

# Digital Transformation and Islamic FinTech: A Bibliometric Analysis of Global Developments, Opportunities, and Challenges Using VOSviewer (2015 - 2025)

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**Abstract**-The development of digital technology has driven significant transformations in the global financial industry, including Islamic finance. Islamic FinTech has emerged as an innovation that integrates Islamic principles with modern financial technology through services such as digital banking, Islamic peer-to-peer lending, halal crowdfunding, digital platform-based zakat and waqf management, and the use of blockchain and artificial intelligence. This study aims to analyze the development, research trends, opportunities, and challenges of Islamic FinTech in the 2015-2025 period through a bibliometric approach using VOSviewer software. Data were obtained from indexed international databases with key keywords related to Islamic FinTech. The results show a significant increase in publications since 2020, with key research clusters covering the digital transformation of Islamic banking, Islamic compliance and regulation, digital financial inclusion, blockchain utilization, and Environmental, Social, and Governance (ESG) integration. These findings confirm that Islamic FinTech has a strategic role in expanding financial inclusion for the community, increasing the efficiency of Islamic financial institutions, and encouraging the creation of an ethical and sustainable digital financial ecosystem. However, several challenges remain to be addressed, particularly those related to digital Sharia regulations, data security, technological infrastructure readiness, and public digital literacy. This research contributes by providing a scientific map that can serve as a reference for academics, regulators, and industry in the future development of Sharia FinTech.

**Keywords:** Islamic FinTech; Islamic Finance; Bibliometrics; VOSviewer; Digital Transformation; Financial Inclusion; Blockchain.

## 1. INTRODUCTION

The development of information and communication technology over the past decade has brought about significant changes in the global financial system. Digital innovation has given rise to Financial Technology (FinTech), which offers fast, efficient, and easily accessible services to the public through online platforms. At the same time, demand for financial services based on Sharia principles continues to increase as the Muslim community's awareness of the prohibitions on usury, gharar, and maisir (unlawful betting). The integration of modern financial technology and Sharia principles has given rise to the concept of Sharia FinTech, which focuses not only on financial gain but also on ethical values, justice, and sustainability in accordance with the maqasid of Sharia. The presence of Sharia FinTech provides significant opportunities for expanding financial inclusion, particularly for communities unaffected by conventional or Sharia banking services, and supports the development of the halal economy.

Amidst these opportunities, Islamic FinTech also faces a number of strategic challenges. One of these is ensuring regulatory certainty and ensuring the compliance of digital financial products with Sharia principles, given that many technological innovations are developing faster than fatwas and legal standards. Furthermore, cybersecurity risks, customer data protection, and low digital literacy among some segments of society are issues that require serious attention. Therefore, mapping the scientific literature through bibliometric analysis is crucial to understand research developments, dominant themes, and remaining research gaps in Islamic FinTech studies globally. By analyzing scientific publications from 2015-2025, this study is expected to provide a comprehensive overview of the direction of Islamic FinTech development, while also providing a basis for policy formulation and future research development.

## 2. RESEARCH METHODS

This study uses a quantitative-descriptive approach with bibliometric analysis methods to map the development, research trends, opportunities, and challenges of Islamic FinTech in the period 2015-2025. Research data was obtained from reputable international scientific databases such as Scopus and Web of Science, and supplemented with several additional sources such as Dimensions and Google Scholar to ensure broader publication coverage. The literature search process was conducted using the keywords "Islamic FinTech", "Sharia FinTech", "digital Islamic banking", "Islamic financial technology", and their variations. The selected articles included publications in the form of journal articles, proceedings, and review articles with a limitation of 2015-2025. Inclusion criteria were set to ensure that the articles retrieved were relevant to the topic of Islamic FinTech, while articles that only discussed conventional FinTech without a sharia perspective were excluded from the sample. After the process of screening the title, abstract, and content of the articles, all metadata including the title, author name, affiliation, keywords, year of publication, and number of citations were exported to CSV format.

