

EVALUATING THE IMPACT OF FINTECH ON THE FINANCIAL INDUSTRY THROUGH BIBLIOMETRIC ANALYSIS

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Abstract

This paper explores the transformative impact of FinTech on the financial industry using bibliometric analysis. FinTech encompasses a variety of technological innovations, such as blockchain and mobile payments, reshaping financial services in terms of efficiency, accessibility, and regulation. However, FinTech's rapid expansion raises concerns about environmental sustainability, particularly with energy-intensive technologies like blockchain. The study examines FinTech's dual role in promoting both disruptive technologies and green finance, highlighting initiatives like carbon trading platforms and eco-friendly investment portfolios. Using a dataset from Web of Science covering 2019-2024, this analysis provides insights into global research trends, author impact, and collaboration networks. Key findings include a high concentration of research from countries like China and the United States, and dominant themes in FinTech, such as "impact," "innovation," and "performance." A co-occurrence network analysis reveals thematic clusters and the interconnectedness of concepts, while co-citation analysis emphasizes the foundational works shaping the field. The study also maps international collaboration, showing strong research networks across major academic hubs. Concluding, this bibliometric review identifies FinTech as an evolving field at the intersection of finance, technology, and environmental responsibility. The results offer valuable insights for researchers, regulators, and policymakers, outlining future directions for FinTech in fostering both economic and environmental sustainability.

Keywords: FinTech, Bibliometric Analysis, Financial Industry Impact, Innovation, Environmental Sustainability, Global Research Collaboration

Clasificare JEL : G20, G21, G23

1. Introduction and context of the study

In recent years, FinTech (Financial Technology) has emerged as a transformative force within the global financial sector, reshaping the way financial services are delivered, accessed, and regulated. FinTech represents a broad spectrum of innovations that integrate technology into traditional financial services, encompassing everything from mobile payments and peer-to-peer lending to blockchain and cryptocurrency. These innovations not only offer increased efficiency, accessibility, and security in financial transactions but also introduce disruptive changes with wide-reaching implications for economic stability, regulatory landscapes, and even environmental sustainability.

The impact of FinTech transcends the confines of the financial industry, influencing a variety of sectors and prompting a shift in how businesses, governments, and individuals engage with economic activities. One significant aspect of this shift is the environmental implications of FinTech innovations, particularly as the industry increasingly incorporates energy-intensive technologies like blockchain. The widespread adoption of blockchain, for example, has raised concerns due to its high energy consumption and subsequent carbon footprint, which stands in stark contrast to the growing urgency for climate-conscious practices across industries. Consequently,

discussions surrounding FinTech are beginning to address not only economic efficiencies but also the environmental costs associated with these technologies.

Moreover, FinTech's role in promoting green finance and sustainable investment practices is becoming a key point of discussion. From carbon trading platforms to green bonds and eco-friendly investment portfolios, FinTech solutions are opening new pathways for climate-conscious financial products. As global climate change initiatives emphasize the need for sustainable economic practices, FinTech stands at the intersection of technology and environmental responsibility, offering tools that could contribute to a more sustainable future while simultaneously presenting new challenges in energy consumption and resource use.

Thus, the expansive influence of FinTech is not only revolutionizing financial services but also contributing to a broader dialogue on the intersection of technology, sustainability, and economic growth. This paper seeks to explore the scope and scale of FinTech's impact on the financial industry through a bibliometric analysis, examining how the field has evolved and the ways in which it intersects with pressing global issues such as climate change, economic inclusivity, and digital innovation. Through this study, we aim to provide a deeper understanding of how FinTech is shaping the future of finance, as well as the implications of its rapid expansion on both the environment and the global economy.

Bibliometric analysis represents a methodological tool of fundamental importance in evaluating and quantifying scientific output, offering a detailed view of research dynamics within a particular field of study. It has evolved significantly over time, from simple citation counts to complex analyses of co-authorship networks and thematic mapping of emerging fields (Aksnes et al., 2019). Through bibliometric methods, researchers can identify not only research trends and scientific impact but also the structure of international collaborations and the evolution of topics of interest in a dynamic global context.

In the era of digitization and the globalization of knowledge, bibliometric studies become indispensable for understanding how scientific knowledge develops and disseminates worldwide. Major databases such as Web of Science or Scopus are essential for conducting such studies, providing access to a vast and diverse corpus of scientific literature. In this context, bibliometric analysis not only serves as a measure of academic productivity but also offers insights into the interconnectivity of research fields and the mutual influences among various study areas (Waltman and van Eck, 2013).

In this study, concluding the content of the research report, a detailed bibliometric analysis of scientific literature published between 2019 and 2024 was conducted, with the primary aim of assessing and understanding how the field has evolved during this period. Using data extracted from the Web of Science database, our research focuses on examining essential characteristics of scientific output, including the annual growth rate, average document age, citations per document, and the complexity of references used. To extract data and build the database, terms such as Financial System, Financial Technology, and FinTech were selected and used in the search engine to filter papers from Web of Science.

Another aspect investigated in our study is international scientific collaboration. In an increasingly interconnected world, collaboration among researchers from different countries not only accelerates scientific progress but also contributes to the broader dissemination of knowledge, transcending national and regional boundaries (Gazni et al., 2012). In this regard, our analysis aims to identify collaboration patterns and assess the impact of international co-authorship on scientific output.

This study provides not only a quantitative evaluation of scientific output but also a qualitative analysis of emerging trends, thus contributing to a deeper understanding of how the assessed field has developed over the analyzed period. Therefore, our research aligns with global efforts to map and monitor the evolution of scientific knowledge, offering essential insights for researchers, regulators, policymakers, and other stakeholders.

