



SHARIA FINTECH: CURRENT ISSUES AND FUTURE OPPORTUNITIES

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Abstract: This research was conducted to determine the present and future focus on topics related to sharia fintech through the bibliometric and visualization analysis of 380 papers retrieved from the Google Scholar database. The process was based on cluster analysis as well as the evaluation of events and all keywords. The results showed that publications related to sharia fintech increased rapidly since the beginning of 2016. Moreover, the most prolific journals, cities, regions, institutions, and authors identified were JIEI, Jakarta, West Java, STIE AAS, and T Trimulato respectively. The most frequent keywords were Sharia Fintech, Indonesia, Fintech, and Sharia. The six main research trends identified included Principles and Practices of Islamic Finance, Innovative Financial Technology, Studies or Research on Financial Technology, Fintech Association and MSME Development in Indonesia, Covid Analysis and Case Studies in the Context of Sharia Fintech, as well as Sharia Peer Lending. Therefore, this research was able to provide a comprehensive analysis of the trends in Islamic fintech and identify future directions.

Keywords: Sharia Fintech, Bibliometric Analysis, Financial Technology

Abstrak: Penelitian ini berfokus pada fintech syariah serta topik prospektif untuk penelitian masa depan. Sebagai alat bibliometrik dan visualisasi untuk database Google Scholar, 380 makalah dianalisis. Analisis kluster, analisis kejadian bersama semua kata kunci. Hasilnya menunjukkan bahwa publikasi terkait fintech syariah meningkat pesat sejak awal tahun 2016. Jurnal, kota, wilayah, institusi, dan penulis paling produktif adalah JIEI, Jakarta, Jawa Barat, STIE AAS, dan T Trimulato. Kata kunci yang paling banyak muncul adalah Fintech Syariah, Indonesia, Fintech, dan Syariah. Penelitian ini menemukan enam tren penelitian utama: Prinsip dan Praktik Keuangan Islam, Teknologi Keuangan yang Inovatif, Studi atau Penelitian tentang Teknologi Keuangan, Asosiasi Fintech dan Pengembangan UMKM di Indonesia, Analisis Covid dan Studi Kasus dalam Konteks Fintech Syariah, dan Peer Lending Syariah. Studi ini memberikan analisis komprehensif mengenai tren penelitian fintech syariah, serta mengidentifikasi arah penelitian di masa depan.

Kata Kunci: Fintech Syariah; Analisis Bibliometrik; Financial Technology

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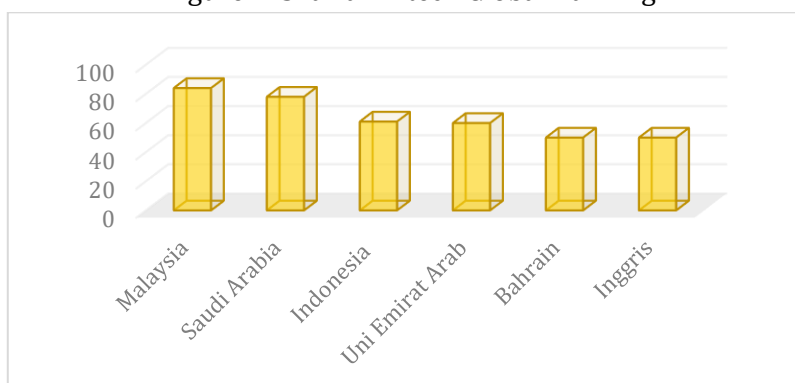
Introduction

The number of internet users in Indonesia is increasing quite rapidly as observed from 110.2 million reported in 2015 to 215.63 million people in 2023, showing a growth of 95.7%. Digital banking transactions also increased by 158% in the last 5 years, from 2018 to 2023, and the last value was recorded to be IDR 4,264.8 trillion. These transactions include internet, SMS or mobile, and phone banking.¹

Sharia banks and financial technology (fintech) firms are expected to work harmoniously to ensure MSMEs become more effective and productive. This is based on the significant market potentials that can be served through the synergy between banks and fintech platforms, specifically for people without access to conventional banking services. The importance is based on the fact that most of the unbankable communities seeking access to capital are micro, small, and medium enterprises (MSMEs). According to the Deloitte Global Fintech Report, fintech is the current dominant technology being developed in the banking world. Financial Services Authority Regulation (POJK) No. 77/POJK.01/2016 concerning Borrowing and Borrowing Money Based on Information Technology Services (LPMUBTI) defines fintech as the provision of financial services to ensure lenders and borrowers directly enter into loan agreements in Rupiah currency through an electronic system using the internet network.

The growth of fintech has been positive over time as observed in the placement of Sharia fintech in the fourth position by Katadata in the Global Fintech Islamic Report of 2021.² The market was reported to have reached Rp 41.7 trillion or US\$ 2.9 billion during the period. Indonesia moved into the third position in 2023 after Malaysia and Saudi Arabia as observed in the GIFT (Global Islamic Fintech) indices of 61.1, 84.5, and 77.8 percent, respectively.³

Figure 1. Sharia Fintech Global Ranking



Source: Global Islamic Fintech Report 2023/2024

¹ Yuli Nurhanisah, "Pengguna Internet di Indonesia Makin Tinggi," <https://indonesiabaik.id/infografis/pengguna-internet-di-indonesia-makin-tinggi>, (23 June 2024).

