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The Role of FinTech in the Digitalization of Financial Services: A Bibliometric Analysis of Emerging Trends

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Abstract. This paper aims to assess the current state of research landscape of the role of FinTech in the digitalization of financial services through a bibliometric analysis using scientometric software (VosViewer). We analyzed a dataset of 585 documents as indexed by Scopus, published between 2015 and 2025 to generate network maps and identify emerging trends in the field. The bibliometric analysis delves into various key areas within financial services, including digital transformation, decentralized finance, artificial intelligence, and blockchain technology. The results revealed a notable rise in the publication volume throughout the years, reflecting the role of modern technologies in transforming financial systems and enhancing user experiences. Geographically, certain countries represent the highest number of publications in the field of FinTech and the digitalization of financial services such as India, China and the United States. These findings provide a foundation for researchers to foster blockchain, artificial intelligence, and decentralized finance, to drive the development and transformation of financial services.

Keywords: *Artificial Intelligence ; Bibliometric Analysis ; Blockchain ; Digitalization ; Digital Transformation ; Financial Innovations ; Financial Services ; Financial Technology ; FinTech.*

1. Introduction

This bibliometric analysis provides an exploration of the evolving field of Financial Technology (FinTech) and the digitalization of financial services. Thanks to the rapid advancement of technology, many sectors of the economy have been digitized (Ahmet Unal & Bolukbas, 2021), including the financial sector, where FinTech has become a central driver in reshaping the landscape of financial services, while making them more accessible, efficient, and user-friendly (Güleç et al., 2024). The focus goes to the role of blockchain in many areas (finance, insurance, banking) (Meera et al., 2024) and to the development of big data and artificial intelligence as they contribute in creating innovative financial service models (Wen, 2024). In addition to the role of Decentralized Finance (DeFi) as a transformative shift in financial services (de Fortuny & Zhang, 2023). These modern technologies notably impact the way the consumers interact with financial services, and enable the creation of opportunities for innovation and improved user experiences.

The study also examines the current state of research within the topic of FinTech and financial services, identifying the primary themes, trends, and developments through a comprehensive bibliometric analysis. This paper reveals the key research themes in FinTech and their evolution over the years through an examination of a dataset of documents. This bibliometric analysis emphasizes the rise of academic interest in the field, as the impact of finance technologies on finance sectors is becoming significant recently (Pompella & Matoušek, 2021).

While an important number of researchers focused on the convergence of FinTech and the digitalization of financial services in recently, a gap still exists in comprehensive analyses

related to the quantification of the trends, subject areas, and geographic distributions related to this digital transformation. Thus, the present study offers a unique contribution by exploring the developing role of FinTech in the digitalization of financial services through an application of bibliometric techniques. Multiple visualizations illustrating trends in publication volume, subject area distribution, and co-occurrence networks were generated in order to offer insights into the academic landscape and emerging patterns, which contributes to adding significant value to the understanding of these trends. The analysis also focused on regional disparities in research output by studying the geographical distribution of publications, which provides a global overview and a nuanced perspective on this rapidly evolving field.

From a theoretical standpoint, the data-based analysis of the current literature and emerging trends provided by this study offers an enrichment of the understanding of the role of digitalization of financial services, enabling potential research directions and approaches based on the findings.

Empirically, this study would enable a navigation of the speedily evolving changes in the FinTech landscape for academics, decision-makers and even industry leaders in terms of the adoption of technologies, the regulatory frameworks, and strategic planning.

Finally, the structure of the paper is outlined as follows: the next section presents the methodology used to conduct this bibliometric analysis, highlighting dataset collection and analysis techniques, followed by a section dedicated to results and analyses where we discuss emerging trends, geographical distribution, and network visualizations maps based on text data. The paper ends with an identification of the main gaps followed by a conclusion.

