Bibliometric Analysis of Fintech Trends

Roshan Kumar Sharma
Yash Pathak
Under The Guidance of Dr. Abdul Wajid
Galgotias University

Abstract
The significant significance that the fast growth of financial technology (Fintech) has had in the creation of numerous academic research is clear. The patterns, impacts, and prospective future directions of this phenomenon that is changing the industry have been the focus of several studies. To gain a better understanding of the current developments in the financial technology industry, we conduct a survey of the academic publications that correspond to them as part of our comprehensive bibliometric study. Our research in the area of financial technology (Fintech) makes use of bibliometric techniques to examine trends in publication, citation networks, and subject clusters. Our major focus is a massive dataset that spans many years and includes data from economics, computer science, and finance. Notable authors, major publications, and new categories are illuminated by the most significant findings in the field of financial technology research. When we set out to conduct this research, we hoped to fill knowledge gaps, paint a full picture of the ever-changing fintech industry, and increase our familiarity with this extraordinary sector.
Keywords: Fintech, bibliometric analysis, trends, financial technology, citation networks, scholarly literature, research themes, interdisciplinary, systematic approach.

INTRODUCTION

The market for financial administrations has recently seen a dramatic shift due to technology developments. The rise of Financial Technology (Fintech) has shaken up the conventional banking, investing, and payment systems with its novel approaches that increase accessibility, efficiency, and transparency. Under the umbrella term "fintech," a multitude of new technologies are reshaping financial systems across the globe. The use of blockchain technology, AI, big data, and mobile applications are all examples of these advancements. Despite this meteoric rise, academics, policymakers, and industry professionals all need a firm grasp of the patterns and components of financial technology research. In order to deal with research into intelligent writing, distinguish new subjects, and review the effect of research commitments, bibliometric analysis offers a quantitative and methodical framework. Bibliometric studies, by examining distribution designs, reference organizations, and catchphrase co-events, give light on how knowledge has developed in the fintech sector. This study aims to guide a thorough bibliometric evaluation of fintech patterns by collecting the most recent academic literature. It will shed light on significant subjects, authors, and research routes. Using cutting-edge bibliometric approaches and perceptual devices, our goal is to chart the academic foundations of fintech research, pinpoint areas of interest, and foresee how this dynamic field will evolve in the future.

What follows is an outline of the rest of the paper Section 2 provides an overview of the system utilized for this bibliometric study and describes in detail the processes of data collection, preparation, and analysis. Section 3 provides a brief overview of the study's results, including key trends, publications, and clusters of subjects.

budgeting, content development, and technology. The ramifications of these discoveries for academia, business, and government are discussed in Section 4, along with suggestions for future research areas. Part 5 wraps off the piece by reviewing key points, including the author's commitments and experiences. We aim to add to the expanding fintech literature by synthesising research trends and experiences into the changing components of digital financial innovation. This bibliometric analysis will help us achieve this goal. A slew of recent technical developments are fueling the emergence of a brand-new academic discipline financial technology, or FinTech for short. A number of new methods, technological implementations, goods, and services are influencing the state of the financial markets and the accessibility of financial services. Its numerous benefits have attracted a lot of attention, including the following increasing activity efficiency, successfully lowering working expenses, disrupting current business structures, erasing industry boundaries, enabling essential disintermediation, creating new opportunities for business ventures, and democratizing access to financial administrations (Li and Xu 2021). Brandl and Hornuf (2020) and Kanungo and Gupta (2021) both note that the management of financial services has been steadily improving thanks to technological innovations. This improvement improves the management of client correspondence and administrative center information. According to Gomber et al. (2017), the emphasis of financial advancement has changed from improving existing jobs to developing new positions and business strategies for firms that handle financial administration

OBJECTIVES

- ✓ Using citation networks to study the relationships in Fintech literature, we can learn about seminal publications, key figures, and joint ventures.
- ✓ Fintech research is multidisciplinary, drawing from a wide range of disciplines in its analysis of contributions from areas including economics, computer science, and finance.
- ✓ Analysing the temporal and geographical patterns in Fintech research publication, including the rates of growth, dispersion across different places, and patterns of collaboration among institutions.
- ✓ The purpose of this research is to catalogue the publications, organisations, and writers that have a major say in Fintech debates. It reveals important things about the academic community's dynamics and intellectual leadership.
- ✓ The goal is to provide useful data that can guide Fintech research in the future. To do this, you need to think of fresh research questions, pinpoint gaps in the current literature, and propose potential areas of cross-disciplinary collaboration and innovation.

