

RESEARCH TREND IN ISLAMIC FINANCIAL TECHNOLOGY AND BLOCKCHAIN: A BIBLIOMETRIC ANALYSIS

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ABSTRACT

Blockchain's expansion in the Islamic financial industry has prompted researchers to examine the topic from various angles. Using VOSviewer software, this study focuses on analysing the relevant research and published articles indexed in Scopus by employing bibliometric methodology. The data were obtained from search results of documents indexed by Scopus until 2023. There are 67 publications consisting of 24 book chapters, 18 articles, 11 conference papers, eight books, five reviews, and one conference review. The results indicate that the number of publications on blockchain in Islamic finance increased significantly in the year 2022. Employing Network Visualization, the study identifies five distinct clusters within this field. Cluster one investigates the integration of blockchain and smart contracts in Islamic crowdfunding, while cluster two delves into blockchain integration in financial services. Cluster three explores the role of fintech in advancing financial inclusion, cluster four focuses on Islamic fintech innovations, and cluster five centres on the geographic distribution of studies. These clusters align with the principles and challenges of Islamic finance and their implications for key stakeholders, including financial institutions, regulators, and technology providers, as well as connect to discourse on technological innovation and Sharia-compliant financial solutions. To the best of the authors' knowledge, this work is the first to use bibliometric analysis to assess blockchain in Islamic finance. The findings and suggested areas for future research can guide academics and researchers in their efforts to advance the field of Islamic finance.

Introduction

In recent years, the convergence of modern technological advancements with traditional financial principles has paved the way for innovative solutions across various industries (Pati et al., 2021; Rabbani, 2022; Muhammad et al., 2024). An exemplary fusion of technology and finance can be observed within the realm of Islamic finance, where blockchain technology finds significant application (Dahdal et al., 2001; Atiyah et al., 2024). The integration of blockchain into Islamic finance represents a significant step forward in enhancing transparency, efficiency, and compliance while adhering to the principles of Shariah (Alaeddin et al., 2021).

Islamic finance, rooted in the principles of Shariah law, adheres to a defined set of rules that forbid interest (*riba*) and encourage risk-sharing, moral investing, and asset-backed transactions (Beik et al., 2019a). These guidelines strive to establish an equitable and morally aligned financial system consistent with the broader ethical precepts of the Islamic faith. Blockchain, on the other hand, is a decentralised and immutable digital ledger used to record transactions across a network of computers (Allen, 2017). It is a perfect option for addressing some of the issues faced by Islamic financial institutions, such as worries about transparency, accountability, and the difficulty of compliance, thanks to its fundamental properties of transparency, security, and traceability (Beik et al., 2019a).

The integration of Islamic finance and blockchain technology presents a viable solution to circumvent persistent problems in the sector. Blockchain guarantees that financial activities remain transparent and traceable by offering a secure and tamper-proof record of transactions and contracts (Dahdal et al., 2001). This reduces the risk of fraud and improves the overall integrity of the system. Furthermore, because blockchain is decentralised, it supports a fairer allocation of power and control, which is in line with Islamic values (Rejeb, 2020).

As Islamic finance continues to grow on a global scale, adopting blockchain's revolutionary potential not only complies with its fundamental tenets but also positions the sector at the forefront of financial innovation (Aljamos et al., 2022; Alaeddin et al., 2021). Islamic finance is making tremendous progress towards fulfilling its goals of moral, open, and inclusive financial practices by leveraging the technology of blockchain (Unal & Aysan, 2022).

The sukuk industry is one of the applications of blockchain, such as the tokenisation system and smart contracts, which have been proven to bring positive effects (Delle Foglie et al., 2021). Through the use of tokens, any tangible or intangible assets can be shared, and the ownership of those assets is guaranteed. Since this system eliminates the risk of uncertainty regarding ownership, rights, and responsibilities linked to the underlying assets, it mitigates the risk of *gharar* and *maysir*, resolving the major problem of securitisation in the sukuk issuance process (Delle Foglie et al., 2021). The issues with asset-based and asset-backed sukuk securitisation are also resolved by this form of application, which has a positive effect on the transparency and complexity of Islamic finance contractual facilities (Delle Foglie et al., 2021).

