Journal of Islamic Finance, Vol. 15 No. 1 (2026) 103-128
IIUM Institute of Islamic Banking and Finance
ISSN 2289-2117 (O) / 2289-2109 (P)

Application of Blockchain Technology in Islamic Social Finance: A Scientometric Analysis

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Abstract

The integration of blockchain technology within Islamic Social Finance (ISF) has emerged as a transformative approach to enhancing transparency, operational efficiency, and accountability in socio-economic development. Despite growing scholarly interest, the existing literature remains fragmented and lacks a cohesive analytical framework that reconciles technological capabilities with Islamic ethical principles. This study synthesizes the current state of research through a hybrid methodology, integrating bibliometric analysis with a Systematic Literature Review (SLR) in accordance with PRISMA guidelines. Utilizing data from the Scopus and Web of Science databases (2018–2024), the research is theoretically grounded in a synthesis of the Technology Acceptance Model (TAM) and the *Maqāṣid al-Sharīʿah* framework. This dual-lens approach offers a novel perspective on the adoption and theological relevance of blockchain within Islamic social finance institutions. The findings demonstrate that blockchain significantly improves governance and efficiency in the management of *Zakāt* and *Waqf*. Scientometric results identify key contributors, noting A. Muneeza as the most prolific author, the University of Malaya as the leading institution, and the *ISRA International Journal of Islamic Finance* as the primary publication outlet. However, the analysis suggests the field is still in its nascent stages, characterized by a dearth of empirical and cross-country investigations. This study contributes the first integrated scientometric synthesis of blockchain in ISF, offering critical insights for regulators and practitioners while outlining a future research agenda focused on empirical validation and technological convergence

Keywords: Blockchain Technology, Islamic Social Finance, Zakāt, Waqf, Bibliometric Analysis, Systematic Literature Review

1. Introduction

Islamic finance has emerged as a dynamic and rapidly expanding segment of the global financial industry, maintaining a robust presence in diverse international markets. In recent years, the sector has sustained an impressive annual growth rate of approximately 20%, a testament to its institutional resilience and increasing global acceptance. This popularity is primarily driven by a steadfast adherence to Shari'ah principles, which govern all financial activities. These core tenets—encompassing equity, risk-sharing, and asset-backed ownership—ensure a transparent, fair, and equitable financial ecosystem for all stakeholders (Khera et al., 2021). Islamic Social Finance (ISF), a specialized sub-sector formally conceptualized by the IRTI-IDB in 2013, represents a contemporary paradigm for addressing global economic challenges. ISF leverages traditional Islamic instruments, such as Zakāt (obligatory alms), Infaq (voluntary spending), Sadaqah (charity), Waqf

Article history
Received: 10 January 2026
Accepted: 14 March 2026

(endowments), Qardh al-Hasan (benevolent loans), and Islamic micro-insurance/microfinance. These mechanisms facilitate the stra tegic allocation of capital toward social and humanitarian initiatives, offering viable solutions for multifaceted socio-economic disparities (Ismail & Aisyah, 2022). Consequently, ISF plays a pivotal role in socio-economic empowerment by mobilizing these redistributive instruments to foster financial inclusion (Hossain & Mahadi, 2022). Through the institutionalization of Zakāt and Waqf, ISF has become instrumental in enhancing the collective well-being of society. The integration of these frameworks across various jurisdictions has accelerated socio-economic development by directing financial resources toward poverty alleviation and social welfare programs (Billah et al., 2024).

Concurrently, the convergence of blockchain technology and Artificial Intelligence (AI) is redefining fintech innovation. Blockchain's utility is derived from its decentralized architectural characteristics. Within this framework, blocks are interlinked via cryptographic hashes across a peer-to-peer network, effectively eliminating single points of failure. This decentralized structure ensures that the system remains resilient and operational even if individual nodes fail (Shahnawaz & Astya, 2017; Khan Shahnawaz, 2020). Furthermore, blockchain offers unparalleled transparency, as the distributed ledger allows stakeholders to trace and audit transactions in real-time. Another defining feature is immutability; once a transaction is recorded, it becomes computationally prohibitive to alter, thereby ensuring data integrity. While rare instances of chain modifications have been documented in specific contexts, the inherent security of blockchain remains a cornerstone of its value proposition for financial systems (Rabbani et al., 2020).