2. Methodology and results

For this bibliometric analysis, we used an extensive dataset obtained from the Web of Science database, covering the period from 2019 to 2024, considered a peak period in the evolution of the FinTech phenomenon. This database is recognized globally for the exhaustiveness and quality of its bibliographic information and is often used in bibliometric studies to measure the impact and evolution of research across various fields. Data processing was performed using the R programming language, specifically utilizing the Bibliometrix package and the Biblioshiny application, which enable complex analysis and detailed visualizations of bibliographic data (Aria and Cuccurullo, 2017).

A key aspect of our methodology was identifying and analyzing the most relevant authors in the field, based on the number of publications and citations. This included both authors with significant scientific output and authors whose works have had a substantial global impact. An analysis of the most cited documents globally was conducted to identify publications with the highest impact, thus providing an overview of essential contributions to knowledge in the studied field.

Next, we performed a detailed analysis of the most frequent keywords to understand the main themes and dominant concepts in the specialized literature. This analysis was complemented by creating a WordCloud, which provides an intuitive visualization of the most used words and their importance within the dataset. WordCloud visualizations are effective tools for visually highlighting the density and relevance of research terms used in the analyzed documents. Additionally, we performed a co-occurrence network analysis of keywords, which allowed for mapping relationships between key concepts and identifying emerging thematic clusters. Co-occurrence networks are essential for understanding how different themes are interconnected and for identifying focal points of research (Zupic and Čater, 2015). Furthermore, we conducted a co-citation network analysis, enabling the identification of the main sources and authors who have significantly influenced the field through the frequent citation of their works.

Another key aspect of our analysis was the evaluation of the collaboration network at the country level. This collaboration network was analyzed by creating a global map of collaborations between countries, highlighting connectivity and international research partnerships. This was supplemented by analyzing the most cited countries to emphasize the global influence of scientific output from different regions.

The methodology used in this study enabled a detailed and comprehensive analysis of research evolution over the mentioned period, offering valuable insights into scientific contributions, dominant themes, and collaboration networks in the studied field. Through the combined use of various bibliometric analysis methods and graphic visualizations, we succeeded in capturing both quantitative and qualitative aspects of scientific output, thereby contributing to a better understanding of the dynamics within this domain.

Table 1. Summary of analyzed bibliometric data characteristics

Time frame 2019:2024	Sources 2040	Documents 6500	Annual growth rate 244,04 %
Authors 13403	Authors of documents with a single author 992	International coauthorship 31,29 %	Co-authors per document 3.25
Authors' keywords 14927	References 239722	Average document age 2.08	Average citations per document 9.726

Source: Processed using R and the Biblioshiny application

The previous table provides an overview of the essential characteristics of the bibliometric data used in the analysis, covering the period 2019–2024.

In total, 6,500 documents from 2,040 distinct sources were analyzed, reflecting significant diversity in scientific publications within the field. These documents are supported by an impressive 239,722 references, indicating a solid foundation of academic knowledge.

The analysis involves a total of 13,403 authors, of whom 992 are unique authors of single-authored documents, suggesting a relatively high presence of individual research. However, the average of 3.25 co-authors per document indicates a strong trend toward collaboration within the field, further highlighted by a significant percentage of international co-authorship, reaching 31.29%. This reflects a robust global network of scientific collaboration, essential for advancing knowledge in financial technology.

The average document age is 2.08 years, suggesting that most of the analyzed works are relatively recent, which contributes to the relevance and timeliness of the results. The annual growth rate of documents, at 244.04%, indicates a rapid expansion of scientific output during the period analyzed, possibly reflecting a growing interest in and rapid development of the field.

Regarding academic impact, the average of 9.726 citations per document emphasizes that the works in this dataset have been well-received and influential within the scientific community. Additionally, with a total of 14,927 keywords (Author’s Keywords), the dataset covers a wide range of topics and themes, indicating thematic diversity in the analyzed literature. These statistics provide a solid basis for interpreting the obtained results and for understanding the dynamics and impact of research within the field.

