



American Journal of Environmental Economics (AJEE)

ISSN: 2833-7905 (ONLINE)

VOLUME 5 ISSUE 2 (2026)



PUBLISHED BY
E-PALLI PUBLISHERS, DELAWARE, USA

Fintech and Sustainable Development: A Bibliometric and Network Analysis

Tarun Gangadhara^{1*}†, Deiya Govila^{1†}, Vivaan Kenia^{1†}

Article Information

Received: January 10, 2026

Accepted: April 23, 2026

Published: July 16, 2026

Keywords

Climate Change, Economic Growth, Fintech, Green Finance, Sustainable Development

ABSTRACT

In recent years, financial technology (Fintech) has developed rapidly and has become an important part of modern financial systems. At the same time, environmental problems such as climate change and carbon emissions have increased the need for sustainable solutions. This study examines the relationship between fintech and environmental sustainability using a bibliometric and network analysis approach. A total of 322 peer-reviewed journal articles published between 2017 and 2025 were collected from the Scopus database and analyzed using performance analysis and science mapping methods. The results show that research on Fintech and sustainability has grown steadily over time, indicating rising academic interest in this topic. The network analysis highlights key themes, including green finance, ESG, climate change, and digital innovation. It also shows patterns of collaboration between authors and countries working in this field. These findings suggest that Fintech is increasingly being studied as a possible tool to support sustainable development and environmental goals. This study differs from earlier research by providing a broad, data-driven overview of the existing literature rather than focusing on individual examples. By identifying major research trends and connections, this paper helps improve understanding of how fintech is linked to environmental sustainability and the transition towards net-zero.

INTRODUCTION

Immediate action is needed to stop climate change. Climate change is a global issue with detrimental effects, and together we can address it. Climate change comes from the major industrial activities and sectors that generate greenhouse gas emissions. The Asian Development Bank (2024) estimated that a total of 590 % is needed to achieve the 2030 climate objectives through annual climate finance. The gap between current GHG emissions and available capital underscores the need for new solutions to promote environmental sustainability. Fintech can provide solutions by helping direct capital to environmental projects.

Climate change is what happens to the Earth; it constitutes long terms shift in temperature and weather due to human activity, primarily from the emissions of greenhouse gases. Fintech is “the four pillars of Digital ID, Interoperable Payments, Digital Assets, and Data needed to achieve the United Nations Sustainable Development Goals (SDG)” (Arner *et al.*, 2020). Green Fintech refers to “the intersection of digital technology, finance and sustainable development” (Puschmann *et al.*, 2020). Despite recent economic challenges, this sector is ripe for growth. Green Fintech has not only maintained strong levels relative to other sectors, but funding has continued to be invested in developing new digital technologies that address environmental concerns (UOB & PwC, 2023/2024).

Fintech and environmental sustainability are closely interconnected and mutually affect one another in a variety of ways. Arner *et al.* (2020) defined fintech as a lubricant for green financing through facilitating the movement of money into sustainable projects. Digital platforms, blockchain technology, and data analytics all play a part in

how this facilitation occurs. Nevertheless, research gaps at the intersection of fintech and environmental sustainability remain. For example, Zhe *et al.* (2024) indicate a critical research gap in evidence on how fintech assists developing regions in reducing resource consumption. According to Deng *et al.* (2023), while peer-to-peer lending has been studied, the network effects of green fintech innovations have not been explored enough; therefore, additional studies are warranted. Banna *et al.* (2021) stated that additional bibliometric clarity is needed to understand how fintech benefits vulnerable populations affected by climate change. In addition, Kwong *et al.* (2023) called for future research directions that use bibliometric analysis to connect green finance to fintech applications. Finally, Feng and Li (2024) contended that while fintech reduces CO2 emissions, research has yet to examine the relationships among sub-regions within the digital infrastructure development continuum.

Recently, the volume of academic literature on Fintech has exploded due to the growing significance of Fintech in addressing global problems. Academic research and publications analysing different areas of Fintech have demonstrated increasing interest among academics and policymakers, and that Fintech is being embraced as a key mechanism for delivering economic and environmental change. Despite the increase in research on Fintech, the understanding of how Fintech specifically supports environmental sustainability and the transition toward net-zero emissions remains limited. There is a larger knowledge gap when reviewing developing economies, where both digital infrastructure and environmental sustainability challenges are most prevalent.

