Bibliometric Analysis of Financial Inclusion Research in the Context of Sustainable Economy

Loso Judijanto¹, Usup²

¹ IPOSS Jakarta

² Politeknik Tunas Pemuda Tangerang

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ABSTRACT

This study does a bibliometric analysis of financial inclusion research within the framework of a sustainable economy, utilizing papers indexed in a prominent scientific database from 2000 to 2025. The study utilizes performance analysis and scientific mapping methodologies through VOSviewer and Bibliometrix to investigate publication patterns, prominent authors, institutions, countries, and networks of keyword co-occurrence. The findings indicate that financial inclusion and sustainable development form the primary conceptual core, intricately linked to economic growth, financial development, and sustainability. Contemporary research is mostly focused on digital issues, including fintech, digital financial inclusion, and decentralized finance, which progressively associate inclusive finance with environmental performance, green innovation, and the reduction of carbon emissions. Networks of international collaboration indicate that emerging economies, notably China, India, Pakistan, and South Africa, assume a prominent role, but such collaboration is predominantly localized rather than entirely global. elucidates the structure and history of this interdisciplinary domain, identifies significant research clusters and deficiencies, and delineates avenues for further exploration of inclusive and sustainable financial systems.

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Corresponding Author:

Name: Loso Judijanto

Institution Address: IPOSS Jakarta e-mail: losojudijantobumn@gmail.com

1. INTRODUCTION

Financial inclusion is now a key goal for global progress because it can help reduce poverty and inequality, and boost overall e conomic growth. Big groups like the World Bank and the UN see it as a vital way to a chieve the Sustainable Development Goals (SDGs), especially those about reducing poverty, ensuring gender equality, and empowering people financially [1]. When people can access financial services, especially those with low incomes, in rural areas, women, and small businesses, thev

can participate in the economy more, protect themselves from risks, and work toward longterm financial security. Because of this, there's been a lot more research on financial inclusion, looking at things like microfinance, mobile banking, financial literacy, and digital financial services [2].

At the same time, the idea of a sustainable economy has become more talked about in economic policy and discussions. A sustainable economy encourages growth that includes everyone, is socially responsible, and good for the environment [3]. Financial inclus

ion is seen as a way to promote sustainability by giving vulnerable people access to the resources they need for environmentally friendly businesses, adapting to climate change, and creating sustainable ways to make a living. Recent studies show that inclusive financial systems help promote sustainable development by encouraging ecoconsumption, helping people friendly withstand environmental threats, expanding opportunities for sustainable investments. This increasing connection between the two ideas has sparked a lot of interest in including inclusive finance in broader sustainability plans[4].

Technology has greatly sped up this process. Advances in fintech, like mobile payments, peer-to-peer lending, digital wall ets, blockchain finance, and AI-driven credit scoring, have greatly increased access to financial services. These advancements reduce costs, increase transparency, and mak financial inclusion programs scalable[5]. Also, digital financial inclusion helps sustainable economic changes by providing access to micro-insurance, funding for clean energy, and green credit programs. As a result, academic research has focused more and more on digital inclusion plans, fintech systems, and how technology affects sustainable development, showing how fi nancial inclusion studies have become a multidisciplinary field[6].

The growth of this body of work is clear from the rising number of publications, increased citation rates, and more global teamwork among researchers[7]. Experts in economics, finance, development studies, information systems, and environmental sciences have all helped to advance the concepts and practical applications in this area. The existing work is very diverse, including studies on what affects financial access, the influence of governance and institutions, digital changes, poverty reduction, sustainability-focused financial policy, and inclusive fintech technologies. Thi s multidisciplinary aspect requires bringing together research trends to understand how knowledge is growing, identify key contrib utors, and define how topics are developing.

Given the guick rise in research output, bibliometric analysis has become a helpful way to assess scientific progress. Bibliometric tools can help researchers see networks of co-authorship, co-citation, and keyword co-occurrence, which helps to have a full understanding of intellectual systems and emerging study areas. While bibliometric research has looked at microfinance, digital finance, green finance, and sustainable development, there aren't many scientometric analyses specifically focusing on financial inclusion in the context of a sustainable economy [8]. A systematic and thorough bibliometric assessment is needed to spot conceptual links, research paths, and gaps in the academic discussion on financial inclusion and sustainable economic growth.