REVIEW OF LITERATURE

Bibliometric studies often make use of quantitative methods to examine bibliographic data. A bibliometric analysis of the writing in the context of fintech trends would include evaluating academic works such as research papers, articles, licenses, and more in order to discover patterns, designs, and linkages among different subjects, creators, teachers, and nations.

This literature review serves as an example of a bibliometric investigation of current fintech trends: -

Various scholars have examined the development of fintech, which has been defined as the study of financial technology and its relationship to both traditional banking systems and the modern digital age. The evolution of financial technology (fintech) has been extensively documented by writers such as Arner, Barberis, and Buckley (2015), who have highlighted key administrative changes and innovative breakthroughs that have influenced the field.

This area has been the primary focus of research on what variables consumers, businesses, and financial educators consider when choosing fintech innovations. Demirgüç-Kunt and Klapper (2016) are among the scholars who have examined the administrative environment, mechanical basis, and consumer inclinations as fintech selection variables. Mobile payments, robo-advisors, blockchain, and peer-to-peer financing are just a few examples of the fintech applications and services that many minds have investigated. Famous works of art, such as such the ones carried out by Yermack (2017) and Zhang and Liu (2018), which examined the development of mobile payment systems and the effects of blockchain technology on banks. Challenges in Effective Administration and Reactions to Method Because fintech is growing at such a rapid pace, experts have looked at the administrative challenges lawmakers have and the solutions put in place to encourage innovation while protecting consumers' money and their faith in the system. Administrative sandboxes were examined by Anderloni, Vandone, and Maffei (2017), while the impact of administrative reforms on fintech loans was examined by Hu and Ongena (2020). Bibliographic investigations have uncovered top nations, educators, and producers in the field of financial technology (fintech), creating a global landscape of fintech study. The worldwide distribution of fintech research yield and collaboration designs was examined in a study by Breuker and Reijers (2019). Emerging Styles and the Future of Fintech Experts in the field have come to a consensus on the current and future directions of fintech, including the potential effects of artificial intelligence, big data analytics, and quantum computing on monetary authorities. In their 2018 study, Gomber et al. investigated the potential impact of new financial technologies on the market. Innovative budgetary goods and services, new production processes, and state-of-the-art organizational structures are all examples of financial sector improvements (Outline and White 2004). The final result of progress was made in the area of financial department data innovation. Central to the entire monetary system, banks are always looking for ways to improve their underused monetary administration services. Thanks to developments in data innovation and communication technology, budgetary operations can now take place in any physical location, allowing financial institutions to better construct a credit framework. Regardless, there is a lack of sufficient data to make definitive judgments regarding the impact of monetary development on banks at this time. The standard innovation-growth theory proposes that enhanced budgetary development enhances the many aspects of account management services, fortifies banks' ability to share risk, and makes asset assignment more efficient (Berger, 2002). On the other hand, the 'innovation-fragility' theory posits that as the money supply grows, banks' risk-bearing capacities increase, leading to budgetary markets experiencing excessive credit expansion and, eventually, monetary crises. This theory was developed as a result of the 'innovation-stability' conjecture that followed the 'innovation-stability' hypothesis. "Everyone talks around monetary advancement, but (nearly) no one tentatively looks at assumptions about it," says Outline and White (2004). I couldn't agree more. Anything that has typically been noticed. Consequently, it is essential for a nation's economic and financial growth to be flexible enough to respond to changes in the financial sector, such as increasing operational efficiency, promoting a broader array of financial services at lower rates, and making companies more competitive. Therefore, researching the consequences that financial The effect of development on the operational proficiency of banks is crucial to both the economy and an

open approach. One subset of financial technology is crowdsourcing, which also includes crowdlending and crowdinvesting. Computation, social trading, and robot advice are all parts of asset management. Cryptocurrency and other payment plans are available.