¹ John Nash Research Program, Mumbai, India

* Corresponding author's e-mail: tarungan00@gmail.com

In this article, we describe how we used bibliometric and network analysis methods to analyse the literature on the emergence of financial technology (Fintech) and environmental sustainability. Unlike traditional review methods, bibliometric and network analyses provide a comprehensive picture of knowledge areas, research networks, and emerging trends by analysing large volumes of academic publications. This approach helps identify patterns, collaborations, and gaps that are not easily visible through conventional review methods. The findings of this analysis will provide a more comprehensive understanding of the relevant knowledge domains, research networks, and emerging trends than can typically be obtained from a traditional systematic review. In addition, these findings will offer a resource for identifying ways in which policymakers and businesses can leverage Fintech in the transition to net-zero emissions. The rest of this paper is organized as follows: Section 2 presents the literature review, examining key studies on fintech and environmental sustainability. Section 3 describes the research methodology, including the bibliometric and network analysis techniques used. Section 4 presents the results and findings from the analysis. Section 5 discusses the implications of these findings. Finally, Section 6 presents conclusions and identifies the study's limitations.

LITERATURE REVIEW

In recent years, there has been a rise in research on the relationship between fintech and (environmental) sustainability in areas with rapidly growing digital technology and significant environmental issues. This review examines key studies describing different facets of the relationship between fintech and (environmental) sustainability. Seth (2025) examined the use of blockchain technology to achieve environmental and community objectives, particularly through the adoption of renewable energy sources. Blockchain technology has the potential to improve the transparency and traceability of information, helping address at least one of the informational barriers preventing MSMEs from accessing financing for renewable energy projects. The creation of permanent records of energy consumption and environmental impact on these digital platforms makes it easier for smaller businesses to demonstrate to their investors or lenders their efforts towards sustainability. This research is especially relevant to our project because it demonstrates the application of blockchain technology as an accessibility tool for environmental finance within developing countries. It, therefore, addresses both financial inclusion and sustainability objectives simultaneously.

Noreen (2024) conducted research on how fintech programs link to SDG 13 (Climate Action) targets set out in a country's development plan. The findings of this research demonstrate various approaches to ensure that development strategies can incorporate fintech solutions in working towards achieving climate change objectives. To achieve this purpose, Noreen created a matching system that links digital financial innovations to distinct

climate change milestones. This matching system provides a framework that other countries can use to reach net-zero targets. The significance of Noreen's research is that it clearly highlights that fintech is more than merely a technological application; it is also a mechanism for facilitating the implementation of national climate policies. Planning and coordinating the creation of digital infrastructure with the implementation of environmental policy is necessary to achieve this objective.

According to Fatoki and Awinja (2021), the adoption of digital financial services by small and medium-sized enterprises (SMEs) has had a positive effect on working capital efficiency and on reducing carbon emissions. They found that, through the use of digital payment systems and automated financial management tools, SMEs reduced their operational emissions by 23%-31% compared to those using traditional payment processing methods. This reduction is attributed to printing less paper, improved logistics through real-time tracking of financial transactions, and better inventory management, resulting in less waste. Zhang *et al.* (2022) used the Ecological Footprint (EF) to investigate how digital finance maturity results in economic "dematerialization." Their longitudinal analysis indicates that geographic areas with higher adoption rates of digital finance are associated with a more rapid decoupling of economic growth from resource consumption. Furthermore, their study indicates that fintech is changing how societies produce goods and services by transitioning away from resource-heavy manufacturing toward more service-oriented, knowledge-based work. The implications of this study are particularly pronounced for countries transitioning from industrialised economies to post-industrialised economies.