The emergence of blockchain technology offers tremendous prospects as it offers a practical solution to various services. Zakat management, for example, will be able to improve services and strengthen the management system (Mohd Nor et al., 2021; Batri, 2021). Transparent, traceable, and accessible transactions are advantages of employing blockchain technology. These characteristics could boost zakat payers' trust as they improve zakat management effectiveness and reduce human error, which will raise annual zakat collections (Zulfikri et al., 2021). Zakat payers will have the option to choose and determine the amount of zakat to be distributed to their preferred beneficiaries using blockchain (Beik et al., 2019b). As a result, institutions will be challenged to offer value as they develop trust and maintain good governance (Beik et al., 2019b).

According to a study conducted by Mohaiyadin et al., (2022), blockchain technology can help address some of the issues that frequently arise in waqf management, such as the issuance of receipts from a 'Servant of God', which occurs frequently in our culture. Blockchain technology enables ID identifiers as well as the capability for individual network technology in the blockchain to be generated alongside authentication in the system. Another issue is the difficulty in providing waqf distribution to *mawquf alaihi*. The blockchain solution would prevent the misuse of waqf distribution for other purposes, allow for use as a public ledger to prevent dishonesty in providing information by *mawquf alaihi* about funding

received and serve as a tool that allows *al-waqif* to obtain *waqf* distribution data and compare this with their database to avoid overlapping.

Blockchain technology also has the potential to assist the insurance (*takaful*) industry in eliminating typical causes of fraud by transferring insurance claims onto an immutable ledger (Ibrahim et al., 2023). The effectiveness of property and casualty insurance can be greatly increased by utilising a shared ledger and insurance plans that are carried out by smart contracts. Medical records can be transferred and cryptographically secured using blockchain technology between healthcare providers, enhancing interoperability throughout the health insurance industry. The blockchain can make information and payments between insurers and reinsurers more efficient by safeguarding reinsurance contracts on the blockchain through smart contracts (Elasrag, 2019).

While there has been growing academic interest in Islamic fintech and blockchain, as evidenced by numerous studies indexed in the Scopus database, the existing body of research primarily focuses on theoretical frameworks, regulatory challenges, and case-specific applications. However, a comprehensive bibliometric analysis that systematically maps the evolution, key themes, and influential works in this field remains underexplored. Such an analysis is crucial for identifying research trends, gaps, and collaborative networks that can advance the integration of blockchain technology within Islamic financial systems. This study addresses this gap by employing bibliometric methods to analyse the scholarly output on Islamic fintech and blockchain, shedding light on areas that require further investigation, such as cross-border financial applications, technological innovation in Sharia-compliant systems, and the socio-economic impacts of these technologies in diverse Islamic markets.

Methodology

This study aims to conduct a bibliometric review of the intersection between blockchain and Islamic finance. A query was performed in the Scopus database using the following search terms within the title, abstract, and keywords: TITLE-ABS-KEY (blockchain AND "Islamic finance").

The query resulted in 67 documents published between 2018 and 2023. All titles and abstracts were reviewed and found relevant. Scopus, a widely recognised academic database, was chosen for its extensive coverage, which has been utilised in many prior bibliometric reviews (Rusydiana et al., 2021; Suban, 2023; Mohamad, 2024; Wasim & Zafar, 2024; Qadri et al., 2024).

Bibliometrics is an extension of scientometrics that mainly focuses on the quantitative analysis of scientific publications for statistical reasons (Gauthier, 1998). It implies that bibliometrics is a method for examining academic data from a variety of well-known databases in research articles, publications, conference proceedings, and reports. By using bibliometrics, a quantitative analysis allows researchers to determine the intellectual hierarchy of a certain field of study and detect new trends in collaboration networks (Liu et al., 2020; Alshater et al., 2022).

In bibliometrics, there are two main approaches to selecting publication keywords: centrality-based networks and high-frequency keywords. High-frequency keywords are used to identify research hotspots and domain trends. The keywords are typically filtered using an established number or frequency threshold. Centrality-based networks utilise the characteristics of significant nodes, such as degree centrality, betweenness centrality, eigenvector centrality, and k-core values of nodes. However, due to the positive correlations between their frequency and those network measurements, it is observed that the keywords chosen by such metrics tend to be similar to high-frequency keywords (Chen & Xiao, 2016).

This study uses international publication data on blockchain in Islamic finance research that is indexed by Scopus. The search results yielded 67 published articles. The information collected included details on each publication's authors, publication venues, years of publication, country case studies, abstracts, author keywords, number of authors, research topics, citations, and methodological approaches. This data was then analysed using VOSviewer software.

