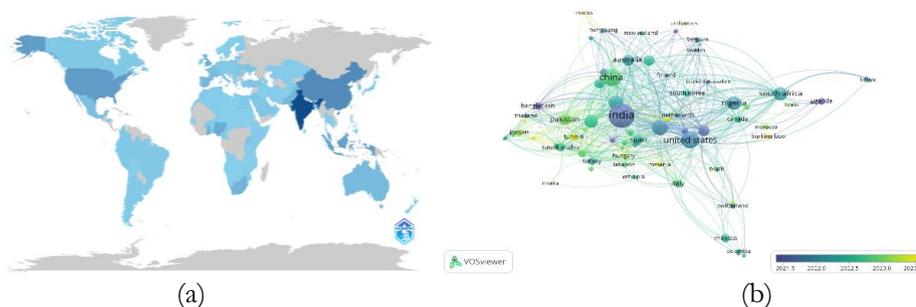

(a)   (b)

Figure 5. (a) Country Scientific Production, (b) Co-authorship Countries
Source: Data processing using (a) R Studio, (b) VOSviewer

Based on Figure 5 (a) shows that India, China, and the United States are the countries with the highest contributions, indicated by the darker shades. This dominance indicates that financial inclusion research remains concentrated in countries with substantial academic capacity and adequate research infrastructure. Conversely, most countries in Africa and Southeast Asia still show relatively low publication rates, indicating a gap in research participation.

Meanwhile, Figure 5 (b) shows that India, the United States, and China are not only productive in terms of the number of publications but also play a central role in global collaboration networks. This is indicated by the large size of the nodes and the density of connecting lines with various other countries. European countries such as the Netherlands, Spain, and Italy also occupy a key role in strengthening research networks, while Africa and the Middle East remain peripheral with limited collaboration intensity. The combination of these two findings underscores that although financial inclusion has become a global issue, the distribution of research and the quality of collaboration across countries remains uneven, opening up opportunities to expand the involvement of academics from currently underrepresented regions.

Keyword Analysis and Emerging Research Trends

Keyword analysis was conducted to identify the primary focus of the research and to explore how these topics evolved over time. This study used VOSviewer to map keyword co-occurrence, allowing for visual representation of the relationships between concepts in the financial inclusion literature. Figure 6, using Network Visualization, demonstrates the clearer interrelationships between topics, while Figure 7, using Overlay Visualization, illustrates the shifting research focus over time.
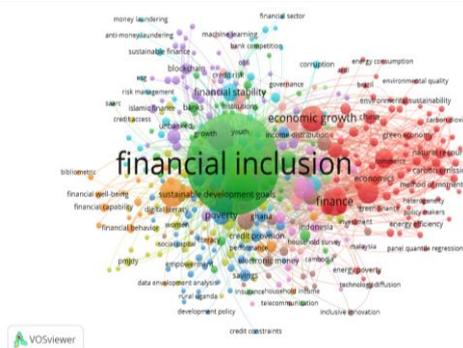
Figure 6. Co-occurrence Keywords Network Visualization
Source: Data processing using VOSviewer

Based on the results of Figure 6, the keyword "financial inclusion" appears to be the most dominant with the largest node size, indicating that this topic is a focus of research. Other important keywords that frequently appear include economic growth, finance, sustainable development goals, poverty, financial stability, and digital literacy. The close interconnectedness between nodes indicates that research on financial inclusion is closely related to macro issues such as economic growth, financial system stability, and poverty alleviation. Furthermore, the emergence of new keywords such as blockchain, fintech, electronic money, and sustainable finance indicates a shift in research focus toward the integration of digital innovation and sustainability. This shift aligns with the dynamics of Industry 4.0, where digitalization, big data, and financial technology are key catalysts for global economic transformation.

This relationship becomes even more relevant when linked to innovation and entrepreneurship, where financial inclusion acts as an enabler that expands access to funding for MSMEs and encourages technology-based entrepreneurship. This demonstrates that financial inclusion addresses more than just access to financial services, but also supports the creation of a competitive innovation ecosystem. Furthermore, attention to financial literacy and digital policies strengthens financial inclusion's position as a strategic instrument for creating inclusive and sustainable economic growth. Thus, financial inclusion research not only develops thematically but also responds to the demands of the digital era and the direction of knowledge-based development policies.