² Dini Hariyanti, "Pertumbuhan Tekfin Syariah Indonesia Tertinggi Keempat di Dunia," <https://katadata.co.id/finansial/keuangan/609a0975ee68/pertumbuhan-tekfin-syariah-indonesia-tertinggi-keempat-di-dunia>, (23 June 2024).

³ Abidah Naqiya, "Sistem Fintech Syariah Indonesia Terbaik Ketiga di Dunia pada 2023/2024," <https://id.technasia.com/sistem-fintech-syariah-indonesia>, (23 June 2024).

The data retrieved from Tech in Asia as of December 14, 2023 showed the existence of 61 sharia fintech platforms in Indonesia. This was equivalent to 20 percent of the 300 licensed fintech estimated to be operating in the country. Moreover, the introduction of sharia fintech was to serve as a response to the development of conventional firms that often request interest for transactions.⁴ The services of sharia fintech in Indonesia are regulated in the fatwa of the National Sharia Council-Indonesian Ulema Council (DSN-MUI) number 117/DSN-MUI/II/2018 concerning Information Technology-Based Financing Services based on Sharia Principles.

An example of potential drawbacks is the occurrence of financial exclusion due to the possibility of not including those without access or familiarity with technology. Another issue is to ensure fintech platforms follow sharia principles and laws which is a complex process and requires close monitoring.⁵ This shows that the convergence of technology and Islamic finance offers several benefits but also has problems to be addressed through careful analysis and regulation.

The latest OJK Regulation (POJK) no. 10/2022 concerning Information Technology-Based Joint Funding Services requires P2P lending fintech operators to meet a minimum equity of IDR 2.5 billion. The report by OJK showed that 76 P2P lending fintech platforms satisfied the minimum equity requirements in July 2023. Moreover, this minimum equity provision is regulated in stages, and organizers are required to meet IDR 7.5 billion in July 2024 and IDR 12.5 billion in July 2025. OJK serves as the supervisor and enforces compliance by issuing an administrative letter in the form of a written warning to organizers who do not meet the provisions. It was reported that 26 P2P lending fintech platforms did not satisfy the minimum equity of IDR 2.5 billion in July 2023, leading to the design of an action plan to ensure the fulfillment of the regulation. Furthermore, OJK ensures continuous monitoring of the development of fintech P2P lending due to the risk of bad loans or a 90-day default rate (TWP90) which is recorded to be above 5 percent.

Islamic finance has become an increasingly popular and important topic in recent years with a growing body of literature discussing its ideas and practices. Moreover, the growth of fintech has also provided new potential and difficulties for the Islamic finance industry.⁶ Several research articles focus on the convergence of Islamic finance and fintech but there is much to learn about future developments and trends in the field.⁷ This is possible because fintech system and Islamic banking are superior to conventional banks in several ways. For example, fintech platforms leverage technology to provide faster, easier, and more customizable financial services at a lower cost. This shows the importance of

⁴ Rifki Muhammad Dan Rima Lanaula, "Challenges Of Islamic Supervisory In The Islamic Financial Technology Industry," *Economica: Jurnal Ekonomi Islam* 10, no. 2 (2019): 318.

⁵ Umar A Oseni And Syed Nazim Ali, "Fintech In Islamic Finance," *IJUM Law Journal* 26, no. 2 (2018): 14; Mustafa Raza Rabbani, And Shahnawaz Khan, "Introduction To Islamic Fintech: A Challenge Or An Opportunity?," *Springer International Publishing*, (2022): 25.

⁶ Ibrahim Musa Unal And Ahmet Faruk Aysan, "Fintech, Digitalization, And Blockchain In Islamic Finance: Retrospective Investigation," *MDPI Journal*, (2022): 388.

⁷ Muhamed Zulkhibri, "Financial Inclusion, Financial Inclusion Policy And Islamic Finance," *Macroeconomics And Finance In Emerging Market Economies*, (2019): 22.

observing how fintech and Islamic banking systems have continued to grow and innovate in financial sector considering the competition with traditional banks.⁸

Sharia fintech is technology-based business with innovative financial services or products developed based on sharia schemes. The concept promotes responsible, ethical finance and provides opportunities to influence all forms of financial transactions globally. Islam also has the capacity to improvise and innovate while ensuring adherence to sharia principles. This is observed from the implementation of sharia fintech to basically assist each other in goodness. The application is guaranteed to remain in accordance with Islamic values of providing benefits to all communities, both in the present world and in the hereafter.

This research aimed to provide data on trends, recommendations, representation of images or patterns, and add to the present efforts on Sharia Fintech in Indonesia. The results are expected to be useful in presenting the latest research and literature in order to ensure more relevance and enrichment of information on sharia fintech in different contexts. This can provide further research direction through the determination of the most important concepts capable of influencing sharia fintech. The process can also motivate future research and policy development in this field to improve the development of sharia fintech industry in the next few years.