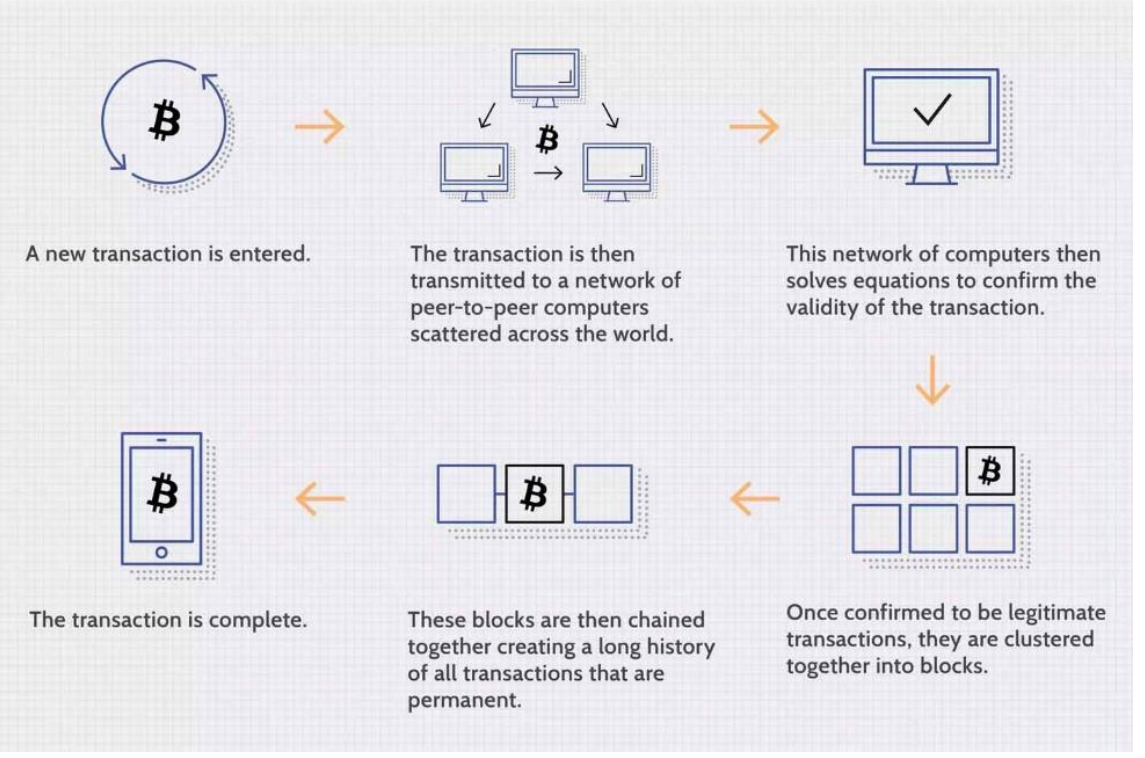


Figure 1: Blockchain technology characteristics, (Casino et al., 2019)

Blockchain technology has undergone several transformative phases, each representing a significant technological advancement. As illustrated in Figure 2, the evolution of blockchain from its inception to its current state reflects a paradigm shift, expanding its functionality and applicability across diverse industries.

Blockchain 1.0: In its initial development phase, blockchain technology was predominantly associated with Bitcoin and other cryptocurrencies. This first iteration enabled decentralized, peer-to-peer financial transfers,

focusing primarily on monetary transactions. Consequently, it became widely known as the "Internet of Money" (Lutfiani et al., 2022).

