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MAPPING FINANCIAL TECHNOLOGY AND ECONOMIC SUSTAINABILITY RESEARCH IN EMERGING ECONOMIES

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Abstract

This study aims to map and analyze the development of research on financial technology and economic sustainability in emerging economies using a bibliometric analysis approach. Bibliographic data were collected from the Scopus database covering publications from 2018 to 2025. A total of 101 documents were analyzed using Microsoft Excel, VOSviewer, and Harzing's Publish or Perish to identify publication trends, dominant research themes, country contributions, and citation structures. The findings indicate that research on fintech and economic sustainability has experienced significant growth, particularly after 2023, reflecting increasing academic interest in digital financial transformation and sustainable development. The keyword co-occurrence analysis reveals that the dominant research themes include fintech, sustainability, financial inclusion, green finance, environmental sustainability, and digital innovation. Country analysis shows that China and India are the leading contributors to this research area, while citation analysis demonstrates that sustainability-oriented fintech studies, particularly those related to green finance and ESG practices, have become the most influential topics in recent literature. This study contributes to the existing literature by providing a comprehensive bibliometric mapping of fintech and sustainability research in emerging economies and offers useful insights for researchers, policymakers, and financial practitioners regarding future research directions and sustainable digital financial development.

Keywords: fintech; economic sustainability; emerging economies; bibliometric analysis; green finance

INTRODUCTION

Financial technology (fintech) has significantly transformed the global financial system through the development of digital financial services such as mobile banking, blockchain technology, digital payments, artificial intelligence, and online financial platforms (Puschmann, 2017; Buckley et al., 2019). The rapid growth of fintech has created new opportunities for improving financial accessibility, operational efficiency, and economic inclusion across both developed and developing countries. In emerging economies, fintech plays an important role in addressing structural economic challenges, expanding financial access to underserved communities, and supporting economic resilience through digital transformation. Simultaneously, global concern regarding economic sustainability has continued to increase due to issues related to environmental degradation, social inequality, and sustainable economic growth.

The relationship between fintech and economic sustainability has therefore become an increasingly important topic in academic and practical discussions. Fintech innovation is widely viewed as a strategic instrument for supporting sustainable economic development through financial inclusion, green finance, ESG implementation, and environmentally responsible financial practices (Puschmann et al., 2020; Zournatzidou, 2025). Emerging economies represent an important context for fintech development because these countries experience rapid digital

adoption, increasing internet penetration, and strong government support for digital economic ecosystems. As a result, research related to fintech and sustainability has expanded rapidly across multiple disciplines, including economics, finance, management, sustainability studies, and digital innovation. Previous studies have mainly focused on specific issues such as green finance, digital financial inclusion, ESG practices, or fintech adoption within particular countries or industries (Dar et al., 2024; Bagarti, 2025).

Despite the increasing number of studies on fintech and sustainability, the existing literature remains fragmented and diverse. Previous studies have mainly focused on specific issues such as green finance, digital financial inclusion, ESG practices, or fintech adoption within particular countries or industries. However, limited studies have comprehensively mapped the overall development of research trends, thematic structures, influential contributions, and conceptual relationships within the field of fintech and economic sustainability, particularly in emerging and developing economies. In addition, the acceleration of digital transformation following the post-pandemic era has further increased academic interest in fintech-related sustainability research, highlighting the need for a systematic and comprehensive research mapping.

Therefore, this study aims to map and analyze the development of research on financial technology and economic sustainability in emerging economies using a bibliometric analysis approach. The scope of this study is limited to English-language publications indexed in the Scopus database between 2018 and 2025. Bibliometric techniques were employed to identify publication trends, dominant research themes, influential countries, and highly cited publications related to fintech and sustainability research. Several analytical tools, including VOSviewer, Microsoft Excel, and Harzing's Publish or Perish, were utilized to visualize bibliometric networks and analyze citation structures.

The novelty of this study lies in its comprehensive bibliometric mapping of financial technology and economic sustainability research specifically within emerging economies. Unlike previous studies that focused only on particular dimensions of fintech or sustainability, this study integrates publication trends, keyword co-occurrence analysis, country contributions, and citation analysis to provide a broader understanding of the evolving research landscape. This study also contributes theoretically by enriching the literature on fintech and sustainability through a systematic mapping of dominant themes and emerging research directions.