According to research conducted by Li *et al.* (2023), the impact of high levels of FinTech use can mitigate the effects of "Dutch Disease" during green transitions, which is an economic disorder where countries become unbalanced economically by having resource wealth in the form of natural resource rent and are unable to diversify and develop sustainably. They demonstrate that countries with highly developed FinTech systems can channel their resource rent investment into green innovation and sustainable industries at a much greater capacity than countries still relying on traditional banking systems. This research deepens our understanding of FinTech's influence on both direct environmental impacts and infrastructure improvements in creating a long-term, sustainable economy. Udeagha and Ngpah (2023) found evidence of a "U-shaped relationship" between FinTech innovation and environmental quality in trade-open economies. They analyzed the relationship using statistical data and concluded that early stages of FinTech adoption are likely to add to environmental degradation due to increased infrastructure development and increased consumer spending as a result of greater access to credit. However, after reaching a certain level of maturity, FinTech innovations have a positive impact on environmental quality through improved efficiency, green investment, and

better infrastructure tracking.

In a study by Mahmood *et al.* (2024), bibliometric analysis demonstrates that digital literacy is the greatest barrier to achieving “Net-Zero” in specific geographical areas. Technology solutions, such as fintech platforms, are not being fully utilized due to a lack of digital skills among potential users. The implications of this finding for the current study are that the environmental potential of fintech can only be realized through proper digital education and training. Thus, the study shifts emphasis from whether technology is available to whether individuals can access and utilize it. Therefore, human capital development is fundamental for fintech’s ability to contribute to sustainability. Tayyab *et al.* (2023) explore InsurTech in the context of climate-resilient strategies. They examined how parametric insurance platforms can help farmers manage flood risk by analysing real-time data. Unlike conventional insurance, which requires a long claims submission process and then payment, parametric InsurTech makes payments based on predefined environmental conditions (e.g., when it rains more than a certain amount or a flood reaches a particular depth).

Taken together, these studies demonstrate that fintech makes multiple contributions to achieving environmental sustainability. These benefits include: Increasing the access and availability of green finance; aligning with national climate policies; enhancing operational efficiency; promoting economic dematerialization; eliminating the resource curse problem; demonstrating non-linear relationships between fintech innovation and environmental quality; addressing digital literacy barriers; and improving climate adaptation. At the same time, these studies show that there is a need for comprehensive mapping of these contributions, using both systematic bibliometric and network analyses. This is the specific gap that this study fills.

While the studies reviewed offer significant information on various aspects of Fintech and environmental sustainability, they typically represent distinct research endeavours focused on specific areas or locations. Therefore, the broader intellectual structure of this research domain remains unknown. The overall scope of the literature has not yet been systematically mapped to provide insight into the dominant topics, key authors, co-authorship patterns, and emerging themes across the entire domain. A conventional literature review can examine only a limited number of articles and cannot capture the complexity of interconnections between the different ways that knowledge is produced and the evolution of topics within this expanding domain. Thus, there is an urgent research gap: a systematic, empirical overview of the research landscape on Fintech and environmental sustainability. The use of bibliometric and network analysis techniques to fill this void has been specifically developed to facilitate the study of large volumes of literature and elucidate interconnections that are not typically observed with traditional review methodology. Therefore, the implementation of bibliometric and network analyses is a critical step toward gaining a broader view of the

current state of the literature and exploring future research directions in this domain.

MATERIALS AND METHODS

This study uses a bibliometric and network analysis methodology to examine existing research on fintech-driven innovations that support environmental sustainability and the transition to net-zero. Bibliometric analysis enables a systematic, quantitative review of a large body of academic literature, allowing identification of publication trends, frequently cited authors and journals, and emerging themes within the research field. Bibliometric methods are commonly used in sustainability and innovation research because they help map the development of knowledge within rapidly changing fields (Donthu *et al.*, 2021). When bibliometrics are combined with science mapping techniques, they enable visualisation of conceptual links, key research clusters, and patterns of collaboration across disciplines (Aria and Cuccurullo, 2020). In addition, network-based bibliometric tools are useful for identifying structural connections and less visible patterns within complex bodies of literature (van Eck and Waltman). Since fintech and environmental sustainability are both highly interdisciplinary areas, this approach is appropriate for addressing the objectives of the present study.