Previous bibliometric research focused on articles in the Web of Science database related to Islamic finance and financial technology⁹, Fintech Islamic Research Mapping Using Biblio Shiny-R¹⁰, Islamic Finance and Blockchain,¹¹ as well as the Impact of Financial Technology on UKM Financing.¹² Another discussed the Development of Crowdfunding and Peer-to-Peer Lending. This research was conducted based on the interest in the world of fintech in Indonesia as observed in the very rapid development and domination despite the newness. Some of the cases associated with the presence of fintech include accumulation of interest beyond the initial loan, the terror of loan sharks tarnishing the good name of the platforms, mental health problems for the borrower, and even suicide due to default and debt entanglement.¹³

Issues cannot occur in sharia fintech because the practice of riba is strictly prohibited in Islamic law. Sharia fintech is perceived to be very safe due to the absence of

⁸ Thuy Nguyen, "Determinants Of Digital Banking Services In Vietnam: Applying UTAUT2 Model," *Asian Economic And Financial Review* 10, no. 6 (2020): 65.

⁹ Hanan Ahmad Qudah, Khawla Kassed Abdo, Laith Akram Al-Qudah, Hussein Mohammad Aldmour, And Mohammad Zakaria Al Qudah, "Factors Affecting Credit Policy In Islamic Banks Of Jordan," *Academy Of Accounting And Financial Studies* 21, no. 25 (2021): 307.

¹⁰ Aisyah Assalafiyah, Aam Slamet Rusydiana, And Lina Marlina, "Mapping Research On Islamic Fintech Using Biblioshiny-R," *Journal Of Islamic Economic Literatures* 3, no. 2 (2022): 15.

¹¹ Arinda Putri, Sylviana Damayanti, And Raden Rahadi, "Islamic Finance And Blockchain: A Bibliometric Analysis," *International Journal Of Current Science Research And Review* 05, no. 12 (2022): 4517.

¹² Irwan Moridu, Eva Andriani, Eva Yuniarti Utami, Dan Yudith F. Lerrick, "Dampak Teknologi Finansial Pada Pembiayaan UKM- Studi Bibliometrik Tentang Perkembangan Crowdfunding Dan Peer-To-Peer Lending," *Sanskara Ekonomi Dan Kewirausahaan (SEK)* 2, no. 01 (2023): 37.

¹³ Laura E. Stevenson And James A. Green, "The Socioeconomic Impact Of Fintech: Unintended Consequences For Low-Income Consumers," *Journal Of Economic Inequality*, (2024).

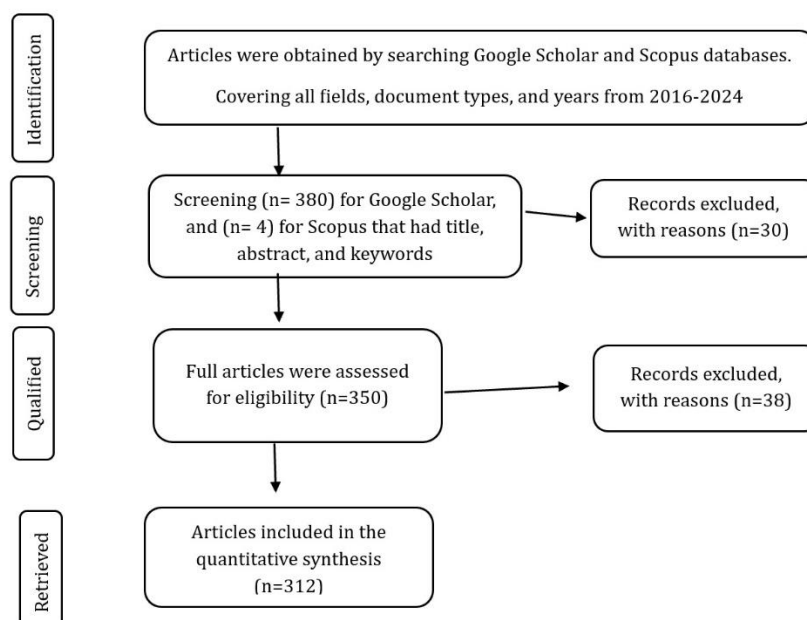
interest. Islamic law requires that the profits obtained be divided based on the agreed tenor, serving as the interesting aspect of the Islamic financial system. Profits and risks are equally distributed based on the principle of ta'awun (please help).¹⁴ Therefore, the novelty of this research is in different phases and first is to further analyze bibliometric results obtained, per graph or pattern and through clusters. Second, unfamiliar graphic models are not presented excessively, leading to the production of more informative results that do not confuse the readers or information users. Third, the focus on Indonesia reflects the condition of fintech research and provides more benefits to the country as a whole and future academics.

The bibliometric assessment of future trends allowed this research to answer questions related to different issues on sharia fintech. First, the number of sharia fintech research conducted yearly was identified. Second, the trends in research journals were explored based on productivity. Third, relevant affiliate trends were identified and, fourth, the distribution of research areas was mapped. Fifth, the topics most often used to investigate sharia fintech were analyzed.