Blockchain 2.0: The progression to Blockchain 2.0 introduced the concept of "smart contracts"—autonomous, transparent computer programs executed directly on the blockchain. These self-executing contracts significantly reduce the costs associated with execution, verification, and fraud prevention. Furthermore, smart contracts deployed on decentralized ledgers are inherently secure and resilient to unauthorized tampering. A prominent example of this generation is the Ethereum network, which facilitates the seamless integration of smart contracts to manage the registration, confirmation, and transfer of digital properties and contractual agreements (Apriani et al., 2021).

Blockchain 3.0: Current advancements focus on overcoming the limitations of Blockchain 2.0, particularly real-world implementation challenges such as low transaction throughput and prohibitive gas fees. Blockchain 3.0 aims to enhance scalability through interoperability and optimized network performance. For example, platforms like Vexanium offer reduced transaction costs and accelerated processing speeds compared to Ethereum, making them highly suitable for high-frequency retail applications. The utility of Blockchain 3.0 extends beyond financial and commodity exchanges to encompass diverse sectors, including governance, healthcare, scientific research, and education. This third generation fosters global, trustless value exchanges between individuals, machines, and enterprises, effectively eliminating the need for traditional intermediaries (Djatmiko et al., 2018).

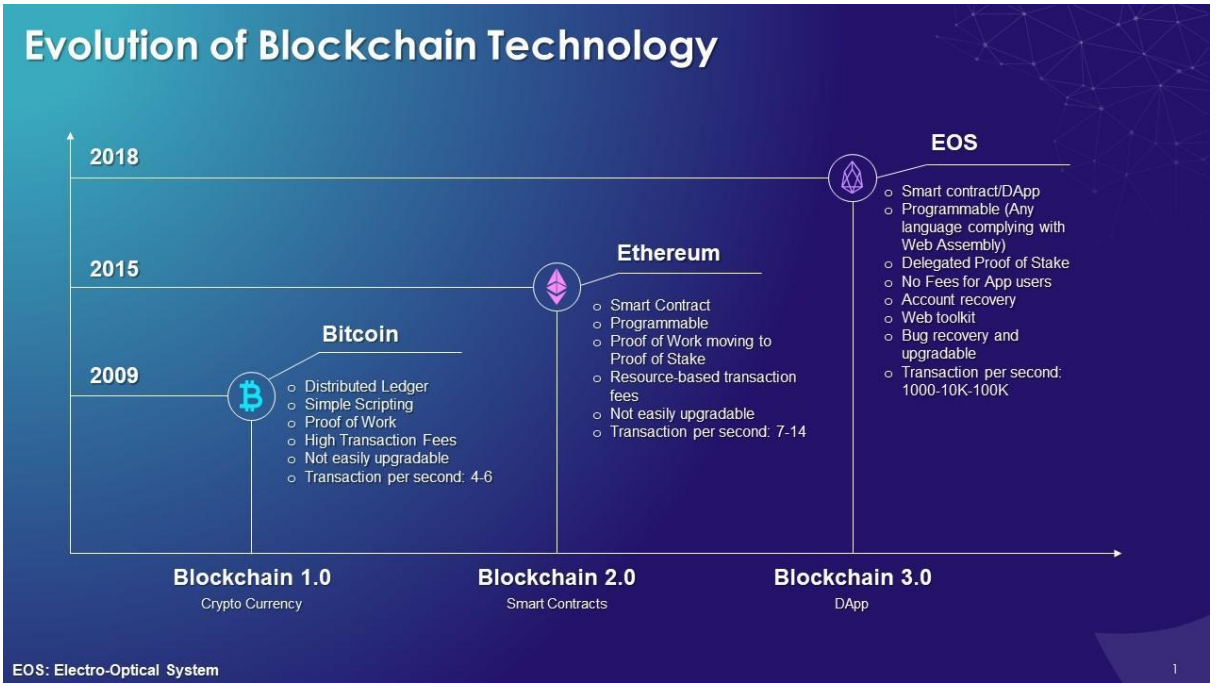


Figure 2: The Evolution of Blockchain, According to Purnama (Purnama et al., 2022)

