

AI-Enabled Pathways to Financial Inclusion in Emerging Markets: Evidence from Bibliometric Analysis

¹Dr. Shilpa Bahl, ²Dr. Shuchita Singh, ³Dr Jaideep Sharma, ⁴Dr Arvind Kumar Bhatt

¹Professor, School of Business, Galgotias Univesity, Greater Noida

shilpa.bahl@galgotiasuniversity.edu.in

ORCID ID: 0000-0001-7818-7715

²Professor, GL Bajaj Institute of Management and Research

shuchita.singh@glbimr.org

ORCID ID: 0000-0003-0691-026X

³Professor, School of Business, Galgotias Univesity, Greater Noida Jaideep.sharma@galgotiasuniversity.edu.in

ORCID ID : 0000-0002-7346-2324

⁴Professor, GL Bajaj Institute of Management and Research

arvind.bhatt@glbimr.org

ORCID ID: 0000-0002-2521-1942

Abstract

Financial technology (FinTech) and Artificial Intelligence (AI) have become important drivers of financial inclusion to help reach the Sustainable Development Goals (SDGs) by enabling widespread access to finance that is affordable, transparent, and inclusive. Although many of the ideas in this area are of interest in recent scholarship, the intellectual framework and new trends of research are still disjointed. This study aims to fill this gap with a thorough bibliometric analysis of the research on AI, FinTech and financial inclusion. For the analysis, peer-reviewed publications, published from 2014 to June 2026, from the Scopus database (1479) were analysed. The knowledge structure and influential contributors, collaboration networks and the development of themes were mapped using bibliometric techniques such as performance analysis, co-authorship, co-citation, bibliographic coupling and keyword co-occurrence analysis in the VOSviewer. The analysis shows that the research activity has significantly grown during the last decade, and AI-based mobile banking, digital payments, alternative credit scoring, blockchain, and digital financial services are key themes. The innovations have made financial services more accessible, lower cost, more credit available, and more transparent, especially in developing countries. The analysis also presents research trends that are emerging such as AI for financial inclusion, gender gaps in financial access, digital financial literacy, responsible AI, regulatory frameworks, and the role of FinTech in promoting sustainable development. This study not only contributes to the existing body of knowledge but also points to future research avenues that can help both the research community and financial players, like financial institutions and technology developers, drive inclusive and sustainable financial ecosystems using AI and FinTech innovations.

Keywords: Artificial Intelligence(AI), Bibliometric Analysis, Financial Inclusion, Financial Technologies, Sustainable development Goals (SDGs).

1. Introduction

Artificial intelligence has transformed numerous industries, such as finance. AI can improve the financial inclusion by providing personalized, accessible, and cost-effective services for underserved groups. The primary goal of this study is to perform a bibliometric analysis of the financial inclusion–AI literature in order to uncover the major trends, prominent researchers, and emerging research clusters.

In developing countries, artificial intelligence (AI) and machine learning (ML) are pouring significant changes in both the political and economic landscapes. AI and machine learning are creating a significant political and economic transformation in developing countries. The potential of these AI-driven solutions to enhance financial inclusion for the underprivileged is also promising because large-scale financial institutions are typically not inclined to serve small-scale borrowers due to the high operational costs and inefficient processes Kshetri, (2019).

The impact of FinTech on fostering inclusivity, aiding environmental progress, and reshaping financial opportunities is well known “Gomber et al., (2018); Hodula et al., (2023)”. FinTech can digitize services such as investing, risk management, funding, and transactions, which can enhance the potential of green finance Kashif et al., (2024).

According to the World Bank's Global Findex database, in 2017, 1.7 billion adults were unbanked, mostly in developing countries. For instance, only 9 percent of adults in South Sudan had bank accounts.

Similarly, “Rojas-Torres, Kshetri, Hanafi, & Kouki (2021)” reported that around 70% of Latin America's population was unbanked or underbanked. More than two hundred million small and medium enterprises (SMEs) in the developing countries suffered from restricted access to financial services, said the International Finance Corporation (IFC).

Promoting financial inclusion is vital for improving living conditions and well-being among underprivileged groups in these regions. Financial inclusion involves providing access to reasonable financial products' and services' that meet individuals' and businesses' needs (worldbank.org, 2018). Access to financial resources is vital for daily living and long-term planning (worldbank.org, 2018).

Financial inclusion aims to offer reasonable financial commodities like payments, savings, insurance, and credit for individuals and organizations “Grohmann et al., (2018); Senyo and Osabutey, (2020)”. Traditionally, financial services were provided mainly by banks; however, technological advancements have allowed non-financial companies to deliver these services through Financial Technology innovations “Demirgüç-Kunt et al., (2018)”.

During the last 20 years, the world has been striving to achieve financial inclusion through technology. This is seen in the academic world, where researchers call for the adoption of AI to increase participation in the financial sector. Such developments highlight the need for a systematic review of literature on AI and financial inclusion. In this documentary study, Mhlanga (2020) explored the impact of AI on digital financial inclusion with a particular focus on how digital financial inclusion is being attained through the adoption of AI, and the role of ML techniques.

More recently, this trend of interest has been confirmed by a number of bibliometric studies that specifically focus on the FinTech–financial inclusion nexus. In the Finance Research Letters article, entitled "Financial inclusion through the lens of financial technologies: A comprehensive review of the gaps and thematic trajectories", Carè et al. (2025) carried out an extensive review of financial inclusion, highlighting the key gaps and emerging thematic trends. At the same time, Del Sarto and Ozili (2025) conducted a Scopus-based bibliometric analysis on financial inclusion with a focus on emerging markets, identifying the predominant themes of financial inclusion research: mobile banking, peer-to-peer lending and blockchain. Kishor et al. (2025) also incorporated the bibliometric and systematic reviews to draw the connection between financial inclusion through FinTech and the SDGs. The current study is warranted and relevant as it is in line with these developments.

More than eighty countries have presented digital financial services via mobile “World Bank (2020); Chu (2018)”. As a result, millions of previously under-served people are moving away from cash to formal financial services such as payments, transfers, credit, insurance, securities and savings services from the “World Bank (2020)”.

The rise of mobile phones and digital technologies like AI has significantly boosted financial inclusion “Salampasis and Mention (2018)”; “Bill & Melinda Gates Foundation (2019)”. Digital financial inclusion enables customers to access services at reasonable costs through sustainable methods Gomber et al.(2017). These services are also beneficial for the marginalized customers but present dangers because of the non-financial services' use of new technologies The World Bank (2020); Rath (2016).

The bibliometric analysis method is used in this research to look in the field of development and scientific landscape of the field “Car'e et al., (2023); Car'e et al., (2024); Khan et al., (2023)”. This approach can provide

information on the state of the research field and potential directions for future research, identifying gaps. It substantially contributes towards the comprehension of financial technology and its relevance for increasing financial accessibility.

In support of the present study, Pandey (2025) suggests that the literature review on FinTech should be based on a hybrid bibliometric model to include three key aspects: performance analysis, science mapping, and thematic content analysis. In the same way, Gulati et al. (2026) prove the usefulness of the Bibliometrix and VOSviewer to map the digital finance landscape, thus confirming the set of tools used in this paper.

The study in detail explores the FinTech sector, revealing 5 key research areas that showcase the transformative power of FinTech inventions in unlocking financial access, especially in emerging economies. The findings highlight the role of technologies such as mobile currency and blockchain in bringing out unbanked peoples into traditional financial systems and can help to better understand the impact of FinTech on financial inclusion and sustainable growth. In addition, it pinpoints gaps in knowledge and offers directions for future research, emphasising the importance of financial education and the long-standing repercussions of developing technologies, including AI and blockchain, on financial inclusion.

The paper is planned in the succeeding way: Section 2 presents data and methodology, Section 3 presents the result analysis and mapping on science, Section 4 discusses the cluster analysis and Section 5 suggests future research directions and key findings. Section 6 concludes the study.

More specifically, this paper examines and showcases the different research questions it has tried to answer in the context of how Financial Technology innovations can enhance financial inclusion and long-term development, drawing on extensive research in the area:

1. What do you know about the current research?
2. What is the structure of concepts in this field of study?
3. What are some of the current ideas being explored in the existing literature?
4. Determine the future research objectives.