Practically, the findings of this study provide useful insights for policymakers, financial institutions, and technology developers regarding the growing role of fintech in supporting sustainable economic development and financial inclusion. The findings may also assist stakeholders in identifying future research opportunities and developing sustainable digital financial strategies in emerging economies. Therefore, this study is expected to serve as a valuable reference for future academic research and policy formulation related to fintech, sustainability, and digital economic transformation.

LITERATURE REVIEW AND HYPOTHESIS

Financial Technology and Economic Sustainability

Financial technology (fintech) refers to the application of digital technologies to improve financial services, transactions, and financial accessibility (Puschmann, 2017). The rapid development of fintech has transformed traditional financial systems through innovations such as digital payment systems, mobile banking, blockchain technology, peer-to-peer lending, artificial intelligence, and digital financial platforms (Buckley et al., 2019). Fintech has become an important driver of economic transformation because it enables financial services to become more efficient, accessible, and inclusive, particularly in developing and emerging economies.

In recent years, fintech has increasingly been associated with economic sustainability and sustainable development agendas. Economic sustainability emphasizes long-term economic

growth that balances financial development, social welfare, and environmental responsibility. Fintech contributes to economic sustainability through several mechanisms, including expanding financial inclusion, supporting green finance initiatives, increasing operational efficiency, and facilitating digital economic ecosystems (Puschmann et al., 2020; Zournatzidou, 2025). Previous studies have argued that fintech innovation can support sustainable economic growth by reducing financial barriers, improving financial accessibility for underserved communities, and encouraging environmentally responsible financial practices (Dar et al., 2024).

Furthermore, the growing integration between fintech and sustainability has attracted increasing academic attention due to the emergence of green finance, ESG implementation, and sustainable digital finance initiatives. Fintech is now widely viewed not only as a technological innovation but also as a strategic instrument for supporting sustainable development goals (SDGs), environmental sustainability, and economic resilience (Zournatzidou, 2025). Consequently, research on fintech and sustainability has expanded rapidly across multiple disciplines, including economics, finance, management, sustainability studies, and digital innovation.

Fintech Development in Emerging Economies

Emerging economies have become important centers for fintech development due to rapid digital transformation, increasing internet penetration, and expanding smartphone usage (Buckley et al., 2019). Many developing countries have experienced significant growth in digital financial services, particularly in mobile payments, online banking, digital lending, and financial inclusion programs. Governments and financial institutions in emerging economies have also increasingly promoted digital financial ecosystems as part of national economic development strategies (Dar et al., 2024).

The role of fintech in emerging economies is particularly important because many developing countries still face challenges related to financial exclusion, limited banking infrastructure, and unequal access to financial services. Fintech innovation helps overcome these barriers by providing accessible and technology-based financial solutions for individuals and small businesses. As a result, fintech is considered capable of improving economic participation, reducing inequality, and supporting inclusive economic growth (Puschmann, 2017; Buckley et al., 2019).

In addition, sustainability-related financial initiatives have become increasingly important within emerging markets. Green finance, sustainable investment, ESG practices, and environmentally responsible financial systems are now receiving substantial attention from policymakers and researchers (Zournatzidou, 2025). Emerging economies are expected to play a crucial role in achieving global sustainability goals because these countries are simultaneously experiencing rapid economic growth and environmental challenges. Therefore, the integration between fintech and sustainability has become an increasingly relevant research area in the context of developing economies (Dar et al., 2024).

Previous Studies and Research Gap

Previous studies on fintech and sustainability have mainly focused on specific dimensions such as financial inclusion, green finance, ESG implementation, digital banking, and fintech adoption. Several studies have examined the role of fintech in improving financial accessibility and supporting economic resilience in developing countries (Puschmann et al., 2020; Dar et al., 2024). Other studies have highlighted the contribution of fintech toward green finance initiatives, sustainable investment practices, and environmentally responsible financial systems (Zournatzidou, 2025).

Despite the growing body of literature, existing studies remain fragmented and concentrated on specific issues or individual country contexts. Most previous studies employed empirical or conceptual approaches focusing on limited aspects of fintech and sustainability relationships. Furthermore, although research on fintech has increased substantially in recent years, limited studies have comprehensively mapped the development of research trends,

thematic structures, influential contributions, and conceptual relationships within the field of fintech and economic sustainability, particularly in emerging economies (Bagarti, 2025).