Methods

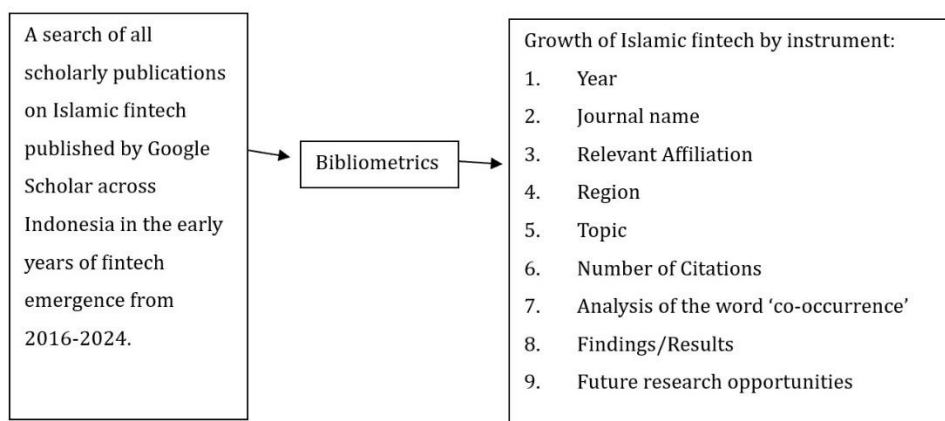
Publication data related to sharia fintech were sourced from the Publish or Perish database using "Sharia Fintech" as the search term in the complete data. This led to the identification of 380 publications in Google Scholar and 4 in Scopus on June 9, 2024. Scopus was eliminated from the search due to the lack of metadata. Moreover, bibliometric mapping was conducted using VOSviewer and Excel devices as observed in the methods and framework summarized in Figures 2 and 3.

Figure 2. Step Method



¹⁴ Ahmad B. Ibrahim And Sara A. Hussein, *Ethical Financing: The Advantages Of Islamic Fintech Over Conventional Models*, (UK: Palgrave Macmillan, 2024).

Figure 3. Research Outline



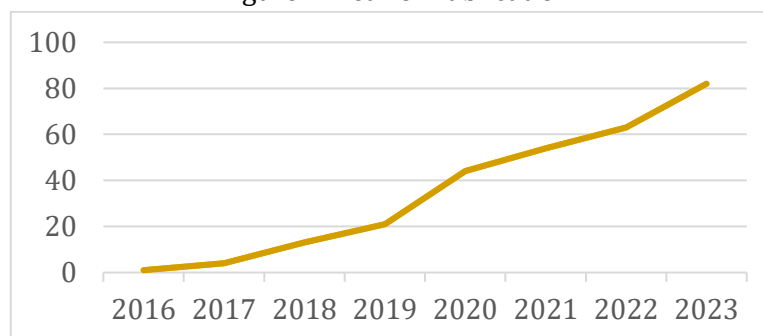
Results And Discussion

Multiple units of analysis were conducted to determine the number of authors, citations, journals, affiliates, publishers, and regions in the publications for a specific period. This was considered important to measure publishing activity in the field of Islamic fintech, determine the scope and organization of research, as well as the leading journals, universities, and regions.¹⁵ The focus was on the relevant literature published between 2016 and 2024 through the application of the most significant bibliometric analysis. Moreover, the most important academic institutions and their relationships were also examined based on the 312 articles published in 131 scientific journals.

Year Of Publication

The results showed the exponential growth of the knowledge related to sharia fintech in recent years. An average of 5 to 6 publications was recorded annually for the first three years, showing the publishing activity was quite low. However, there was a sharp spike starting from 2019 as observed in the following Figure 4.

Figure 4. Year of Publication



Source: PoP, Data Processed by the Author in 2024

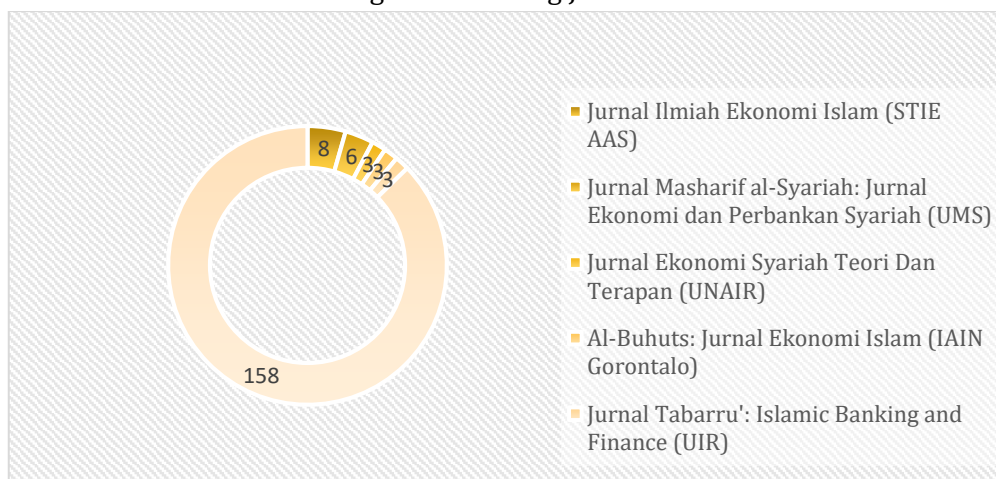
¹⁵ Irene Bautista-Bernal, Cristina Quintana García, And Macarena Marchante- Lara, “Research Trends In Occupational Health And Social Responsibility: A Bibliometric Analysis,” *Safety Science*, (2021): 137.

The analysis showed an increase from 1 article in 2016 to 4 in 2017 (YoY 300%), 13 in 2018 (YoY 225%), 21 in 2019 (YoY 62%), 44 in 2020 (YoY 110%), 54 in 2021 (23%), 63 in 2022 (YoY 17%), and 82 in 2023 (30%). There was a total of 30 articles in early June 2024. The trend showed a continuous increase in the number of publications based on time and identify the growing need for future research on sharia fintech. Some of the reasons for the boom included the introduction of technological innovations that provided cheaper and more accessible financial solutions, changes in consumer behavior in personal financial management, and financial inclusion for rural residents or small entrepreneurs.