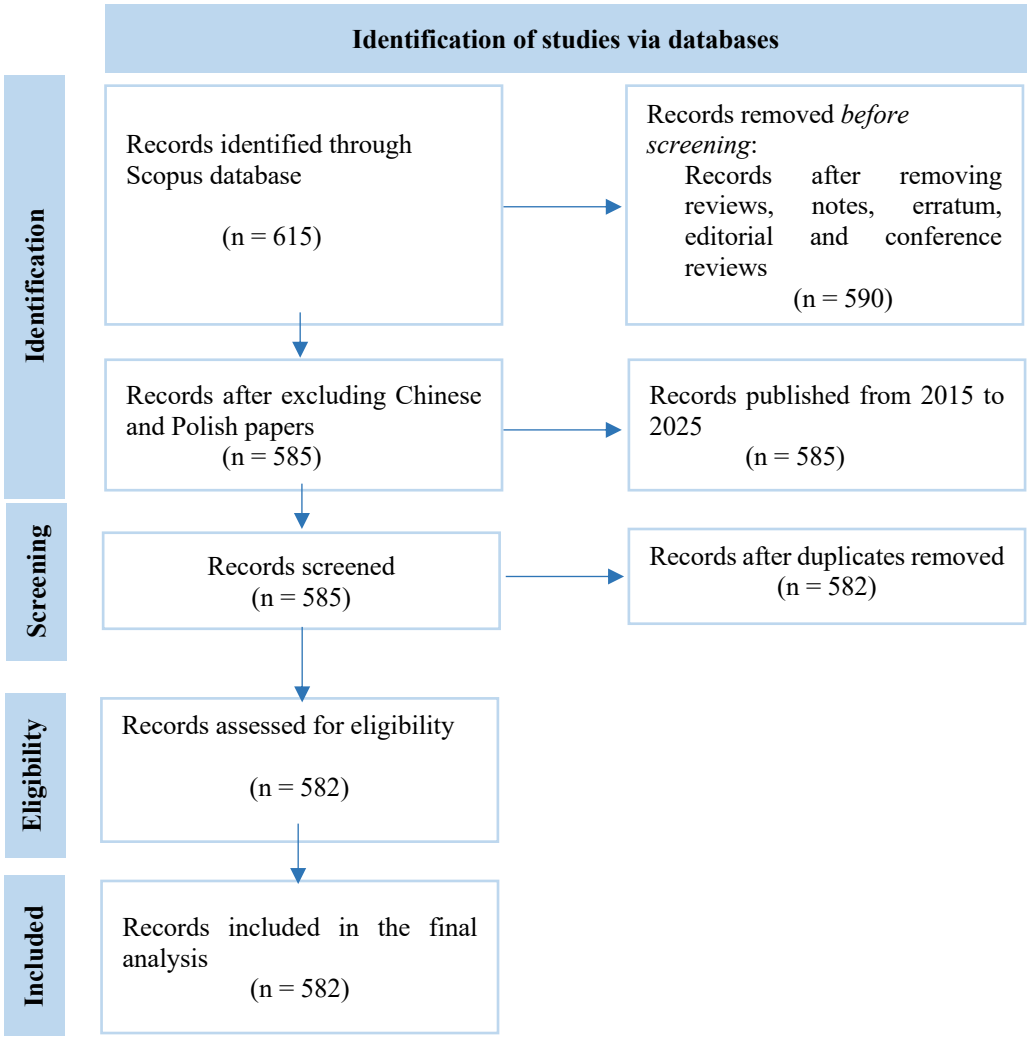
2. Methodology

In this paper, we collected a dataset of 585 publications from the Scopus database in order to conduct a bibliometric analysis of research on the role of FinTech in the digitalization of financial services. Scopus is the largest abstract and citation database, with both peer-reviewed research literature and web sources that offer a comprehensive overview of global research output across various disciplines (Agarwal et al., 2016).

In this analysis, we focused exclusively on publications related to the digitalization of financial services and FinTech and limited the research to articles, books, book chapters, and conference papers. We defined the research parameters as follows:

- Date range: from 2015 to 2025
- Publication types: articles, books, book chapters and conference papers
- Query date: performed on february 2025
- Search query: ("FinTech" OR "financial technology" OR "digital finance") AND ("digitalization" OR "digital transformation" OR "blockchain" OR "AI") AND ("financial services").

