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Bibliometric Analysis of Fintech Applications in Financial Institutions: A Comprehensive Review of Recent Trends and Research Patterns

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Abstract
This paper presents a bibliometric analysis of publications on FinTech applications in financial institutions, focusing on research trends, document types, publication patterns, and contributions from nations, institutions, journals, and authors. Citation and co-citation network analysis highlights key contributors and collaborations. Using Scopus data from top finance and economics journals, 222 articles were selected from an initial 328 based on "Financial Technology" as the main keyword. The study emphasizes FinTech's transformative role in financial institutions, its rapid growth, and its adoption by users and providers. It identifies research gaps and emerging themes, contributing to the evolving understanding of FinTech's impact.

Keywords: Bibliometric citation analysis, Fintech, financial institutions, VOS viewer, Biblioshiny.

Introduction
The usage of information technology by financial institutions has increased, and there are new rivals in the market. Any development in how individuals conduct business can be broadly referred to as "financial technology," from the development of digital currency to double-entry accounting(Alafeef et al. 2024). Fintech, which originally referred to computer technology being applied to the back office of banks or trading firms, has nevertheless expanded dramatically since the internet revolution and the mobile and smartphone revolution(Kukreja, Bahl, and Gupta 2020a). Fintech now encompasses a wide range of technical advancements in both personal and commercial finance(Stankevičienė and Kabulova 2022a). Fintech is disrupting traditional banking models, offering customers alternative sources of funding, such as peer-to-peer lending, and providing services like robo-advisory and digital payments(Anagnostopoulos 2018; Kukreja, Bahl, and Gupta 2020b). This disruption is forcing traditional banks to adapt and integrate fintech solutions to remain competitive(Jünger and Mietzner 2020).

According to the Financial Stability Board (2017), FinTech can be defined as “technologically-enabled financial innovation that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services”. Fintech, short for Financial Technology, refers to the innovative use of technology to deliver financial services more efficiently, securely, and conveniently(Khatun and Tamanna 2021). It encompasses a wide range of applications, including mobile banking, digital payments, blockchain technology, robo-advisors, peer-to-peer lending, and more(B. Li and Xu 2021). Fintech has emerged as a disruptive force in the financial industry, revolutionizing the way financial services are accessed and delivered(Mention 2019). It refers to the use of technology to improve and automate the delivery and use of financial services(Bollaert, Lopez-de-Silanes, and Schwienbacher 2021). Fintech companies use technology to provide new and innovative financial products and services, often at a lower cost than traditional financial institutions(Khatun and Tamanna 2021). Some banks are partnering with fintech firms to leverage their strengths, while others advocate for stricter regulations for fintech startups to ensure fair competition(Suprun, Petrishina, and Vasylchuk 2020a) Individuals with a better understanding of financial concepts and a belief in their ability to manage their finances are more likely to adopt fintech services(Emuron, van der Nest, and Coffie 2024).

Partnerships between fintech firms and established financial institutions can be mutually beneficial, leveraging the strengths of each sector(Emuron, van der Nest, and Coffie 2024). An innovative FinTech solution is available

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whenever and wherever one has to undertake a transaction, for example, riding a cab, shopping at a small retail store, or any online transaction(Vučinić 2020). In many ways, it is changing the financial sector; minimizing the financial sector's costs, improving the quality of financial services, and helping organizations manage their finances efficiently with high security against cyber-attacks (J. Li et al. 2020a).

The rising importance of IT in our daily lives is one of several elements influencing the fintech industry's rapid rise(Suprun, Petrishina, and Vasylchuk 2020b). The financial sector can now improve procedures, services, and business models thanks to phenomena like cloud computing, the internet, and big data(Haddad and Hornuf 2019). InsurTech, Robo advisory services, and crowdfunding platforms have changed the horizon of the insurance, investment, and financial sectors (Rabbani, Khan, and Thalassinos 2020).

Importance of bibliometric analysis in understanding research trends
Bibliometric analysis allows researchers to identify emerging research areas and trends by analyzing the frequency of keywords, topics, and concepts in scientific publications(Donthu et al. 2021). This helps institutions, researchers, and funding agencies to allocate resources effectively and stay up-to-date with the latest developments in their respective fields(B. Li and Xu 2021). A bibliometric analysis' major objective was to compile and assess all relevant research on a topic of interest in order to create objective findings that could be verified and repeated repeatedly(Brika 2022).