Leading Journals

The results showed that 37 out of 146 journals received more than the average number of citations 13.5. Details of the top five leading journals are shown in Figure 5.

Figure 5. Leading Journals



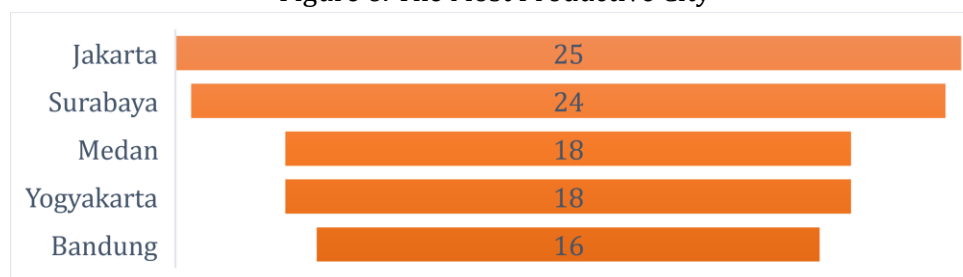
Source: PoP, Data Processed by the Author in 2024

The need for a lot of exploration of sharia fintech because the field is relatively new allows the accommodation of research journals indexed by SINTA 3-5. The leading journals were identified to include Scientific Journal of Islamic Economics (SINTA 3) with 320 citations, Journal of Masharif al-Syariah - Journal of Sharia Economics and Banking (SINTA 5) with 110, Journal of Theoretical and Applied Sharia Economics (SINTA 3) with 23, Al-Buhuts - Journal of Islamic Economics (SINTA 4) with 29, and Journal of Tabarru' - Islamic Banking and Finance (SINTA 4) with 25.

Regional Analysis

The regional analysis showed that most authors, educational institutions, journal publications, and citations related to sharia fintech were in areas with high attention and development of science and technology. The details of the ten most productive cities are shown in Figure 6.

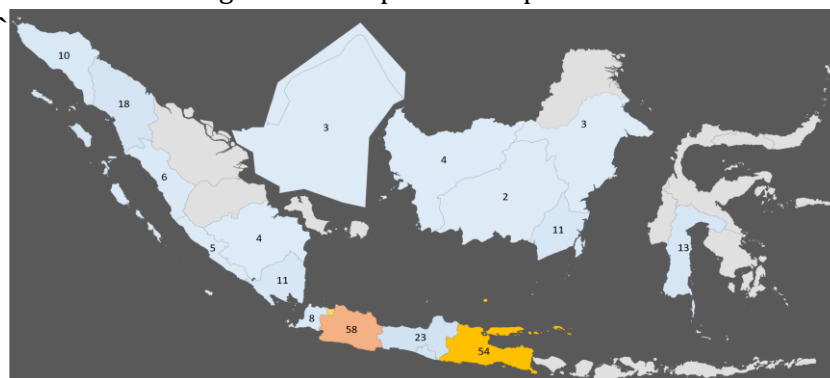
Figure 6. The Most Productive City



Source: PoP, Data Processed by the Author in 2024

Jakarta ranked first followed by Surabaya, Medan, Yogyakarta, and Bandung. This is probably because big cities are economic and business centers that allow rapid development of science and technology followed by a growing digital infrastructure, such as easy internet access, as well as many education and research centers.¹⁶ The next was the determination of the most productive provinces as presented in Figure 7.

Figure 7. Most productive provinces



Source: PoP, Data Processed by the Author in 2024

The results ranked West Java as the first followed by East Java, DKI Jakarta, Central Java, and North Sumatra. This could be based on the large number of people living in the region as observed in the data from the Central Statistics Agency (BPS) as of December 2023. West Java had 49.9 million followed by East Java (41.64 million), Central Java (38.13 million), North Sumatra (15.47 million), Banten (12.47 million), and Jakarta (11.34 million).

Most Productive And Influential Authors And Institutions

The most productive author was found to be T Trimulato who contributed a lot of sharia fintech research such as "Excellent Service for Sharia Fintech in the Midst of Covid-19 Conditions, Linkage of Sharia Banks and Sharia Fintech, Digital-Based Financing Distribution and Financing Risks, and MSME Development Through Sharia Fintech". The other authors are presented in the following Table 1.

¹⁶ Clara J. Setiawan And Rahmat H. Pratama, "Urbanization And Technology Advancement In Indonesian Economic Hubs: Jakarta, Surabaya, Medan, Yogyakarta, And Bandung," *Indonesian Journal Of Urban Studies*, (2023).