Figure 1: PRISMA model of the study selection process
Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA)

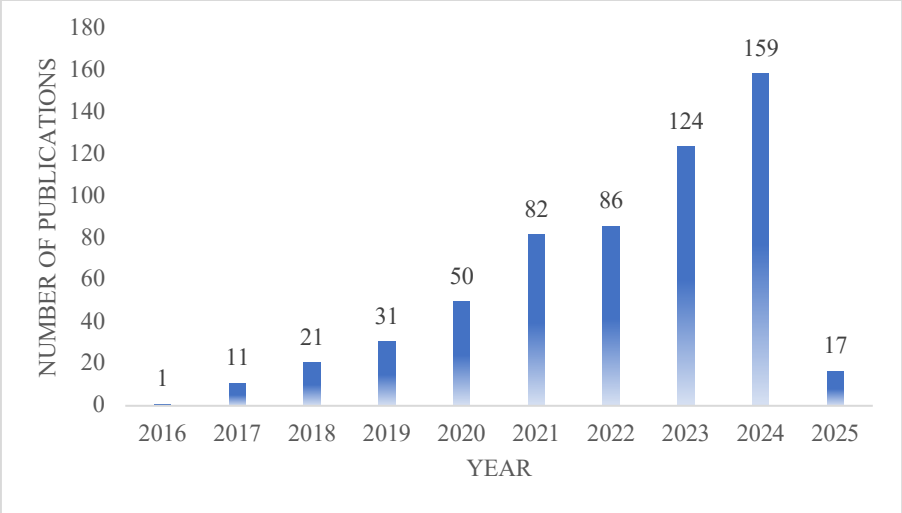


3. Results and analysis

a. Trends in publications

The publication volume trend related to the role of FinTech in the digitalization of financial services showed a significant increase in the past decade. We notice a gradual rise, starting with 1 publication in 2016 with a remarkable peak between 2020 and 2023 by reaching 82 publications in 2021, peaking in 2024 with 159 publications. As the year 2025 is still ongoing, it shows a lower number of publications (17), indicating that the publication count will likely increase as the year continues.

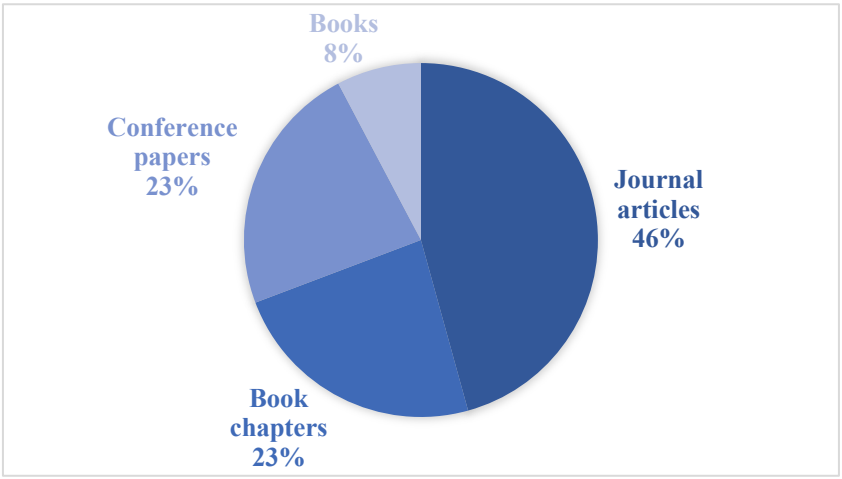
Figure 2 : Number of publications per year (2015-2025) on the digitalization of financial services



i. Distribution of publication types

Five hundred eighty-five publications were exhibited from our search query on the Scopus database, most of them (46%) are journal articles (N = 267), followed by 23% of publications that are book chapters (N = 137) and conference papers (N = 136). Books (N = 45) make up the smallest proportion at 8%, suggesting a less frequent but remarkable contribution of in-depth research in the field of digitalization of financial services.