In addition, previous bibliometric studies generally focused on green finance or sustainable investment literature without specifically examining the integration between fintech and economic sustainability within emerging market contexts. The rapid acceleration of digital transformation following the post-pandemic era has also significantly expanded fintech-related sustainability discussions, creating the need for a more comprehensive and updated bibliometric mapping. Therefore, this study seeks to fill the existing research gap by providing a comprehensive bibliometric analysis of financial technology and economic sustainability research in emerging economies between 2018 and 2025.

RESEARCH METHODS

This study employed a quantitative bibliometric analysis approach to examine the development of research on financial technology and economic sustainability in emerging markets. Bibliometric analysis was used to identify publication trends, influential authors, research themes, collaboration networks, and citation structures related to the selected topic.

The bibliographic data were retrieved from the Scopus database on 6 May 2026. Scopus was selected because it is recognized as one of the most comprehensive and reliable databases for bibliometric and scientific mapping studies. The population of this study consisted of publications related to financial technology and economic sustainability indexed in the Scopus database. The sample included publications published between 2018 and 2025 and written in English. A total of 101 documents were identified and included in the bibliometric analysis.

The data collection process was conducted using the search fields of article title, abstract, and keywords. The search query applied in this study followed the search strategy presented in Figure 1. The retrieved records were screened to ensure their relevance before the final bibliometric analysis was conducted. The dataset consisted of various document types, including articles, book chapters, reviews, conference papers, books, conference reviews, and editorials.

Several analytical tools were employed in this study. Microsoft Excel was used to compute publication frequencies and generate descriptive charts. VOSviewer software was utilized to visualize bibliometric networks, including co-authorship, co-occurrence of keywords, citation analysis, and bibliographic coupling. In addition, Harzing's Publish or Perish software was used to calculate citation metrics such as total citations, citations per paper, h-index, and g-index.

The data analysis technique consisted of descriptive bibliometric analysis and network visualization analysis. The analysis focused on publication trends, productive authors, influential institutions, country contributions, highly cited publications, and thematic developments related to financial technology and economic sustainability in emerging and developing economies.