By analyzing citation patterns and co-authorship networks, bibliometric analysis provides insights into the structure of the scientific community(Donthu et al. 2021). It helps in identifying key players, influential researchers, and collaborative networks, leading to a better understanding of how knowledge is disseminated and shared(B. Li and Xu 2021). Additionally, researchers employ bibliometric techniques to analyze publications in the ScienceDirect database to learn more about their past, present, and future(Singh 2021). Particularly in recent years, this type of research has produced many important findings. All of the papers in the database were examined using a bibliographic measurement approach(Brika 2022).

Bibliometric analysis enables researchers to compare their output and impact against their peers and institutions(Donthu et al. 2021). This benchmarking helps identify areas of improvement and collaboration opportunities, as well as foster knowledge exchange and interdisciplinary research(Brika 2022; Keshari and Gautam 2023).

Research Questions
RQ1. What changes have been made to the fintech and financial institution literature?
RQ2. Which articles have had the most citations, and which nations, publications, and authors have contributed the most to Fintech and Financial Institution-related research?
RQ3. What are the most important topics and problems discussed in the scholarly literature on financial institutions and fintech?

Literature Review

2.1. FinTech: - 'FinTech' was coined later than the word 'financial innovation,' which has nearly the same meaning. Up until 2009, one or two scholarly articles per year were published on financial innovation(Takeda and Ito 2021a). FinTech as a phenomenon will simply be referred to as "FinTech," while FinTech as a set of technologies will be referred to as "FinTech technologies" and as a set of services as "FinTech services" in this article (Takeda and Ito 2021a)

It is identified the factors that affect the application of Fintech in the financial sectors(Takeda and Ito 2021b). The effective use of fintech is anticipated to boost decision-makers capacity to employ creative and effective methods for enhancing the usage of fintech by manipulating and controlling the independent variables [(Khatun and Tamanna 2021).

Blockchain, big data, machine learning, artificial intelligence, and the digital economy all advance together to support the development of fintech(B. Li and Xu 2021).

In the area of FinTech, we reaffirmed the significance of financial regulation(J. Li et al. 2020b). The achievement of network security and the reduction of current online microfinance present further challenges for banking

regulators(Anwarul Islam and Khan 2024). That is to say, from the standpoint of financial risk, figuring out how to use technology efficiently, enhance supervision tools, and optimize supervision paths is a difficulty(B. Li and Xu 2021).

2.2. FinTech in Financial Institutions

Financial technology refers to businesses that use technology to enhance the efficiency and ease of financial transactions, including buying and selling(Bollaert, Lopez-de-Silanes, and Schwienbacher 2021). Fintech also defines a range of financial activities, such as money transfers, checking with your mobile, by passing a bank branch to apply for credit, raising money for a start-up, or managing your business(Kukreja, Bahl, and Gupta 2020b) There are several sorts of financial technology based on the services they offer(Khatun and Tamanna 2021). In Indonesia, businesses such as Squarecash, Venmo, TransferWise, and Very Fund offer money transfer services. Fintech companies including Google Wallet, PayPal, Square Order, and Moka in Indonesia offer purchasing services[(Purnomo and Khalda 2019)

To consider financial stability as a systemic event within a specific location or region, it is customary in the world today to use a specific set of indicative indicators that reflect the locations of both the real, state, and external economic sectors as well as the infrastructure and market as a whole(Vučinić 2020). As a result, it takes into account changes in the macroeconomic environment that significantly impact the situation of the financial industry(Stankevičienė and Kabulova 2022b). Globally, the banking industry is currently experiencing a possible disruption due to recent advancements in FinTech and digital technologies. Numerous factors, such as financial globalization, technical development, the necessity for new business models, and the competition among service providers to meet rising client expectations, were responsible for this transition(Kukreja, Bahl, and Gupta 2020b). African countries and other developing and emerging markets need to invest in FinTech as such investments might provide a cushioning effect during significant macroeconomic shocks(Tut 2023)

Data and Methedology

3.1. Data

The sample contains 222 articles which have been produced by 176 journals including 126 articles,31 book chapters, and 65 conference papers, and written by 586 authors from different countries during 2016-2023. There are only 40 single-authored documents while 37 authors wrote in collaboration. The selection criteria explain the inclusion and exclusion process in Table 1.