Figure 3: Percentage of publications by type



b. Subject areas of research

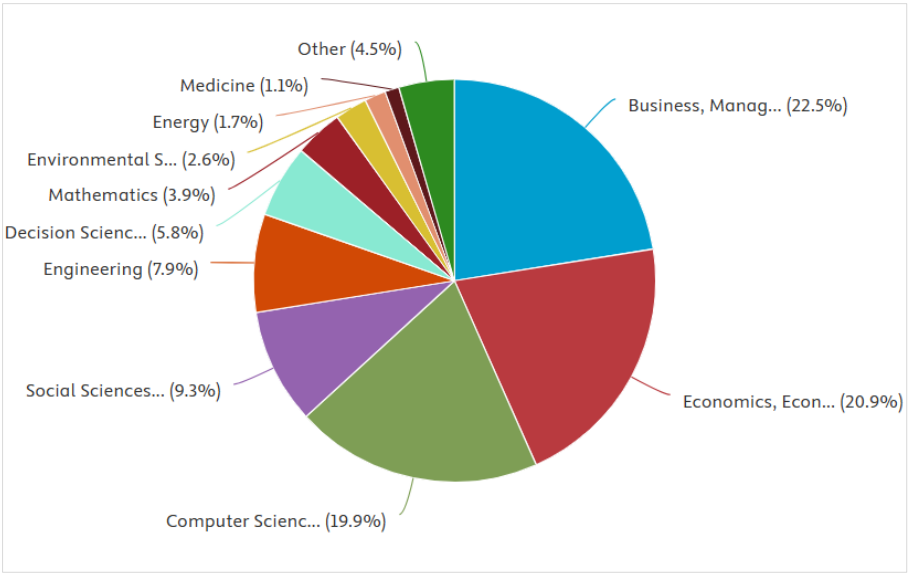
By analyzing the extracted documents by subject area, we notice that the majority of publications on the digitalization of financial services are relevant to the business, management, and accounting area (22.5%), followed by economics, econometrics, and finance (20.9%). These two areas are considered the core areas driving digitalization in financial services. Computer science (19.9%) is also significant, indicating the role of technology in this sector. Social Sciences (9.3%) emphasizes the importance of understanding societal implications,

while engineering (7.9%) and decision sciences (5.8%) point to the technical and analytical approaches in this research. Mathematics (3.9%) and environmental science (2.6%) contribute to emerging interdisciplinary work. Smaller contributions come from the area of energy (1.7%) and medicine (1.1%), reflecting niche but relevant research domains. Overall, the subject areas emphasize the interdisciplinary nature of the digitalization of financial services.

Figure 4: Number of publications by subject area on the digitalization of financial services

Subject area	Documents
Business, Management and Accounting	277
Economics, Econometrics and Finance	257
Computer Science	245
Social Sciences	114
Engineering	97
Decision Sciences	72
Mathematics	48
Environmental Science	32
Energy	21
Medicine	14
Physics and Astronomy	14
Arts and Humanities	9
Multidisciplinary	8
Psychology	8
Materials Science	7
Earth and Planetary Sciences	4
Agricultural and Biological Sciences	2
Chemical Engineering	2
Biochemistry, Genetics and Molecular Biology	1

Figure 5: Percentage distribution of publications by subject area on the digitalization of financial services



c. Network visualization based on text data

In order to generate the network visualization maps in this bibliometric analysis, we used VosViewer using co-occurrence data, which enabled us to detailly explore the bibliometric maps (Van Eck & Waltman, 2010).

In our dataset, out of 2388 keywords, we only considered 46 keywords that occurred in a minimum of 12 publications.

The occurrence of the keywords is illustrated with circles (Figure 7), and it represents the frequency with which the keywords co-occur.