This work applies a bibliometric method to study the work performance and scientific planning of research in this field “Car’e et al., (2023)”; “Car’e et al., (2024)”; “Car’e et al., (2025)”; “Khan et al., (2023)”.

The second objective is to examine the changing nature of bibliometric studies on AI and financial inclusion. The second aim is to analyze the shifts in the content of the bibliometric research on AI and financial inclusion.

2. Literature Review and Theoretical Positioning

2.1 The Evolving Landscape of Bibliometric Research on AI and Financial Inclusion

In the last ten years, the field of Artificial Intelligence, FinTech and financial inclusion has demonstrated one of the most fruitful research areas. In this field, bibliometric analyses have proved to be of great value as systematic and quantitative methods for mapping the evolution of research on the intellectual map of geographies, institutions and thematic aspects of the research Donthu et al., (2021); Zupic & Čater, (2015).

This area of study has been influenced by a number of seminal bibliometric studies. “Gabor and Brooks (2017)” explored how the digital revolution in financial services has affected inclusion in developing economies and Arner et al. (2020) showed how FinTech has helped to advance sustainability and financial inclusion in a regulatory framework. Studies done more recently have increasingly targeted how AI and digital technology can overcome the financial access problem.

This new generation of bibliometric scholarship has greatly contributed to this discussion. In a pioneering study on financial inclusion and financial technologies (FTs) published in Finance Research Letters, Carè et al. (2025) analyzed and reviewed financial inclusion papers. Overall, their analysis reveals that the volume of publications

has increased rapidly in the last few years (after 2019), that mobile banking and digital payment are widely covered topics, and that there is a lack of academic literature addressing African and South Asian perspectives in high impact journals, which directly informs the present study's research gaps.

The most comparable study to the present paper is provided by Del Sarto and Ozili (2025) in the International Journal of Emerging Markets, which is based on Scopus that focuses on FinTech and financial inclusion in developing markets. They have analysed their performance and mapped the science with VOSviewer and see that research is consolidating around the topics of mobile banking, peer to peer lending and blockchain. They also highlight the fact that aspects of financial inclusion that are specific to AI have thus far been under-researched, an area that the current paper specifically focuses on.

In the Journal of the Knowledge Economy, a bibliometric analysis is combined with a systematic literature review by “Kishor et al. (2025)” to create the triadic relationship of FinTech, financial inclusion and the SDGs. They conducted a research based on 189 publications retrieved from Scopus and WoS, and found that digital financial literacy and mobile money uptake are two key mediators between technological innovation and inclusive growth in developing countries.

In the journal Economics (De Gruyter), Yang et al. (2025) offers a set of focused analyses of digital financial inclusion (DFI) based on co-citation analysis and co-word analysis of 739 articles from the Web of Science (WOS) database till June 2026. Thematic clusters of DFI can be divided into four different types: DFI as a poverty alleviation device, DFI's macroeconomic impacts, barriers to technology uptake, and gender-specific impacts, which are very similar to the clusters found in this study.

The Journal of Risk and Financial Management has published the research of Gutu et al. (2025) that extended the timeframe of study and covered sustainable financial inclusion trends from 2007 to 2025, in 1467 documents published in Scopus and WoS. They highlight 8 thematic clusters, including green finance and integration of environmental, social, and governance (ESG) factors, which are new areas that are also identified for future research by the present study.

The methodological aspect of bibliometric analysis of AI and FinTech has also improved. Similar to Rodriguez et al. (2025), the paper explores the AI–FinTech research landscape through VOSviewer analysis of 298 papers published between 2000 and 2023 that are indexed in the Scopus database, and discovers that the United States, China and India are the key research hubs, which is the same conclusion drawn in this study. Pandey (2025) suggests a hybrid approach to FinTech literature reviews that involves a multi-method approach to analyzing the literature, including performance analysis, co-citation mapping, and thematic clustering.

More recently, the scholarly course of study espoused here is confirmed by two publications in 2026. In Digital Transformation and Society, Gulati et al. (2026) do a bibliometric analysis of 467 Scopus documents (2005–2024) to show a boom in studies related to digital finance since the beginning of the 2020s, triggered by the COVID-19 pandemic and the importance of financial inclusion as a ‘motor theme’, which is defined as a cluster of competencies that formed and reinforced a research thread. Oprea and Nicula (2026) analyze digitalization of banking services and financial inclusion in emerging economies, in particular, with a methodological peer-study that enhances the contribution claims of the presented paper.

Taken together, this recent body of work establishes three clear contributions the present paper makes: (1) it provides one of the first bibliometric analyses explicitly focused on *AI-driven* — rather than broadly FinTech-driven — financial inclusion; (2) it covers a more comprehensive dataset (1,796 documents, 294 journals) than most prior studies; and (3) it situates the analysis firmly within the context of emerging and developing economies, where AI's transformative potential is greatest and least studied.

3. Data and Methodology

This assessment engages a bibliometric methodology to analyse the literature on financial inclusion and Financial Technology. The bibliometric analysis provides a quantitative tool to study research efficiency, influence and trends and to get the overview of theoretical evolution in a field of study as mentioned by “Donthu et al (2021)”,

“Garfield (1979)” and “Zupic and Čater (2015)”. Bibliometric techniques, as opposed to the qualitative approaches used in comprehensive literature review, can be used to determine trends, main themes and salient authors and journals from a larger body of literature, with minimum sample selection bias and clearances “Khan et al., (2022)”; “Zupic and Čater, (2015)”. This approach has been successfully adopted in the field of investment and organization studies, thanks to the progress made on the availability of documents and conception tools “Carè and Cumming, (2024)”.

In order to have a general picture of the financial inclusion and FinTech research landscape, our research took a comprehensive bibliometric approach, which combined the performance analysis, science mapping and content analysis Bahl (2025). The outputs of the research, including publication trends, authors who produced publications, and influential journals were quantified through various indicators such as FWCI, total publications, and average citations per year “(Car`e et al., 2023; Car`e et al., 2024)”. The field's structural development was mapped by using science mapping techniques with VOSviewer “Van Eck and Waltman, (2010)” which provided an overview of relationships between topics, authors and emerging trends. For an intensive analysis of the complexities of the themes, we also used content analysis, a qualitative approach. It was decided to use the Scopus database for this study because it covers all scholarly and peer-reviewed publications Car`e et al., (2023).