Even though there's a lot of work on financial inclusion and its growing role in sus tainability changes, there hasn't been a complete bibliometric synthesis to map out the intellectual system, thematic groups, and research trends that specifically link financial inclusion to sustainable economic plans. Current assessments mainly focus on specific subfields like digital finance, microfinance, or poverty reduction without including sustain ability aspects [9]. This separation stops policymakers, researchers, and development workers from fully understanding how the global academic community sees, discusses, promotes financial inclusion sustainable economic plans. The lack of a scientometric analysis means there's a lack of clarity about key contributions, current research paths, and conceptual views in the subject.

This study aims to do a full bibliometric analysis of financial inclusion research within the broader plan of a sustai nable economy, using data from respected academic databases to map out the int ellectual area of the field. The analysis focuses on a few main goals: assessing publication trends, citation systems, and the overall progress of scholarly output; identifying the most influential authors, institutions, publications, and countries contributing to this interdisciplinary field; and describing intellectual links through co-authorship

collaborations, co-citation patterns, keyword co-occurrence networks to show ho w knowledge is connected and has grown ov er time. The study seeks to spot and analyze important topic groups that define how finan cial inclusion research has grown and how it relates to sustainability goals. This study brings together ideas to give a full understanding of how financial inclusion promotes sustainable economic development, while also suggesting future research directions based on conceptual gaps and new chances.

2. METHOD

This study utilizes a quantitative bibliometric approach to examine scientific landscape of financial inclusion research in relation to a sustainable economy. Bibliometric analysis offers a systematic and objective method for evaluating scientific output, delineating intellectual frameworks, and charting subject development within extensive literature [8]. Scopus was chosen as the principal data source due to its com prehensive coverage of peer-reviewed artic citation dependable metrics, appropriateness for sophisticated scientometric research. The search technique employed a combination of "inclusive including "financial inclusion," finance," "sustainable economy," "sustainability," "green economy," related topics, integrated through Boolean op erators to guarantee thorough retrieval. The dataset comprised journal articles, reviews, conference papers, and book chapters published from 2000 to 2025, with only Eng lish-language documents maintained to ensure interpretative consistency.

Upon acquiring the dataset, bibliographic information—including titles, authors, abstracts, affiliations, keywords, publishing sources, and citation counts—was

exported in CSV and RIS formats for subsequent analysis. Two principal analytical instruments were employed: VOSviewer and Bibliometrix (via RStudio). VOSviewer was employed to generate and visualize coauthorship networks, co-citation frameworks, keyword co-occurrence diagrams, facilitating the discovery of theme clusters and significant intellectual connections [10]. facilitated **Bibliometrix** comprehensive quantitative analyses, encompassing annual scientific output, highly cited papers, author productivity, journal influence, and patterns of international collaboration [11]. integration of these tools facilitated a meticulously organized examination. combining quantitative performance metrics with intuitive visual network mapping.

To enhance reliability, the study employed several fundamental bibliometric methodologies: (1) Performance analysis, assessing the scientific productivity and authors, citation impact of journals, institutions, and countries; Science (2) mapping, utilized to investigate conceptual, intellectual, and social networks via keyword co-occurrence, co-citation analysis, collaboration networks; and (3) Thematic evolution analysis, which scrutinizes the progression and changing emphasis of research themes across various time intervals. Data cleansing protocols were implemented to eliminate duplication, standardize author nomenclature, harmonize keywords, and discrepancies in affiliation rectify information. These methodological processes coherent and comprehensive examination of the evolution of financial inclusion research, the formation of topic clusters, and the alignment of the discipline with sustainability-focused scholarship. The technique offers a reliable, reproducible framework for delineating the conceptual structure of this interdisciplinary study field.