The effective utilization of blockchain technology is increasingly critical to the advancement of Islamic social finance (ISF). However, realizing this potential requires a comprehensive understanding of the technology's functional complexities and the socio-technical challenges impeding its widespread acceptance. Despite a growing body of literature situated at the intersection of blockchain and Islamic finance, existing research remains highly fragmented and predominantly domain-specific. Prior bibliometric studies have typically examined either Islamic social finance or blockchain applications in conventional finance in isolation, failing to integrate these two disciplines into a cohesive analytical framework. To address this critical gap, this

study contributes a hybrid scientometric and systematic synthesis that maps the intellectual structure of blockchain-enabled ISF and explicitly delineates emerging research gaps, governance challenges, and future academic trajectories. Unlike preceding scholarship, this paper converges quantitative bibliometric insights with a critical qualitative literature synthesis, thereby delivering robust descriptive and analytical contributions to the evolving discourse on Islamic financial technology. Specifically, this research aims to evaluate the functional role of blockchain technology in accelerating Islamic social finance activities for socio-economic development, while simultaneously analyzing the current research output and intellectual structure of the field through a comprehensive scientometric lens.

2. Theoretical Framework

This study is theoretically grounded in the synthesis of Technology Adoption Theory and the Maqāṣid al-Sharīʿah framework. This dual-lens approach is essential for explaining the multi-dimensional relevance and adoption of blockchain technology within the Islamic social finance (ISF) ecosystem. From a technological perspective, the Technology Acceptance Model (TAM) and its subsequent extensions provide a robust basis for understanding how user perceptions—specifically perceived usefulness and perceived ease of use—determine the adoption of blockchain systems within financial institutions (Davis, 1989; Venkatesh et al., 2022). In the specialized context of Zakāt and Waqf management, blockchain serves as a catalyst for institutional trust. By inherently enhancing transparency, accountability, and operational efficiency, the technology addresses the specific functional requirements that drive the likelihood of adoption among Shari'ah-compliant organizations (Aysan et al., 2021; Rabbani et al., 2020).

Complementing this technological view, Maqāṣid al-Sharīʿah (the higher objectives of Shari'ah) provides a normative and ethical framework that prioritizes the protection of wealth (ḥifẓ al-māl), the promotion of social justice, and the maximization of communal welfare (Chapra, 2008; Hasan et al., 2021). Blockchain-enabled ISF directly aligns with these teleological objectives. By ensuring the integrity of fund allocation, mitigating the risk of fraud, and optimizing social redistribution mechanisms, the technology serves as a digital manifestation of Maqāṣid principles (Alam et al., 2022). Ultimately, the integration of these two frameworks allows this study to transcend descriptive analysis. It provides a theoretically grounded explanation of blockchain adoption, bridging the gap between technological feasibility and the socio-ethical mandates of Islamic finance.finance.

3. Research Design

The research design is structured into two primary phases: the methodological framework and the systematic data collection process. This structured approach ensures a rigorous and reproducible analysis of the literature.