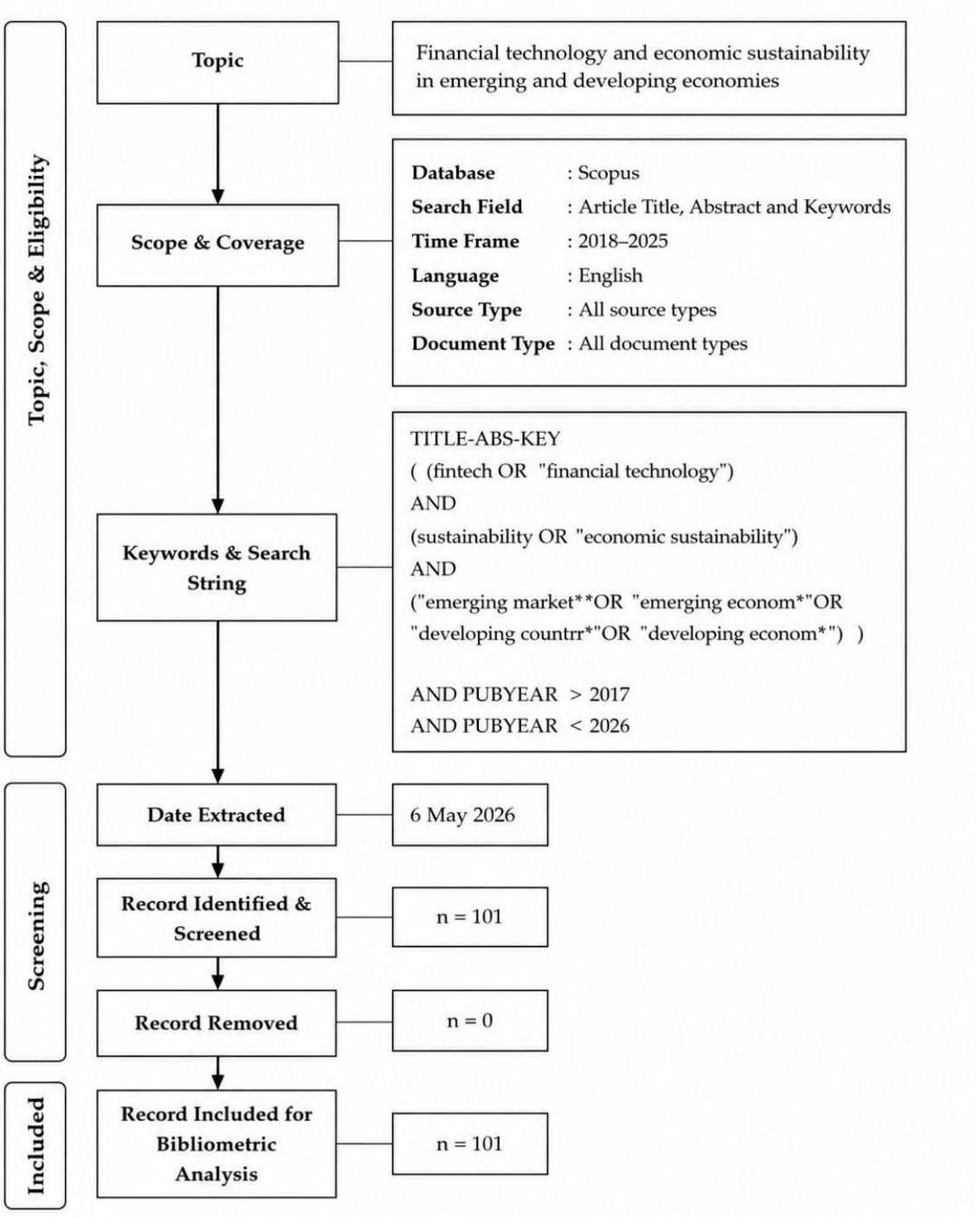

Figure 1: Flow Diagram of The Search Strategy (Source: Zakaria, 2020)

RESULTS AND DISCUSSION

Publication Trends

Table 1. Annual Publication Trends (2018–2025)

Year	Publications
2018	1
2019	1
2020	1
2021	4
2022	10
2023	7
2024	20
2025	57

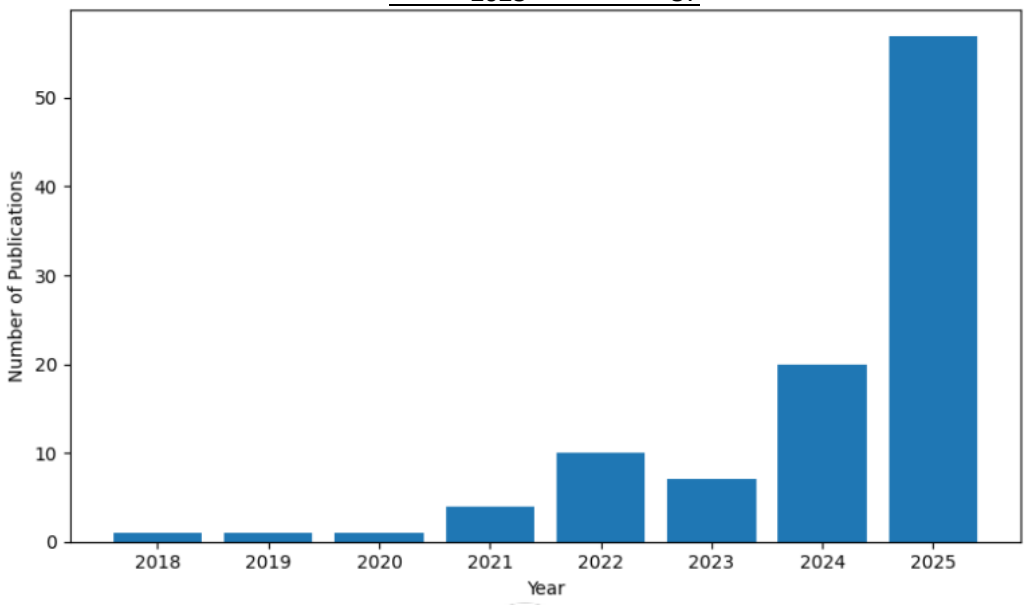

Figure 2. Publication Growth on Financial Technology and Economic Sustainability Research

Table 1 and Figure 2 present the annual publication trends related to financial technology and economic sustainability in emerging and developing economies from 2018 to 2025. The findings show that the number of publications increased over time. During the early years, namely from 2018 to 2020, only one publication was recorded annually. The publication output then increased gradually in 2021 and 2022, with four and ten publications, respectively. A slight decline occurred in 2023 with seven publications, followed by a significant increase in 2024 and 2025, reaching 20 and 57 publications, respectively.