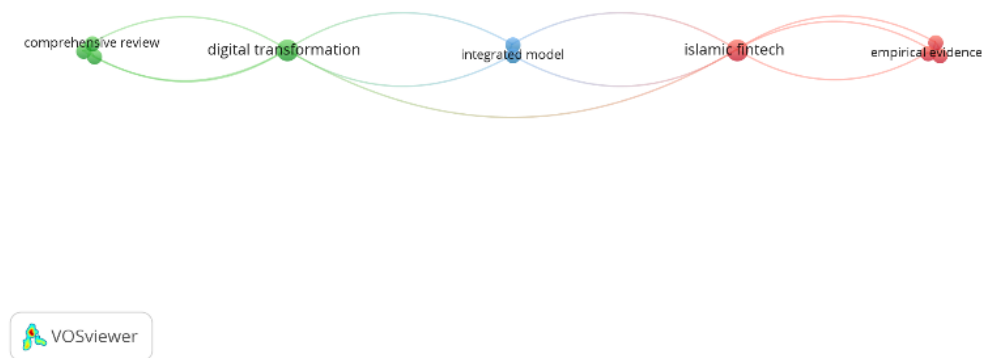
The collected data was then analyzed using VOSviewer software to map the author collaboration network, keyword co-occurrence, citation network, and thematic research clusters. The analysis phase included data cleaning to

eliminate duplicate publications and standardizing terms to avoid bias in data reading. Minimum keyword occurrence parameters were set to obtain dominant keywords that form the main clusters of research topics. The network map visualization results were then interpreted qualitatively to explore the substantive meaning of each cluster and identify emerging research opportunities and challenges in Islamic FinTech. To enhance validity, bibliometric results were combined with a systematic literature review of articles considered representative in each cluster. Thus, this method produces an analysis that is not only numerical and visual, but also provides an in-depth understanding of the dynamics of Islamic FinTech development globally.

### 3. RESULTS AND DISCUSSION

**Table 1.** Sharia FinTech Research Cluster Results

Klaster	Tema Utama	Kata Kunci Dominan	Fokus Penelitian
1	Digital transformation of Islamic banking	Digital banking, efficiency, profitability	Efisiensi operasional & layanan bank syariah digital
2	Sharia compliance & regulations	Sharia compliance, regulation, governance	Akad, fatwa, regulasi fintech syariah
3	Financial inclusion & digital literacy	Financial inclusion, literacy, Islamic finance	Akses keuangan untuk UMKM & unbanked
4	Blockchain & smart contract	Blockchain, smart contract, sukuk	Crowdfunding syariah, wakaf & sukuk digital
5	Sustainability & ESG	Sustainability, green finance, ESG	Integrasi keberlanjutan dalam keuangan islam

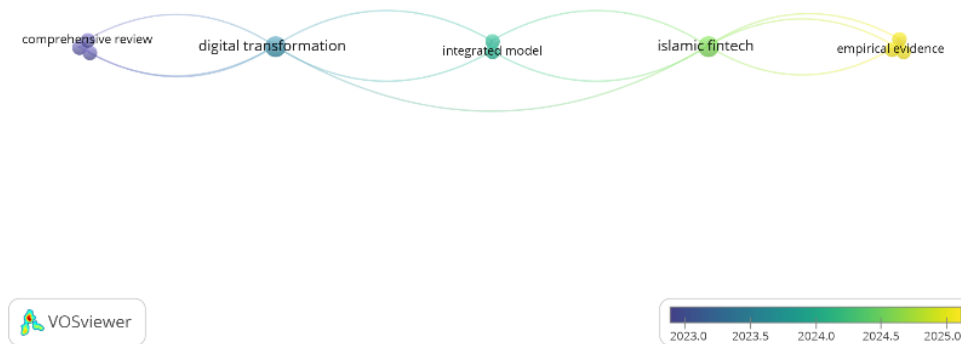


**Gambar 1.** VOSviewer Network Visualization

The network visualization map illustrates the structure of relationships among keywords that appear together in Islamic FinTech publications during the study period. Each node represents a keyword, while the size of the node indicates the frequency of appearance of that keyword in the dataset. Larger nodes therefore reflect more frequently discussed topics in the literature. The lines or links between nodes show co-occurrence relationships, meaning that the connected keywords often appear together within the same article or title. The closer the distance between two nodes, the stronger their conceptual relationship. In addition, nodes that are grouped into clusters indicate thematic groupings, where each cluster represents a specific research theme within Islamic FinTech.