3.1 Research Method

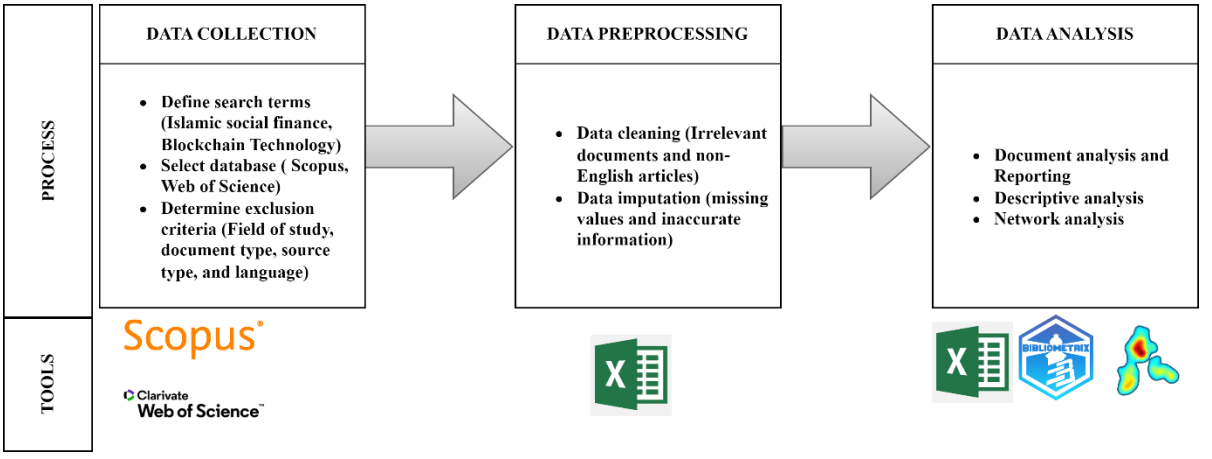
To comprehensively address the research objectives, this study employs a hybrid methodological approach, integrating a Systematic Literature Review (SLR) with bibliometric analysis. The SLR was utilized to fulfill the first research objective (RO1). Conducting an SLR ensures that the review process is transparent, reproducible, and unambiguous. A well-constructed search protocol enhances the efficacy of the review and accurately captures the evolving nature of academic discourse surrounding blockchain technology (Salleh et al., 2023). To ensure methodological rigor, the SLR was executed in strict adherence to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. This framework is highly effective for synthesizing critical findings within a research domain (Moher et al., 2009) and consists of four primary phases: identification, screening, eligibility assessment, and synthesis. To address the second research objective (RO2), bibliometric analysis was employed. This quantitative method systematically examines publication metadata derived from established academic databases. It facilitates the mapping of research trends, influential publications, and the intellectual structure of a specific academic field. By analyzing underlying data patterns, bibliometrics provides valuable insights into the impact of scientific outputs and the collaborative networks between authors, institutions, and disciplines (Hakim & Bahari, 2021). Ultimately, it serves as a robust approach for collecting, organizing, and evaluating data to inform evidence-based conclusions (Nasir et al., 2021). The quantitative data visualization and bibliometric mapping for this study were conducted utilizing RStudio and VOSviewer.

3.2 Data Collection Process

Data were sourced from Scopus and Web of Science (WoS), two of the most prominent bibliographic databases recognized for providing high-quality publication metadata and reliable bibliometric indicators (Pranckutė, 2021). Because the validity of bibliometric research is contingent upon the quality of the data source, these databases were deliberately selected. Scopus was chosen for its comprehensive coverage of peer-reviewed literature in economics, Islamic finance, and emerging financial technologies, consistent with prior systematic reviews in this domain (Paltrinieri et al., 2023). WoS was utilized as a complementary database to ensure data accuracy and methodological robustness, given its stringent indexing standards and quality control (Pech & Delgado, 2020). The data collection protocol commenced with the identification of core keywords. Guided by established literature (Akhter et al., 2023; Hakim & Bahari, 2021; Ismail & Aisyah, 2022; Kuanova et al., 2021; Tandon et al., 2021), the search query integrated terms related to Islamic social finance (e.g., "Zakāt," "Waqf," "Islamic Microfinance," "Islamic Social Finance") with technological terminology (e.g., "Blockchain," "Blockchain Technology," "Distributed Ledger Technology"). The initial database search yielded 193 documents (128 from Scopus and 65 from WoS) published between 2018 and 2024. A structured screening protocol was subsequently applied in accordance with PRISMA guidelines. In the first stage, duplicate and irrelevant records were eliminated based on an evaluation of titles and abstracts, resulting in the exclusion of 103 documents.