3. RESULT AND DISCUSSIONS

3.1 Network Visualization

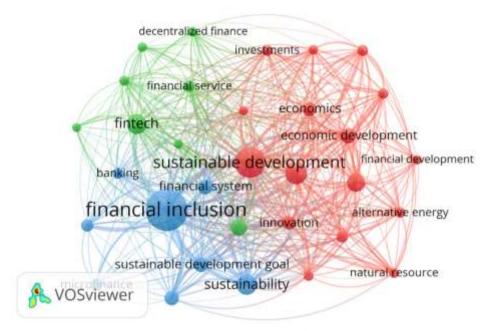


Figure 1. Network Visualization Source: Data Analysis Result, 2025

The VOSviewer network sualization reveals a thick and intricately interconnected research landscape, signifying that financial inclusion is a central and predominant theme within the wider academic conversation. The prominent blue node labeled "financial inclusion" indicates that this term is prevalent and functions as the central anchor of the research network. broad connections to other nodes illustrate the intersection of financial inclusion with other facets sustainability, economics, development studies, and technological innovation. The dense and extensive connecting lines depict robust co-occurrence correlations across keywords, indicating that financial inclusion is persistently examined in conjunction with concepts linked development, sustainability, financial systems.

The image underscores the growth of sustainable development as a significant cluster—indicated by the red color grouping—which is closely linked to themes such as economic development, financial development, inventions, and alternative energy. This indicates that con temporary academic research increasi

ngly frames financial inclusion within the scope of wider sustainability discussions, particularly on its role in facilitating lowcarbon transitions, resource efficiency, and environmental resilience. "sustainable substantial size of the development" node indicates its prevalence in the literature, while the cluster's deep internal structure illustrates multifaceted character sustainability-related research.

A unique green cluster focuses on fintech, decentralized finance, and f symbolizing inancial services, technology aspect of financial inclusion. cluster signifies that transformation is a predominant topic traj ectory in the field. Terms like fintech and decentralized finance serve connections between financial inclusion and new financial systems, as well as growing digital platforms. Their closeness to sustainability-related hubs indicates the rising acknowledgment that technology-driven financial solutions can improve sustainab le development results by broadening access, lowering transaction costs, and enhancing financial transparency.

Simultaneously, the blue cluster conventional financial encompasses including banking, sector themes, microfinance, and the financial system. These connections indicate traditional financial systems continue to be fundamental in debates of inclusion, d expansion digital espite the of technologies. Microfinance, despite its limited scale, remains crucial is frequently associated with sustainabil ity discourse, particularly in aiding small businesses and rural populations. The coexistence of traditional and digital financial nodes signifies a transitional phase wherein experts are investigating both legacy systems and innovative alternatives to attain inclusive and sustainable economic development.

The network structure depicts a highly interconnected research

environment marked by interdisciplinary connections across economics, sustainability studies, finance, and technology. The proximity of terms indicates that the area has progressed towards convergence, with financial inclusion being regarded not merely as a financial tool but also as a catalyst for sus tainable development and green econo transformation. The graphic identifies three principal theme pillarsdigital finance, sustainability, development—that jointly economic constitute the intellectual framework of modern financial inclusion research. This interconnection highlights the signific ance of integrative methodologies in e xamining financial inclusion, especially a s global goals transition towards inclusiv e and sustainable economic frameworks.

3.2 Overlay Visualization

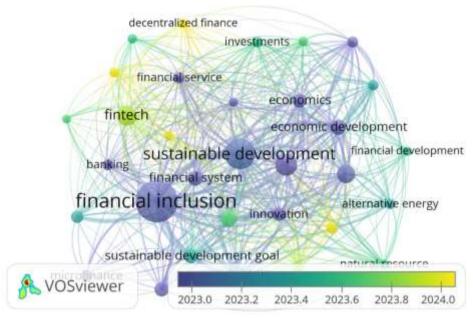


Figure 2. Overlay Visualization Source: Data Analysis Result, 2025

The overlay visualization illustrates the temporal progression of research themes connecting financial in clusion to the sustainable economy. The color gradient—from dark blue (older to pics) to brilliant yellow (newest themes) signifies that fundamental concepts such as financial inclusion, sustainable development, economic growth, financial system, and financial development ori

ginated earlier and continue to be important tenets of the literature. Their dark-blue to green gradient indicates that persistently principles these have prevailed in publications since early 2023, serving as the intellectual nucleus of the fi eld. These topics persist as foundational elements in scholarly discourse, illustrating their lasting significance in influencing theoretical and empirical

investigations into inclusive and sustainable economic systems.