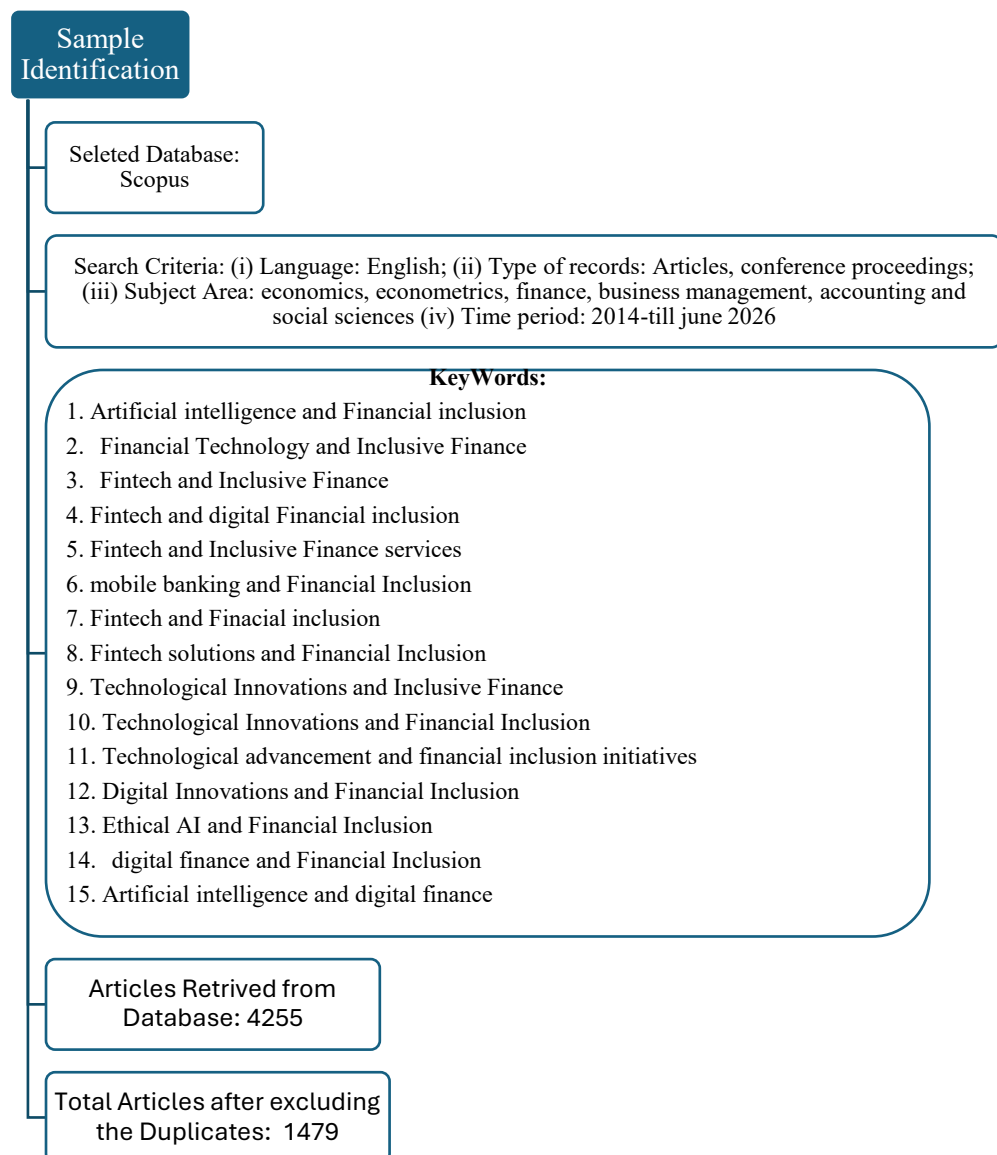


Fig 1: Sample Identification Flow Chart

4. Result Analysis and Science Mapping

4.1 Result Analysis

The growth of research in this discipline is evident in Fig. 2, which highlighting the volume of articles available over the period between 2014 to June 2026 investigating the relationship between digital finance and financial inclusion. Throughout this era the total number of articles released in this research area were 1479.

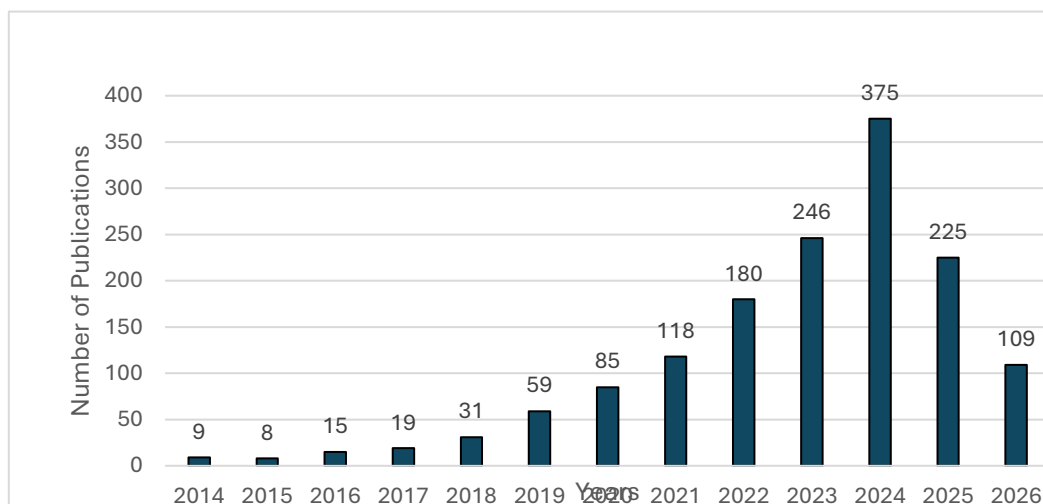


Fig2: Number of Publications per Year

The data collected from the Scopus database retrieved 4255 articles, with 1479 remaining after excluding duplicates. Fig. 3 shows that 515 articles are available in open access (OA), while 964 are in non-open access. There is also a remarkable difference in terms of number of citations with non-OA publications dominating with 25139 citations, while OA publications have 4014 citations. Although these results indicate that the number of citations for non-OA publications is higher, OA articles still have the same reach and influence. It is important to acknowledge the variety of OA publications, especially the difference between research papers in fully OA journals (e.g., Sustainability) and those which are OA by paying an article processing charge (APC) to the traditional/combination OA journal. However, some journals which are fully OA could be said to be "predatory" because of their poor peer review processes and concern over their emphasis on financial than academic quality.

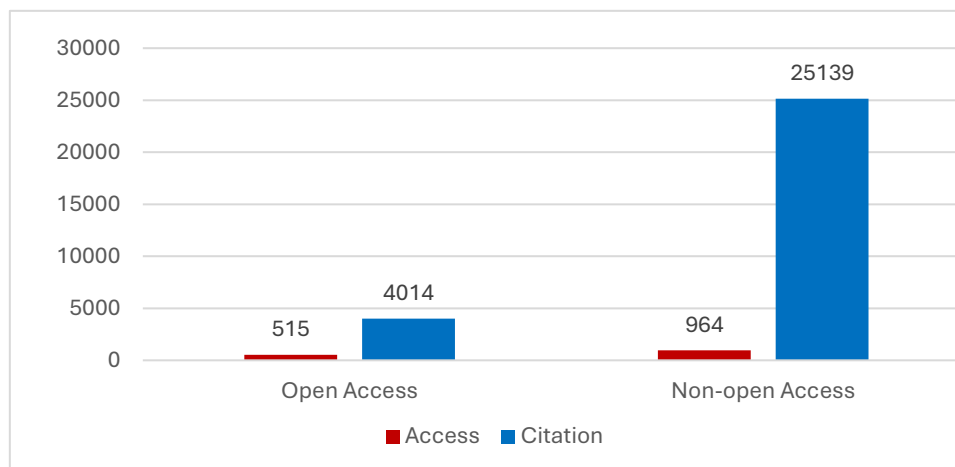


Fig3: Number of Article Published and Citation: Open Access V/S Non- Open Access

Table 1 summarizes scientific publications in this field that have received over 200 citations, along with their annual citation archives. The spread sheet also presents field-weighted citation impact (FWCI) scores. According to “Elsevier (2019, p. 46)”, the FWCI metric compares "the number of citations received by an entity's publications" to "the average number of citations received by all other similar publications in the data universe. Specifically, an FWCI score of 1 indicates that a research article has achieved the global average citation impact, while scores exceeding 1.00 suggest a greater impact “Elsevier, (2019)”.