Table 1. Most Productive and Influential Authors and Institutions

Authors	Citations	Institutions
M Ansori	335	Nahdlatul Ulama Islamic University of Jepara
H Hiyanti	229	University of Indonesia
L Nugroho	229	University of Indonesia
C Sukmadilaga	229	University of Indonesia
D Yarli	136	Tazkia Bogor Islamic Economics College (STEI)
ATRC Yudha	105	Scopindo Media Library
AS Rusydiana	103	Bogor Agricultural University
W Lutfiah	90	Universitas Airlangga
AB Alwi	90	Universitas Airlangga
DD Setiani	90	Sunan Ampel State Islamic University Surabaya
T Trimulato	5	Academy of Accountancy Surakarta (STIE AAS)
H Suhendar	4	Pekalongan State Islamic Institute
L Rahmawati	3	Sunan Ampel State Islamic University Surabaya
W Yuspin	3	University of Muhammadiyah Surakarta
ATRC Yudha	3	Scopindo Media Library
M Iqbal	3	Perbanas Institute
K Islamiyah	2	State Islamic University of Jakarta
S Yahya	2	Universitas Airlangga
P Lestari	2	Jenderal Soedirman University
AR Amiruddin	2	Scopindo Media Library

Source: Vosviewer, Data Processed by the Author in 2024

The data shows that M Ansori and H Hiyanti had the highest citations with 335 and 229, respectively. M Ansori published an article titled "The Development and Impact of Financial Technology (Fintech) on the Sharia Financial Industry in Central Java" conducted through qualitative method through data collected from Financial Services Authority and the Sharia People's Financing Bank. Meanwhile, H Hiyanti published "Opportunities and Challenges of Sharia Fintech (Financial Technology) in Indonesia" through descriptive analysis based on an interactive model.

Concurrent Keywords

Bibliometric analysis was conducted using VOSviewer with an emphasis on the word "co-occurrence" to identify commonly recurring words and phrases. Moreover, the number of appearances for the phrase in all literature was determined by summing the observations from the entire dataset. The process of selecting the most popular terms to represent the Islamic fintech trend and setting a minimum repetition criterion of 3 was used to determine the relevance of the keywords. The results related to the concurrent keywords are presented in Figure 8.

Table 2. Keyword Grouping

Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
DSN MUI	Innovation	Factors	AFSI	Analysis	Sharia Peer Lending
World	Belief	Field	Indonesian Sharia Fintech Association	Covid	
Fatwa	Lending	Financial Technology	Indonesia	Case Research	
Sharia Fintech Finance	Sharia Lending P2P	Fintech Impact	MSMEs		
Institution	Peer Lending	Interest			
Role	Research	Research			
Product					
Sharia Technology					

Source: VOSviewer, Data Processed by the Author in 2024

The results showed that 67 keywords satisfied the minimum repetition criteria of 3 while 33 were selected based on relevance to the research topic. The 33 words selected were further grouped into six different clusters in relation to sharia fintech research topics.

Cluster 1: Principles And Practices Of Islamic Finance

The group "Principles and Practices of Islamic Finance" consisted of ten keywords. It was presented in a red cluster on the map and the data showed the need for an in-depth investigation of the grand idea in future. The cluster covers the entire rightmost center map, showing direct connections to the blue as well as indirect relationships with the green and yellow. The keywords identified in the cluster are presented in Table 3 in addition to the frequency and relationship.

Table 3. Cluster 1 Keywords

Keywords (Cluster 1)	Link	The Power of Local Links	Event
DSN MUI	8	13	6
World	6	9	4
Fatwa	5	10	4
Fatwa DSN	4	8	6
Sharia Fintech	32	321	215
Finance	14	40	11
Institution	8	19	8
Role	9	10	4
Product	7	16	6
Sharia	28	184	90
Technology	15	54	16

Source: VOSviewer, Data Processed by the Author in 2024

The results emphasized the importance of examining the ideas thoroughly to understand the consequences. Islamic financial principles and practices cover a number of key concepts required to serve as the basis for financial system that complies with sharia principles. An example is sharia law which focuses on applying Islamic principles in all aspects of life, including economics and finance.¹⁷ Moreover, usury which is the interest in the conventional system is prohibited in Islam. This shows the system does not charge or receive interest on financial transactions but provides a mechanism for parties that provide capital to share profits or benefit from real assets.¹⁸

This principle of profit sharing allows the party providing capital (investors) and the party using capital (entrepreneurs) to share profits according to the previous agreement.¹⁹ Moreover, Islamic financial transactions are required to be based on real assets or services that are not unpredictable, speculative, or high-risk. Investment in haram businesses such as alcohol, tobacco, gambling, and others is also prohibited. This is in addition to the need for prudence and social responsibility because the practices are required to promote transparency, fairness, and social responsibility in every transaction and economic activity. Furthermore, all financial products and services need to be consistent with sharia principles which include supervision and certification by authorized Islamic financial institutions.

Cluster 2: Innovative Financial Technology

The "Innovative Financial Technology" cluster consists of seven keywords that focus primarily on important issues such as "Financial Inclusion", "Improving User Experience", "Adoption of New Technology", "Development of New Products and Services", and "Sustainability". This shows the need for a detailed investigation of the green clusters in the future. There was basically a little relationship with the yellow and red clusters and a slender correlation with the blue cluster. The keywords identified in the cluster are presented in Table 4 along with the frequency and relationship.

¹⁷ Mohamed Ariff And Munawar Iqbal, *Principles Of Islamic Finance: A Guide To Shariab-Compliant Financial Products*, (UK: Routledge, 2019).

¹⁸ Miftahul Huda, "Bank Interest Halal: Distinction Interpretation Of Contemporary Ulama Thought Umer Caphra And Muhammad Sayyid 'Thanthawi," *FINANSIA : Jurnal Akuntansi dan Perbankan Syariah* 5, no. 2 (2022).