The overlay analysis reveals a distinct transition towards contemporary, innovation-centric research themes. Bright green to yellow nodes—such as fin tech, decentralized finance, innovation, a nd financial services indicate that these th emes have gained traction from late 2023 into 2024. Their rising prominence indicates a heightened scholarly interest in exploring how technological innovations improve financial inclusion and advance sustainable development goals. This trend highlights a structural shift in literature: from conventional financial inclusion methods such as microfinance and banking to digital and decentralized financial solutions that enhance access, increase efficiency, and promote environmentally sustainable eco nomic practices.

The yellow clusters associated w ith innovation, fintech, and decentralized finance indicate a shift in recent research t owards digital sustainability models, wherein inclusive finance is integrated with technology change and green investment techniques. Conversely, subjects like alternative energy, natural resources, and sustainable development goals occupy a moderate hue spectrum, signifying persistent yet progressively growing involvement. The visualization i

ndicates that the field is undergoing thematic diversification: although the f undamental principles of financial in clusion and sustainable development remain robust, research is swiftly advancing towards technology-driven, sustainability-focused

financial ecosystems. This development indicates forthcoming prospects for interdisciplinary collaboration that amalgamates digital finance, environme ntal governance, and sustainable econo mic transitions.

3.3 Citation Analysis

This study analyzes frequently referenced publications to identify the most significant contributions at the nexus of financial inclusion, digital transformation, and sustainable development, thereby shaping the intellectual foundation of the area. The subsequent table encapsulates the mostcited papers, emphasizing various viewpoints like fintech-driven inclusiveness, environmental sustainability, carbon emissions mitigat ion, economic growth, and poverty red uction. These studies provide fundamen tal evidence illustrating the growing intersection of inclusive finance with technological innovation, sustainable dev elopment, global sustainability and objectives.

Table 1. Top Cited Research

Citations	Authors and year	Title
458	[12]	Sustainability, FinTech and Financial Inclusion
456	[13]	Fintech, financial inclusion and income inequality: a quantile regression approach
363	[14]	Does digital financial inclusion matter for economic growth and environmental sustainability in OBRI economies? An empirical analysis
295	[15]	Does financial inclusion limit carbon dioxide emissions? Analyzing the role of globalization and renewable electricity output
277	[16]	Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy
273	[17]	Artificial intelligence in the industry 4.0, and its impact on poverty, innovation, infrastructure development, and the sustainable development goals: Lessons from emerging economies?
240	[18]	Digital financial inclusion: A gateway to sustainable development

Source: Scopus, 2025

The table indicates that the most significant papers in this research area center on three primary themes: fintechfacilitated financial inclusion, environmental and sustainability effects, and economic development results. The most-cited papers such as [2], [13]highlight the essential function of digital innovation and fintech ecosystems in promoting inclusive finance mitigating socioeconomic inequalities. Research conducted by [15], [19], [21] underscores a robust empirical correlatio between financial inclusion and environmental outcomes, indicating that inclusive financial systems can mitigate carbon emissions, facilitate renewable energy adoption, and enhance environme ntal performance. A third category of studies, including [16], [20]underscores the significance of inclusive financing for economic expansion, ICT advancement, and poverty alleviation, particularly in developing economies. These highly ref erenced works collectively demonstrate the interdisciplinary advancement of financial inclusion research, highlighting its incorporation of financial and social aspects, as well as technical innovation and environmental sustainability.

3.4 Density Visualization

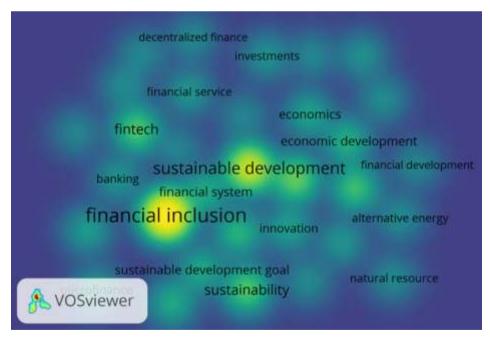


Figure 3. Density Visualization Source: Data Analysis Result, 2025

The density map distinctly identifies financial inclusion and sustainable development as the two primary focal points in the research

environment. Their vivid yellow hue signifies the peak concentration of publications, co-occurrences, and academic focus within the dataset. The

relatively dense regions green surrounding key basic terms-such as financial system, economic development, financial development, and sustainability—indicate that these concepts provide the structural foundation of the research domain. This pattern illustrates that the research constantly regards financial inclusion as a tool propelling sustainable development results, while concurrently intertwining it with broader economic and financial systems.