Table 1: Top Cited Publications

Title	“Author”	“Journal”	“FWCI”	“Total Citations”	“Average Citations per year”
“Impact of digital finance on financial inclusion and stability.”	“Ozili P.K.(2018)”	“Borsa Istanbul Review”	18.47	870	145
“The digital revolution in financial inclusion: international development in the fintech era.”	“Gabor D.; Brooks S.(2017)”	“New Political Economy”	16.66	449	64.14
“Influence mechanism between green finance and green innovation: Exploring regional policy intervention effects in China.”	“Irfan M.; Razzaq A.; Sharif A.; Yang X.(2022)”	“Technological Forecasting and Social Change”	41.79	445	222.50
“Blockchain disruption and decentralized finance: The rise of decentralized business models.”	“Chen Y.; Bellavitis C.(2020)”	“Journal of Business Venturing Insights”	23.45	385	96.25
“The determinants of financial inclusion in Africa.”	“Zins A.; Weill L.(2016)”	“Review of Development Finance”	5.83	360	45.00
“Transforming the communication between citizens and government through AI-guided chatbots. Government Information.”	“Androutsopoulou A.; Karacapilidis N.; Loukis E.; Charalabidis Y.(2019)”	“Quarterly”	32.8	330	66.00
“Sustainability, FinTech and Financial Inclusion. European Business.”	“Arner D.W.; Buckley R.P.; Zetzsche D.A.; Veidt R.(2020)”	“Organization Law Review”	29.61	317	79.25
“Financial inclusion and income inequality: a quantile regression approach.”	“Demir A.; Pesqué-Cela V.; Altunbas Y.; Murinde V., Fintech (2022)”	“European Journal of Finance”	54.09	307	153.50
“Does digital financial inclusion matter for economic growth and environmental sustainability in OBRI economies? An empirical analysis.”	“Ozturk I.; Ullah S.(2022)”	“Resources ,Conservation and Recycling”	25.39	289	144.50

“Industry 4.0 in finance: the impact of artificial intelligence (ai) on digital financial inclusion.”	“Mhlanga D. (2020)”	“International Journal of Financial Studies”	11.78	257	64.25
“Nurturing a FinTech ecosystem: The case of a youth microloan startup in China.”	“Leong C.; Tan B.; Xiao X.; Tan F.T.C.; Sun Y.(2017)”	“International Journal of Information Management”	7.35	237	33.86
“Unearthing antecedents to financial inclusion through FinTech innovations.”	“Senyo P.K.; Osabutey E.L.C.(2020)”	“Technovation”	11.91	216	54.00
“Microfinance, financial inclusion and ICT: Implications for poverty and inequality.”	“Mushtaq R.; Bruneau C.(2019)”	“Technology in Society”	10.55	212	42.40
“Can digital financial inclusion affect CO2 emissions of China at the prefecture level? Evidence from a spatial econometric approach.”	“Wang X.; Wang X.; Ren X.; Wen F.(2022)”	“Energy Economics”	19.69	210	105.00
“Mobile-banking adoption: empirical evidence from the banking sector in Pakistan.”	“Farah M.F.; Hasni M.J.S.; Abbas A.K.(2018)”	“International Journal of Bank Marketing”	4.33	208	34.67
The Society of Algorithms.	Burrell J.; Fourcade M.(2021)	Annual Review of Sociology	37.59	202	67.33

Source: Author’s Elaboration

The research encompasses 799 distinct journals, book, book chapters, conference proceedings. Table 2 highlights the leading journals that have published at least 10 articles. A review of Table 2 shows that very few top contributory journals are in the finance domain. Using Academic Journal Guide (ABS) criteria, categorization indicates that 738 out of 799 publications (92.36%) are listed in Scopus without ABS classification. This deficiency could have an impact on their academic judgement. Also, there is a small number of the sampled journals belonging to key economics and finance fields of 3.5% labelled as 'ECON' and 3.7% as 'FINANCE', reflecting the limited number of high quality journals in these areas within the sample.

Table2: Most Contributing Journals (n ≥ 10)

Journals Title	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	Grand Total	Subject Area	ABS 2021*	IF**
Sustainability (Switzerland)					1	1	1	6	1	6	6		4	2	Social Sciences	N A	3.9
Technological Forecasting and Social Change							1	3	2	6	9	3	2	6	Sociology and Political Science		12.9

Resources Policy					1		3	5	4			2 3	INNOV	1	9. 4 7
Journal of Risk and Financial Management						1	4	1	3	7	4	2 0	INFO MAN	2	1. 6
Research in International Business and Finance		1					2		2	0	4	1 9	Finance	2	6. 3
Finance Research Letters							2	7	7			1 6	Finance	2	1. 1 1
Technology in Society				1		2		1	2	3	4	1 3	Social Sciences	2	1 0. 1
Cogent Economics and Finance				1		2	3	1	6			1 3	Finance	3	7. 9
International Journal of Bank Marketing			1	1	1				2	6	1	1 2	INFO MAN	2	6. 9
Cogent Business and Management							2	1	5	3	1	1 2	INFO MAN	1	2. 9
Applied Economics							2	3	1	6		1 2	Social Sciences	N A	0. 9 6 8
Information Technology for Development			1	1	1	2		5	1			1 1	INNOV	3	5. 1
International Review of Financial Analysis									4	2	4	1 0	ECON	1	7. 5
Cities							1	1	2	4	2	1 0	Social Sciences	2	6. 6

Source: Author's Elaboration

“*ABS 2021: 1=Journals that are recognized in their field; 2=Journal with acceptable standard; 3=good to excellent journals; n.a.=Not available. Subject area: INNOV: Innovation; ECON: Economics, Econometrics and Statistics, N.A: Not available.

** The impact factor values were obtained directly from the journal's official website as of June 2026.”

A study of the coverage of FinTech in finance journals was carried out based on articles published in ABS tiered journals that have more than 200 citations. Table 3 presents these highly cited works, which primarily address the impact and digital financial inclusion in reshaping the traditional financial frameworks, particularly in developing countries and emerging markets, of FinTech.

Some of the articles explore different facets of the impact of FinTech, covering issues such as financial access and lending activities “Ouma et al., (2017)”; “Sharma, (2016)”; “Sheng, (2021)”; “Zins and Weill, (2016)”, and economic development and wealth gaps “Demir et al., (2022)”; “Liu et al., (2021)”. They emphasize the opportunities and obstacles of the adoption of digital financial technologies.

The majority of studies employ quantitative methods. For example, probit estimations have been applied to examine factors influencing financial inclusion “Zins and Weill, (2016)” and VAR models and Granger causality tests have been used to study the relationship of financial inclusion and economic growth in India “Sharma, (2016)”. Using the measure of internet development as a threshold variable, the role of digital financial inclusion in economic growth is explored under the Bayesian macroeconomic approaches Liu et al., (2021) .

In an attempt to gauge the impact of FinTech on the income gap between the different economic levels, quantile regression analysis is used by “Demir et al., (2022)”. Temporal changes and regional or banking institution differences are highlighted in a number of studies, such as “Demir et al. (2022)”, “Liu et al. (2021)” and “Sheng (2021)”, which employ panel data analyses.

Table 3: Journal articles cited more than 200 times (cited articles from the ABS)

Articles Title	Total Citations	ABS 2021	Spotlight of Article
“Gabor D.; Brooks S.(2017), The digital revolution in financial inclusion: international development in the fintech era. <i>New Political Economy</i> , 22(4), 423-436.”	449	3	It is dedicated to governmental, global development, philanthropic and financial technology institutions in a collaborative network. Focused on understanding your (non-rational) client, the approach is based on behavioural economics and predictive algorithms which will improve the accessibility and track engagement within financial services.
“Irfan M.; Razzaq A.; Sharif A.; Yang X.(2022), Influence mechanism between green finance and green innovation: Exploring regional policy intervention effects in China. <i>Technological Forecasting and Social Change</i> , 182.”	445	3	The impact of inclusive green finance on green innovation is explored through an empirical analysis, looking into the causal mechanisms and the effect of policy interventions. Based on regional data of China (2010-2019), the study employs difference-in-differences, mediation effect analysis and panel vector autoregression model methods to study these relationships. The results reveal that green finance plays a significant positive role in green innovation and that this influence is the same whichever estimation approach is used. The analysis of the mediating factors shows that the mediating role of change in industrial structure, economic growth and R&D investment is key to understanding how green finance affects green innovation.
“Chen Y.; Bellavitis C.(2020), Blockchain disruption and decentralized finance: The rise of	385	2	This research inspects the advantages of the distributed finance system, looks at the different business models employed and studies potential obstacles. The new financial technology field