Figure 6: Table of the main keywords with occurrence counts

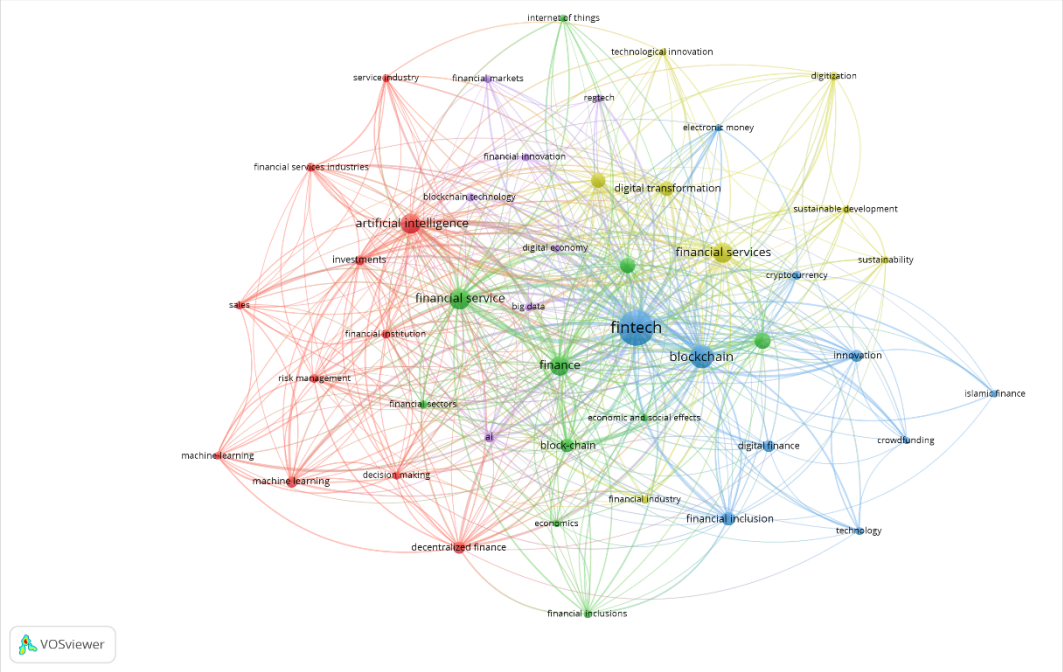
Verify selected keywords

Selected	Keyword	Occurrences	Total link strength
☑	fintech	274	847
☑	blockchain	116	447
☑	financial service	95	423
☑	artificial intelligence	92	355
☑	finance	79	334
☑	financial services	92	334
☑	block-chain	41	203
☑	financial technology	54	196
☑	banking	45	170
☑	decentralized finance	32	160
☑	digitalization	55	149
☑	digital transformation	48	141
☑	innovation	31	128
☑	machine learning	28	122
☑	financial inclusion	41	119
☑	investments	23	114
☑	financial institution	19	106
☑	risk management	18	102
☑	decision making	15	97

The five main keywords in our research topic are “FinTech” (274 occurrences and 847 total

link strength), "blockchain" (116 occurrences and 447 total link strength), "financial service" (95 occurrences and 423 total link strength), "artificial intelligence" (92 occurrences and 355 total link strength) and "finance" (79 occurrences and 334 total link strength).

Figure 7: Co-occurrence network visualization based on text data in the digitalization of financial services



The visualization map (Figure 7) shows five colored clusters (red, blue, green, yellow, and violet) related by 698 links.

The red cluster totals a number of 11 items; the main ones are "artificial intelligence" (occurrence = 92), "machine learning" (occurrence = 40), and "decentralized finance" (occurrence = 32). The red cluster is focused on cutting-edge technologies, such as machine learning, and their impact on citizens' interaction with the financial sector (Ducas & Wilner, 2017). The cluster also focuses on the link between decentralized finance (DeFi) with open banking and policy considerations (Zetzsche et al., 2020).

For the blue cluster, it comprises 10 items; the main ones are the following: "FinTech" (occurrence = 274), "blockchain" (occurrence = 116), and "financial inclusion" (occurrence = 41). The focus is shifted towards the fintech's role in the enhancement of financial inclusion through digital platforms (Liu & Lyons, 2024), in addition to the role of technologies such as the Internet of Things (IoT), and blockchain in redefining the way financial institutions deliver services (Albastaki, 2020).

The green cluster also presents a total number of 10 items, where the main ones are "financial service" (occurrence = 95), "finance" (occurrence = 79), and "economics" (occurrence = 12), focusing on improving the financial service and the autonomous operations thanks to financial technology (Khadidos et al., 2022), in addition to the impact of FinTech on the socioeconomic well-being of the economy (Makhija et al., 2021).