VOSviewer is a software used to visualise and explore maps created from network data (VanEck & Waltman, 2023). VOSviewer can be accessed online, including through the Web of Science or the Scopus database, and it is compatible with a wide range of hardware and operating system platforms. This programme can be used to display maps created using VOS mapping techniques as well as those created

using multidimensional scaling techniques (Rusydiana et al., 2021). This tool enables researchers to map the scientific issues being discussed by researchers while studying the links between keywords (Uluyol et al., 2021).

Results and Analysis

Document Profile and Study Location Classification

This study reviewed 67 publications from 2018 to 2023, consisting of 24 book chapters, 18 articles, 11 conference papers, eight books, five reviews, and one conference review. Only two papers had been published when Scopus-indexed publications on blockchain in Islamic finance first appeared in 2018. In comparison to 2018, there were seven more publications in 2019. This increase in publication numbers was also seen in 2020, when there were 13 publications. There was a slight decrease in publication numbers in 2021, with only 11 Scopus-indexed publications related to blockchain in Islamic finance. However, the number of publications significantly increased in 2022, with 24 publications related to this topic.

Rank	Country	Docs	Citations	Total Link Strength (TLS)
1	Malaysia	22	122	13
2	Bahrain	12	109	21
3	Greece	1	54	2
4	Malta	1	54	2
5	Pakistan	5	51	8
6	United States	12	46	20
7	India	5	40	7
8	Singapore	3	36	4
9	Brunei Darussalam	2	33	3
10	Australia	3	31	3
11	Norway	1	30	2
12	Indonesia	7	19	11
13	France	1	17	2
14	Luxembourg	1	17	2
15	Jordan	1	15	3
16	United Kingdom	4	13	8
17	Qatar	5	9	1
18	Italy	1	9	1
19	Turkey	2	4	3
20	United Arab Emirates	1	4	2
21	Oman	2	3	6
22	Central African Republic	1	2	0
23	Morocco	5	1	0
24	Bangladesh	2	1	2
25	Russian Federation	2	1	1
26	Brazil	1	1	2
27	Saudi Arabia	1	1	1
28	Tunisia	1	1	1
29	Egypt	2	0	0
30	Vietnam	1	0	1

Table 1. Classification of Publication by Study Location

The post-COVID-19 pandemic accelerated digital transformation across industries, including finance. Islamic finance institutions began adopting technological solutions such as blockchain, fintech platforms, and AI to improve efficiency, accessibility, and compliance with Sharia principles (Rabbani et al., 2021). This spurred academic interest in studying these advancements; for instance, Bin-Nashwan (2022) conducted research on the implementation of e-zakat in the post-pandemic era, highlighting its potential to enhance efficiency in zakat management. The adoption of technology not only in zakat but also in other financial aspects after the economic disruption post-COVID-19 (Misra et al., 2022).

Hence, from the beginning until the middle of the year 2023, there were 11 publications that examined blockchain in Islamic finance (Figure 1).



Figure 1. Classification of Publications by Year

In addition, the classification was carried out according to the study location. The ranking of publications and citations was used to determine the classification. The most productive country is Malaysia, with 22 publications and 122 citations related to blockchain and Islamic finance, followed by Bahrain, which has 12 publications and 109 citations. The third-most prominent nation in studies of blockchain and Islamic banking, according to citations, is Greece, with 54 citations, followed closely by Malta and Pakistan, which are slightly below them.

Citation Analysis

Citation analysis is typically used to evaluate the influence of particular authors, journals, or articles. The influence of bibliographic material is predicted by the quantity of citations. For instance, if numerous other researchers mention a certain paper, it suggests that those researchers value that item's contribution to the literature (Yihua et al., 2023). Based on the output generated by VOSviewer, a total of 380 citations were identified. Table 2 presents the top 10 most cited articles.

The article with the most citations was titled "FinTech, Blockchain and Islamic Finance: An Extensive Literature Review". The study aimed to review the academic research on Islamic finance technology that has been conducted. The study divides Islamic FinTech into three major categories: potential and difficulties, shariah compliance for cryptocurrency and blockchain, and law and regulation (Rabbani et al., 2020).

The second highest citation was for a study conducted by Alam et al., (2019) which examined the potential for institutions and how fintech is transforming and empowering the financial sector. Financial institutions are implementing artificial intelligence, augmented reality, biometrics, and cloud computing, among other technologies, in their financial services offerings to fully realise the potential of digitalisation. Financial institutions have transformed as a result of digitisation, but they are also being disrupted by the growing impact of fintech firms. Startups have the ability to reduce the importance and role of established financial institutions if they are not prepared for digital disruption.