Bibliometric and network analyses were chosen for this study because they provide a structured overview of a growing, interdisciplinary body of literature (Donthu *et al.*, 2021). Instead of only summarising individual studies, this method helps in understanding how research has developed over time and how different topics and authors are connected. When combined with science mapping techniques, bibliometric analysis can visually show relationships between key concepts and research clusters (Aria & Cuccurullo, 2017). Network-based tools are also helpful for identifying collaboration patterns and less-obvious connections within large collections of publications (van Eck & Waltman, 2010). Since fintech and environmental sustainability involve both technological and economic aspects, this approach is suitable for meeting the aims of the present study.

Most existing research on fintech focuses on financial inclusion, digital payment systems, and technological efficiency, while its role in environmental sustainability and climate-related issues has received less attention (Gomber *et al.*, 2018). Although some recent studies examine the potential of green fintech to support sustainable development, the literature remains fragmented and does not provide a clear overall picture (Chen *et al.*, 2022). Using bibliometric and network analysis, this study addresses the gap by offering a more organised view of how digital financial innovations are linked to environmental sustainability and the transition towards net-zero (Donthu *et al.*, 2021).

The Scopus database was chosen as the main data source for this research. Scopus is one of the largest abstract and citation databases of peer-reviewed literature, providing wide coverage across fields such as business, economics,

technology, and sustainability. It also offers detailed metadata, reliable citation tracking, and strong compatibility with bibliometric analysis software, making it suitable for large-scale bibliometric and network analyses. Although other databases were considered, Scopus was ultimately selected because of its broader interdisciplinary coverage, which aligns well with the focus of this study.

A systematic search strategy was applied in the Scopus database to ensure consistency and relevance in study selection. The following search string was used to retrieve the literature: (TITLE-ABS-KEY (“fintech” OR “Financial Technology” OR “Green Fintech”) AND TITLE-ABS-KEY (“Sustainability” OR “Sustainable Development” OR “Environmental Quality” OR “Climate Change” OR “Environmental Sustainability” OR “Sustainable Development Goals” OR “Green Economy” OR “Carbon Emissions”)) AND (LIMIT-TO (SUBJAREA , “ECON”) OR LIMIT-TO (SUBJAREA , “BUSI”)) AND (LIMIT-TO (DOCTYPE , “ar”)) AND (LIMIT-TO (PUBSTAGE , “final”)). This search strategy was designed to capture peer-reviewed journal articles that directly examine the relationship between fintech and environmental sustainability, specifically within economics and business-related research areas. By limiting the results to final-stage journal articles, the search ensured that only completed and academically validated studies were included in the analysis.

The article selection process was carried out collaboratively by the research team. After the initial set of records was retrieved, titles and abstracts were reviewed for relevance to the study, and any duplicate entries were removed. Using the predefined inclusion and exclusion criteria, the dataset was narrowed to a final sample of 322 documents, which were then used for the bibliometric and network analyses. The final dataset was analysed using a combination of performance analysis and science mapping techniques. Performance analysis was used to examine trends in publications over time, identify leading authors and journals, assess citation impact, and understand country-level contributions to the research. Science mapping was then applied to explore the intellectual structure of the field through keyword co-occurrence and co-authorship networks, thereby identifying major research themes and patterns of collaboration.

The bibliometric analysis was conducted using Bibliometrix (R) and VOSviewer. Bibliometrix was mainly used for preparing and analysing the data, while VOSviewer was used to create and visualise bibliometric networks, as it is effective for mapping and clustering large datasets (Aria & Cuccurullo, 2017). The upcoming section presents the findings of the bibliometric and network analyses and discusses the main trends and patterns observed in the selected body of literature.

RESULTS AND DISCUSSION

The bibliometric analysis was carried out using Bibliometrix in R and VOSviewer. Bibliometrix was mainly used for data preprocessing and performance analysis, while VOSviewer

was used to construct and visualise bibliometric networks, as it is well suited for mapping and clustering large datasets (Aria and Cuccurullo). The findings reveal a maturing research domain with a 12.98% annual growth rate, moving from theoretical discussion toward applied environmental and sustainability analysis. China leads global collaboration, while fintech serves as the central concept linking digital finance with ESG frameworks and broader sustainable development goals.