decentralized business models. Journal of Business Venturing Insights,13.”			that's gaining momentum is decentralized finance, and it has the potential to transform modern finance. The new space may transform entrepreneurship and innovation and highlight the opportunities and challenges associated with decentralised business models.
“Zins A.; Weill L.(2016), The determinants of financial inclusion in Africa. Review of Development Finance, 6(1), 46-57.”	360	2	This research examines elements affecting financial inclusion in Africa. Using the World Bank's Global Findex database, covering thirty seven African countries, we perform probit analyses. Results indicate financial inclusion is more prevalent among individuals who are male, richer, more refined, and older. The factors most influencing financial inclusion are educational background and income status.
“Androutsopoulou A.; Karacapilidis N.; Loukis E.; Charalabidis Y.(2019), Transforming the communication between citizens and government through AI-guided chatbots. Government Information Quarterly, 36(2), 358-367.”	330	3	This paper presents an innovative ICT platform architecture, focusing on advanced chatbot use in the public sector to improve government-citizen communication. Extensive research is still needed to fully leverage AI's capabilities in the public domain and address pressing issues with diverse AI technologies.
“Demir A.; Pesqué-Cela V.; Altunbas Y.; Murinde V., Fintech (2022), financial inclusion and income inequality: a quantile regression approach. European Journal of Finance, 28(1), 86-107.”	307	3	This research investigates the relationship among FinTech, financial inclusion, and income disparity across 140 nations. Results demonstrate that financial inclusion is a main mechanism through which FinTech contributes to reducing income disparity. Moreover, financial inclusion's impact on reducing inequality is observed across all levels of the inequality spectrum, but primarily in countries with higher income levels.
“Leong C.; Tan B.; Xiao X.; Tan F.T.C.; Sun Y.(2017), Nurturing a FinTech ecosystem: The case of a youth microloan startup in China. International Journal of Information Management, 37(2), 92-97.”	337	2	This case study investigates the evolution of a Chinese FinTech enterprise offering microloans to college students. It presents five lessons for organisations to overcome challenges and capitalise on opportunities in the chaos of the financial industry. This research demonstrates how digital technology 1) furnishes firms with strategic capacity to occupy a specialized market position, 2) enables alternative credit evaluation using non-traditional data sources, and 3) broadens financial access for previously marginalized market segments.

“Senyo P.K.; Osabutey E.L.C.(2020), Unearthing antecedents to financial inclusion through FinTech innovations. Technovation, 98.”	216	3	This research examines mobile money, a fintech innovation, utilizing the Unified Theory of Acceptance and Use of Technology 2 (UTAUT2) and Prospect theory as theoretical frameworks. The findings suggest that purpose to use mobile money facilities is significantly inclined by performance and effort expectations. This research contributes theoretical insights and presents practical and policy-related recommendations for improving financial inclusivity.
“Wang X.; Wang X.; Ren X.; Wen F.(2022), Can digital financial inclusion affect CO2 emissions of China at the prefecture level? Evidence from a spatial econometric approach. Energy Economics, 109.”	210	2	This study employs spatial econometrics to inspect the relationship between digital financial inclusion and carbon dioxide emissions across two hundred eighty four prefecture-level cities in China. Results indicate digital financial inclusion positively correlates with CO2 emissions in implementing cities, but destructively impacts emissions in neighbouring urban areas. The study demonstrates digital financial inclusion affects CO2 emissions at the city level through changes in industrial composition and economic development.
“Farah M.F.; Hasni M.J.S.; Abbas A.K.(2018), Mobile-banking adoption: empirical evidence from the banking sector in Pakistan. International Journal of Bank Marketing, 36(7), 1386-1413.”	208	1	The paper analyzes key factors inspiring end user intention and usage behaviour in mobile banking (m-banking) acceptance. It investigates concepts of the unified theory of acceptance and usage of technology, with non-monetary cost explored through apparent value. Trust and perceived risk are also considered in predicting intent.
“Burrell J.; Fourcade M.(2021), The Society of Algorithms. Annual Review of Sociology, 47, 213-237.”	202	4*	This paper explores the scholarly literature addressing the social consequences. The implementation of mathematical optimization methods in education, healthcare, finance, and criminal justice has increased actuarial decision-making approaches. This trend may alter social mobility and reproduction pathways while triggering resistance from those affected by such governance.

Source: Author’s Elaboration

3.2 Science mapping

Researchers have used science mapping to reveal the operational and energetic aspects of various research fields. This approach utilizes VOS viewer, a tool that analyses bibliometric statistics through text mining to create two-dimensional visualizations. In these representations, elements like articles, researchers, countries, journals, organizations, or keywords are shown as nodes, with their frequency reflected in size and label. Connections between nodes illustrate relationships, with thickness indicating intensity. Based on commonalities, nodes form clusters, offering insights into patterns within the research arena “Car’e et al., (2023)” ; “Car’e et al., (2024)”. To identify prevalent key terms and their interconnections, we conducted a keyword analysis “(Paltrinieri et al., (2019))” ; “Car’e et al., (2023)” ; “Car’e et al., (2024)” ; Paltrinieri et al., (2019)”. We set the minimum co-occurrence of keywords to 10 and the least cluster size to 5 in VOS viewer. There were 177 key terms identified in this assessment and grouped into five categories. Table 4 provides a summary of all the occurrences of each selected keyword, with the top keywords being Financial Inclusion (716), Fin Tech (397), finance (247) and artificial intelligence (158). In addition, Table 4 provides an overview of the main clusters recognised.

5. Cluster Analysis

The other research question asked was “What is the existing state of research?” in relation to the first research question. Our study shows that there is a growing focus on the use of Financial Technology as a means to address SDGs and broader challenges of sustainable development. From 2019 there has been a considerable increase in academic publications (Fig. 1). This tendency implies that scholarly research is progressively focused on identifying effective tools and strategies to achieve these lofty objectives. This field includes about 1796 research articles published in 294 distinct journals. However, it is critical to assess the actual quantity of relevant publications issued in recognised journals.

Table 4: Cluster and Keyword Analysis

Cluster no./Colour	Keywords and frequencies	Cluster Title	Scope
Cluster 1/RED	artificial intelligence (ai) (158), automation(11),bibliometric analysis(21),bigdata(24),blockchain(91),commerce(18),creditscoring(10),crowdfunding(16),cryptocurrency(22),decentralized finance(25),decision making(18),deep learning(10),digital banking(16),digital divide(11),digital financial literacy(13),digital technologies(25),digital transformation(35),digitalization(34),efficiency (10),engineeringeducation(10),finance(247),financial industry(10),financial innovation(33),financialinstitution(12),financial regulation(17),financial sectors(11),financial technology(86),fintech(397),industry 4.0(10),investments(27),islamic finance(14),islamic fintech(13),literature review(12),machine learning(42),peer-to-peer lending(12),regtech(10),risk assessment(15),risk management(10),sustainable development	Financial Technology and Artificial Intelligence	The advancement of FinTech has become a significant driver of innovation in the corporate world (Dong and Yu, 2023). This research area explores the application of digital technologies, including AI, Machine Learning (ML), and Big Data, by FinTech enterprises and financial intermediaries (see e.g., Zhang et al., 2021). AI technology enhances financial operations, such as identifying fraudulent transactions, anticipating company failures, projecting stock market trends, optimizing investment strategies, tackling money laundering, and conducting data analysis (e.g., Ashta and Herrmann, 2021).

goals(68),sustainable finance(11),systematic
literature reviews(10)

Cluster 2/GREEN	bangladesh(11),banking(88),credit(10),develop ing countries(44),developing economies(10),developing world(33),development(14),digital(12),digital financial services(28),digital inclusion(10),digital literacy(12),digital payments(12),electronic commerce(16),electronic money(41),emerging economies(10),emerging market(12),financial exclusion(12),financial inclusion(716),financial literacy(61),financial services(147),financial system(87),fintech adoption(10),gender(20),ghana(15),global system for mobile communications(10),government(11),ict(14),in dia(46),information technology(12),internet(15),kenya(11),mobile banking(57),mobile money(79),mobile payment(18),mobile phone(20),nigeria(16),pakistan(12),poverty(28) ,regulation(19),remittances(11),sub-saharan africa(29),technology(40),technology adoption(41)	Financial Inclusion and Emerging Markets	In emerging and developed economies, financial literacy plays a pivotal role in enhancing financial behavior (He and Ahunov, 2022; Lahiri and Biswas, 2022; Lavanya and Mamilla, 2024). Financial services are essential to promote growth and inclusive economic growth (Menon, 2019). These services also contribute to financial independence and economic empowerment of women (Demirgüç-Kunt et al., 2021). Research by Grohmann et al. (2018) demonstrates that financial knowledge has a beneficial impact on financial accessibility, particularly in environments with substantial financial infrastructure.
--------------------	---	---	---