3.2. Bibliometric analysis

Analyzing bibliographic data using bibliometric techniques is one of the most important metrics for determining the Caliber of scientific output. The most significant discoveries of a group of bibliographic records are frequently highlighted using bibliometric analysis. The report uses a range of bibliometric analysis methodologies to assess the research relevant to the application of Fintech research on Financial Institutions. In addition to being able to handle a large corpus, bibliometric analysis may identify publication trends, produce visualizations of the development of a subject, and identify emerging themes. This makes it possible to evaluate the situation as well as imagine prospective future study areas.

Both VOS Viewer and the Bibliometrix R-package were used by the study to analyse the data. The Bibliometrix R-package software's metrics for citations and publications identify the most significant authors, works, sources, and nations based on total citations and total number of publications. Using the Bibliometrix R-package, co-authorship analysis emphasizes the international research collaborations based on the countries of origin of the papers. As a result of the keywords utilized in the studies, the Bibliometrix R-package is also employed for keyword analysis, producing a thematic map and the hot issues in the industry. Thematic mapping provides information on the dominant topics in the area right now and the prospective directions for future research. Co-occurrence analysis in VOS Viewer focuses on the textual keywords of the document and shows the link between terms in the literature, giving insight into the knowledge structure of the field. Bibliographic coupling is used in VOS Viewer to clarify the topics in the body of knowledge. These are the bibliometric analysis methods employed in this paper with the aid of the two programs.

Data Analysis

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The data is analysed using the Bibliometrix R-package software and VOS viewer. The citation-related and publication-related metrics using the Bibliometrix R-package software give the most influential authors, publications, sources and countries in terms of total citations and total number of publications.

4.1. Performance analysis

4.1.1. Publication trend: - The total number of papers is plotted against each year of publication in Figure 1, which shows the publishing trend of Fintech in financial institutions research. The Figure shows that the research started to evolve only after 2016 considering certain criteria of filtering, and there were few papers from 2016 and 2017. The average number of publications per year was finally reached after four years, or in 2020. Over the past three years, the most papers have been produced, with 2022 being the most productive (63 articles), followed by 2021 (50 articles), and 2020 (33 articles). Even though 2022, the year of recovery from COVID-19, was the year that produced the most studies in this field, 2023 will not compare to 2022 in this regard. Only 28 articles have been published in 2023 as the year draws to a close, which is 44% of the total number of articles produced in 2022. This demonstrates that research on Fintech in financial institutions is not moving as quickly in 2023.

4.1.2. Co-authorship analysis: - Fintech on Financial Institutions related research based on countries. The co-authorship between authors from various nations is depicted in Figure 2. This observable and tried-and-true method efficiently reveals scientific collaboration. Researchers now work in teams that integrate diverse viewpoints and complementary abilities to accomplish shared goals rather than playing independently. An author collaboration network can check the intensity of collaboration and the degree of intimacy between different authors. Hence, co-authorship analysis is an effective tool for evaluating collaboration trends and recognizing significant sources (Fonseca et al., 2016), which is why this paper intends to look at the co-authorship analysis.

Countries are denoted in Figure 2 by a label and a circle. Each circle's size represents the number of papers from that country that have been written. The thickness of the link also reveals the intensity of the ties between the two nations or the quantity of papers with writers from both nations. According to the data, China has the second-highest number of co-authorship links with other nations after the kingdom (10 countries). 78 countries are isolated, which indicates that its authors have never collaborated on works with authors from other countries.

4.1.3. Keyword analysis

Trending topics: -Analysing the keywords utilized in papers is a significant method for determining emerging subjects and the focus of the authors on the topic (Agbo et al., 2021). The topics that are currently trending in this area are shown in Figure 3& Table 2 based on the authors' keyword usage. To conduct this study, the minimum word frequency was set at 4, and the yearly word count was set at 5. It demonstrates that recent studies in this field have focused on Financial Institutions, Fintech, Finance, and Financial Services. Financial sectors is the trending topics in2022, and Finance and Financial service are the trending topics in2021. It is noted that the term Fintech has been used by researchers since 2019, which was stopped in 2020. Apart from Fintech, the most prominent keywords used in the studies are commerce, Investments and Artificial Intelligence.

4.1.4. Thematic map

The thematic map of AR in tourism shown in Figure 4 is another analysis done with the keywords using the Bibliometrix R-package. A thematic map aims to analyze the existing state and sustainability prospects of the area. This analysis helps educate researchers and stakeholders about the possibility of the establishment of new thematic research topics within a discipline (Agbo et al., 2021). The issues' significance and level of development are determined by the density and centrality measurements, respectively. The size of each circle indicates how frequently that specific term has been used in publications. There are four quadrants on a themed map. Following is an explanation of the quadrants.