Table 1: Main Information about the data

Description	Results
Timespan	2017:2026
Sources	137
Documents	322
Annual Growth Rate %	12.98
Average citations per doc	21.1
Author's Keywords	964
Authors	966
Authors of single-authored docs	33
Co-Authors per Doc	3.42
International co-authorships %	45.96

Table 1 illustrates the annual distribution of publications from 2017 to 2026, highlighting a sustained upward trend in scholarly output. The pattern suggests increasing academic engagement with fintech and sustainability themes, with an average annual growth rate of approximately 12.98 per cent, indicating a progressively expanding and maturing research domain.

Figure 1 indicates that research activity in fintech and sustainability experienced a delayed but rapid expansion phase, particularly between 2022 and 2024. The sharp peak suggests a surge in scholarly attention, possibly driven by global interest in digital finance, ESG frameworks, and sustainable development. The subsequent decline may indicate normalization after a rapid growth phase or incomplete indexing of recent publications. Overall, the pattern reflects an emerging yet evolving research domain with episodic acceleration.

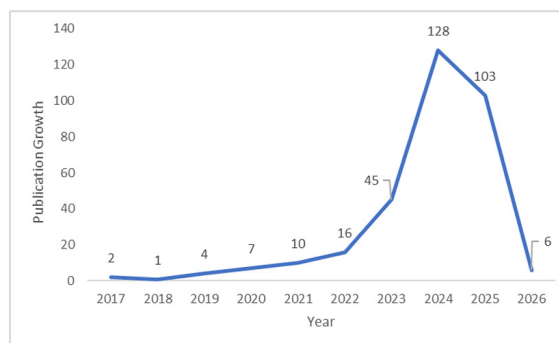


Figure 1: Publication Growth Trend

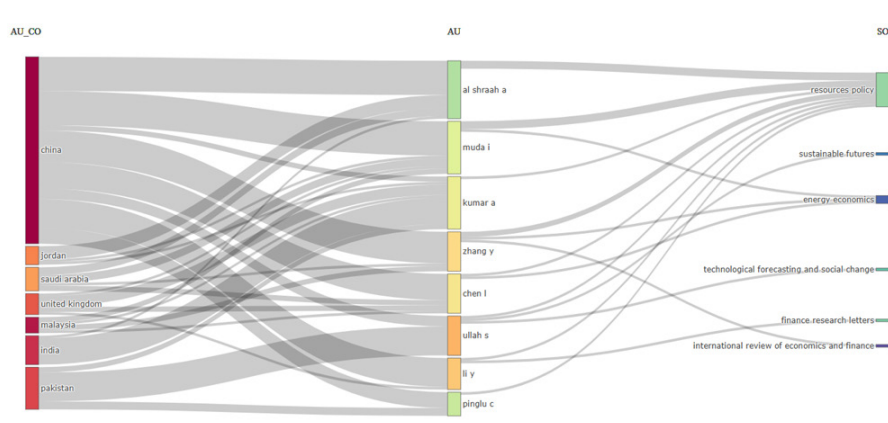


Figure 2: Three-Field Plot (Countries–Authors–Sources)Figure 2. Three-Field Plot (Countries–Authors–Sources)

Figure 2 highlights geographic concentration in research production, with China serving as the central contributor in fintech-sustainability literature. Key authors act as intellectual bridges connecting national output to high-impact journals, particularly Resources Policy. The structure suggests that the field is shaped by regionally clustered scholarship with identifiable core publication outlets, reflecting both specialization and knowledge concentration.

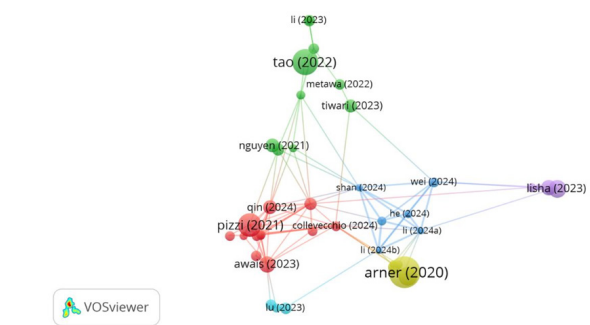


Figure 3: Author Collaboration Cluster

The clustering in Figure 3 reveals distinct research communities within the field, with a few central authors acting as collaboration hubs. Such a structure indicates moderate knowledge integration but also suggests fragmentation across thematic or geographic lines. The presence of bridging authors reflects growing interdisciplinary cooperation, which is typical of expanding research domains.