Concurrently, regions of lower density next to terms such as fintech, decentralized finance, innovation, alternative energy, and natural resources indicate nascent yet expanding study sectors. While these themes do not now predominate the subject, their noticeable prevalence signifies a growing academic interest, especially in correlating digital with finance environmental sustainability. The existence of green surrounding clusters fintech-related terminology indicates that technical innovation is increasingly significant in the dialogue, signifying a trend towards digitalization, green innovation, finance. sustainable The density visualization illustrates a study domain rooted in conventional development themes while swiftly advancing towards technology-enabled and sustainabilityfocused trajectories.

3.5 Co-Authorship Network



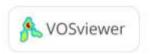


Figure 4. Author Visualization Source: Data Analysis Result, 2025

The VOSviewer author collaboration map depicts a compact yet distinctly delineated network of coauthorships in the realm of financial inclusion and sustainable development research. The red cluster signifies a tightly-knit group of authors-Ozturk, Ilhan Tekin; Khan, Zeeshan Anis; and Kirikkaleli, Dervis—who regularly collab orate on research concerning digital environmental financial inclusion, sustainability, economic and development. Their robust connections

indicate a dynamic research collaboration yielding significant empirical findings, particularly in the domains environmental consequences of financial inclusion, including carbon emissions and sustainability transitions. The green distinct cluster emphasizes a collaborative group led by Ali K., Satar Bakhsh, and Muhammad Anas, who seem to collaborate on topics related to financial development, fintech, sustainable investment frameworks. The existence of two separate clusters with

little inter-group linkages suggests that research collaboration in this field remains fragmented, with authors pr eferring to work within small, specialized teams instead of establishing extensive, interconnected research networks. This pattern indicates potential for more multidisciplinary and cross-institutional collaboration to augment the depth and diversity of future research.

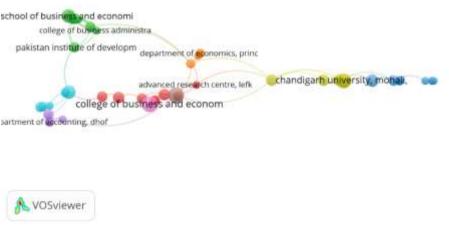
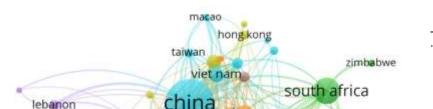


Figure 5. Affiliation Visualization Source: Data Analysis Result, 2025

The institutional collaboration map depicts a moderately interconnected yet fragmented network of associations engaged in research on financial inclusion and sustainable development. The multiple graphic illustrates unique clusters, each signifying institutions that regularly co-author works within their respective regional or academic domains. The College of Business and Economics, the School of Business and Economics, the College of **Business** dministration are a closely interconnected cluster, signifying robust collaboration a mong business schools, presumably within the same nation or region. The Pa kistan Institute of Development links this cluster to others, indicating its role as a bridge institution that facilitates interdisciplinary research on development economics and financial incl A significant connection is the Department of Economics, which associates development-oriented

organizations with broader or specialized research entities like the Advanced Research Centre, Lefk.

Chandigarh University, Mohali, serves as a pivotal center within its cluster, exhibiting several collaboration connections to other universities in the blue and yellow clusters. This signifies that the university significantly contributes to the advancement multidisciplinary research in digital finance, sustainability, and economic development. The elongated chain-like s tructure among clusters indicates that collaboration is present but is confined to small, localized groups instead of cons tituting a robust, worldwide research network. This pattern indicates the robustness of regional collaboration and presents an opportunity for expansive international partnerships to enhance global integration of in financial inclusion and sustainable ec onomic development.