¹⁹ Muhammad Ramadhan, Zaki Mubarak, And Lisda Aisyah, "Analisis Bagi Hasil, Kualitas Pelayanan, Dan Minat Nasabah Dalam Menggunakan Produk Deposito Syariah", *FINANSIA : Jurnal Akuntansi dan Perbankan Syariah* 5, no. 2 (2022).

Table 4. Cluster 2 Keywords

Keywords (Cluster 2)	Link	The Power of Local Links	Event
Innovation	10	12	3
Belief	7	13	6
Lending	9	18	7
Sharia Lending	11	27	11
P2P	9	13	3
Peer Lending	10	16	7
Research	13	22	8

Source: VOSviewer, Data Processed by the Author in 2024

Fintech is defined as any form of technology used to provide financial solutions through a new, more efficient, and more inclusive method. This is based on technological advances in every sector due to the digital revolution which allows users to easily access and use services at any time, specifically in the banking sector. An example of the latest and new aspects of the digital revolution around the world is mobile payments, which allow users to make financial transactions independently.²⁰ This includes a range of technologies and platforms that are transforming the traditional methods of providing and accessing financial services by individuals, businesses, and financial institutions. For example, P2P Lending, which connects borrowers directly with lenders, eliminates traditional intermediaries such as banks and allows more access to those in need of loans. Mobile payments are also apps and platforms that allow users to make payments through mobile devices in order to reduce reliance on cash and credit card transactions. Furthermore, blockchain and cryptocurrency technology are used to secure and verify financial transactions digitally without the need for intermediaries.²¹ Cryptocurrencies such as Bitcoin are examples of the implementation of blockchain technology.

Robo-advisors are automated platforms that use algorithms to provide investment advice to investors in order to reduce management costs and improve access to relevant services. Moreover, Insurtech is technology used to transform the insurance industry by providing faster claims processes, more accurate risk assessments, and more affordable insurance products. Digital banks also eliminate physical branches and provide banking services through digital platforms, such as mobile applications or websites, in order to increase accessibility and convenience for customers. Furthermore, big data analytics allows the application of big data to analyze consumer behavior, improve risk management, and develop more personalized and effective financial products.²² The Internet of Things (IoT) in finance also connects physical devices such as cars or smart home devices to facilitate payments, financial management, and asset management more efficiently. Another

²⁰ Priyanka Yadav, "Financial Equality Through Technology: Do Perceived Risks Deter Indian Women From Sustained Use Of Mobile Payment Services?," *International Journal Of Information Management Data Insights* 4, no. 2 (2024).

²¹ Ashish Kumar And Arun G. Pande, *Fintech: The Innovation And Transformation Of Financial Services*, (Germany: Springer, 2022).

²² Bayo Olushola Omoyiola, "The Social Implications, Risks, Challenges And Opportunities Of Big Data," *Emerald Open Research* 4, no 23 (2023).

example is crowdfunding which is a tool developed to ensure a person or businesses raise funds from several people through an online platform for a specific project or cause. Regtech is also technology that assists financial institutions comply with rules and regulatory standards more efficiently, including better transaction supervision and reporting.²³

Cluster 3: Research On Financial Technology

The "Studies or Research on Financial Technology" cluster has seven keywords that focus mainly on important issues such as "Financial Innovation", "Regulatory Influence", "Financial Literacy and Education", and "Industry Collaboration". Based on the map provided, the blue cluster presents a significant problem and requires in-depth analysis in the near future. Table 5 shows the keywords in cluster 3 along with the frequency and relationship.

Table 5. Keywords of Cluster 3

Keywords (Cluster 3)	Link	The Power of Local Links	Event
Factors	6	16	6
Field	8	13	3
Financial Technology	24	168	57
Fintech	27	248	92
Impact	7	7	3
Interest	6	11	4
Research	8	14	5

Source: VOSviewer, Data Processed by the Author in 2024

Previous research on fintech focuses on several issues and aspects relevant to the development and application of technology in financial industry, such as innovation in financial services. The emphasis is on the process of using new technologies such as blockchain, artificial intelligence, and IoT to change the way financial services are provided and accessed by consumers and businesses. These include the implementation of regulations and policies to accommodate fintech innovations without sacrificing security and compliance with industry and legal standards. Moreover, attention is placed on the usage of technology to improve data security and user privacy in the context of digital financial transactions.²⁴ Another focus is financial inclusion, which is how fintech can improve access to financial services for previously underserved or marginalized populations, including rural areas and developing countries.

Economic and social influence is another important issue that focuses on the impact of fintech adoption on financial system, economic growth, and wealth distribution. Furthermore, another issue is the implementation of fintech in changing business models in financial industry with the consideration of the sustainability aspects. Financial education

²³ Luis Hernan Contreras Pinochet, "The Influence Of The Attributes Of "Internet Of Things" Products On Functional And Emotional Experiences Of Purchase Intention," *Innovation & Management Review* 15, no. 3 (2018).

²⁴ Daniel K. Zwick And Lydia M. Walsh, *Fintech And The Future Of Finance: Trends, Challenges, And Opportunities*, (UK: Cambridge University Press, 2023).

and literacy also determine how fintech can be used to improve the knowledge of the community about finances and facilitate better access to information.²⁵ The equity and access issue shows the usage of fintech to promote equal access to financial services for people from different backgrounds, including those with special needs or in vulnerable situations. Moreover, investment and risk management represent the usage of technology to improve risk management in investment as well as the implementation of fintech to drive new product innovations. The collaboration between financial institutions, technological companies, and fintech startups was also discussed to provide a more dynamic and innovative ecosystem.²⁶

Cluster 4: Association Of Fintech And MSME Development In Indonesia

The "Association of Fintech and MSME Development in Indonesia" cluster has four keywords that focus mainly on issues such as "Financial Access", "Financial Inclusion", "Alternative Funding", and "Financial Education". The keywords are presented in Table 6 with the frequency and relationship.