The yellow cluster comprises fewer items (N = 8), with "financial services" (occurrence = 92), "digital transformation" (occurrence = 48) and "banking" (occurrence = 45) as the main items. The cluster revolves around the following idea ; the ease offered by financial technology must be accompanied by responsible usage so that the financial technology services empower users to adopt and maintain healthy financial behaviors (Aryono & Satya, 2019).

As for the violet cluster, it contains 7 items, which are "AI" (occurrence = 21), "blockchain technology" (occurrence = 18), and "big data" (occurrence = 16), reflecting the role of recent technologies in transforming the financial sector in general, in addition to the intermediary role of big data analysis in the relationship with blockchain technology (Hashem, 2023).

d. Geographic distribution of publications

By analyzing the geographic distribution of publications in the field of digitalization of financial services, we notice a significant concentration in certain countries. India leads the list with the highest number of publications (N = 128), with a research focus on open banking with an objective of enhancing customer experiences (Shacheendran et al., 2025). Followed by China with 64 publications reflecting the interest on the role of inclusive finance in promoting sustainable development in the country (Yang & Meseretchanie, 2024). While the United States comes third on the list, with 56 publications, with a main focus on the distinction between FinTech and financial technology for creating an industry framework (Knewtson & Rosenbaum, 2020).

Figure 8: Documents by country

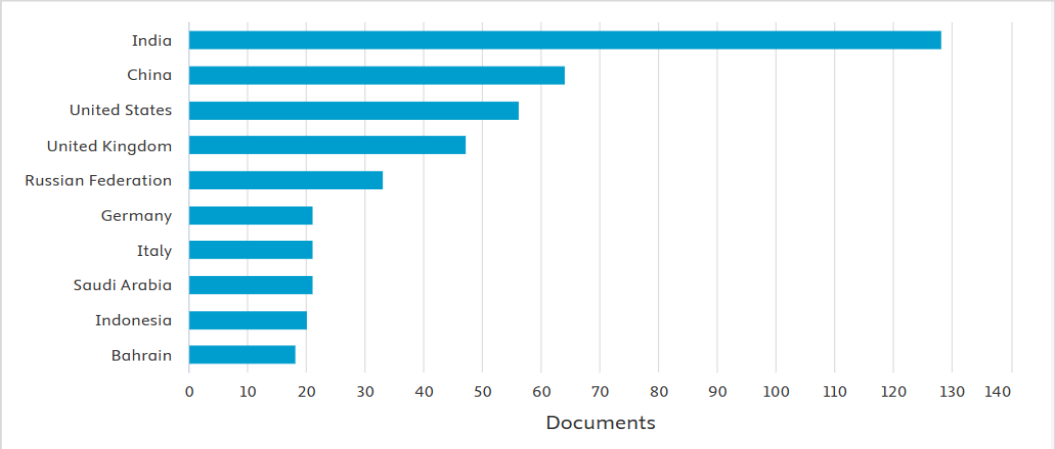
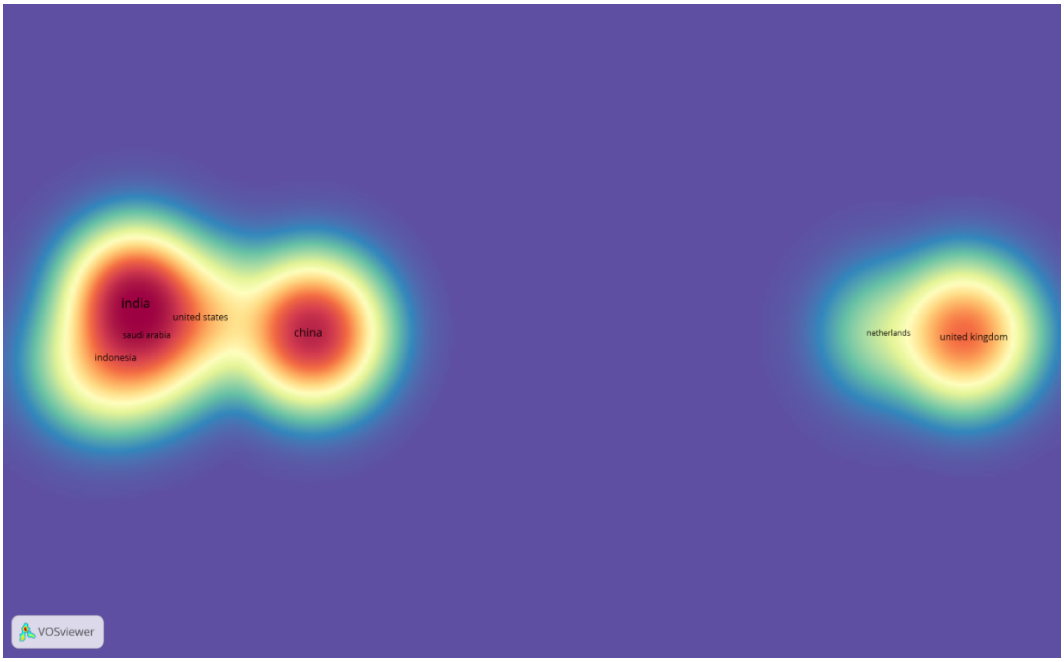