RESEARCH METHODOLOGY

Research on computerized funding remains in its infancy, despite the growing importance of this topic. Academic study on advanced back has grown in the previous several decades, and most distributions are based on experiments (Zou et al. 2023). Scopus data extraction took place between 2017 and 2022. Six hundred sixty-five investigate distributions were taken into account for this analysis. According to the data, the Fintech business really took off in the first quarter of 2018. We identified 85 articles from 2008 to 2016, 114 articles in 2017, and 305 reports in 2018, nearly three times as much as the previous year. A lot of work went into this since we collected data from the Scopus database.

The "Prevention and Recuperation Data Framework for Checking and Analysis" (or "PRISMA" shortened), Figure 1 shows how this acronym is organized. It lends credence to claims about the papers' caveats, the screening variables employed, and the recognisability of the study materials. Finally, records are analyzed for the inquiry's goal. Using our criteria (year, distribution organize, archive sort, keyword, subject range, and dialect), we were able to narrow the Scopus database search to 3403 research publications. Using the properties indicated before, these documents have been compressed. The data cannot be used for 83 distributions due to the year parameter, as it was collected from 2017 to 2022. Papers distributed in 2017 or after are typically not included in the evaluation process. Please disregard any inquiries that are already part of the communication plan or are already in the planning stages; we are now reviewing all distributed articles. distribution. The outcome of 154 individual papers is this. After going over the articles, we removed any references to licenses, book chapters, or other reports. This happened throughout the last 1,569 deliveries. For our analysis, we were intrigued about the distributions of FinTech keywords and thus prohibited 597 articles based on the creator's catchphrase. Due to the subject region restrictions, 318 papers were not accepted, despite our reputation in commerce, economics, and social science. For some reason, we were captivated by papers written in this level of English and had to skip over 17 reports just because of the dialect they used. Following the elimination of 27,38 publications from this investigation, we narrowed our focus to 665 papers from 3403 distributes.