Figure 4 demonstrates that fintech functions as the conceptual core linking financial systems with sustainability and environmental research. The clustering indicates convergence between digital finance and the Sustainable Development Goals, suggesting a multidisciplinary research trajectory. The prominence of

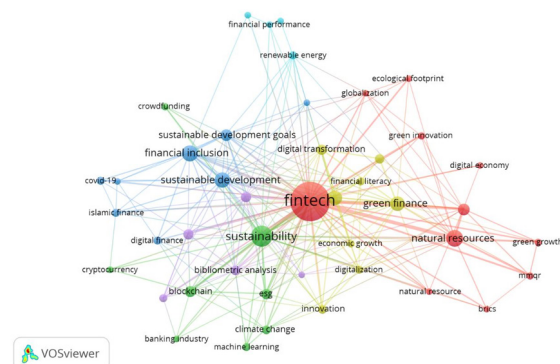


Figure 4: Author Keywords Cluster Network

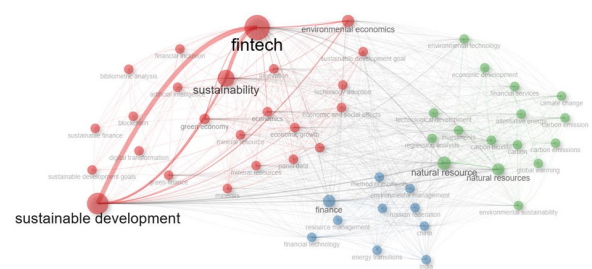


Figure 5: Keyword Co-occurrence Network

ESG, innovation, and green finance highlights the field's policy and developmental relevance.

Figure 5 of the network reveals that research is structured around the intersection of financial technology and sustainability economics. The strong linkage between fintech and sustainable development suggests that the field is shifting from theoretical exploration to applied analysis of environmental and economic impacts. The presence of multiple interconnected clusters indicates increasing thematic integration and maturity.

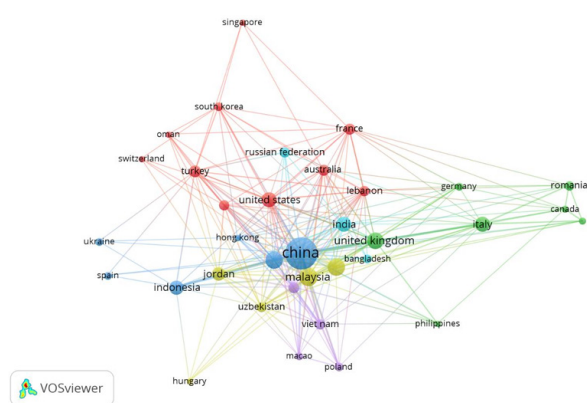


Figure 6: Country Collaboration Network

Figure 6 of the network indicates strong global collaboration with China as the primary research hub. The presence of multiple interconnected countries reflects internationalization of the research domain, though collaboration intensity varies. This suggests knowledge diffusion across regions and growing global academic engagement in fintech and sustainability studies.

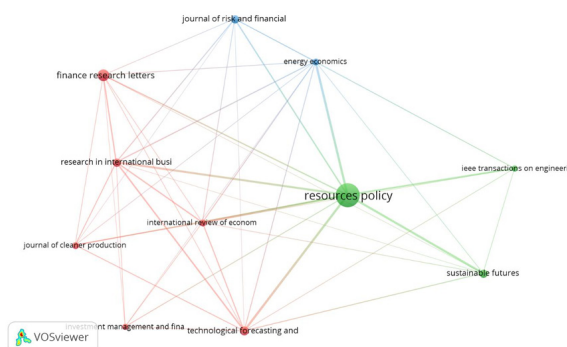


Figure 7: Sources Network

The dominance of Resources Policy in Figure 7 indicates that the field is strongly anchored in the resource economics and sustainability literature. The interconnected journal structure suggests cross-disciplinary publication patterns, reflecting integration between finance, environmental economics, and technological research streams.