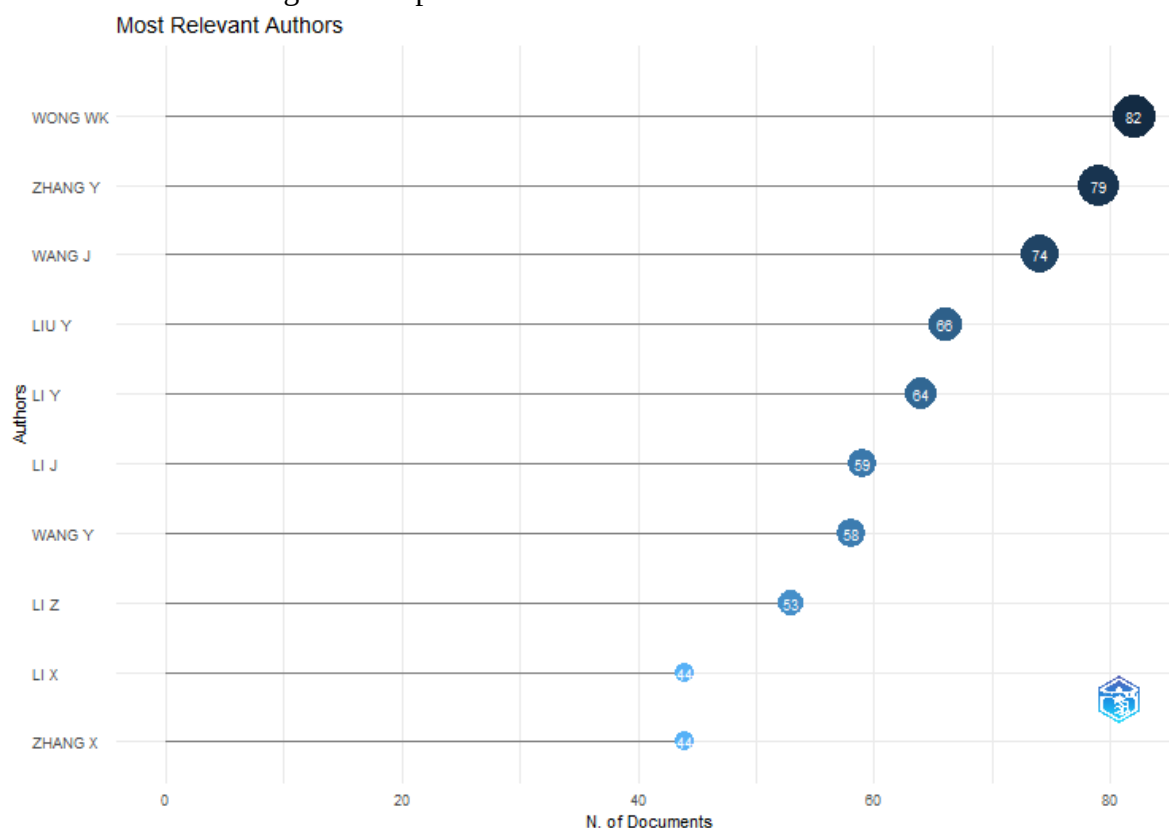
The following figure presents the most relevant authors in the studied field, highlighting both the number of papers they have published and their relative impact, indicated by the size of each bubble. The horizontal axis (X) shows the number of papers published by each author, while the vertical axis (Y) lists the most important authors as determined by bibliometric analysis.

From the figure, it can be observed that the authors with the highest number of papers are WONG WK, ZHANG Y, WANG J, and LIU Y, who hold top positions in both the total number of publications and relative impact, suggested by the bubble size. For instance, WONG WK is the most prolific author, with 82 papers, followed by ZHANG Y with 79 papers and WANG J with 74 papers. These authors are evidently central figures in the field, with a consistent number of contributions to the specialized literature.

The bubble size, which may represent a measure of the fractional contribution of each author in collaborations (i.e., the extent of their actual contribution to collaborative papers), provides a more nuanced view. For example, in the case of WONG WK, even though he has the highest number of papers (82), the fractionalized contribution is approximately 24.66, indicating that many of his papers resulted from extensive collaborations with other researchers. By comparison, WANG J, although having fewer papers (74), has a slightly higher fractional contribution (20.19), suggesting a greater influence per paper he contributed to.

Furthermore, authors LIU Y and LI Y have a significant number of papers (66 and 64, respectively), but their fractional contributions are lower than the top-ranked authors. This indicates substantial participation in scientific collaborations, though possibly with a less dominant role in the published papers.

Figure 1. Representation of the most relevant authors



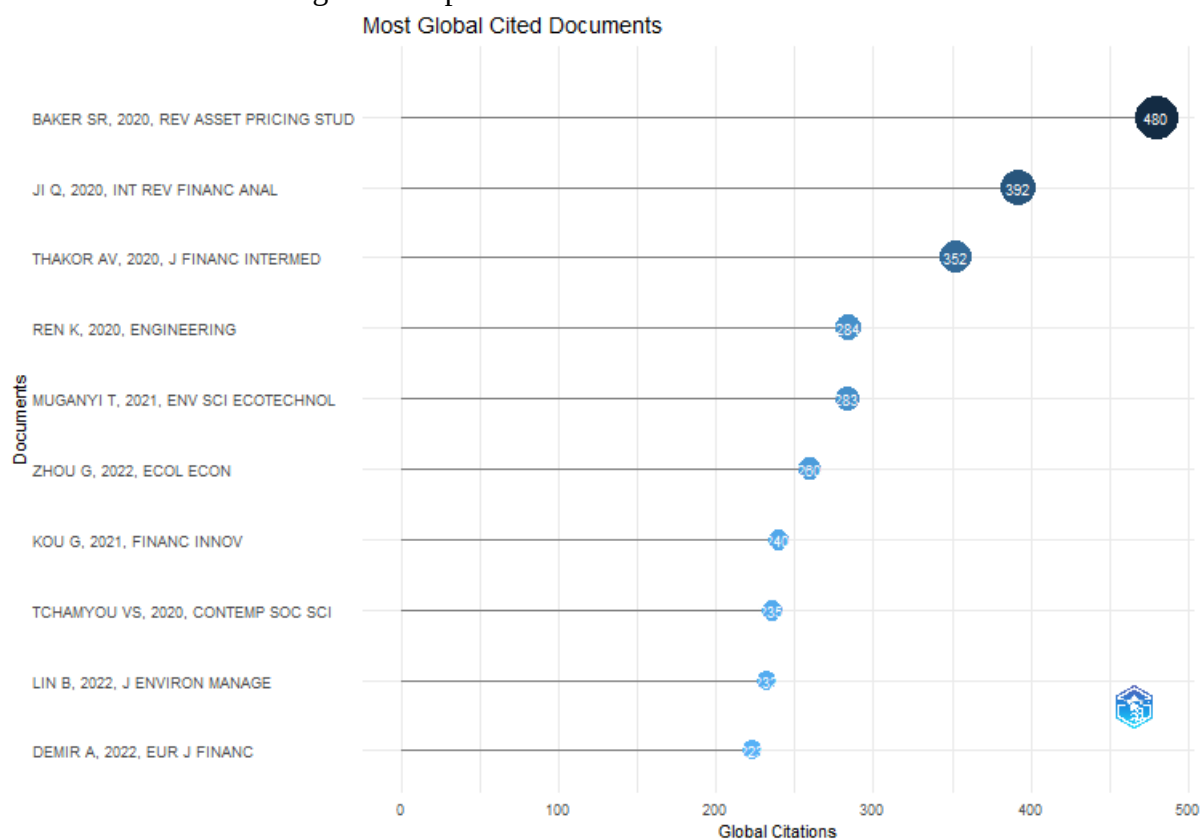
Source: Processed using R and the Biblioshiny application