Year	Title	Authors	Journal Title	Total
2020	FinTech, blockchain and Islamic finance: An extensive literature review	Rabbani M.R., Khan S., Thalassinos E.I.	International Journal of Economics and Business Administration	54
2019	Fintech and Islamic finance: Digitalization, development and disruption	Alam N., Gupta L., Zameni A.	Fintech and Islamic Finance: Digitalization, Development and Disruption	45
2018	Blockchain, fintech, and Islamic finance: Building the future in the new Islamic digital economy	Mohamed H., Ali H.	Blockchain, Fintech, and Islamic Finance: Building the Future in the New Islamic Digital Economy	32
2022	Fintech in Islamic finance literature: A review	Alshater M.M., Saba I., Supriani I., Rabbani M.R.	Heliyon	14
2021	Islamic FinTech: The digital transformation bringing sustainability to Islamic finance	Atif M., Hassan M.K., Rabbani M.R., Khan S.	COVID-19 and Islamic Social Finance	21
2019	Cryptocurrency tide and Islamic finance development: Any issue?	Abubakar M., Hassan M.K., Haruna M.A.	International Finance Review	21
2021	Enhancing trust through digital Islamic finance and blockchain technology	Chong F.H.L.	Qualitative Research in Financial Markets	20
2022	Tokenization of sukuk: Ethereum case study	Khan N., Kchouri B., Yatoo N.A., Kraussl Z., Patel A., State R.	Global Finance Journal	17
2021	What is Core and What Future Holds for Blockchain Technologies and Cryptocurrencies: A Bibliometric Analysis	Nasir A., Shaukat K., Khan K.I., Hameed I.A., Alam T.M., Luo S.	IEEE Access	30
2021	The role of blockchain technology in enhancing Islamic social finance: the case of Zakah management in Malaysia	Mohd Nor S., Abdul- Majid M., Esrati S.N.	Foresight	13

	Table 2.	Classification	of Publications	by Citation
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Figure 2 below shows the most cited journals related to blockchain in Islamic finance. Based on the bibliometric analysis, and using a minimum threshold of at least one document and one citation per source, a total of 37 journal sources were identified as meeting the criteria. This distribution reflects the growing scholarly interest in the intersection of blockchain technology and Islamic finance across a wide range of reputable academic outlets.

As can be found from the figure, The International Journal of Economics and Business Administration emerged as the most frequently cited journal, contributing 54 citations. This is followed by Fintech and Islamic Finance: Digitalization, Development and Disruption with 45 citations, and Blockchain, Fintech, and Islamic Finance: Building the Future in the New Islamic Digital Economy with 33 citations. These three sources collectively account for a significant portion of the total citations, underscoring their pivotal role in shaping academic discourse in this area.

Furthermore, other frequently cited journals such as Qualitative Research in Financial Markets and IEEE Access also indicate a growing interest in the practical implications and innovative applications of blockchain in Shariah-compliant financial systems. This trend reflects an evolving scholarly landscape that seeks to address contemporary financial challenges while remaining anchored in Islamic ethical frameworks.



Figure 2. Classification of Publications by Most Cited Journal

Network Visualisation of Co-occurrence of Keywords

The following results show the minimum number of occurrences of a keyword, set at 3, from a total of 273 keywords, resulting in 22 keywords meeting the threshold upon exporting 67 documents for VOSViewer analysis from the database search results.

Cluster	Name of Cluster	Keywords				
Cluster	Integration of Blockchain and Smart	Consists of 7 items: blockchain, crowdfunding,				
1	Contracts in Islamic Crowdfunding	investments, Islamic finance, smart contracts, and sukuk.				
Cluster	Blockchain Integration in Financial	Consists of 5 items: banking, blockchain, finance,				
2	Services	financial services, and i-fintech.				
Cluster	The role of fintech in advancing	Consists of 5 items: financial inclusion, fintech, Islamic				
3	financial inclusion	banks, Islamic economics, and Islamic finance,				
Cluster	Islamia Fintach Innovations	Consists of 4 items: bitcoin, cloud computing,				
4	Islamic Finteen Innovations	cryptocurrency, and Islamic fintech.				
Cluster 5	Study Location	Consists of 1 item: Malaysia.				

Table 3.	Research	Map	Based	on Ke	vwords	Clustering
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Figure 3. Network Visualisation of Co-occurrence of Keywords Indicates the Categorisation of the Map of Blockchain in Islamic Finance Research into 5 Clusters.