DATA ANALYSIS AND INTERPRETATION

Descriptive Statistics

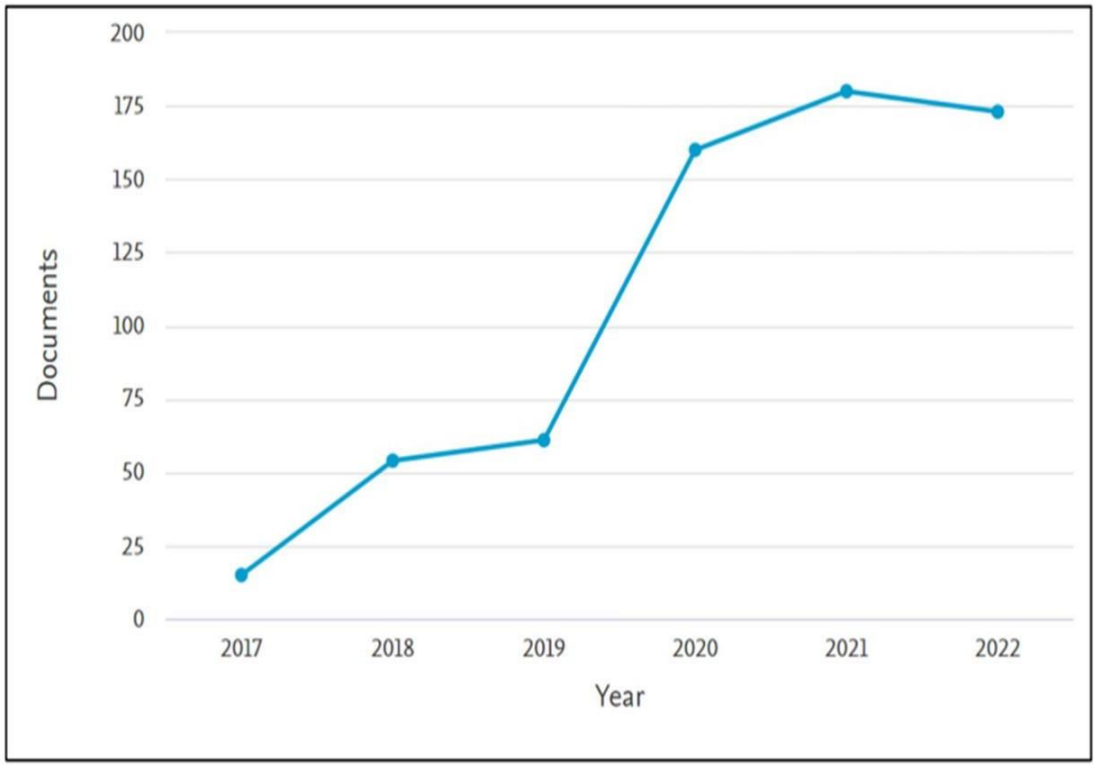
Using Elsevier's Scopus database, we compile FinTech distributed inquiry publications. Over the course of those six years, 665 research publications were published, as shown in Table 1. In this context, numerical expressions stand in for the database that bibliometric studies or prior analyses of a FinTech-related subject draw from. Figure 2 displays the expanded distribution from the previous section. The distribution of articles continued to climb progressively after reaching a low of 15 in 2017, 54 in 2018, 61 in 2019, 160 in 2020, 180 in 2021, and 173 in 2022. In 2020 and beyond, the circulation of term papers in the FinTech sector increased at an unprecedented rate. This is due to the fact that numerous inventive advancements changed the way various sectors functioned throughout this time. Consequently, everyone was keen to make the most of this development and carry out their tasks in a more contemporary and efficient way. Innovations in mechanical and non-mechanical fields brought about a great deal of operational change for businesses in all industries with the arrival of new technology. India witnessed numerous

instances of innovation during the COVID-19 epidemic, including virtual meetings, better installments, computerized campaigning, and countless more.

Table 1. Citation.

Author	Documents	Citations	Total Link Strength
Gomber P.	2	547	75
Kauffman R.J.	4	357	42
Shin Y.J.	2	303	58
Ozili P.K.	5	212	18
Giudici G.	2	208	26
Martinazzi S.	2	208	26
Brooks' S.	2	200	23
Hornuf L.	2	154	35
Tan B.	5	139	52
Sun Y.	4	130	48
Leong C.	3	126	42
Tan F.T.C.	2	126	36
Jagtiani J.	5	124	53
Lemieux C.	2	113	47
Langley P.	2	108	15
Leyshon A.	2	108	15
Rabbani M.R.	6	107	18
Chang V.	3	106	4
Belanche D.	2	103	6
Casaló L.V.	2	103	6