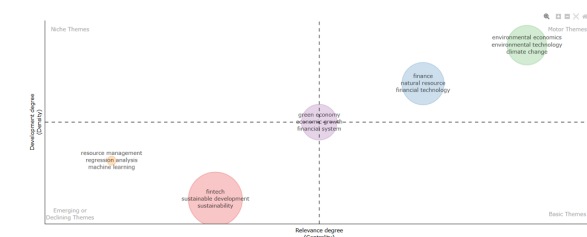


Figure 8: Thematic Mapping Analysis

The figure 8 mapping shows that environmental economics and climate change are well-developed driving themes, while fintech and financial systems form the foundational structure of the field. The fintech-sustainability cluster appears in the emerging quadrant, suggesting it is still evolving but gaining strategic relevance. This confirms the research domain's transitional nature.



Figure 9: Keywords Word Cloud

Figure 9: Prominence of fintech and sustainability confirms their role as the conceptual core of the research field. The presence of terms such as financial inclusion, climate change, and environmental economics indicates strong alignment with global development and ESG agendas. The distribution suggests a multidisciplinary and policy-relevant research direction.

5. Discussion and Implications of the Findings:

This study provides a clear, structured overview of fintech–sustainability research. It shows that the field has grown steadily, with an average annual growth rate of 12.98 per cent. There was a sharp rise in publications between 2022 and 2024, which shows strong academic interest during this period. After this peak, the trend shows signs of stabilization, which suggests that the field is becoming more established rather than declining. The study also maps the global research structure. China is identified as the leading contributor and the main hub for international collaboration. The country collaboration network shows that many countries are connected, which reflects increasing global participation in this research area. The analysis identifies *Resources Policy* as a key journal in this field. This shows that fintech–sustainability research is strongly linked to resource economics and environmental studies.

The author collaboration clusters show that research is organized into groups, with some key authors connecting different teams and countries. This indicates moderate integration, although some separation between research communities still exists. The keyword and co-occurrence networks show that fintech is the central theme of the field. It connects financial systems with sustainability, ESG, green finance, innovation, climate change, and environmental economics. The presence of several connected keyword clusters shows that the field is becoming more integrated and structured over time.

The findings show a clear change in research focus. Earlier studies were mainly theoretical, but recent

research focuses more on applied environmental and economic impact analysis. This means researchers are now studying how digital finance can produce measurable sustainability outcomes. The thematic mapping places fintech–sustainability in the emerging quadrant. This means the field is still developing but gaining strong strategic importance. Environmental economics and climate change are well-developed themes, while fintech serves as the main link between finance and sustainability research.

The strong presence of terms such as financial inclusion, climate change, and ESG shows that the field is closely aligned with global development goals. Fintech is now viewed as an important tool for supporting sustainability and climate resilience. Overall, the study shows that fintech–sustainability research is growing, becoming more connected across countries, more interdisciplinary, and more relevant for policy and sustainable development.

CONCLUSIONS

This study used bibliometric and network analyses to review research on fintech and environmental sustainability, drawing on 322 journal articles. The results show that this field has expanded in recent years and mainly focuses on topics such as green finance, climate change, ESG, and digital innovation. Overall, the findings indicate that fintech is increasingly being discussed as a way to support environmental sustainability and guide financial activities toward greener practices. Despite these findings, the study has several limitations. First, only articles from the Scopus database were included, so relevant studies from other academic databases were not analysed. Second, the study considered only English-language journal articles, potentially excluding important research published in other languages. Third, bibliometric analysis focuses on publication trends and connections between studies, rather than directly measuring the real-world impact of fintech on environmental outcomes. Future research could include data from multiple databases and use qualitative or case-based methods to better understand how fintech solutions work in practice. This would provide a more detailed view of how digital financial innovations can contribute to environmental sustainability and the net-zero transition.