Integration of Blockchain and Smart Contracts in Islamic Crowdfunding

Cluster 1 discusses extensively the integration of blockchain and smart contracts in Islamic crowdfunding. It covers the potential benefits and challenges of implementing blockchain-based crowdfunding platforms such as Qardulhasan, which has been identified by Aderemi and Ishak (2023) as a crowdfunding instrument for financing micro-enterprises, and sukuk. Khan et al., (2022) used an Ethereum smart contract to evaluate the feasibility of sukuk tokenisation for the Sukuk al-Murabaha. Furthermore, Hafssa and Oumaima (2020) and Delle Foglie et al., (2021) also studied the implications of blockchain technology on the international sukuk market. They proposed smart sukuk, a structure that uses blockchain and smart contract technologies to increase transparency and eliminate fraud and speculation in sukuk contracts. This innovative method of issuing sukuk also eliminates the need for middlemen and their associated fees, which currently represent one of the major barriers to the growth of the sukuk market.

Besides sukuk, zakat is another example of Islamic crowdfunding that has been researched in this area. Khairi et al., (2023) studied the creation of a zakat collection blockchain system in order to provide affordable, integrated, continuous, real-time zakat transactions, along with transparency, and traceability through the implementation of smart contracts in zakat administration. Moreover, many other researchers have explored the potential use of blockchain technology in the zakat system, such as Esrati et al., (2018), Sulaeman and Ninglasari (2020), Rejeb (2020), Omar and Khairi (2021), Mohd Nor et al., (2021), Guindo (2021), Zulfikri et al., (2021), and Salleh et al., (2022).

Blockchain Integration in Financial Services

Cluster 2 discusses the integration of blockchain in financial services. The discussion in this cluster focuses on how blockchain technology has revolutionised the financial services industry, notably in the field of banking and finance. It examines how traditional financial services are being transformed by the convergence of blockchain technology and cutting-edge "i-Fintech" (intelligent fintech) solutions, resulting in greater efficiency, security, and accessibility.

Mohamed and Ali (2028), Mohamed (2020), Alaeddin et al., (2021), and Dahdal et al., (2022) explored opportunities for the application of blockchain in the financial industry. Blockchain enhances the validity of data stored on the blockchain, allowing for increased portability of products and services. Therefore, this technology has the potential to significantly widen the market for Islamic financial services. Blockchain technology and digitisation can therefore enable and guarantee the compliance of Islamic financing transactions, providing access to finance for millions of individuals. This promotes financial inclusion, greatly increases transaction efficiency, and helps the industry thrive. In addition to the possibility of applying this technology, they also noted that the complicated structure of Islamic banking products, combined with the application, leads to obstacles in utilising blockchain in this sector, which includes unclear laws and a lack of standards.

The integration of blockchain technology in Islamic banks also brings positive impacts. As noted by Mutamimah and Kartika (2023) who examined Profit Loss Sharing Financing of Indonesian Islamic Banks, the existence of smart contracts can eliminate asymmetric information, and the fact that all blockchain stakeholders can access and monitor data without being able to alter it can reduce asymmetric information and financing risk in Islamic bank profit loss-sharing contracts. This research aligns with that conducted by Rabbani and Khan (2020), who investigated Islamic banks in Bahrain. They mentioned that fintech could potentially impact the future growth of Islamic banking; however, Islamic banks in Bahrain viewed fintech more as a rival than as a partner. Islamic banks must understand the need to be adaptable, aggressive, and competitive. Additional studies that cover the relationship between blockchain and numerous sectors, including banking, include Osmani et al., (2021), Sharma et al., (2023), Jindal and Chavan (2023), and Dewasiri et al., (2023).

The Role of Fintech in Advancing Financial Inclusion

This cluster covers the role of fintech in promoting financial inclusion within the framework of Islamic finance and economics. It examines how, in line with the tenets of Islamic economics, fintech innovations are bridging the gap and extending access to financial services for underprivileged and marginalised groups. Additionally, it explores the mutually beneficial relationship between Islamic finance, fintech, and the broader objectives of socioeconomic development within the Islamic economy.

Chong (2021) stated that the application of blockchain technology in Islamic banking promotes accountability and trust between parties involved in the provision of Shariah-compliant products and services. This has also been investigated by Alidin et al., (2018), who reviewed the implementation of blockchain in Saadiqin, which has been successfully implemented in compliance with the standards and specifications of Muamalah Financial Contracts. The implementation of blockchain made data from Saadiqin transactions more transparent, auditable, and securely stored. Furthermore, Mohd Haridan *et al.* (2023) discovered that, regardless of the volume of data information and storage, digital solutions and tools, such as the robo-advisory system and blockchain, strengthen Shariah boards' functions by offering more efficient and faster Shariah assurance.