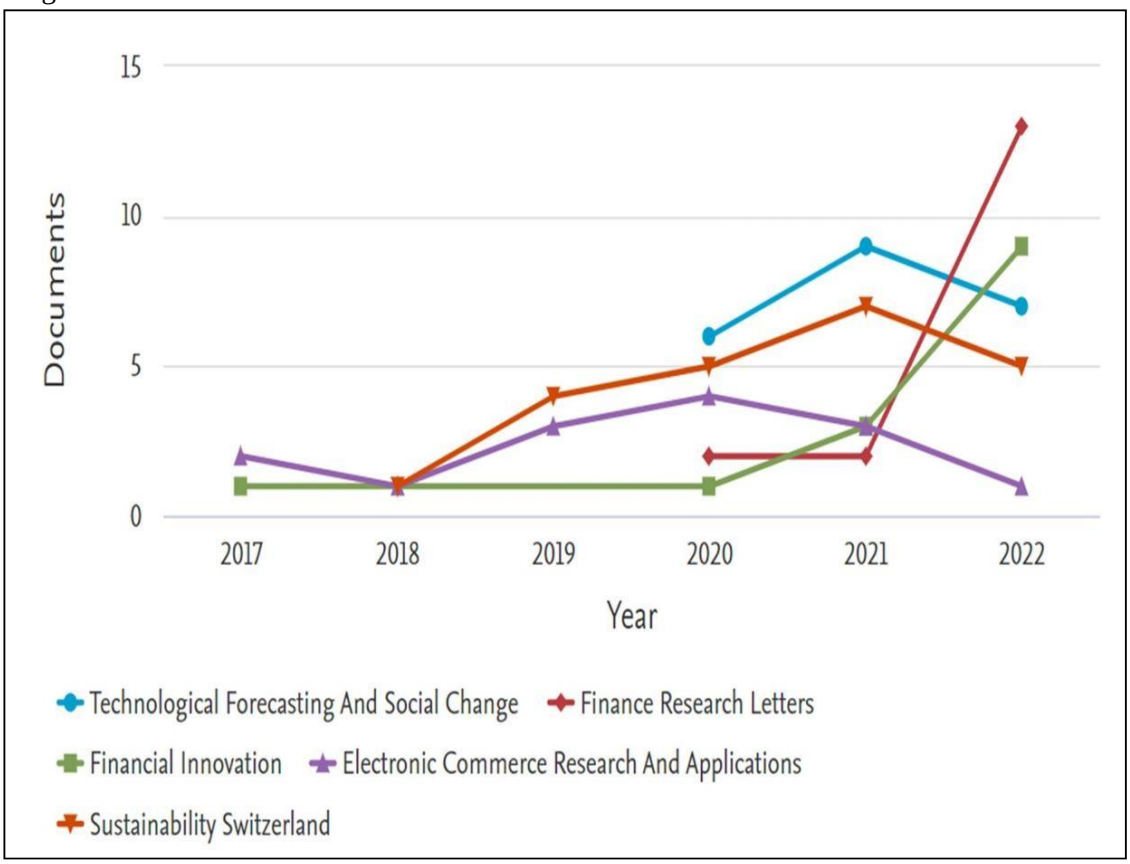
Source: Author's Contribution.



Documents Year Wise. Source: Author's Contribution.

Documents were discovered every year from 2017 to 2022 and are organized according to their sources. Predicting Innovation, Social Change, and Sustainability Each country can only have 22 papers. The Monetary Investigate Letter Diary covers the years 2017–2022, with seventeen reports pertaining to the Fintech industry. Application and

Financial Advancement and Electronic Commerce Inquiry each have fourteen articles. These were the unique journals kept by people working in the financial technology sector. We found that the more seasoned journals usually covered topics related to technological progress in finance and online business. The year 2020 and beyond saw the launch of Financial Research Letter, Technological Determination, and Social Alter in an effort to distinguish



Documents per year by source. Source: Author's Contribution.

LIMITATION

Though there are a few downsides to bibliometric analysis that should be thought about, it does give useful information on the academic setting of fintech developments. One potential issue with bibliometric analysis is the use of published material, which might lead to publication bias. Because databases may not always include negative outcomes or research conducted by non-academic institutions, they may not provide an accurate picture of the research environment.

The accuracy and completeness of bibliographic data may vary among databases. Incorrect citation counts, author identities, or connections could cast doubt on the analysis's trustworthiness. Methods for cleaning and preprocessing data also have the potential to introduce biases and inaccuracies

The vast majority of bibliometric databases exclusively include articles published in English. The lack of research published in non-Western languages, particularly in academic publications, may lead to linguistic bias in the analysis. Data can be incomplete or out of date if bibliometric databases take too long to index new articles. This

can lead to questionable trend analysis and citation effect estimations, which is particularly problematic in fast-paced industries like banking.

The precise definition of financial technology (fintech) is difficult to pin down. because it covers a wide range of academic disciplines. Researchers can use a wide range of approaches. When there are discrepancies in terminology and theoretical models, it becomes difficult to ensure consistent data gathering and analysis.