At the bottom of the figure are authors LI X and ZHANG X, each with 44 papers, but with relatively low fractional contributions (13.55 and 11.88, respectively), suggesting a lower influence compared to other authors, particularly in multi-author collaborations.

In summary, the figure highlights the differences between the total number of published papers and the actual impact of each author, measured by their fractional contribution. The authors on the right side of the figure, with large bubbles, are the most relevant both in terms of the number of papers and their impact in the field, reflecting significant influence within scientific collaborations.

Figure 2 (next) illustrates the most globally cited documents in the analyzed field, offering insight into the works that have had a substantial impact in the specialized literature. The data for each document include the total number of citations, citations per year, and a normalized citation metric, which allows for impact comparison across works published in different years. The most cited document is by BAKER SR (2020), published in the "Review of Asset Pricing Studies," with a total of 480 citations. This document stands out not only for its high total citations but also for its citations per year (96), indicating sustained and ongoing interest in this work over the years. The normalized citation measure (29.11) confirms that this document has significant impact compared to other works, making it one of the most influential studies in the field.

Figure 2. Representation of the most cited studies



Source: Processed using R and the Biblioshiny application

Following is the work by JI Q (2020), published in the "International Review of Financial Analysis," which has accumulated 392 citations and an annual rate of 78.4 citations. The normalized citations (23.77) indicate that this work, while not as highly cited as BAKER's, remains extremely influential in its specific field.

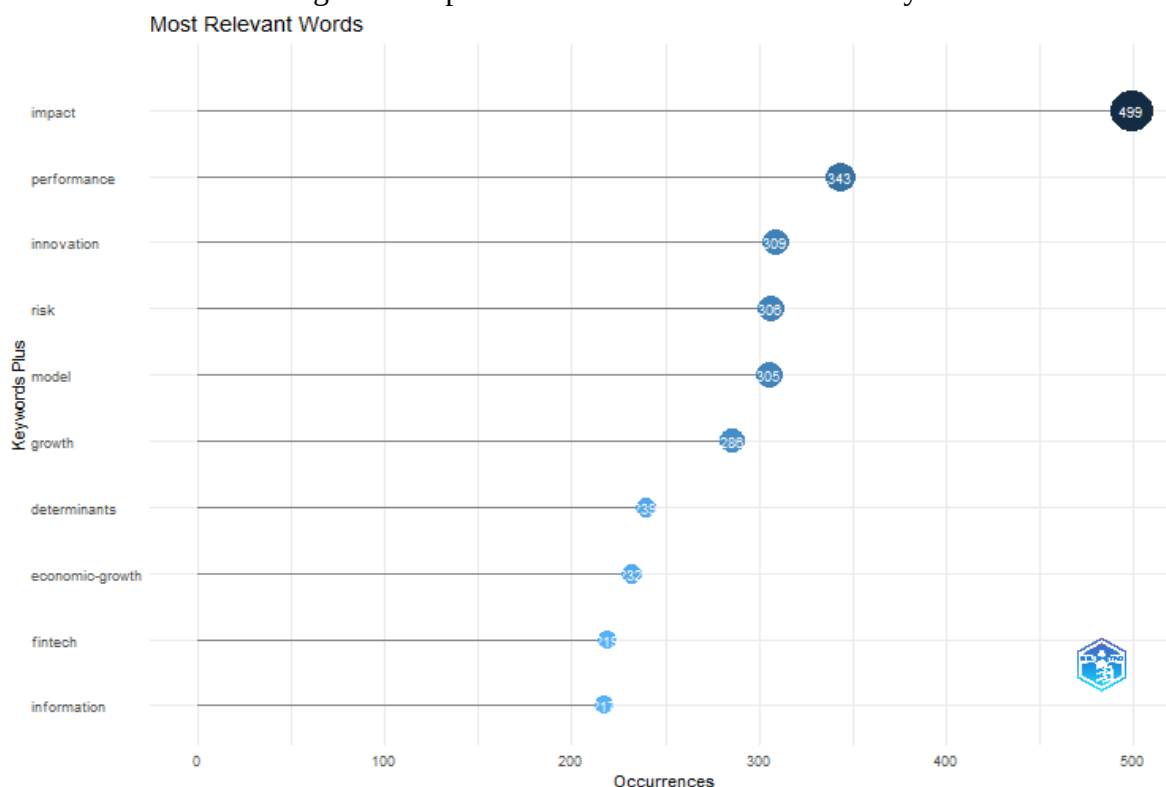
The third most cited document is by THAKOR AV (2020), published in the "Journal of Financial Intermediation," with a total of 352 citations and an average of 70.4 citations per year. Although it has fewer total citations than JI Q's work, its normalized citations (21.35) indicate a comparable influence, especially when considering the document's age.