The increasing publication trend indicates growing academic interest in the role of financial technology in supporting economic sustainability in emerging economies. This trend may reflect the rapid development of digital financial services, financial inclusion initiatives, and sustainable finance practices across developing countries (Dar et al., 2024). The substantial increase after 2023 also suggests that fintech has become an increasingly important research topic following the acceleration of digital transformation and post-pandemic economic recovery.

These findings are consistent with previous studies that highlight fintech as a strategic instrument for improving financial access, economic resilience, and sustainable development (Puschmann, 2017; Buckley et al., 2019). The growing number of publications further demonstrates that the integration of financial technology and sustainability has evolved into an important interdisciplinary research area involving economics, finance, business, and digital innovation.

Keyword Co-occurrence Analysis

Table 2. Most Frequent Keywords

Keyword	Occurrences
fintech	50
sustainability	14
financial inclusion	12
green finance	12
financial technology	11
environmental sustainability	10
digital transformation	9
artificial intelligence	8
ESG	7
blockchain	7

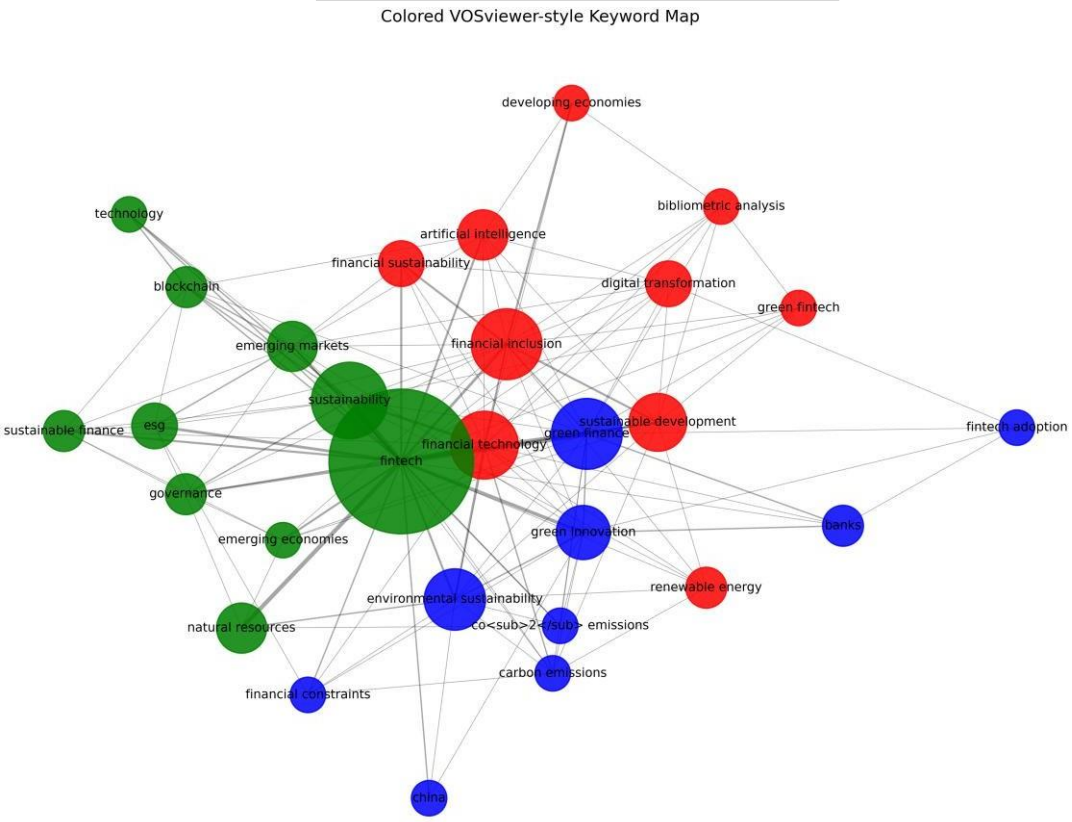

Figure 3. Keyword Co-occurrence Network Visualization

Table 2 and Figure 3 present the keyword co-occurrence analysis related to financial technology and economic sustainability research in emerging and developing economies. The keyword “fintech” appeared as the most dominant term with 50 occurrences, indicating that financial technology serves as the central theme within the research network. Other highly frequent keywords include “sustainability,” “financial inclusion,” “green finance,” and “financial technology,” reflecting the strong relationship between digital finance and sustainable economic development.