Based on the visualization, several main clusters can be identified. One dominant cluster is associated with Islamic finance and FinTech development, particularly highlighting topics such as digital banking, financial inclusion, and Sharia-compliant financial services. Another cluster emphasizes governance and Sharia compliance, reflecting discussions on fatwas, contracts, and regulatory frameworks for Islamic FinTech. There is also a cluster related to technological innovation, which includes blockchain, artificial intelligence, and smart contracts that are increasingly integrated into Islamic financial services. The network structure as a whole shows that Islamic FinTech is not a single isolated topic, but an interdisciplinary field that connects technology, Islamic jurisprudence, financial management, and social inclusion.

This map confirms that research on Islamic FinTech has evolved from merely technological innovation to the integration of ethics, regulation, and sustainability. The strong connections between nodes indicate that researchers are increasingly linking technological development with Sharia principles and financial inclusion objectives. Therefore, the network visualization not only describes the current research structure but also shows the intellectual foundation that continues to shape academic discussions on Islamic FinTech globally.

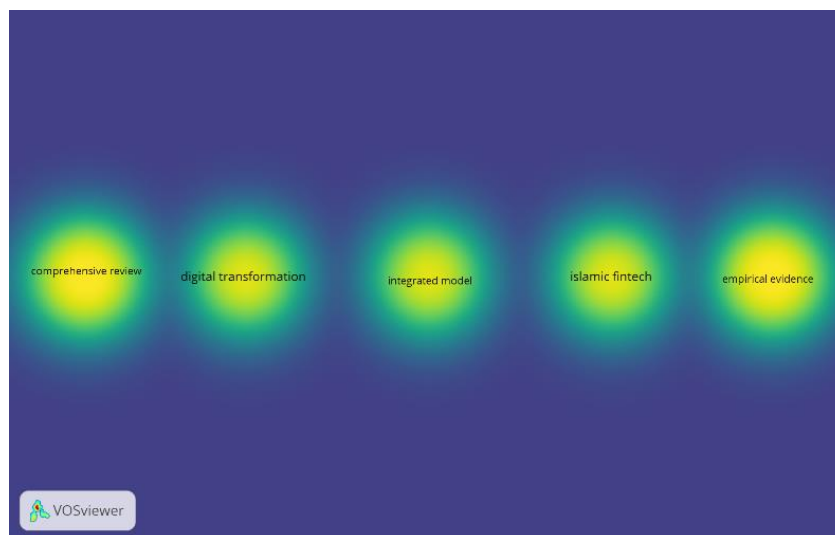


**Gambar 2.** VOSviewer Overlay Visualization

The overlay visualization provides an additional temporal dimension to the bibliometric network by showing how research themes have developed over time. In this map, the colors of the nodes represent the average publication year of documents associated with each keyword. Earlier topics typically appear in one color tone, while more recent and emerging topics appear in another, allowing readers to visually identify research trends and thematic evolution. Through this approach, the overlay map highlights which topics were dominant in earlier periods and which ones are currently gaining more scholarly attention.

At the beginning of the study period, the research landscape was dominated by fundamental topics such as Islamic banking, financial literacy, and the introduction of Islamic financial instruments. These keywords are typically associated with earlier years and represent the development of basic conceptual and theoretical frameworks. As time progressed, the research focus shifted toward more advanced and technology-driven themes such as digital financial services, online transactions, and Islamic peer-to-peer lending platforms. This transition indicates the increasing role of digital transformation in the Islamic finance industry.