Table 6. Keywords of Cluster 4

Keywords (Cluster 4)	Link	The Power of Local Links	Event
AFSI	12	48	14
Indonesian Sharia Fintech Association	10	35	9
Indonesia	23	184	94
MSMEs	11	39	17

Source: VOSviewer, Data Processed by the Author in 2024

This yellow cluster consists of complex concepts that require additional research, according to the map provided. The poor relationship with other clusters shows a possible lack of integration with the larger conceptual framework. Meanwhile, the cluster focuses on several key issues relevant to the role of fintech in supporting the MSME sector of Indonesia. The process can be achieved through the increase in the access of MSMEs to financial services, specifically those experiencing difficulty in conventional banks. Another issue is financial inclusion which can be expanded through the ability of fintech platforms to provide more affordable and accessible services.²⁷ Furthermore, fintech can provide alternative funding solutions for MSMEs through P2P lending platforms, crowdfunding, or other models that ensure faster and easier access to capital. Fintech associations can also play an important role in improving financial literacy of MSMEs by providing education about financial management, the use of technology, and an understanding of available products and services.

²⁵ Michael J. Schermerhorn, "The Role Of Financial Education In Financial Literacy And Financial Behavior," *Journal Of Economic Education*, (2019).

²⁶ Jonathan E. Shaw And Olivia R. James, *Strategic Alliances In Financial Services: Leveraging Fintech Innovations*, (UK: Cambridge University Press, 2021).

²⁷ Michael P. Arney And Stephanie J. Johnson, *Fintech For Smes: How Digital Technologies Are Revolutionizing The Financial Services For Small And Medium Enterprises*, (UK: Palgrave Macmillan, 2021).

Cluster 5: Covid Analysis And Case Studies In The Context Of Sharia Fintech

The "Covid Analysis and Case Studies in the Context of Sharia Fintech" cluster has three keywords that focus mainly on issues such as the Impact of the Pandemic on the Growth of Sharia Fintech and Case Studies on Sharia Fintech in Indonesia. These keywords are presented in Table 7 along with the frequency and relationship.

Table 7. Keywords of Cluster 5

Keywords (Cluster 5)	Link	The Power of Local Links	Event
Analysis	8	12	4
Covid	12	24	13
Case Studies	10	17	6

Source: VOSviewer, Data Processed by the Author in 2024

The purple cluster consists of complex concepts that require additional research, according to the map provided. The poor relationship with other clusters shows a possible lack of integration with the larger conceptual framework. Therefore, in-depth investigation and analysis are needed to understand the intricacies and potential connections between the purple and other clusters.

Keyword analysis refers to the process of examining and evaluating information to understand and show meanings, relationships, and patterns in a specific context. This research focuses on issues related to sharia fintech and the Covid keyword describes the influence of the Covid-19 pandemic on different aspects of life, including the development and impact of sharia fintech. Moreover, the case research keyword refers to in-depth research or investigation regarding specific cases or relevant scenarios in the development of sharia fintech.²⁸ This cluster generally shows the analysis conducted on the impact of COVID-19 on the development of sharia fintech, as well as the case research of the implementation process or challenges identified.²⁹

Cluster 6: Sharia Peer Lending

Sharia Peer Lending cluster has only one keyword with eight links, thirteen local link strengths, and five events. This turquoise blue cluster consists of rare concepts that urgently need additional research attention in future. Sharia P2P lending is a funding model that connects borrowers directly with investors or lenders based on sharia principles. This shows that the concept strives to provide innovative and inclusive financial solutions while promoting sharia values in business and financial practices.

Conclusion

In conclusion, this research contributed to the literature on sharia fintech by conducting a comprehensive review. The analysis of keywords led to the identification of six research areas currently explored, including the principles and practices of Islamic finance, innovative financial technology, financial technology research, fintech associations

²⁸ Paolo Sironi, *Fintech Innovations: Case Studies And Analysis*, (USA: Wiley, 2021).

²⁹ Rizki Maulana And Jaka Sriyana, "The The Effect Of A Countercyclical Covid 19 Policy On The Main Financial Ratios In Islamic Rural Banks", *Jurnal Ekonomi Dan Keuangan Islam* 9, no. 1 (2023).

and MSME development, covid analysis and case research, as well as sharia peer lending. Moreover, the highest number of sharia fintech articles was published in Jakarta and the most famous author was T Trimulato. It was also observed that STIE AAS and JIEI were the most significant universities and journals in terms of citation. The number of scientific publications increased due to unexpected challenges and globalization since 2016. It is recommended that further research investigate the role of Islamic finance in promoting sustainable development and solving challenges in society and the environment to ensure the effectiveness of the concept.

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Author Contributions Statement

DA contributed to the development of research concepts and problems together with K. Moreover, DA and MS selected previous comprehensive research to identify gaps. DA and K selected the research methods and collected data while DA conducted analysis and presented results based on suggestions and inputs from K and MS.

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