The driving and motor themes in the upper-right quadrant. There are three clusters and it shows that the driving themes of this field are financial institutions, finance, financial services, crime, machine learning, investments and risk assessment. The basic themes include two clusters, one of its clusters consists of fintech, commerce and blockchain. And second one includes only customer experience. In Emerging themes, there are three clusters, consists of payment systems, electronic money, engineering research and financial system. In Niche themes, which studied software design, literature reviews, information system and information use.

4.1.5. Co-occurrence analysis: - Co-occurrence analysis is an analysis that is also conducted based on keywords. The analysis of keywords in the publications used by the authors gives an idea of the concepts that are being

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focused on in these studies of FinTech in Financial Services. Out of a total of 1276 keywords in the 222 articles, 47 meet the threshold of being occurred for a minimum of 5 times, which is shown in Figure 5. The figure shows that Financial Institutions, FinTech, Finance, and financial services have a greater impact on the network. It reveals that compared to other concepts; Fintech was studied in connection with Financial Institutions by the authors in several studies.

4.1.6. Bibliometric coupling: Citations from publications are used in bibliographic coupling to show the level of knowledge currently held in a field. Bibliographic coupling encompasses fundamental, specialized and contemporary knowledge (Goodell et al., 2021). Coupling occurs when two works mention a third shared work. It implies that there's a probability the topics covered in the two works are related. When the documents having at least 5 citations were taken into consideration for coupling, a total of 222 documents of which 72 were connected were produced. Of these,24 documents with the greatest total link will be selected. As seen in Figure 6, this led to the discovery of eight theme groupings. Each item in these clusters has been examined using content analysis to group them under a single theme.

Cluster 1 consists of 5 Articles which examine the implementation of financial technology in financial institutions and its impact, challenges and determinants of fintech in financial institutions.

Cluster 2 consists of 4 Articles aims to study the adoption digital transformation of financial service systems through Fintech – disruptive innovations.

Cluster 3 consists of 3 Articles focused to understand the main aspects of Fintech, role of financial institutions, attitude of stakeholders towards the new financial system, challenges and opportunities prevailing towards this industry.

Cluster 4 consists of 3 Articles examines the determinants of in Fintech sector firms representing the implementation of the sustainable business model and Peer-to-Peer (P2P) lending.

Cluster 5 includes 3 Articles This research examines individuals' feasibility of adopting digital wallets and why some financial institutions choose to, or not to, participate in this nascent mobile payments ecosystem.

Clusters 6,7 & 8 consist of 2 Articles and focus on online peer-to-peer lending and the impact of Fintech on SMEs, the emergence of new technologies in the financial industry and its determinants, and a review of the academic research work done in the area of Islamic financial technology.

Conclusions, limitations, and directions for Future research

5.1. Conclusions

The current study advances understanding of the existing state of Fintech on financial institutions-related research. This study has compiled a comprehensive summary of all papers made in the field of Fintech up to and including August 2023. The study of Fintech on financial Institutions gained more attention and attraction in academic research and financial literature during the late 20th century and early 21st century. The main contribution of the article is that there haven't been any bibliometric studies on Fintech in financial Institutions related research before. The study demonstrates a rising trend in this topic's scholarly publications. An increase in promising scientific articles on this subject has been seen recently, according to the research. The publication of relevant papers has also improved since 2017 when the topic began to catch the attention of moving very quickly. Although various countries have published articles on the subject, the global community has not given research on Fintech on financial institutions as much attention as it deserves. China is in the first place with 89 articles generated, followed by India with 19 Articles and the United Kingdom with 8 Articles. A total of 586 Authors published works on Fintech related Hassan MK, Khan S, and Raza Rabbani M are the most relevant Authors. The most influential cited documents produced by Imam Abdurahman Bin Faisal University.