The document by ZHOU G (2022), published in "Ecological Economics," though more recent, already has 260 citations and an impressive 86.67 citations per year. This suggests that the work has an emerging impact, with a very high interest in the period immediately following its publication. The normalized citations (26.61) confirm that this document is among the most influential in the analyzed dataset, even if it is more recent.

The remaining documents, including those by REN K (2020), MUGANYI T (2021), KOU G (2021), and DEMIR A (2022), while having a lower total citation count (between 223 and 284), all maintain a significant presence in the literature, with annual citation rates ranging from 56.8 to 77.33. Their normalized citations range from 14.25 to 23.74, showing that these works have had a notable, though somewhat more modest, impact compared to the top three documents.

Next, the most frequently used keywords in the analyzed documents are highlighted, providing insight into the dominant themes and main concepts addressed in the specialized literature. The data associated with figure 3 indicates the frequency of these keywords within the documents, offering a perspective on the relative importance of each term within the research field.

Figure 3. Representation of the most relevant keywords



Source: Processed using R and the Biblioshiny application

The most frequent keyword is "impact," with 499 occurrences. This suggests that discussions about impact—whether economic, social, or otherwise—are central in research within the analyzed field. The term "impact" may refer to how different variables or phenomena influence certain outcomes, indicating a major focus on assessing the consequences and effects of various studied phenomena.

"Performance," with 343 occurrences, is the second most frequent keyword. This term suggests an emphasis on performance evaluation, whether of organizational performance, financial market performance, or technological performance. Its high frequency indicates that performance measurement and analysis are key themes in this research area.

"Innovation" appears 309 times, underscoring the importance of research on innovation. This may include studies on developing new technologies, implementing new processes, or adopting innovative practices across various industries. Innovation is a critical factor in economic competitiveness and technological advancement, explaining its prominent presence in the literature.

The term "risk," with 306 occurrences, points to a strong focus on risk management, an essential theme in diverse contexts, from finance to the environment. Risk management is crucial in decision-making and strategic planning, which explains its high frequency.

"Model" (305 occurrences) reflects the widespread use of theoretical and econometric models in research within this field. Models are essential tools for understanding complexity and testing scientific hypotheses.

Other frequent keywords include "growth" (286 occurrences), indicating an interest in economic growth dynamics and other forms of expansion; "determinants" (239 occurrences), referring to the identification of factors influencing various phenomena; and "economic growth" (232 occurrences), which specifies a particular interest in economic growth.

The terms "fintech" (219 occurrences), "information" (217 occurrences), and "technology" (216 occurrences) highlight the importance of financial technologies and technology in general, suggesting a significant intersection between technological innovation and economic development.

Figure 4. Representation of the most relevant words in a WordCloud

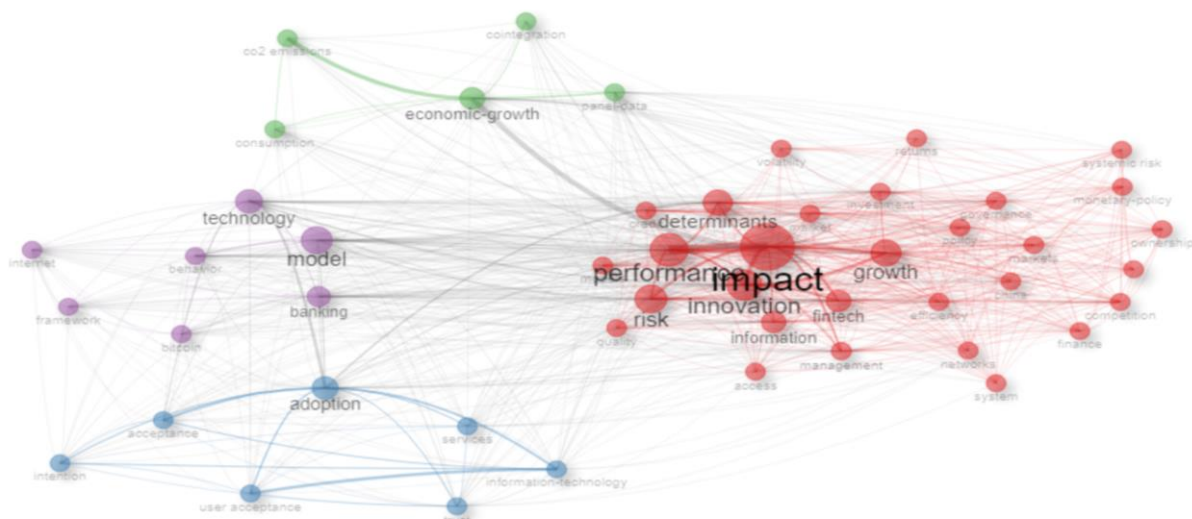


Source: Processed using R and the Biblioshiny application

This visualization method is particularly effective in highlighting the relative importance of terms like "innovation" or "risk" compared to less prominent yet still relevant terms such as "co2 emissions" or "volatility." Additionally, the WordCloud can suggest thematic associations and narrative structures in a more flexible manner than a traditional figure, offering researchers an immediate impression of concept interconnectivity. For example, the juxtaposition of "technology" and "information" in the WordCloud may suggest a close relationship in the analyzed literature.

The next figure synthesizes the co-occurrence network of keywords in the analyzed documents, highlighting the relationships and interconnectivity among the main themes in the studied literature. Each node in the network represents a keyword, and the connections between nodes indicate the frequency with which these words appear together in the same documents. The size of each node suggests its importance within the network, measured by indicators such as Betweenness, Closeness, and PageRank.