Furthermore, Figure 7 presents the results of an Overlay Visualization showing the distribution of keywords by publication year.
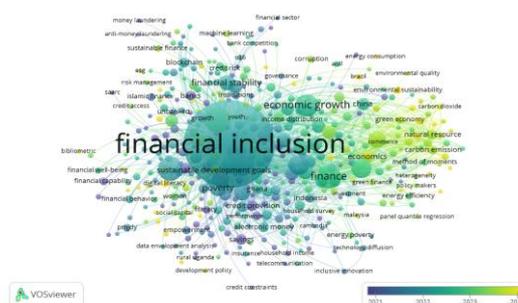

Figure 7. Co-occurrence Keywords Overlay Visualization
Source: Data processing using VOSviewer

The overlay visualization results in Figure 7 show the chronological development of research focus on financial inclusion. In the early period, the node color tended to be blue, indicating the dominance of classic topics such as microfinance, poverty, and household income. This indicates that research in the early phase focused more on the role of conventional financing and credit access as instruments for poverty alleviation. Over time, the node color shifted to green and yellow, indicating the emergence of new themes such as fintech, blockchain, digital finance, sustainable finance, and digital literacy. This color shift reflects the academic response to the digitalization of the financial sector and the increasing relevance of financial technology in creating broader inclusion.

These findings have important implications for policy development and future research directions. The shift toward digital-based themes indicates that financial inclusion is now viewed not only as access to basic financial services but also as a means of economic empowerment in the Industry 4.0 era. The integration of technologies such as blockchain and fintech enables the expansion of more efficient, transparent, and affordable financial access, especially for MSMEs and the informal sector. Furthermore, the growing attention to

sustainable finance reflects efforts to link financial inclusion with the sustainable development agenda. Thus, these overlay results confirm that financial inclusion has evolved into a strategic instrument to support innovation, digital entrepreneurship, and the achievement of the SDGs at the global level.

Intellectual Structure

Co-citation analysis is used to understand the intellectual structure of financial inclusion research. This approach helps identify groups of researchers connected through shared citations and identify the most influential literature in shaping the theoretical framework. Using VOSviewer, a co-citation map is generated in two formats, Figure 8 based on cited authors, and Figure 9 based on cited references. This analysis is important because it can provide insight into how academic communities interact, the dominant research themes, and the direction of future scientific development.
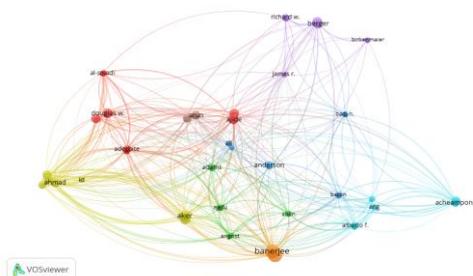

Figure 8. Co-Citation Cited Authors
Source: Data processing using VOSviewer

The results in Figure 8 show that the authors' co-citation network is divided into several colored clusters. The main cluster is led by Ajide, Ahmad, and Aker, who contribute to the study of the relationship between financial inclusion and socio-economic development. Another cluster, led by Berger and Richard W., tends to discuss the efficiency of the banking system, the role of financial institutions, and monetary stability. The density of connections between nodes reflects the synergy between researchers and strengthens evidence that financial inclusion research is conducted collaboratively across disciplines. This finding also indicates that research has evolved towards greater complexity, in line with the demands of innovation in the digital era. This is crucial to support technology-based entrepreneurship and adaptive inclusion policies, which are priority agendas for promoting inclusive growth in the Industry 4.0 era.
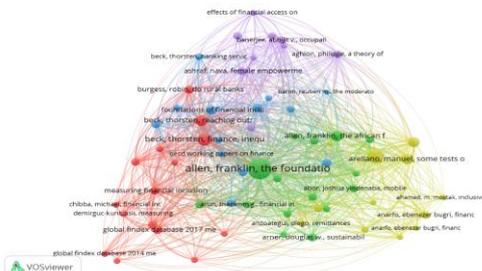

Figure 9. Co-Citation Cited References
Source: Data processing using VOSviewer

Figure 9 displays the co-citation map for the most cited references. Allen and Franklin dominate the network, confirming its role as a theoretical foundation in the financial inclusion literature. The works of Beck and Thorsten and the World Bank's Global Findex Database also occupy a central position as data sources and analytical frameworks. Furthermore, references to mobile banking, remittances, and women's empowerment are increasingly used, indicating a shift in research focus toward the digitalization of financial services and the empowerment of vulnerable groups. This trend supports the Sustainable Development Goals (SDGs) agenda while opening up opportunities for product and policy innovation that encourages inclusive entrepreneurship. Integrating digital technology with entrepreneurial strategies can accelerate access to financing for MSMEs and increase the efficiency of financial services, making it relevant to the direction of economic policy in the Industry 4.0 era.