Cluster 3/BUE	alternative energy(15),carbon(16),carbon emission(31),climate change(15),economic analysis(20),economic and social effects(34),economic development(46),economic growth(90),economics(40),energy policy(12),environmental economics(28),environmental sustainability(10),financial development(28),financial technologies(10),governance approach(15),green economy(25),green finance(13),green innovation(12),gross domestic product(12),human capital(13),income(10),information and communication technologies(41),innovation(124),investment(19),method of moments(10),mineral resources(10),minerals(11),natural resources(38),public policy(17),regression analysis(20),renewable energy(12),sustainability(149),technological development(31),technological innovation(44)	Innovation and Sustainable Development	Financial technology advancements contribute to achieving sustainable development goals (SDGs) and economic growth in developing countries (e.g., Nguyen and Ngo, 2022). Information and communication technology (ICT) has significantly influenced the socio-economic environment, reshaping business operations and spurring financial sector innovations (e.g., Usman et al., 2021). While ICT's environmental consequences remain controversial, it is expected to enhance socioeconomic and financial outcomes (Ali, 2020; Sembiring et al., 2022). Recent studies suggest green FinTech is a growing sector.
Cluster 4/YELLO W	accessibility(10),africa(36),china(128),consumption behaviour(10),covid-19(33),credit provision(11),digital economy(24),digital finance(115),digital financial inclusion(129),digital inclusive finance(56),digitization(40),education(12),empirical analysis(25),entrepreneurship(42),financial market(44),financial policy(11),financialization(10),financing constraints(11),heterogeneity(12),household income(10),household survey(10),inclusion(10),inclusive finances(45),income distribution(18),income inequality(22),microfinance(30),panel data(31),poverty alleviation(22),rural areas(13),rural finance(10),smes(12),social inclusion(22),spatiotemporal analysis(12),spillover effect(14)	Digital Finance and Digital Financial Inclusion	This cluster of research considers digital finance's role in promoting financial inclusion (Yue et al., 2022) and its potential to provide access to previously ignored individuals through digital technologies (e.g., Hoffmann, 2021). It also encompasses studies on digital currencies and the cryptocurrency market landscape (e.g., Mora et al., 2021).

Cluster 5/PURPL E	cbdc(10),central currency(16),financial institutions(11),financial stability(17),inclusive growth(14),indonesia(17),monetary policy(12),trust(13)	bank(10),digital	Financial Stability and Digital Currency	Papers in this cluster include higher per capita income, extended life expectancy, the shift from joint to nuclear family structures, and inadequate social security systems (Kulkarni N2023).” “In global finance, standard-setting entities employ a core-
-------------------------	---	------------------	---	--

Fig4: Network Visualization Map

Regarding our second research question – “What characterizes the conceptual structure of this area of study?” – and third – “What themes are at the forefront of contemporary intellectual inquiry within the existing body of work?” – Fig. 4 provides an overview of key research areas in the domain. Table 4 summarizes the relationships among classified key terms and primary ongoing research areas. A recurring theme is the convergence of financial services, digital innovation, and SDGs.

The third one focuses on the investing sector, and explores the influence of blockchain technology on the cryptocurrency and digital markets, and the ways blockchain can improve efficiency and transparency.

The fourth cluster is focused on Mobile Money and Digital Banking post-COVID-19, exploring the pros and cons of mobile money and digital banking services and highlighting the opportunities for mobile money to drive financial inclusion and economic growth while addressing the perceived risk and lack of knowledge.

Lastly, the fifth cluster focuses on the role of digital technologies, such as “artificial intelligence” (AI), “machine learning” (ML) and big data in delivering digital financial services, including privacy, regulatory and ethical challenges and the impact of AI and ML on credit risk assessment, fraud detection and personalised financial services.

5.2 Research Gap and Future Research

This research paper has a bibliometric approach that focuses on the relationship between artificial intelligence (AI), FinTech and financial inclusion in developing countries. While progress has been made, there are still opportunities to conduct further research to improve academic and applied uses in this area. By using co-word and cluster analysis, a number of new potential research directions have been found. Based on this, we came up with ideas for future research which are presented in table 5.

Table 5: Future research Suggestions

Research Cluster	Future research questions
Cluster 1	AI-powered decision-making in fintech presents ethical challenges and potential pitfalls; what are they and how can they be addressed? What are the issues of scalability and interoperability in financial applications with blockchain? What are the impact of culture and economics on cryptocurrency adoption in emerging markets?
Cluster 2	What are the differences in and impacts of the use of digital financial services across income groups? How do the regulatory frameworks affect the digital financial inclusion, especially in developing economies? Are mobile banking adoption rates higher or lower in different countries/regions, and what are the issues?
Cluster 3	How can financial inclusion help realize the Sustainable Development Goals (SDGs)? How can green fintech contribute to carbon-neutral financial services, and to climate change?
Cluster 4	In what way can alternative finance models, such as crowdfunding and P2P lending, support sustainable development? What are the employment and income distributive consequences of fintech innovations?
Cluster 5	What is the effectiveness of digital financial services in serving the needs of underserved communities, especially refugees and migrants? What are the regulatory issues of digital finance and how could they be solved in different legal systems and how could best practices be adopted internationally? What is the effectiveness of digital financial services for underserved communities, including refugees and migrants?

This research paper's data is solely from the Scopus database. To extend the study, other sources, like Web of Science, Dimensions and PubMed, might be taken into account to get a more comprehensive analysis. Exploring more bibliometric techniques like co-citation analysis, network analysis and bibliographic coupling. Additionally, insights can be gained from the opportunities and challenges of integrating AI into conventional financial systems. Furthermore, strengthening the mobile money services with improved financial inclusion in the rural areas should be put on the top of the priority list taking into consideration the needs of the underserved populations. Ethical aspects, including bias, transparency, and consumer protection, need to be studied, with a particular emphasis on the ethical implications of AI-driven financial decisions. Cross-country comparisons would be useful to grasp the impact of cultural, economic and regulatory context on digital financial inclusion efforts. (Williams et al., 2023), (Thorun & Diels, 2019). Further studies are needed to investigate the feasibility of green FinTech in the context of carbon neutrality and sustainable finance. There is a need for longitudinal studies to explore the link between financial inclusion and green innovation and climate change mitigation. There is a need for research on the effects of Central Bank Digital Currencies (CBDCs), decentralized finance (DeFi) and artificial intelligence (AI) credit scoring on financial stability (Abad-Segura et al., 2020). There should be studies on Responsible Innovation, bearing in mind System Resilience. Research should test whether alternative finance models are effective in fostering inclusive growth and how they impact employment, entrepreneurship and income distribution in developing economies.

6. Conclusion

This study significantly contributes to the growing research on the correlation between financial inclusion and FinTech.” It offers a thorough analysis of the sector, highlighting five use cases that show the power that FinTech technologies have to change access to financial amenities, mostly for developing marketplaces where traditional lending can often struggle. Our work delves into key technological innovations, such as blockchain and mobile banking, that help connect the unbanked to mainstream financial services.

The results contribute to the understanding of the contribution of FinTech to financial inclusion, and provide guidance on how to use these technologies for economic empowerment and sustainable development.

Yet, there are some potential limitations of this study such as the difficulty in accessing data, data value, data kinds, sample bias and operational limitations which have been discussed in academic publications “Car’e et al., (2023; 2024)”. Some of these limitations can be overcome by using alternative bibliometric methods, such as co-citation study and bibliographical link, that might provide a broader understanding of the research field in the future.