Figure 5. Co-occurrence network of keywords and node importance in the studied literature



Source: Processed using R and the Biblioshiny application

Clustering (Cluster) shows keywords grouped into clusters, indicating sub-themes or related research areas. For example, Cluster 1 (marked in red) includes terms like "impact," "performance," and "innovation," suggesting a thematic group focused on assessing the influence and performance of innovation in various contexts. This appears to be the central cluster, with the highest values for centrality measurements, indicating that it is a nodal point in the network.

The Betweenness indicator measures how often a node appears on the shortest path between other nodes in the network. In this case, the term "impact" has the highest betweenness value (89.65), suggesting it plays a crucial role in connecting different themes and sub-themes within the analyzed literature. This indicates that "impact" is a central concept linking various topics in the network.

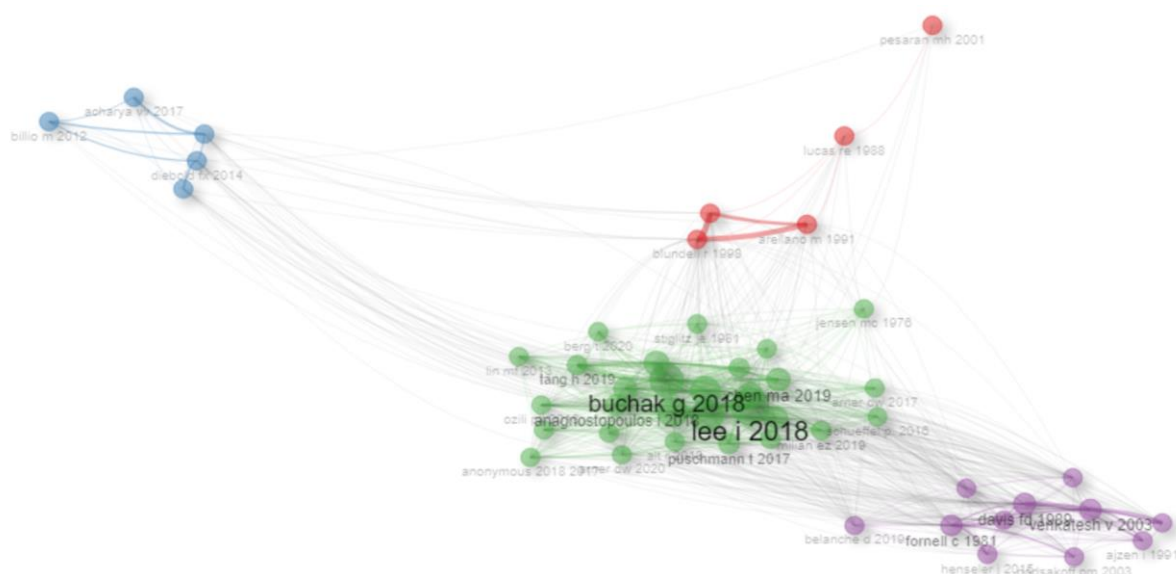
Closeness measures how close a node is to all other nodes in the network, indicating the potential influence of a term in the network. Terms like "innovation" and "performance" have high closeness values (0.02), indicating that they are relatively easy to access from other points in the network, thus being highly connected and influential.

PageRank is another centrality indicator, similar to the one used by the Google search engine, measuring a node's importance based on the number and quality of its connections. In this figure, "impact" again has the highest PageRank (0.0648), followed by "performance" (0.0448), which confirms their essential role in the network.

Thematic Interconnectivity - Cluster 2 (blue) focuses on themes like "adoption" and "trust," suggesting a thematic group centered on the acceptance and trust in new technologies or processes. Cluster 3 (green) includes terms like "economic-growth" and "co2 emissions," indicating an emphasis on the relationship between economic growth and environmental impact. Cluster 4 (purple) focuses on technological and financial themes, including terms like "technology," "model," and "banking."

In conclusion, figure 5 offers a complex perspective on how different themes and concepts are interconnected within the studied literature. The central cluster, comprising terms such as "impact" and "performance," is the network's core, and its interconnectivity with other clusters indicates an interdisciplinary and integrative approach to research. The centrality indicators underscore the importance of these terms within the network, showing that they are essential for understanding the dominant themes in the field.

Figure 6. Co-citation network and the central importance of classic and modern literature in the studied field



Source: Processed using R and the Biblioshiny application

The above figure represents a co-citation network of scientific papers, highlighting how frequently papers are cited together in other works and how they are organized into thematic clusters. The nodes, representing individual papers, are color-coded according to the thematic cluster they belong to, suggesting that these papers address similar or related topics. Node size and link thickness are determined by centrality indicators such as Betweenness, Closeness, and PageRank, reflecting the importance and influence of each paper within the network.