REFERENCES

- Arner, D. W., Buckley, R. P., Zetzsche, D. A., & Veidt, R. (2020). Sustainability, FinTech and financial inclusion. *European Business Organization Law Review*, 21(1), 7–35.
- Asian Development Bank. (2024). Asia-Pacific climate finance report 2024: Bridging the gap for 2030 targets. ADB Publishing.
- Banna, H., Hassan, M. K., & Rashid, M. (2021). FinTech and financial inclusion in emerging markets: A bibliometric analysis and future research agenda. *International Journal of Emerging Markets*.
- Deng, S., Zhao, H., & Zhang, X. (2023). Fintech development and green innovation: Evidence from China. *Energy Policy*, 183, 113827.
- Fatoki, O., & Awinja, N. N. (2021). Effect of digital financial services on the growth of SMEs in Kenya. *African Journal of Empirical Research*, 2(1), 79–94.
- Feng, H., & Li, Y. (2024). The role of fintech, natural resources, environmental taxes and urbanization on environmental sustainability: Evidence from the novel panel data approaches. *Resources Policy*, 92, 104915.
- Kwong, R., Kwok, M. L. J., & Wong, H. S. M. (2023). Green FinTech innovation as a future research direction: A bibliometric analysis on green finance and FinTech. *Sustainability*, 15(20), 14683.
- Li, P., Liu, T., Li, J., Ling, F. K., & Li, Z. (2023). Exploring the impact of fintech, natural resources, energy consumption, and international trade on economic growth in China: A dynamic ARDL approach. *Resources Policy*, 98, 105120.
- Mahmood, H., Furqan, M., & Bagais, M. A. (2024). Enablers of net-zero transition: A holistic model of energy policy, innovation and infrastructure. Cambridge Prisms: *Energy Transitions*, 2, e5.
- Noreen, U. (2024). Mapping of FinTech ecosystem to Sustainable Development Goals (SDGs): Saudi Arabia's landscape. *Sustainability*, 16(2), 854.
- Puschmann, T., Hoffmann, C. H., & Khmarskyi, V. (2020). How Green FinTech can alleviate the impact of climate change. *Sustainability*, 12(24), 10691.
- Seth, H. (2025). Modelling for working capital efficiency: Integrating SBM-DEA and artificial neural networks in Indian manufacturing. *Journal of Modelling in Management*. (Formerly cited as Himanshu, 2025).
- Tayyab, M., et al. (2023). Parametric InsurTech and climate adaptation in SE Asian agriculture. *Journal of Risk and Financial Management*.
- Udeagha, M. C., & Ngepah, N. (2023). The asymmetric effect of fintech innovation on environmental quality: Evidence from BRICS economies. *World Development Sustainability*, 2, 100063.
- UOB & PwC. (2023/2024). FinTech in ASEAN: Seeding the Green Transition. Joint Report by United Overseas Bank and PwC Singapore.
- Zhang, T., Wang, Y., & Wang, Y. (2022). Digital financial development and ecological footprint: Evidence from green-biased technology innovation and environmental inclusion. *Journal of Cleaner Production*, 380, 135069.
- Zhe, L., et al. (2024). Regional variations in Fintech effectiveness for resource conservation in developing provinces. *Environmental Science and Pollution Research*.
- Aria, Massimo, and Corrado Cuccurullo. “Bibliometrix: An R-tool for Comprehensive Science Mapping Analysis.” *Journal of Informetrics*, vol. 11, no. 4, 2017, pp. 959–975.
- Chen, Shuai, et al. “Digital Finance and Environmental Sustainability: A Review of Emerging Research.” *Sustainable Development*, vol. 30, no. 5, 2022, pp. 1231–1246.

- Donthu, Naveen, *et al.* “How to Conduct a Bibliometric Analysis: An Overview and Guidelines.” *Journal of Business Research*, vol. 133, 2021, pp. 285–296.
- Gomber, Peter, *et al.* “On the Fintech Revolution: Interpreting the Forces of Innovation, Disruption, and Transformation in Financial Services.” *Journal of Management Information Systems*, vol. 35, no. 1, 2018, pp. 220–265.
- van Eck, Nees Jan, and Ludo Waltman. “Software Survey: VOSviewer, a Computer Program for Bibliometric Mapping.” *Scientometrics*, vol. 84, no. 2, 2010, pp. 523–538.