The country collaboration map illustrates a highly integrated worldwide research network, with multiple nations identified as key contributors to the literature on financial inclusion and sustainable economic growth. China, India, Pakistan, South Africa, and the Unit ed Kingdom emerge as the most signific ant nodes, as seen by their higher circle s izes and dense clustering. Their elevated node weight signifies substantial publication output and widespread international collaboration. China and predominantly influence network, indicating that these nations are at the forefront of empirical and theoretica l progress in domains such as digital financial inclusion, green finance, and sustainability-oriented economic policy. Encircling them are dynamic clusters symbolizing Southeast Asia, the Middle East, and Africa, illustrating that developing economies significantly influence global discussions on inclusive and sustainable finance.

The image underscores robust cross-regional connections, illustrating the transdisciplinary and globally shared essence of financial inclusion research. Countries such as Saudi Arabia, Ghana, the Netherlands, Australia, and the United Arab Emirates exhibit significant

collaboration, acting as intermediaries a cross Asian, African, and European research communities. Simultaneously, smaller yet active contributors like Leba non, Ethiopia, Zimbabwe, and Morocco illustrate the expanding geographic diversity of the field, with research increasingly reflecting viewpoints from developing nations where concerns rela ted financial inclusion and sustainability are most acute. The intricate network of interconnecting lines signifies that researchers often interact across international borders, fostering a robust, globally integrated information ecosystem. This framework emphasizes the worldwide significance of financial inclusion research and identifies substan tial prospects for bolstering North-South and South-South scientific collaborations to amplify the influence of forthcoming studies.

3.6 Discussions

a. Practical Implications

This bibliometric research ha s various specific implications for policymakers, regulators, and devel opment practitioners engaged in financial inclusion and sustainable economy. The pronounced clustering around themes like digital financial inclusion, fintech, and decentralized

egions with underdeveloped research and practice, hence facilitating South-South knowledge transfer and scala ble pilot programs.

finance indicates that regulatory frameworks and national financial goals must explicitly inclusion incorporate digital technologies and innovation. Governments and central banks should leverage the identified research hotspots to prioritize policy instruments that enhance access via mobile money, digital payment systems, and alternative credit scoring, while concurrently integ rating consumer protection, data privacy, and cybersecurity requirements. The strong correlation among financial inclusion, sustainabl e development, and environmental performance suggests that inclusive finance can serve as a mechanism for attaining climate and sustainability objectives, such as through the creation of green microcredit, pay-asyou-go solar financing, or climateresilient insurance products aimed at vulnerable households and micro, small, and medium enterprises (M SMEs).

At the industry level, the prevalence of themes like fintech and green innovation suggests financial institutions and fintech start-ups should regard financial inclusion not alone as a social res ponsibility but as a strategic opportunity for product diversif ication and sustainable business models. Financial institutions, including banks, microfinance ntities, and digital platforms, can leverage insights from predominant themes and regional clusters to pinpoint lucrative markets, collaborate with local partners to develop solutions, and create tailored products, such as Sharia-compliant gr financing in predominantly Muslim nations or digital savings options for informal workers in developing economies. International organizations and donors can utilize country-collaboration patterns direct technical help and money to r

Theoretical Contributions

This work theoretically contributes by methodically mapping and combining hitherto fragmented material on financial inclusion, digital finance, and sustainable development. The bibliometric findings elucidate the convergence of distinct conceptual streams into a cohesive interdisciplinary subject by identifying main clusters related to "financial inclusion-sustainable dev elopment-economic growth" "digital financial inclusion-fintechenvironmental performance." establishes a systematic intellectual framework wherein financial inclusion is perceived not merely as a tool for poverty alleviation or financial expansion, but multifaceted construct associated with environmental sustainability, technological advancement, institutional integrity. The study co nsequently aids in recontextualizing financial inclusion within wider discussions on sustainable finance and inclusive growth, providing a foundation for more cohesive theoretical frameworks.