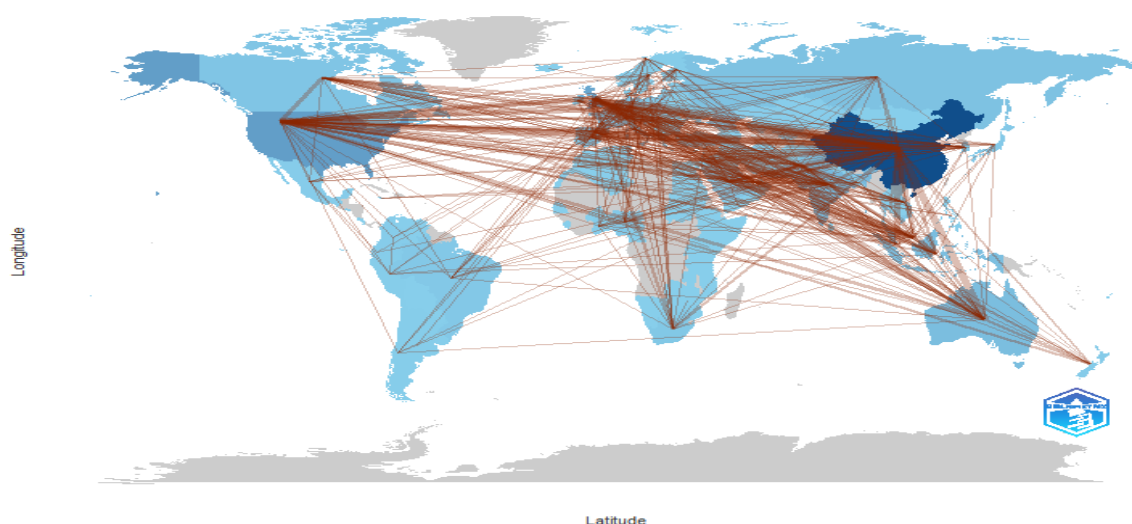
The clustering of papers reveals the existence of four major groups. Cluster 1 (red) includes classic works, such as those by Blundell R (1998) and Arellano M (1991, 1995), which are foundational in econometric analysis and panel-data methodology. These papers are frequently co-cited and form the basis of much econometric research.

Centrality indicators, like Betweenness, highlight the crucial role of certain papers in connecting various sub-themes. For example, Blundell R's (1998) paper has the highest Betweenness value, suggesting it plays a central role in linking different topics within the network. Scientific papers like those by Lee I (2018) and Gomber P (2018) show high values for Closeness and PageRank, indicating that they are well-connected and influential within the network, reflecting their relevance in emerging themes.

The interconnectivity and importance of nodes within the network reveal that Cluster 1, dominated by the works of Blundell and Arellano, is essential for econometric methodologies. Cluster 2 (blue) focuses on financial risks and their management, with Diebold FX's works at the core. Cluster 3 (green) centers on fintech and financial innovation, featuring recent works such as those by Lee I (2018) and Gomber P (2018), which are critical for understanding digital transformations in finance. Cluster 4 (purple) is associated with technology adoption and user behavior, with foundational works by Davis FD (1989) and Venkatesh V (2003) that are essential for studies on technology acceptance.

The figure thus illustrates how classic and recent papers are interconnected in the academic literature, emphasizing the influence of foundational works on the development of theories and methodologies in the studied field. Centrality indicators underscore the relative importance of these works, providing insight into how research has evolved and interlinked over time.

Figure 7. Map of international scientific collaborations



Source: Processed using R and the Biblioshiny application

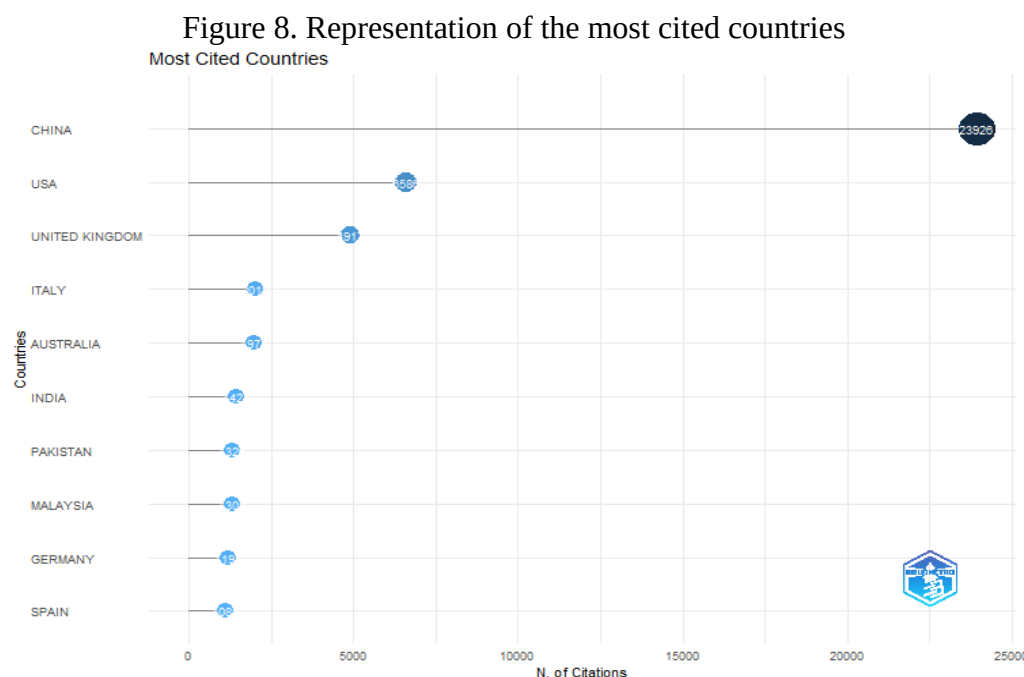
The international collaboration map we present illustrates a vast and complex landscape of academic interactions at a global level, with a strong emphasis on collaborations among institutions

and authors from various countries. Major collaboration hubs are evident, such as China, the United States, and the United Kingdom, which act as central nodes in the network, attracting and coordinating a significant share of these collaborations. These countries have numerous connections with other states, underscoring their predominant role in global research.