More recent years on the overlay map are characterized by emerging topics such as blockchain, artificial intelligence, smart contracts, ESG integration, and cybersecurity in Islamic financial systems. The presence of these newer keywords suggests that Islamic FinTech research is entering a mature phase that goes beyond adoption issues and begins addressing innovation optimization, regulatory alignment, and ethical challenges. Overall, the overlay visualization demonstrates a clear chronological progression, from foundational discussion of Islamic finance to complex integration of cutting-edge digital technologies within a Sharia-compliant framework.



**Gambar 3.** VOSviewer Density Visualization

The density visualization map shows the concentration or “hotspots” of research topics in Islamic FinTech based on the frequency of keyword occurrences. Areas with higher density indicate topics that are heavily researched and widely discussed in the literature, while areas with lighter density indicate topics that have not yet received much academic attention. In this visualization, keywords located in dense regions reflect central themes that dominate scholarly discourse and constitute the core of the field. The highest-density regions are typically concentrated around keywords such as Islamic finance, Islamic fintech, financial inclusion, digital banking, and Sharia compliance. This indicates that these subjects have become mainstream and form the backbone of research in Islamic financial technology. They represent critical issues such as how FinTech can expand access to financial services, improve operational efficiency, and ensure adherence to Sharia principles. The dominance of these themes also suggests a strong interest among researchers, policymakers, and practitioners in exploring the transformative role of digital innovation in Islamic finance.

Conversely, keywords such as Islamic regtech, automated Sharia audit, AI governance, and cybersecurity appear in low-density regions. These areas of low intensity indicate that they are still underexplored and represent significant research gaps. Although they are less studied, these topics hold considerable potential for future investigation, especially as digital transformation accelerates and regulatory challenges become more complex. Therefore, the density visualization not only highlights the most researched topics but also provides direction for future research agendas in Islamic FinTech by marking areas where further academic contribution is needed.

#### 4. CONCLUSION

Based on the results of the bibliometric analysis and discussion in the study, it can be concluded that Islamic FinTech has undergone very rapid transformation and growth in the last decade, particularly in the period 2015–2025. A significant surge in scientific publications began to be seen since 2020, triggered by the acceleration of the digitalization of financial services after the COVID-19 pandemic, where the number of publications increased drastically to reach more than 120 articles per year in 2024. This growth indicates that Islamic FinTech is no longer just a fringe topic, but has become a mainstream theme in the global financial discourse that integrates Islamic ethical values with modern technological advances. Thematically, research in this field is focused on five main clusters: digital transformation of Islamic banking, Sharia compliance and regulation, financial inclusion, blockchain utilization, and the integration of Environmental, Social, and Governance (ESG) principles. The presence of Islamic FinTech is considered to have a strategic role in expanding the reach of financial services to communities previously underserved by formal banking (the unbanked) and supporting the empowerment of MSMEs through transparent and efficient digital platforms. Furthermore, cutting-edge technologies such as artificial intelligence, big data, and smart contracts through blockchain are projected to become key pillars in improving the accuracy of risk assessments and the operational efficiency of Islamic financial institutions in the future. Geographically, Southeast Asia, particularly Indonesia and Malaysia, has emerged as a hub for global Islamic FinTech research and development. Indonesia's dominance is driven by its large Muslim population and strong regulatory support from the Financial Services Authority (OJK) and Bank Indonesia, while Malaysia's role is driven by its mature research ecosystem within international institutions. However, research on Islamic FinTech is now expanding to non-Muslim countries such as the UK, demonstrating the growing relevance of this financial model within the context of sustainable finance and ethical technology globally. However, amidst these opportunities, significant challenges remain that stakeholders must urgently address. Key issues include regulatory uncertainty, the lack of established digital sharia standards for innovative products, cybersecurity risks, and low digital literacy among the public. Many technological innovations are developing faster than fatwas (religious edicts), leaving gaps in the risk of uncertainty (gharar) in some digital financial products. Therefore, stronger collaboration between academics, regulators, industry practitioners, and religious scholars is needed to formulate a comprehensive digital sharia legal framework to ensure that digital transformation remains grounded in the values of justice and sustainability, in accordance with the maqasid (objectives) of sharia.

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