Co-authorship analysis is taken based on the countries, of the 78 countries 10 have the international co-authorship relationship. China has the second-highest co-authorship links with other nations after the United Kingdom. Keyword Analysis demonstrates that recent studies in this field have focused on Financial Institutions, Fintech, Finance, and Financial Services. Financial sectors is the trending topics in2022, and Finance and Financial service are the trending topics in2021. Financial Institutions occurred 77 times and, Fintech occurred in 41 times in this

study. A thematic map aims to analyze the existing state and sustainability prospects of the area and here it classifies 4 themes. The driving themes of this field are financial institutions, finance, financial services, crime, machine learning, investments, and risk assessment. Co-occurrence analysis of keywords, the analysis of keywords in the publications used by the authors gives an idea of the concepts that are being focused on in these studies of FinTech in Financial Services. Out of a total of 1276 keywords in the 222 articles, 76 meet the threshold of being occurred for a minimum of 4 times. The theme map in keyword analysis and the content analysis in bibliographically coupled articles have identified several topics that could be useful for academics planning further research. In bibliographic coupling, several studies are focused on the impact, determinants, and challenges of Fintech in financial institutions and financial services.

5.2. Limitations and Future Research Direction

Several limitations must be addressed despite the paper's contributions. The first is the use of a single database as opposed to several sources for data retrieval. Even if the authors of this study believe that Scopus includes a sizable number of publications that are typical of the field in general, using additional databases will give more coverage of the topic. Working papers that have not yet been published, doctoral theses, books, or conference proceedings did not meet the requirements for inclusion. Furthermore, because the study only looked at English-language publications, the significance of research done in other languages was ignored.

References

1. Alafeef, Mohammad Ali, Baliira Kalyebara, Nevin Youssef Kalbouneh, Nawaf Abuoliem, Amer N. Bani Yousef, and Mohammad Abdel Mohsen Al-Afeef. 2024. “The Impact of FINTECH on Banking Performance: Evidence from Middle Eastern Countries.” International Journal of Data and Network Science 8 (4): 2219–30. https://doi.org/10.5267/j.ijdns.2024.6.009.
2. Anagnostopoulos, Ioannis. 2018. “Fintech and Regtech: Impact on Regulators and Banks.” Journal of Economics and Business 100 (June 2017): 7–25. https://doi.org/10.1016/j.jeconbus.2018.07.003.
3. Anwarul Islam, K. M., and Muhammad Saifuddin Khan. 2024. “The Role of Financial Literacy, Digital Literacy, and Financial Self-Efficacy in FinTech Adoption.” Investment Management and Financial Innovations 21 (2): 370–80. https://doi.org/10.21511/imfi.21(2).2024.30.
4. Bollaert, Helen, Florencio Lopez-de-Silanes, and Armin Schwienbacher. 2021. “Fintech and Access to Finance.” Journal of Corporate Finance. Elsevier B.V. https://doi.org/10.1016/j.jcorpfin.2021.101941.
5. Brika, Said Khalfa Mokhtar. 2022. “A Bibliometric Analysis of Fintech Trends and Digital Finance.” Frontiers in Environmental Science 9 (January). https://doi.org/10.3389/fenvs.2021.796495.
6. Donthu, Naveen, Satish Kumar, Debmalya Mukherjee, Nitesh Pandey, and Weng Marc Lim. 2021. “How to Conduct a Bibliometric Analysis: An Overview and Guidelines.” Journal of Business Research 133 (September):285–96. https://doi.org/10.1016/j.jbusres.2021.04.070.
7. Emuron, Abraham, D. P. van der Nest, and Cephas Paa Kwasi Coffie. 2024. “FinTech and Financial Development: The Role of Traditional Financial Institutions.” African Journal of Economic and Management Studies. https://doi.org/10.1108/AJEMS-10-2023-0406.
8. Haddad, Christian, and Lars Hornuf. 2019. “The Emergence of the Global Fintech Market: Economic and Technological Determinants.” Small Business Economics 53 (1): 81–105. https://doi.org/10.1007/s11187-018-9991-x.
9. Jünger, Moritz, and Mark Mietzner. 2020. “Banking Goes Digital: The Adoption of FinTech Services by German Households.” Finance Research Letters 34 (March 2019): 101260. https://doi.org/10.1016/j.frl.2019.08.008.
10. Keshari, Aditya, and Amit Gautam. 2023. “Asset Pricing in Global Scenario: A Bibliometric Analysis.” IIM Ranchi Journal of Management Studies 2 (1): 48–69. https://doi.org/10.1108/irjms-02-2022-0025.
11. Khatun, Nasima, and Marzia Tamanna. 2021. “FACTORS AFFECTING THE ADOPTION OF FINTECH: A STUDY BASED ON THE FINANCIAL INSTITUTIONS IN BANGLADESH.” Copernican Journal of Finance & Accounting 9 (4): 51. https://doi.org/10.12775/cjfa.2020.021.
12. Kukreja, Gagan, Divij Bahl, and Ruchika Gupta. 2020a. “The Impact of FinTech on Financial Services in India: Past, Present, and Future Trends.” In Innovative Strategies for Implementing FinTech in Banking, 191–200. IGI Global. https://doi.org/10.4018/978-1-7998-3257-7.ch012.
13. . 2020b. “The Impact of FinTech on Financial Services in India: Past, Present, and Future Trends.” In Innovative Strategies for Implementing FinTech in Banking, 191–200. IGI Global. https://doi.org/10.4018/978-1-7998-3257-7.ch012.