Further research by Baber (2020), Ranabahu (2022), Ediagbonya and Tioluwani (2023), Ozili (2023a; 2023b) and Mittal et al., (2023) investigated the relationship between the application of fintech and financial inclusion. Ediagbonya & Tioluwani (2023) examined the effectiveness of fintech technologies in promoting financial inclusion in emerging and developing markets, using Nigeria as a case study. The results showed that the majority of adult Nigerians do not have bank accounts or access to financial services; thus, they remain financially excluded. Despite the scarcity of banks in most rural areas, fintech has the potential to bridge the financial divide by lowering the cost of delivering financial services.

Fintech has the potential to be one of the most cutting-edge tools for boosting financial inclusion in Nigeria and other developing and emerging nations with challenging institutional environments, provided the right conditions and legislation are in place. Due to its crucial role in bringing about financial stability and economic progress, there is widespread agreement regarding the significance of financial inclusion. Fintech can increase financial stability and economic growth by promoting financial inclusion (Ediagbonya & Tioluwani, 2023). Islamic fintech can promote financial inclusion by addressing the needs of the non-bankable market segment. Since fintech employs a variety of methods to determine a customer's creditworthiness or ability to pay, it plays a crucial role in increasing financial inclusion for

the community. The achievement of the Sustainable Development Goals (SDGs) will be facilitated by the role of financial inclusion (Mufaidah, 2022).

The application of fintech in Islamic finance has also been studied by Mohamed and Ali (2018), Ellili (2023), Mohamed (2020), Alam and Ali (2021), Unal and Aysan (2022), Alshater et al., (2022), Nagimova (2022), and Mohd Haridan et al., (2023). Islamic fintech can use innovative technologies to transform the whole Islamic financial sector. By increasing the effectiveness of Islamic financial services and addressing current difficulties, Islamic fintech can completely transform Islamic banking (Ali et al., 2019). In line with this, Alshater et al., (2022) stated that fintech's integration with Islamic finance offers significant potential to advance socioeconomic development, especially for the underbanked, unbanked, and small-to medium-sized enterprises. The government will also benefit from the use of fintech in Islamic finance in terms of increasing financial inclusion, overcoming financial crises such as the COVID-19 issue, and achieving SDGs for a sustainable society.

According to Ali et al., (2019) and Rabbani (2022), there are various challenges in implementing this technology, including cybersecurity issues. Fintech companies invest a significant amount of money and time in establishing a robust defence against traffic and attacks. Customer experience is also a challenge in fintech implementation, while the use of technology in fintech appeals to millennials and the tech-savvy population, middle-aged groups often find it challenging to navigate such technologies. Another challenge faced by fintech is regulatory compliance, as the financial industry must adhere to new regulations that are frequently introduced within an unstable regulatory environment.

Islamic Fintech Innovations

This cluster discusses the integration of Islamic fintech, cloud computing, and cryptocurrencies to produce cutting-edge, Shariah-compliant financial services. The use of cloud computing to support a safe and scalable infrastructure for Islamic fintech applications, particularly those related to cryptocurrencies, is being explored. In order to offer insights into how Islamic fintech might embrace contemporary advances in a religiously compatible manner, this cluster addresses the difficulties and potential of combining these technologies while adhering to Shariah standards.

Swain and Gochhait (2022) noted that blockchain technology is a core and fundamental breakthrough with exciting potential for use in the banking sector. Compared to more traditional approaches like those of SWIFT, this could enable associations to settle and review transactions more quickly. The development of cloud computing has transformed how the Internet is used by various associations and organisations. In an effort to fulfil their diverse objectives and create a flexible, agile financial environment capable of quickly responding to emerging business needs, banks are gradually attempting to adopt cloud technologies. To safeguard the money and personal information they are entrusted with, as well as the people who are always present in the business, physical and digital security, along with client data protection, are essential.

Researchers such as Abubakar et al., (2019), Rabbani et al., (2020), Nasir et al., (2021), Kirchner (2021), and Kunhibava et al., (2023) have explored cryptocurrencies from Islamic perspectives as a result of blockchain technology. Meanwhile, Rahman (2019) and Alam and Ali (2021) have focused more on digital currency. Cryptocurrencies may be recognised as money and used for transactions if they are viewed as commodities with intrinsic worth or if their intrinsic value is not viewed as a necessary condition and their nominal value is acknowledged. The laws of currency exchange apply if cryptocurrencies are regarded as money. Any increase in the payment, including interest, is prohibited, as is any delay in making the payment (Kirchner, 2021). For instance, the Shacklewell Lane Mosque in Hackney, London, began accepting cryptocurrencies like Bitcoin and Ethereum for sadaqah and zakat. This initiative involved the development of a blockchain-based online platform in collaboration with Combo Innovation, a start-up specialising in blockchain financial solutions (Yusof et al., 2021).