Discussion and Policy Implications

The overall results of the bibliometric analysis confirm that financial inclusion has developed into an increasingly mature and relevant research field. The consistent growth of publications from 2015–2025, coupled with high citation rates, indicates that this topic is not just a passing trend, but rather a key focus in the literature on development and the digital economy. The predominance of author collaborations, both nationally and internationally,

indicates that this issue requires multidisciplinary study, encompassing economic, technological, public policy, and social perspectives. These findings reinforce the view that financial inclusion has become a global agenda requiring cross-disciplinary synergy and international cooperation (Sanistasya et al., 2018).

The mapping of the most relevant journals and institutions also shows that knowledge on financial inclusion is disseminated through diverse channels, ranging from social economics-oriented journals to applied finance. The substantial contributions from universities in developing countries demonstrate that this issue is closely linked to the needs of the field, particularly in promoting financial literacy and the digitalization of financial services. However, the pattern of publication contributions, which is still concentrated in countries with high research capacity, indicates a global gap that needs to be addressed. Efforts to expand participation in countries with low publication rates can be achieved by increasing research capacity and strengthening international collaboration, as suggested by (R. Chen & Divanbeigi, 2019), who emphasized the importance of regulations and policy frameworks that support financial inclusion innovation.

From a thematic perspective, the literature shows a shift in focus from conventional topics such as microfinance and poverty alleviation to new themes such as digital finance, fintech, blockchain, and green finance. This shift indicates that digitalization and technological innovation are now key drivers of financial inclusion. In the Indonesian context, this is increasingly relevant to the national agenda of encouraging MSME digitalization, expanding the use of QRIS, and improving digital financial literacy through the National Strategy for Financial Inclusion (SNKI). Adaptive policies to financial technology innovation, digital infrastructure development in remote areas, and equitable financial literacy education are key to the success of financial inclusion at the national level. These efforts are expected to not only expand access to financial services for the unbanked but also encourage the growth of technology-based entrepreneurship and accelerate inclusive and sustainable economic transformation.

5. Conclusion

Financial inclusion has become a crucial global development agenda for reducing economic disparities and supporting sustainable growth. Challenges remain, including the high number of unbanked people, gender disparities, and limited financial infrastructure, particularly in developing countries. In the Industry 4.0 era, the digitalization of financial services, mobile banking, and fintech innovations have opened up new opportunities to expand access, but also pose challenges such as the need for digital literacy and consumer protection. This study aims to provide a comprehensive overview of how academic literature is responding to these challenges by mapping publication trends, collaboration patterns, and emerging research themes from 2015–2025.

The findings of this study indicate that the development of financial inclusion literature is not only increasing quantitatively but also deepening thematically. The consistent growth of publications year after year indicates the increasing relevance of this topic among academics and policymakers. The most contributing journals accommodate cross-disciplinary discussions, indicating that financial inclusion is now understood not only as a banking issue, but as a socio-economic instrument influencing development, poverty alleviation, and technological innovation. An analysis of author and institutional collaborations reveals the increasing involvement of developing countries, enriching research perspectives with real-world contexts. Meanwhile, thematic maps and keyword evolution indicate a shift in focus from traditional microfinance to digital finance, fintech, and green finance, reflecting academic responses to digital transformation and the global sustainability agenda.

This conclusion confirms that financial inclusion now plays a role as a catalyst for innovation and entrepreneurship in the digital economy ecosystem. In addition to key keywords such as "financial inclusion," "fintech," and "digital finance," the analysis also reveals the emergence of specific themes such as "financial literacy," "gender gap," and "rural access," which require further attention in future research. For Indonesia, these findings provide a basis for strengthening the National Strategy for Financial Inclusion, expanding the reach of QRIS (Qualifying Transaction Reduction System), and improving digital literacy. Thus, Indonesia has the opportunity to reduce disparities in financial access, support the transformation of MSMEs, and achieve inclusive and sustainable economic growth.

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