It can be quite difficult to distinguish between writers with similar or identical names when working with common names or writers with diverse ties. This could lead to erroneous authorship analysis and citation attribution. While bibliometric analysis might reveal patterns in research quantitatively, it might not give the same level of insight into context as qualitative methods. Results interpretation requires domain knowledge and exposes researchers to the possibility of bias. Bibliometric analysis ignores qualitative factors like research impact, originality, and relevance in favor of quantitative metrics like citation patterns and research productivity. Though it may miss subtle nuances, it does give a general picture of the state of the field. Findings from bibliometric analysis may not apply to certain subfields or areas within fintech because they are derived from aggregated data. It is possible that the analysis does not completely account for regional differences in research output, funding priorities, and institutional cooperation. The use of published data in bibliometric analysis raises ethical questions about author consent, data privacy, and IP rights, among others. Before analyzing bibliographic data, researchers should ensure they have the appropriate authorizations and follow all applicable ethical requirements. Notwithstanding these caveats, bibliometric analysis is still a great way to learn about fintech research trends, find out who the bigwigs are, and shape research policy and practice. When analyzing the results of bibliometric studies, researchers should be aware of and take these constraints into account.

SUGGESTIONS

Suggestions for future bibliometric studies of financial technology industry trends Supplement bibliometric data from conventional databases with data from non-traditional sources industry reports, preprint repositories, patent databases, and grey literature. This will diversify your data sources. Reducing the influence of publication bias can lead to a more comprehensive picture of fintech research. To incorporate a more diverse range of publications and perspectives, we should consider conducting bibliometric analyses in more than one language. When we work with researchers who are multilingual or make use of translation tools, we can overcome language barriers and eradicate prejudice based on language. Maintaining Up-to-Date Information If you want your analysis to reflect current research trends and lessen the impact of time lag, you should regularly update your bibliometric data. To ensure that data is always up-to-date, implement protocols for regular data refreshes and use automatic data gathering methods. Revise Field-Useful Phrases Defining the financial technology industry's parameters is crucial for research consistency. Find relevant papers using standardized keywords, categorization methods, or ontologies to optimize accuracy and minimize confusion.

Make use of cutting-edge techniques for writers' identities, such as ORCID iDs, affiliations with organizations, and co-authorship. technologies, in addition to semantic analysis. To eliminate confusion and properly credit authors for their works, it is necessary to combine several identities and attributes. Approach Using Hybrid Methods.

CONCLUSIONS

In order to derive conclusions from a bibliometric analysis of fintech trends, it is usual practice to synthesize the most essential facts and takeaways. Here are a few potential conclusions drawn from this Find the big ideas in fintech by looking into citation trends, co-occurrence networks, and keywords in published articles. Conclude by talking about the potential future effects of new advancements on fintech research, such as blockchain, digital payments, regulatory obstacles, and financial inclusion. Notable Groups and Authors Acknowledge the leading academic institutions and authors who have had a major influence on fintech research by their publications, collaborations, and citation effect. Find out how these major figures are fostering innovation and expanding fintech knowledge. Research on a Global Scale Examine the distribution of academic endeavors in financial technology to identify the leading nations or areas in this sector. Finish off the topic of international collaboration networks and bring attention to any chances to enhance international cooperation and information sharing. Time Series Patterns Evaluate the impact of citation trends, the number of publications, and the evolution of fintech research over time. Talk about how new directions have emerged in the field of fintech studies and what has caused the emphasis to change. Our Present Situation and Future Directions Identify possible gaps and possibilities for the future investigation into financial technologies backed by a literature study. Lastly, deal with when there is a need for more study to address past problems, tackle new challenges, or uncover unrealized possibilities in the realm of financial technology innovation. Implications for practice and policy Talk about how politicians, regulators, and businesspeople can put the results into practice. Conclude by talking about how research in financial technology (fintech) might affect innovation in the financial services sector, policymaking, and regulatory framework development. Rules and Limitations Recognize the data biases, methodological limitations, and interpretational issues that were present in the bibliometric analysis. Give suggestions for how future fintech bibliometric research might be better conducted while reducing the likelihood of bias and errors. In sum, a bibliometric study of fintech trends should synthesise the major takeaways and offer concrete suggestions for improving financial technology-related study, practice, and policy.

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