Kunhibava et al., (2023) investigated the intersection of blockchain, the metaverse, and Islamic social finance by proposing the use of blockchain and the metaverse for social initiatives aimed at delivering education to the impoverished through Islamic social finance instruments. They suggested the use of blockchain in waqf. Waqf institutions or waqf collectors utilise waqf funds provided by waqf donors in a temporary or permanent waqf to purchase sukuk issued by an issuer (such as the government or another

corporate body) via blockchain. The issuer uses the proceeds from the waqf fund for shariah-compliant projects. The development of metaverse education for the impoverished is facilitated through the sukuk coupons derived from the placement of waqf funds. When the blockchain matures, pre-programmed smart contracts restore the waqf funds to the waqf institutions, which then either utilise the permanent waqf funds to further advance social causes or return the temporary waqf funds to the donors.

Another example of the use of technology in Islamic finance is BAZNAS, which has adapted to technological changes by integrating various technology-based products such as bank transfers, PayPal payments, and quick response (QR) codes. BAZNAS has been engaging with local e-commerce platforms to realise the zakat potential among domestic Muzakki millennials. Existing fintech firms that provides services for BAZNAS include Elevenia.co.id, Blibli.com, Shopee.co.id, Tokopedia.com, Lazada.com, Mataharimall.com, JD.id, and Bukalapak.com (Hudaefi et al., 2020).

Study Location

This cluster focuses extensively on Malaysia, where the study was conducted. This aligns with Table 1, which identifies Malaysia as having the most articles concerning blockchain in Islamic finance, with Bahrain coming in second. For instance, Oseni et al., (2019) provides comprehensive discussions on issues that arise in the law and practice of Islamic finance in Malaysia. Aderemi and Ishak (2023) also conducted research in Malaysia, examining the feasibility of using Qard Hasan as a form of Islamic crowdfunding to help micro-enterprises in the country. Numerous studies regarding the adoption of blockchain in zakat management have been initiated in Malaysia, including those by Khatiman et al., (2021), Mohd Nor et al. (2021), Zulfikri et al., (2022), and Khairi et al., (2023). The implementation of blockchain in the zakat system is believed to enhance public trust and transparency. It is thought that the implementation of blockchain technology in the zakat collection system will contribute to the eradication of extreme poverty and promote prosperity among the nation's citizens.

Visualisation of Density Maps Co-Author

The classification based on authors will examine the most productive and influential authors in the field of blockchain and Islamic finance. Productivity will be assessed through the number of publications, while influence will be gauged by the total of citations. Table 4 below shows the top 10 authors in this field of study:

No.	Author	Documents	Citations
1	Rabbani M.R.; Khan S.; Thalassinos E.I.	1	54
2	Alam N.; Gupta L.; Zameni A.	1	45
3	Mohamed H.; Ali H.	2	33
4	Nasir A.; Shaukat K.; Khan K.I.; Hameed I.A.; Alam T.M.; Luo S.	1	30
5	Abubakar M.; Hassan M.K.; Haruna M.A.	1	21
6	Atif M.; Hassan M.K.; Rabbani M.R.; Khan S.	1	21
7	Chong F.H.L.	1	20
8	Khan N.; Kchouri B.; Yatoo N.A.; Kräussl Z.; Patel A.; State R.	1	17
9	Alshater M.M.; Saba I.; Supriani I.; Rabbani M.R.	1	15
10	Mohd Nor S.; Abdul-Majid M.; Esrati S.N.	1	13

Table 4.	Тор	10 Authors	in the	Field	of Bloc	kchain	in	Islamic	Finance
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Table 4 indicates that Rabbani et al., (2020) occupy the top spot with the most citations. However, when productivity is considered, Mohamed and Ali (2018) rank higher due to their publication of two articles on blockchain and Islamic finance.

Apart from this, analysis can also be conducted through a density view. The density view is a distinct feature with the same markings as the visible item. Depending on the item's density at the time, each item point is represented in a different colour. The colour of the dots on the map is determined by how many items are connected to other items. This section is particularly useful for getting a general understanding

of the construction of a bibliometric map by focusing on the components of the items that are considered crucial to investigate (Rusydiana et al., 2021).