Furthermore, the analyses of co-authorship, institutional affiliations, and country networks enhance theoretical understanding by elucidating the geographical and soci ological dimensions of knowledge generation in this field. dominance of emerging economies like China, India, Pakistan, and South Africa indicates that theoretical advan cement is increasingly influenced by situations where financial marginalization and sustain ability issues are most severe. This indicates the necessity to transcend conventional, Global North-centric financial and developmental models

and to integrate context-specific mechanisms-such as informal institutions, digital leapfrogging, and resource limitations—into theories of inclusive and sustainable finance. The study establishes a foundation for future theoretical endeavors that explicitly incorporate institutional diversity, technological upheaval, and environmental limitations into frameworks of financial inclusivity and sustainable economic vancement.

c. Limitations and Directions for Future Research

This bibliometric study. despite its extensive breadth, has numerous limitations that must be recognized. The research edominantly depends on documents cataloged in a singular major database (e.g., Scopus), which, while comprehensive, may inadequately reflect specific regional journals, non-English publications, policy reports, and working papers. Consequently, contributions from low- and lowermiddle-income nations, as well as from practitioners and international organizations, may not be entirely documented. Secondly, bibliometric techniques are fundamentally quantit ative, concentrating on publishing and citation trends; they do not di rectly evaluate the quality methodologies, the robustness of em pirical results, or the subtleties of theoretical reasoning. As a result, certain significant concepts that are little referenced or newly introduced may be underappreciated in network visualizations.The keyword-based methodology employed to define the field may exclude pertinent works that utilize other language for analogous topics (e.g., inclusive finance, finance, pro-poor sustainable banking) incorporate studies where financial inclusion is a secondary, rather than primary, focus. Furthermore,

the selection of time frames and threshold parameters (such minimal citations or co-occurrences) inherently influences the resultant networks and clusters. Subsequent research may rectify these limitations triangulating various by databases (Web of Science. Dimensions. Google Scholar), integrating non-English and grey augmenting literature, and bliometrics with systematic literature reviews or meta-analyses that thoro ughly investigate theoretical mechanisms and empirical findings. Longitudinal and comparative b ibliometric studies may investigate how disruptions such as the COVID-19 epidemic, emerging ESG rules, or significant fintech innovations alter the study agenda of financial inclusion in sustainable economies.

4. CONCLUSIONS

This bibliometric analysis offers a th orough examination of the evolution of financial inclusion research within the larger framework of a sustainable economy. analysis of keywords, documents, authors, institutions, and nations indicates financial inclusion and development constitute sustainable the conceptual foundation of the discipline, intricately connected to notions such as eco growth, financial development, sustainability, and the financial system. Over time, literature has progressively shifted from a limited emphasis on banking access and microfinance to a more comprehensive perspective that links inclusive finance with environmental performance, innovation, and the Sustainable Development Goals. The findings underscore the swift emergence of technology-centric themes-fi ntech, digital financial inclusion, decent ralized finance, and artificial intelligence—as crucial areas of inquiry. These subjects manifest as contemporary, dynamic clusters connect conventional development with digital transformation and climate-related results, including carbon

emissions, renewable energy, and alternative energy financing. This transition indicates that inclusive and sustainable finance is increasingly viewed through the framework of digital ecosystems, data-driven credit evaluation, and platform-based financial services, particularly in developing nations. Collaborative networks among countries and institutions indicate that knowledge production is predominantly propelled by gr owing and developing nations, particularly China, India, Pakistan, South Africa, and v arious Gulf states, frequently in conjunction with the United Kingdom, Australia, and European nations. Nonetheless, the coauthorship and affiliation maps reveal relatively tiny, localized clusters instead of a fully integrated global network, suggesting unexploited potential for extensive crosscountry and cross-institutional collaboration. Confronting this fragmentation-while integrating marginalized regions viewpoints-will be crucial for developing

more inclusive theories and policies that accurately represent different socio-economic realities. The findings together emphasize that financial inclusion has transcended being merely a financial-sector initiative; it has evolved into a multifaceted cornerstone of sustainable development and ecological Future research should transformation. enhance micro-level analyses of the impact of inclusive digital finance on households, populations; MSMEs, and vulnerable investigate the distributional effects fintech-driven inclusion; and assess the efficacy of regulatory and policy frameworks designed to align financial systems with longterm sustainability objectives. This study delineates research trends, intellectual frame works, and deficiencies, providing a guide for researchers, policymakers, and practitioners aiming to develop inclusive, technology-driv en, and environmentally sustainable financial systems.