14. Li, Bo, and Zeshui Xu. 2021. "Insights into Financial Technology (FinTech): A Bibliometric and Visual Study." Financial Innovation. Springer Science and Business Media Deutschland GmbH. https://doi.org/10.1186/s40854-021-00285-7.
15. Li, Jianping, Jingyu Li, Xiaoqian Zhu, Yinhong Yao, and Barbara Casu. 2020a. "Risk Spillovers between FinTech and Traditional Financial Institutions: Evidence from the U.S." International Review of Financial Analysis 71 (October). https://doi.org/10.1016/j.irfa.2020.101544.
16. 2020b. "Risk Spillovers between FinTech and Traditional Financial Institutions: Evidence from the U.S." International Review of Financial Analysis 71 (October). https://doi.org/10.1016/j.irfa.2020.101544.
17. Mention, Anne Laure. 2019. "The Future of Fintech." Research Technology Management. Taylor and Francis Inc. https://doi.org/10.1080/08956308.2019.1613123.
18. Purnomo, H., and S. Khalda. 2019. "Influence of Financial Technology on National Financial Institutions." In IOP Conference Series: Materials Science and Engineering. Vol. 662. Institute of Physics Publishing. https://doi.org/10.1088/1757-899X/662/2/022037.
19. Rabbani, Mustafa Raza, Shahnawaz Khan, and Eleftherios I. Thalassinos. 2020. "FinTech, Blockchain and Islamic Finance: An Extensive Literature Review." International Journal of Economics and Business Administration 8 (2): 65–86. https://doi.org/10.35808/ijeba/444.
20. Singh, Bharati. 2021. "A Bibliometric Analysis of Behavioral Finance and Behavioral Accounting." American Business Review 24 (2): 198–230. https://doi.org/10.37625/ABR.24.2.198-230.
21. Stankevičienė, Jelena, and Jelena Kabulova. 2022a. "Financial Technology Impact on Stability of Financial Institutions." Technological and Economic Development of Economy 28 (4): 1089–1114. https://doi.org/10.3846/tede.2022.17093.
22. . 2022b. "Financial Technology Impact on Stability of Financial Institutions." Technological and Economic Development of Economy 28 (4): 1089–1114. https://doi.org/10.3846/tede.2022.17093.
23. Suprun, Anatoly, Tetiana Petrishina, and Iryna Vasylchuk. 2020a. "Competition and Cooperation between Fintech Companies and Traditional Financial Institutions." In E3S Web of Conferences. Vol. 166. EDP Sciences. https://doi.org/10.1051/e3sconf/202016613028.
24. . 2020b. "Competition and Cooperation between Fintech Companies and Traditional Financial Institutions." In E3S Web of Conferences. Vol. 166. EDP Sciences. https://doi.org/10.1051/e3sconf/202016613028.
25. Takeda, A, and Y Ito. 2021a. "A Review of FinTech Research." Int. J. Technology Management. Vol. 86. http://creativecommons.org/licenses/by/4.0/.
26. . 2021b. "A Review of FinTech Research." Int. J. Technology Management. Vol. 86. http://creativecommons.org/licenses/by/4.0/.
27. Tut, Daniel. 2023. "FinTech and the COVID-19 Pandemic: Evidence from Electronic Payment Systems." Emerging Markets Review 54 (June 2021): 100999. https://doi.org/10.1016/j.ememar.2023.100999.
28. Vučinić, Milena. 2020. "Fintech and Financial Stability Potential Influence of FinTech on Financial Stability, Risks and Benefits." Journal of Central Banking Theory and Practice 9 (2): 43–66. https://doi.org/10.2478/jcbtp-2020-0013.