Figure 4. Visualization of Density Maps Co-Author

Figure 4 illustrates the density map produced from analysing all of the articles used in blockchain in Islamic finance studies. It can be observed that the dot for Mohamed and Ali (2018) is more intense than those of other researchers, indicating that they published more articles than others (as shown in Table 3). They studied the integration of Islamic finance, fintech, and blockchain technology, examining how these three areas interact to shape the burgeoning structure of the Islamic digital economy. They state that the decentralised, secure characteristics of blockchain could enhance the transparency and effectiveness of Islamic financial transactions. Another publication is a study about the application of technology in Islamic finance (Mohamed, 2020). Most researchers in this field tend to conduct research collaboratively with others such as Alam et al., (2019), who studied the role of fintech in shaping the financial industry, and Nasir et al., (2021) and Abubakar et al., (2019), who analysed the development of cryptocurrency. Although Nasir et al., (2021) used bibliometrics as an analytical method to examine the literature related to cryptocurrencies, there are also researchers engaged in collaborative research, such as Khan et al., (2022), who studied the tokenisation of sukuk, Mutamimah and Kartika (2023), who investigated blockchain technology and financing risk in profit-loss sharing financing in Islamic Bank Indonesia, and Mohd Nor et al., (2021), who explored public intentions and zakat organisations' perspectives concerning the use of blockchain technology in zakat management in Malaysia.

Some researchers choose to conduct their studies independently, Chong (2021) conducted an independent study on the advantages of blockchain in Islamic finance, using smart Sukuk as an example. In order to promote responsibility among the parties involved in the delivery of Shariah-compliant goods and services, she provided a thoughtful discussion on the various blockchain applications in Islamic finance. She noted two challenges with integrating blockchain into i-Fintech. The first challenge relates to the degree of computational encoding of Shariah principles. Blockchain makes all transactions visible, making it easier to assess their compliance with Shariah and Islamic nature; however, this assessment can only be made after the transaction has actually taken place. The algorithmic methodology used to validate smart contracts, including smart Sukuk, constitutes the subject of the second challenge.

Moreover, other researchers have conducted single studies such as Rabbani (2022), who examined the relevant research on Fintech-engineered innovative financial services, along with the limitations and effects of Fintech on the Islamic finance sector. Rahman (2019) and Kirchner (2021) also independently conducted studies related to the shariah compliance of cryptocurrency as one of the blockchain products. Rahman (2019) examined the different types of digital money, its status from an Islamic perspective, and the legislative frameworks for digital cryptocurrencies in several jurisdictions, while Kirchner (2021)

provided a general introduction to traditional and contemporary Islamic concepts of goods and property, money, and contract laws, and discussed how these concepts connect to digital currencies like Bitcoin.

Conclusion

The five clusters identified in the network visualisation reveal interconnected themes that collectively shape the discourse on blockchain in Islamic finance. Cluster 1 emphasises the integration of blockchain and smart contracts in Islamic crowdfunding, highlighting the transformative potential of blockchain to enhance transparency and trust in crowdfunding platforms. This aligns closely with Cluster 2, which explores the application of blockchain in financial services, showcasing how intelligent fintech (i-Fintech) solutions are reshaping conventional practices by improving efficiency, security, and accessibility. Together, these clusters underscore a shared focus on leveraging blockchain to innovate financial platforms while addressing challenges unique to Islamic finance, such as compliance with Shariah principles and ethical governance.

Clusters 3, 4, and 5 further expand the scope by focusing on specific areas of application and regional significance. Cluster 3 highlights the role of fintech in promoting financial inclusion, particularly for marginalised populations, through innovative solutions rooted in Islamic economic principles. Cluster 4 explores the synergy between Islamic fintech, cloud computing, and cryptocurrencies, presenting a vision for scalable, Shariah-compliant financial services enabled by secure digital infrastructure. Meanwhile, Cluster 5 anchors the discussion in Malaysia, a hub for Islamic finance innovation, showcasing the country's leadership in adopting and advancing these technologies. The interconnections among these clusters reflect a comprehensive approach to integrating blockchain and fintech into Islamic finance, addressing both global and regional challenges while advancing financial inclusion and technological development.

A small number of blockchain-related papers in Islamic finance are listed in Scopus's 2018–2023 index. Other scholars and researchers have the opportunity to explore theoretical and practical studies concerning blockchain in Islamic banking in more detail. In addition to Scopus, retrieving sources from the Web of Science and Dimensions will broaden the range of literature used in the study.

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