REFERENCE

- [1] H. O. F. P. DELEGATIONS, "Organisation for Economic Co-Operation and Development—OECD," *Organization*, 2020.
- [2] D. W. Arner, J. Barberis, and R. P. Buckley, "The evolution of Fintech: A new post-crisis paradigm," *Geo. J. Int'l L.*, vol. 47, p. 1271, 2015.
- [3] A. Demirgüç-Kunt, L. Klapper, D. Singer, and S. Ansar, *The Global Findex Database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19.* World Bank Publications, 2022.
- [4] R. Vishnupriya, "Journal Issues".
- [5] W. B. I. E. D. D. Group and W. B. I. E. D. D. D. Group, World development indicators. World Bank, 1978.
- [6] M. Tayal and P. Chopra, "Sustainable Finance and the United Nations Sustainable Development Goals," in *Community Climate Justice and Sustainable Development*, IGI Global Scientific Publishing, 2025, pp. 19–42.
- [7] A. Zins and L. Weill, "The determinants of financial inclusion in Africa," *Rev. Dev. Financ.*, vol. 6, no. 1, pp. 46–57, 2016.
- [8] N. Donthu, S. Kumar, D. Mukherjee, N. Pandey, and W. M. Lim, "How to conduct a bibliometric analysis: An overview and guidelines," J. Bus. Res., vol. 133, pp. 285–296, 2021.
- [9] T. Suri and W. Jack, "The long-run poverty and gender impacts of mobile money," *Science* (80-.)., vol. 354, no. 6317, pp. 1288–1292, 2016.
- [10] N. Van Eck and L. Waltman, "Software survey: VOSviewer, a computer program for bibliometric mapping," *Scientometrics*, vol. 84, no. 2, pp. 523–538, 2010.
- [11] M. Aria and C. Cuccurullo, "bibliometrix: An R-tool for comprehensive science mapping analysis," *J. Informetr.*, vol. 11, no. 4, pp. 959–975, 2017.
- [12] D. W. Arner, R. P. Buckley, D. A. Zetzsche, and R. Veidt, "Sustainability, FinTech and financial inclusion," *Eur. Bus. Organ. Law Rev.*, vol. 21, no. 1, pp. 7–35, 2020.
- [13] A. Demir, V. Pesqué-Cela, Y. Altunbas, and V. Murinde, "Fintech, financial inclusion and income inequality: a quantile regression approach," *Eur. J. Financ.*, vol. 28, no. 1, pp. 86–107, 2022.
- [14] I. Ozturk and S. Ullah, "Does digital financial inclusion matter for economic growth and environmental sustainability in OBRI economies? An empirical analysis," *Resour. Conserv. Recycl.*, vol. 185, p. 106489, 2022.
- [15] L. Qin, S. Raheem, M. Murshed, X. Miao, Z. Khan, and D. Kirikkaleli, "Does financial inclusion limit carbon dioxide emissions? Analyzing the role of globalization and renewable electricity output," *Sustain. Dev.*, vol. 29, no. 6, pp. 1138–1154, 2021.
- [16] D. Sharma, "Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy," *J. Financ. Econ. policy*, vol. 8, no. 1, pp. 13–36, 2016.
- [17] D. Mhlanga, "Artificial intelligence in the industry 4.0, and its impact on poverty, innovation, infrastructure

- development, and the sustainable development goals: Lessons from emerging economies?," Sustainability, vol. 13, no. 11, p. 5788, 2021.
- [18] L.-Y. Tay, H.-T. Tai, and G.-S. Tan, "Digital financial inclusion: A gateway to sustainable development," *Heliyon*, vol. 8, no. 6, 2022.
- [19] S. A. H. Zaidi, M. Hussain, and Q. U. Zaman, "Dynamic linkages between financial inclusion and carbon emissions: evidence from selected OECD countries," *Resour. Environ. Sustain.*, vol. 4, p. 100022, 2021.
- [20] R. P. Pradhan, M. B. Arvin, M. S. Nair, J. H. Hall, and S. E. Bennett, "Sustainable economic development in India: The dynamics between financial inclusion, ICT development, and economic growth," *Technol. Forecast. Soc. Change*, vol. 169, p. 120758, 2021.
- [21] A. K. Singh, S. A. Raza, J. Nakonieczny, and U. Shahzad, "Role of financial inclusion, green innovation, and energy efficiency for environmental performance? Evidence from developed and emerging economies in the lens of sustainable development," *Struct. Chang. Econ. Dyn.*, vol. 64, pp. 213–224, 2023.