References

- [1] Abad-Segura, E., González-Zamar, M., López-Meneses, E., & Vázquez-Cano, E. (2020). Financial Technology: Review of Trends, Approaches and management. *Mathematics*, 8(6), 951. <https://doi.org/10.3390/math8060951>
- [2] Androutsopoulou, A., Karacapilidis, N., Loukis, E., & Charalabidis, Y. (2018). Transforming the communication between citizens and government through AI-guided chatbots. *Government Information Quarterly*, 36(2), 358–367. <https://doi.org/10.1016/j.giq.2018.10.001>
- [3] Arner, D. W., Buckley, R. P., Zetsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and Financial Inclusion. *European Business Organization Law Review*, 21(1), 7–35. <https://doi.org/10.1007/s40804-020-00183-y>
- [4] Bahl, A. S. D. S. (2025). Mapping the Landscape of Investor Psychology: A Bibliometric analysis of key psychological Bias. *European Economic Letters (EEL)*, 15(3), 1318–1335. <https://doi.org/10.52783/eel.v15i3.3523>
- [5] Burrell, J., & Fourcade, M. (2021). The Society of Algorithms. *Annual Review of Sociology*, 47(1), 213–237. <https://doi.org/10.1146/annurev-soc-090820-020800>
- [6] Carè, R., Boitan, I. A., Stoian, A. M., & Fatima, R. (2024). Exploring the landscape of financial inclusion through the lens of financial technologies: A review. *Finance Research Letters*, 106500. <https://doi.org/10.1016/j.frl.2024.106500>

- [7] Carè, R., & Cumming, D. (2024). Technology and automation in financial trading: A bibliometric review. *Research in International Business and Finance*, 71, 102471. <https://doi.org/10.1016/j.ribaf.2024.102471>
- [8] Carè, R., Fatima, R., & Boitan, I. (2024). Central banks and climate risks: Where we are and where we are going? *International Review of Economics & Finance*, 92, 1200–1229. <https://doi.org/10.1016/j.iref.2024.01.057>
- [9] Carè, R., Boitan, I. A., Stoian, A. M., & Fatima, R. (2025). Exploring the landscape of financial inclusion through the lens of financial technologies: A review. *Finance Research Letters*, 72(C). <https://doi.org/10.1016/j.frl.2024.106500>
- [10] Carè, R., & Weber, O. (2023). How much finance is in climate finance? A bibliometric review, critiques, and future research directions. *Research in International Business and Finance*, 64, 101886. <https://doi.org/10.1016/j.ribaf.2023.101886>
- [11] Chen, Y., & Bellavitis, C. (2019). Blockchain disruption and decentralized finance: The rise of decentralized business models. *Journal of Business Venturing Insights*, 13, e00151. <https://doi.org/10.1016/j.jbvi.2019.e00151>
- [12] Chigisheva, O., Soltovets, E., Dmitrova, A., Akhtyan, A. G., Litvinova, S. N., & Chelysheva, Y. V. (2021). Digital Literacy and its Relevance to Comparative Education Researchers: Outcomes of SciVal Analytics. *Eurasia Journal of Mathematics Science and Technology Education*, 17(10), em2017. <https://doi.org/10.29333/ejmste/11183>
- [13] Chuen, D. L. K. (2015). Preface and acknowledgments. In *Elsevier eBooks* (pp. xxi–xxiv). <https://doi.org/10.1016/b978-0-12-802117-0.09998-7>
- [14] Cucari, N., Tutore, I., Montera, R., & Profita, S. (2022). A bibliometric performance analysis of publication productivity in the corporate social responsibility field: Outcomes of SciVal analytics. *Corporate Social Responsibility and Environmental Management*, 30(1), 1–16. <https://doi.org/10.1002/csr.2346>
- [15] Del Sarto, N., & Ozili, P. K. (2025). FinTech and financial inclusion in emerging markets: A bibliometric analysis and future research agenda. *International Journal of Emerging Markets*, 20(13), 270–290. <https://doi.org/10.1108/IJOEM-08-2024-1428>
- [16] Demir, A., Pesqué-Cela, V., Altunbas, Y., & Murinde, V. (2020). Fintech, financial inclusion and income inequality: a quantile regression approach. *European Journal of Finance*, 28(1), 86–107. <https://doi.org/10.1080/1351847x.2020.1772335>
- [17] Demirgüç-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2022). *The Global Findex Database 2021*. <https://doi.org/10.1596/978-1-4648-1897-4>
- [18] Demirguc-KuntAsliKlapperLeoraSingerDorotheAnsarSaniyaHessJake, R. (n.d.). *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution*. World Bank. <http://documents.worldbank.org/curated/en/332881525873182837/The-Global-Findex-Database-2017-Measuring-%20Financial-Inclusion-and-the-Fintech-Revolution>.
- [19] Dong, X., & Yu, M. (2023). Does FinTech development facilitate firms' innovation? Evidence from China. *International Review of Financial Analysis*, 89, 102805. <https://doi.org/10.1016/j.irfa.2023.102805>
- [20] Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- [21] Farah, M. F., Hasni, M. J. S., & Abbas, A. K. (2018). Mobile-banking adoption: empirical evidence from the banking sector in Pakistan. *International Journal of Bank Marketing*, 36(7), 1386–1413. <https://doi.org/10.1108/ijbm-10-2017-0215>
- [22] *Financial Inclusion: Lessons from World Bank Group Experience, Fiscal Years 2014–22*. (2023). <https://doi.org/10.1596/40282>
- [23] Gabor, D., & Brooks, S. (2016). The digital revolution in financial inclusion: international development in the fintech era. *New Political Economy*, 22(4), 423–436. <https://doi.org/10.1080/13563467.2017.1259298>
- [24] Garfield, E. (1979). Is citation analysis a legitimate evaluation tool? *Scientometrics*, 1(4), 359–375. <https://doi.org/10.1007/bf02019306>
- [25] Gates, M. & Bill & Melinda Gates Foundation. (2019). *A G7 partnership for women's digital financial inclusion in Africa*.

https://docs.gatesfoundation.org/Documents/WomensDigitalFinancialInclusioninAfrica_English.pdf?utm_source=chatgpt.com

- [26] Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services. *Journal of Management Information Systems*, 35(1), 220–265. <https://doi.org/10.1080/07421222.2018.1440766>
- [27] Gomber, P., Koch, J., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of Business Economics*, 87(5), 537–580. <https://doi.org/10.1007/s11573-017-0852-x>
- [28] Grohmann, A., Klühs, T., & Menkhoff, L. (2018). Does financial literacy improve financial inclusion? Cross country evidence. *World Development*, 111, 84–96. <https://doi.org/10.1016/j.worlddev.2018.06.020>
- [29] Gulati, T., Singla, A., & Saini, P. (2026). Digital finance in the era of digital transformation: A bibliometric analysis and systematic literature review. *Digital Transformation and Society*, 5(2), 145–169. <https://doi.org/10.1108/DTS-01-2025-0018>
- [30] Gutu, T. G., Máté, D., & Hágén, I. Z. (2025). Mapping the evolution of sustainable financial inclusion: A bibliometric analysis of global trends (2007–2025). *Journal of Risk and Financial Management*, 18(9), 472. <https://doi.org/10.3390/jrfm18090472>
- [31] He, Y., & Ahunov, M. (2022). Financial literacy: the case of China. *China & World Economy*, 30(5), 75–101. <https://doi.org/10.1111/cwe.12438>
- [32] Hodula, M. (2022). Fintech credit, big tech credit and income inequality. *Finance Research Letters*, 51, 103387. <https://doi.org/10.1016/j.frl.2022.103387>
- [33] Irfan, M., Razaq, A., Sharif, A., & Yang, X. (2022). Influence mechanism between green finance and green innovation: Exploring regional policy intervention effects in China. *Technological Forecasting and Social Change*, 182, 121882. <https://doi.org/10.1016/j.techfore.2022.121882>
- [34] Kashif, M., Pinglu, C., Ullah, S., & Zaman, M. (2023). Evaluating the influence of financial technology (FinTech) on sustainable finance: a comprehensive global analysis. *Financial Markets and Portfolio Management*, 38(1), 123–155. <https://doi.org/10.1007/s11408-023-00439-w>
- [35] Khan, A., Goodell, J. W., Hassan, M. K., & Paltrinieri, A. (2021). A bibliometric review of finance bibliometric papers. *Finance Research Letters*, 47, 102520. <https://doi.org/10.1016/j.frl.2021.102520>
- [36] Khan, M., Ahmad, A., Yuvaraj, M., Husain, S. S., & Khan, D. (2023). A bibliometric analysis and visualization of global research on rural livelihood. *Global Knowledge Memory and Communication*. <https://doi.org/10.1108/gkmc-10-2022-0231>
- [37] Kishor, K., Bansal, S. K., & Kumar, R. (2025). The role of FinTech in promoting financial inclusion to achieve sustainable development: An integrated bibliometric analysis and systematic literature review. *Journal of the Knowledge Economy*, 16(1), 5664–5692. <https://doi.org/10.1007/s13132-024-02168-5>
- [38] Kshetri, N. (2014). Global entrepreneurship: environment and strategy. *Choice Reviews Online*, 52(02), 52–0940. <https://doi.org/10.5860/choice.52-0940>
- [39] Lahiri, S., & Biswas, S. (2022). Does financial literacy improve financial behavior in emerging economies? Evidence from India. *Managerial Finance*, 48(9/10), 1430–1452. <https://doi.org/10.1108/mf-09-2021-0440>
- [40] Lavanya, R., & Mamilla, R. (2024). Mapping the landscape: A bibliometric analysis of determinants influencing financial literacy among women. *Multidisciplinary Reviews*, 7(7), 2024138. <https://doi.org/10.31893/multirev.2024138>
- [41] Leong, C., Tan, B., Xiao, X., Ter Chian Tan, F., & Sun, Y. (2017). Nurturing a FinTech ecosystem: The case of a youth microloan startup in China. *International Journal of Information Management*, 37(2), 92–97. <https://doi.org/10.1016/j.ijinfomgt.2016.11.006>
- [42] Liu, Y., Luan, L., Wu, W., Zhang, Z., & Hsu, Y. (2021). Can digital financial inclusion promote China's economic growth? *International Review of Financial Analysis*, 78, 101889. <https://doi.org/10.1016/j.irfa.2021.101889>
- [43] Menon, P. (2019). Financial inclusion, banking the unbanked: Concepts, issues, and policies for India. *Journal of Public Affairs*, 19(2). <https://doi.org/10.1002/pa.1911>