The network visualization further reveals several interconnected thematic clusters. The first cluster mainly focuses on sustainability-oriented financial ecosystems through keywords such as sustainability, ESG, blockchain, governance, and sustainable finance. The second cluster emphasizes financial inclusion and digital transformation, represented by keywords including

artificial intelligence, green fintech, and emerging economies. Meanwhile, the third cluster highlights environmental sustainability issues, including green finance, carbon emissions, renewable energy, and environmental sustainability.

The findings indicate that fintech research has evolved beyond conventional financial technology discussions and increasingly integrates sustainability and environmental perspectives. The dominance of keywords such as sustainability, green finance, and environmental sustainability suggests that scholars are paying greater attention to the role of fintech in supporting sustainable economic growth and green economic transformation (Zournatzidou, 2025).

In addition, the emergence of keywords related to financial inclusion and digital transformation reflects the growing importance of fintech in improving financial accessibility in emerging economies. This finding supports previous studies arguing that digital financial innovation can enhance economic resilience and reduce financial inequality in developing countries (Dar et al., 2024).

Furthermore, the appearance of environmental-related keywords such as carbon emissions and renewable energy demonstrates that fintech research is increasingly connected with sustainable development agendas and green finance initiatives (Puschmann et al., 2020). Therefore, the co-occurrence analysis confirms that financial technology has become a multidisciplinary research area involving finance, sustainability, digital innovation, and environmental economics.

Most Productive Countries

Table 3. Top Contributing Countries

Country	Documents
China	25
India	18
Pakistan	13
United Kingdom	9
Malaysia	8
Saudi Arabia	8
Jordan	6
Indonesia	5
United States	5
Bangladesh	4

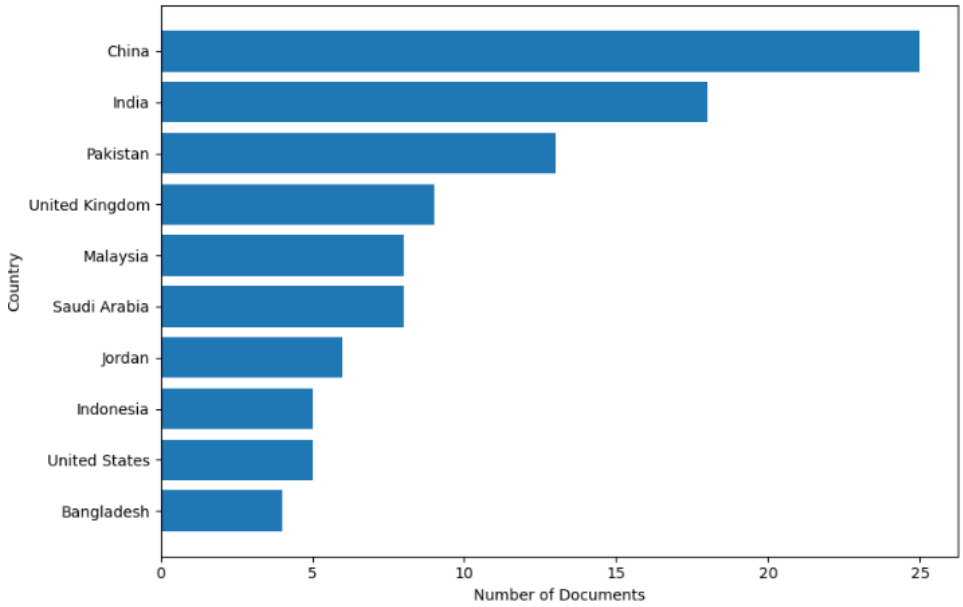

Figure 4. Documents by Country/Territory

Table 3 and Figure 4 present the distribution of publications by country related to financial technology and economic sustainability research. The findings show that China contributed the highest number of publications with 25 documents, followed by India with 18 publications and Pakistan with 13 publications. Several other countries, including the United Kingdom, Malaysia, Saudi Arabia, and Indonesia, also demonstrated significant contributions to the development of this research area.

The results indicate that research on fintech and economic sustainability is largely dominated by emerging Asian economies. This reflects the rapid growth of digital financial ecosystems and technology-based economic transformation occurring in these countries.