Figure 9: Density map based on bibliographic data



4. Identified research gaps

Various areas in the actual research landscape remain underexplored regardless of the rapid emergence of the FinTech's impact on the financial sector of the economies. In developed regions, for instance, the United States and Europe, light has been shed on the digital transformation, which illustrates a remarkable gap in research concentrating on emerging economies in Africa and the Middle East, which reveals potential opportunities to tackle by academics considering the fast rate of FinTech adoption in these regions. In addition to this gap, despite the important role of FinTech in enhancing financial inclusion, we notice that the research related to the capacity of digital financial services to reach underserved regions is still limited. This gap involves a future exploration of the way FinTech can influence the inequalities' reduction to access financial services, in addition to the socio-economic impacts of these technologies.

5. Conclusion

In this paper, we conducted a bibliometric analysis that was focused around the field of digitalization of financial services using VosViewer software. We extracted a dataset of 585 publications from the Scopus database, and we limited the research to the documents published between 2015 and 2025. By examining visuals generated from Scopus and using VosViewer, the analysis revealed an increasing interest of researchers in the field of FinTech in the digitalization of financial services, reflecting the rapidity of technological advancements in financial services in general. The main role goes to the adoption of artificial intelligence, blockchain, and decentralized finance (DeFi) in transforming the traditional financial systems of the economies and improving users' experience.
Geographically, India is the leader of the top countries with the highest number of publications related to the topic, followed by China and the United States. While African countries show a relatively low representation in the digitalization of the financial services research landscape.

6. References

- Agarwal, A., Durairajanayagam, D., Tatagari, S., Esteves, S., Harlev, A., Henkel, R., Roychoudhury, S., Homa, S., Puchalt, N., Ramasamy, R., Majzoub, A., Ly, K., Tvrda, E., Assidi, M., Kesari, K., Sharma, R., Banihani, S., Ko, E., Abu-Elmagd, M., … Bashiri, A. (2016). Bibliometrics : Tracking research impact by selecting the appropriate metrics. *Asian Journal of Andrology*, *18*(2), 296. https://doi.org/10.4103/1008-682X.171582
- Ahmet Unal, M., & Bolukbas, O. (2021). The Acquirements of Digitalization with RPA (Robotic Process Automation) Technology in the Vakif Participation Bank. *ACM Int. Conf. Proc. Ser.*, 68-73. Scopus. https://doi.org/10.1145/3459955.3460602
- Albastaki, Y. A. (2020). When technology meets finance : A review approach to fintech. In *Innov. Strateg. For Implement. FinTech in Bank.* (p. 1-21). IGI Global; Scopus. https://doi.org/10.4018/978-1-7998-3257-7.ch001
- Aryono, S. A., & Satya, D. P. (2019). User Interaction Design for Financial Technology Mobile Application using User-Centered Design. *Proc. - Int. Conf. Adv. Inf.: Concepts, Theory, Appl., ICAICTA*. Proceedings - 2019 International Conference on Advanced Informatics: Concepts, Theory, and Applications, ICAICTA 2019. Scopus. https://doi.org/10.1109/ICAICTA.2019.8904187
- de Fortuny, E. J., & Zhang, Y. (2023). Exploring the New Frontier : Decentralized Financial Services. *Service Science*, *15*(4), 266-282. Scopus. https://doi.org/10.1287/SERV.2021.0048
- Ducas, E., & Wilner, A. (2017). The security and financial implications of blockchain

technologies : Regulating emerging technologies in Canada. *International Journal*, *72*(4), 538-562. Scopus. https://doi.org/10.1177/0020702017741909