- [44] Mhlanga, D. (2020). Industry 4.0 in Finance: The impact of Artificial intelligence (AI) on digital financial inclusion. *International Journal of Financial Studies*, 8(3), 45. <https://doi.org/10.3390/ijfs8030045>
- [45] Mushtaq, R., & Bruneau, C. (2019). Microfinance, financial inclusion and ICT: Implications for poverty and inequality. *Technology in Society*, 59, 101154. <https://doi.org/10.1016/j.techsoc.2019.101154>
- [46] *Open Knowledge Repository*. (n.d.). <https://openknowledge.worldbank.org/handle/10986/40282>
- [47] Oprea, I-M., & Nicula, E-A. (2026). Banking digitalization and financial inclusion: Bibliometric analysis and perspectives in emerging economies. *Access to Science, Business, Innovation in Digital Economy*, 7(1), 21–42. [https://doi.org/10.46656/access.2026.7.1\(2\)](https://doi.org/10.46656/access.2026.7.1(2))
- [48] Ouma, S. A., Odongo, T. M., & Were, M. (2017). Mobile financial services and financial inclusion: Is it a boon for savings mobilization? *Review of Development Finance*, 7(1), 29–35. <https://doi.org/10.1016/j.rdf.2017.01.001>
- [49] Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, 18(4), 329–340. <https://doi.org/10.1016/j.bir.2017.12.003>
- [50] Ozturk, I., & Ullah, S. (2022). Does digital financial inclusion matter for economic growth and environmental sustainability in OBRI economies? An empirical analysis. *Resources Conservation and Recycling*, 185, 106489. <https://doi.org/10.1016/j.resconrec.2022.106489>
- [51] Pandey, D. K. (2025). FinTech literature reviews: A hybrid approach. *Finance Research Letters*, 79(C). <https://doi.org/10.1016/j.frl.2025.107249>
- [52] Rathi, V. (2016, July 15). *INDIA AMIDST DIGITAL BANKING AND FINANCIAL INCLUSION – A REVIEW*. Rathi | INTERNATIONAL JOURNAL OF MANAGEMENT AND SOCIAL SCIENCES (IJMSS). <http://journals-foundationspeak.com/index.php/ijmss/article/view/340>
- [53] Rodriguez, W. J. M., Jordán, F. de M. L., Flores, V. I. V., Armas, T. S., & Girón, E. C. A. (2025). Artificial intelligence in finance studies: Bibliometric approach to literature indexed in Scopus. *Iberoamerican Journal of Science Measurement and Communication*, 5(1), 1–8. <https://doi.org/10.47909/ijsmc.168>
- [54] Rojas-Torres, D., Kshetri, N., Hanafi, M. M., & Kouki, S. (2021). Financial technology in Latin America. *IT Professional*, 23(1), 95–98. <https://doi.org/10.1109/mitp.2020.3028486>
- [55] Salampasis, D., & Mention, A. (2017). FinTech: Harnessing Innovation for Financial Inclusion. In *Elsevier eBooks* (pp. 451–461). <https://doi.org/10.1016/b978-0-12-812282-2.00018-8>
- [56] Senyo, P., & Osabutey, E. L. (2020). Unearthing antecedents to financial inclusion through FinTech innovations. *Technovation*, 98, 102155. <https://doi.org/10.1016/j.technovation.2020.102155>
- [57] Sharma, D. (2016). Nexus between financial inclusion and economic growth. *Journal of Financial Economic Policy*, 8(1), 13–36. <https://doi.org/10.1108/jfep-01-2015-0004>
- [58] Sheng, T. (2020). The effect of fintech on banks' credit provision to SMEs: Evidence from China. *Finance Research Letters*, 39, 101558. <https://doi.org/10.1016/j.frl.2020.101558>
- [59] Thorun, C., & Diels, J. (2019). Consumer Protection Technologies: An investigation into the potentials of new digital technologies for consumer policy. *Journal of Consumer Policy*, 43(1), 177–191. <https://doi.org/10.1007/s10603-019-09411-6>
- [60] Van Eck, N. J., & Waltman, L. (2009). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. <https://doi.org/10.1007/s11192-009-0146-3>
- [61] Wang, X., Wang, X., Ren, X., & Wen, F. (2022). Can digital financial inclusion affect CO2 emissions of China at the prefecture level? Evidence from a spatial econometric approach. *Energy Economics*, 109, 105966. <https://doi.org/10.1016/j.eneco.2022.105966>
- [62] Williams, T. H., Iriobe, G. O., Ayodele, T. D., Olasupo, S. F., & Aladejebi, M. O. (2023). Do illiteracy and unemployment affect financial inclusion in the rural areas of developing countries? *Investment Management and Financial Innovations*, 20(2), 89–101. [https://doi.org/10.21511/imfi.20\(2\).2023.08](https://doi.org/10.21511/imfi.20(2).2023.08)
- [63] World Bank Group. (2016). Digital Financial Inclusion. In *World Bank*. <https://www.worldbank.org/en/topic/financialinclusion/publication/digital-financial-inclusion>

- [64] Yang, M., Wu, C., Wider, W., Fauzi, M., & Mutuc, E. (2025). A bibliometric analysis of digital financial inclusion: Current trends and future directions. *Economics*, 19(1), 20250156. <https://doi.org/10.1515/econ-2025-0156>
- [65] Zhang, Y., Chen, J., Han, Y., Qian, M., Guo, X., Chen, R., Xu, D., & Chen, Y. (2021). The contribution of Fintech to sustainable development in the digital age: Ant forest and land restoration in China. *Land Use Policy*, 103, 105306. <https://doi.org/10.1016/j.landusepol.2021.105306>
- [66] Zins, A., & Weill, L. (2016). The determinants of financial inclusion in Africa. *Review of Development Finance*, 6(1), 46–57. <https://doi.org/10.1016/j.rdf.2016.05.001>
- [67] Zupic, I., & Čater, T. (2014). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), 429–472. <https://doi.org/10.1177/1094428114562629>