China, for example, is connected with a significant number of countries, including Australia, Pakistan, and the United States, reflecting the country's growing influence in the international scientific community. Similarly, the United States and the United Kingdom demonstrate intense collaborative activity, with strong partnerships across Europe, Asia, and other continents. These connections not only facilitate the exchange of knowledge and resources but also stimulate innovation and scientific advancement by bringing together diverse expertise.

Furthermore, the map shows that there are other regions of the world where international collaborations are less dense but still significant. For instance, countries like Australia, Germany, and India, while not as centralized as the top three mentioned, still play an important role in connecting various regional and global academic communities. Another notable aspect is the diversity of countries involved in these collaborations. The map suggests a broad geographical distribution, indicating that modern research is not limited to a few dominant nations but includes a wide range of countries actively contributing to global scientific progress. This diversity promotes greater inclusiveness and plurality in research perspectives and methodologies.

Figure 7 also provides an overview of how knowledge is generated and disseminated globally, highlighting the importance of international collaborations in advancing scientific knowledge and addressing complex global issues. This type of visualization is essential for understanding the dynamics of scientific collaborations and identifying potential gaps or opportunities for expanding international academic networks.



Source: Processed using R and the Biblioshiny application

The figure above highlights the countries with the most cited papers in the analyzed field, thus reflecting the academic influence and research impact from these regions. Based on the presented data, China significantly dominates this landscape, with a total of 23,926 citations and an average of 12.1 citations per paper. This underscores China's central role in producing highly cited scientific papers, indicating not only a large volume of research but also notable global impact. In

comparison, the United States ranks second, with a total of 6,586 citations and a slightly higher average of 12.9 citations per paper, indicating a similar level of academic influence but with a smaller volume of cited works.

The United Kingdom and Australia, with 4,917 and 1,971 citations respectively, show a higher average of citations per paper at 14.3, suggesting that although the research output is lower than that of China and the USA, the quality or relevance of the work is perceived as very high. Similarly, Pakistan, with 1,326 citations, has a remarkable average of 14.7 citations per paper, indicating highly influential research despite a lower total citation count.

India, though it has a total of 1,427 citations, has a lower average of only 5.9 citations per paper, suggesting either broader dissemination of research with variable impact or potential for increasing academic visibility and influence. Other countries such as Germany, Malaysia, and Spain also show notable contributions, with average citations per paper ranging from 7.7 to 9.6, reflecting a stable presence in the international research landscape but with potential for growth in terms of impact and academic influence.

These data illustrate not only each country's academic production power but also the relevance and quality of the research they generate, highlighting the importance of international collaboration and global visibility in strengthening academic influence.

3. Conclusions

The bibliometric analysis highlights that global research in the field of new financial technologies—FinTech—is characterized by a diversity of contributions from numerous countries, with a focus on several major centers of academic production and influence. The dominance of countries like China and the United States in terms of total citations and articles underscores the importance of these nations as global leaders in scientific research. Furthermore, the data suggests that not only the volume of research matters but also its quality and impact, as measured by the average citations per article.

Another relevant observation concerns the distribution of authors and international collaborations. The analysis of collaboration networks and authors shows that research is not merely a national effort but also a product of global collaborations. Authors with the most significant contributions often come from academic environments with strong international connections, enabling them to participate in extensive research networks and contribute to the rapid and widespread dissemination of their findings. This aspect underscores the importance of international collaborations in enhancing the visibility and impact of research.

Regarding the most frequent words and key concepts extracted from the analyzed works, certain themes and topics have emerged as central in academic discussions within the field. Terms such as impact, innovation, and performance suggest a common focus on evaluating the efficiency and innovativeness of proposed processes and solutions. The word cloud and network analyses reinforce this idea, showing how these concepts are interconnected and form the core of current academic debates.

The structure and density of co-citation and co-occurrence networks also indicate which works and authors are central in this field. These networks not only identify the influence of specific works but also emphasize the importance of certain concepts and the relationships between them. Denser networks reflect well-established and heavily researched topics, while more dispersed networks may indicate emerging or niche research areas that have yet to achieve broad academic consensus.

Finally, the international collaboration map highlights the global nature of research and how knowledge is generated and disseminated worldwide. It illustrates not only the flows of collaboration between different countries but also the importance of major academic centers and regional research networks. Thus, it can be inferred that to remain competitive and relevant,

research requires not only internal resources but also continuous connection to global knowledge networks.

In conclusion, the bibliometric analysis provides a comprehensive overview of the research landscape in the financial domain, particularly regarding the impact evaluation of new financial technologies on current financial systems. It reveals not only the dynamics of academic production but also how knowledge is interconnected and influenced by global networks of researchers and institutions. These conclusions can serve as a basis for future research strategies, highlighting both the strengths of the field and potential directions for development and international cooperation.

4. Bibliography

[1] **Aksnes, D. W., Langfeldt, L., Wouters, P.** Citations, citation indicators, and research quality: An overview of basic concepts and theories. *SAGE Open*, 9(1), 2158244019829575. 2019.

[2] **Aria, M., Cuccurullo, C.** Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959-975. 2017.

[3] **Gazni, A., Sugimoto, C. R., Didegah, F.** Mapping world scientific collaboration: Authors, institutions, and countries. *Journal of the American Society for Information Science and Technology*, 63(2), 323-335. 2012.

[4] **Waltman, L., van Eck, N. J.** A smart local moving algorithm for large-scale modularity-based community detection. *The European Physical Journal B*, 86(11), 1-14. 2013.

[5] **Zupic, I., Čater, T.** Bibliometric Methods in Management and Organization. *Organizational Research Methods*, 18(3), 429–472. 2015.

[6] www.webofscience.com

[7] www.bibliometrix.org