The dominance of China and India in publication output may be associated with the rapid expansion of financial technology adoption, digital payment systems, and government-driven digital economy initiatives in these countries (Buckley et al., 2019). As two of the largest emerging economies, both countries have experienced significant growth in fintech innovation, financial inclusion programs, and sustainable economic policies, which has attracted substantial academic attention.

The presence of countries such as Malaysia, Saudi Arabia, and Indonesia also highlights the growing importance of fintech research within developing and Islamic economic contexts. These countries have increasingly promoted digital financial inclusion and sustainable finance initiatives as part of their economic development strategies.

Overall, the findings demonstrate that fintech and economic sustainability research is strongly concentrated in emerging economies where digital transformation and sustainable development agendas are rapidly evolving. This also suggests that future research opportunities remain widely open for other developing regions that are still underrepresented in the existing literature.

Citation Analysis

Table 4. Most Cited Publications

No	Article Title	Citations
1	The effect of fintech adoption on green finance	144
2	Transforming agribusiness in developing countries	141
3	A Two-Staged SEM-Artificial Neural Network	125
4	Digital financial inclusion sustainability	90
5	Can Fintech Promote Sustainable Finance?	81

Table 4 presents the most cited publications related to financial technology and economic sustainability research. The article entitled *"The effect of Fintech adoption on green finance"* received the highest number of citations with 144 citations, followed by *"Transforming agribusiness in developing countries"* with 141 citations and *"A Two-Staged SEM-Artificial Neural Network"* with 125 citations.

The highly cited publications mainly focus on fintech adoption, sustainable finance, ESG practices, digital financial inclusion, and environmental sustainability. This indicates that the relationship between financial technology and sustainability has become one of the most influential and widely discussed themes in recent academic literature.

The citation analysis demonstrates that sustainability-oriented fintech research has attracted substantial scholarly attention in recent years. The dominance of highly cited articles related to green finance, ESG, and digital financial inclusion suggests that researchers increasingly recognize fintech as an important instrument for promoting sustainable economic development.

In particular, the prominence of green finance and ESG-related studies reflects the growing integration between digital finance and environmental sustainability agendas. This finding also indicates that fintech research is shifting from purely technological discussions toward broader socio-economic and environmental perspectives.

Furthermore, the high citation levels of studies related to financial inclusion and developing countries suggest that emerging economies remain central to fintech sustainability research. This supports the argument that financial technology plays a strategic role in improving economic resilience, expanding financial access, and supporting sustainable development goals in developing regions.

CONCLUSION

This study aimed to analyze the development of research on financial technology and economic sustainability in emerging and developing economies using a bibliometric analysis approach. The findings indicate that research related to fintech and sustainability has experienced significant growth, particularly after 2023. The publication trend demonstrates increasing scholarly attention toward the role of financial technology in promoting sustainable economic development, financial inclusion, and digital transformation. The keyword co-occurrence analysis further revealed that major research themes are concentrated around fintech, sustainability, green finance, financial inclusion, environmental sustainability, and digital innovation. In addition, the country analysis showed that emerging Asian economies, particularly China and India, dominate research contributions in this field. Citation analysis also confirmed that sustainability-oriented fintech studies, especially those related to green finance and ESG, have become the most influential themes in recent academic discussions.

The findings of this study provide several important implications. Academically, this study contributes to the growing literature on fintech and economic sustainability by mapping the current research landscape and identifying dominant research themes and trends. Practically, the findings suggest that policymakers, financial institutions, and technology developers should increasingly integrate fintech innovation with sustainability and financial inclusion agendas. The strong relationship between fintech, green finance, and environmental sustainability also indicates

that digital financial ecosystems can play an important role in supporting sustainable development goals in emerging economies.

Despite its contributions, this study has several limitations. First, the bibliometric data were collected only from the Scopus database, which may exclude relevant publications indexed in other databases such as Web of Science or Dimensions. Second, the study focused only on English-language publications published between 2018 and 2025. Future research is therefore recommended to expand the database sources, include broader publication periods, and apply additional bibliometric techniques such as bibliographic coupling, thematic evolution, or collaboration network analysis. Further studies may also explore more specific themes, including Islamic fintech, green digital finance, ESG-based financial innovation, and artificial intelligence in sustainable economic development.

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