- Güleç, M., Hazar, A., & Babuşcu, Ş. (2024). Trends in Fintech. In *Robo-advis. In manag.* (p. 245-273). IGI Global; Scopus. https://doi.org/10.4018/979-8-3693-2849-1.ch017
- Hashem, A. (2023). The Impact of Blockchain Technology on Financial Services : Mediating Role of Big Data Analytics. *Journal of Logistics, Informatics and Service Science*, *10*(2), 91-107. Scopus. https://doi.org/10.33168/JLISS.2023.0207
- Khadidos, A., Subbalakshmi, A. V. V. S., Khadidos, A., Alsobhi, A., Yaseen, S. M., & Mirza, O. M. (2022). Wireless communication based cloud network architecture using AI assisted with IoT for FinTech application. *Optik*, *269*. Scopus. https://doi.org/10.1016/j.ijleo.2022.169872
- Knewtson, H. S., & Rosenbaum, Z. A. (2020). Toward understanding FinTech and its industry. *Managerial Finance*, *46*(8), 1043-1060. Scopus. https://doi.org/10.1108/MF-01-2020-0024
- Liu, F., & Lyons, A. C. (2024). Use Cases in Fintech. In *The Emerald Handb. Of Fintech : Reshaping Finance* (p. 43-64). Emerald Publishing; Scopus. https://doi.org/10.1108/978-1-83753-608-520241005
- Makhija, P., Chacko, E., & Sinha, M. (2021). Transforming Financial Sector Through Financial Literacy and Fintech Revolution. In *Financial Inclusion in Emerg. Markets : A Road Map for Sustainable Growth* (p. 239-255). Springer Nature; Scopus. https://doi.org/10.1007/978-981-16-2652-4_12
- Meera, K. L., Vijai, C., Kalia, R., Raje, H., Sen, G., & Tiwari, M. (2024). Using Blockchain technology for transparent and secure Financial Transactions in the Contemporary Business Landscape. *TQCEBT - IEEE Int. Conf. Trends Quantum Comput. Emerg. Bus. Technol.* TQCEBT 2024 - 2nd IEEE International Conference on Trends in Quantum Computing and Emerging Business Technologies 2024. Scopus. https://doi.org/10.1109/TQCEBT59414.2024.10545075
- Pompella, M., & Matoušek, R. (2021). The Palgrave handbook of FinTech and blockchain. In *The Palgrave Handb. Of FinTech and Blockchain* (p. 522). Springer International Publishing; Scopus. https://doi.org/10.1007/978-3-030-66433-6
- Shacheendran, V., Lukose, A., John, J., Joseph, D., & Joseph, J. (2025). The Rise of Open Banking : A Comprehensive Analysis of Research Trends and Collaborative Networks. *International Journal of Economics and Financial Issues*, *15*(1), 295-307. Scopus. https://doi.org/10.32479/ijefi.17407
- Van Eck, N. J., & Waltman, L. (2010). Software survey : VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523-538. https://doi.org/10.1007/s11192-009-0146-3
- Wen, Y. (2024). Research on Risk Early Warning System of Financial Sharing Platform Based on Neural Network Model. *ACM Int. Conf. Proc. Ser.*, 943-947. Scopus. https://doi.org/10.1145/3675417.3675573
- Yang, J., & Meseretchanie, A. (2024). The intermediate role of farmland transfer in the impact of digital financial inclusion on agricultural total factor productivity in China. *Frontiers in Sustainable Food Systems*, *8*. Scopus. https://doi.org/10.3389/fsufs.2024.1345549
- Zetzsche, D. A., Arner, D. W., & Buckley, R. P. (2020). Decentralized finance. *Journal of Financial Regulation*, *6*(2), 172-203. Scopus. https://doi.org/10.1093/jfr/fjaa010