In the second stage, a full-text screening was conducted applying predefined inclusion and exclusion criteria. Studies were included only if they explicitly examined the application of blockchain technology within an ISF context, specifically regarding Zakāt, Waqf, or allied social finance mechanisms. Conversely, articles focusing broadly on conventional Islamic finance without a distinct technological focus on blockchain were excluded. This rigorous screening aligns with established precedents in the literature (Akhter et al., 2023; Castro et al., 2024; Chandel et al., 2024; Maulina et al., 2023).

Following the eligibility assessment, a final corpus of 78 documents was retained. These selected studies were subsequently subjected to systematic synthesis and bibliometric analysis to delineate key themes, research trajectories, and emerging insights within the field.



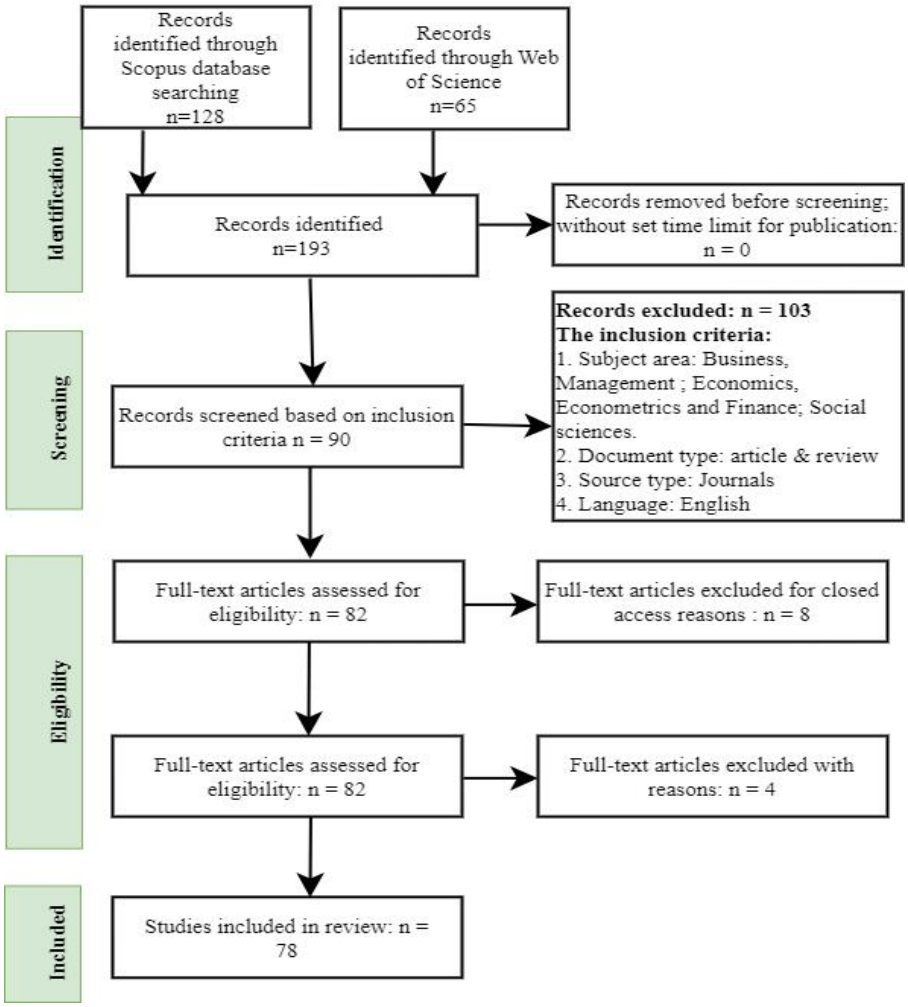


Figure 4: PRISMA Flow Diagram Showing the Article Selection Process, drawn by authors based on David Moher (Moher et al., 2009)

4. Results And Discussion

4.1 Systematic Literature Review (SLR)

The Systematic Literature Review addresses Research Objective One (RO_1). According to data from Scopus and Web of Science, Figure 5 shows 78 scholarly papers related to the application of blockchain technology in Islamic social finance.

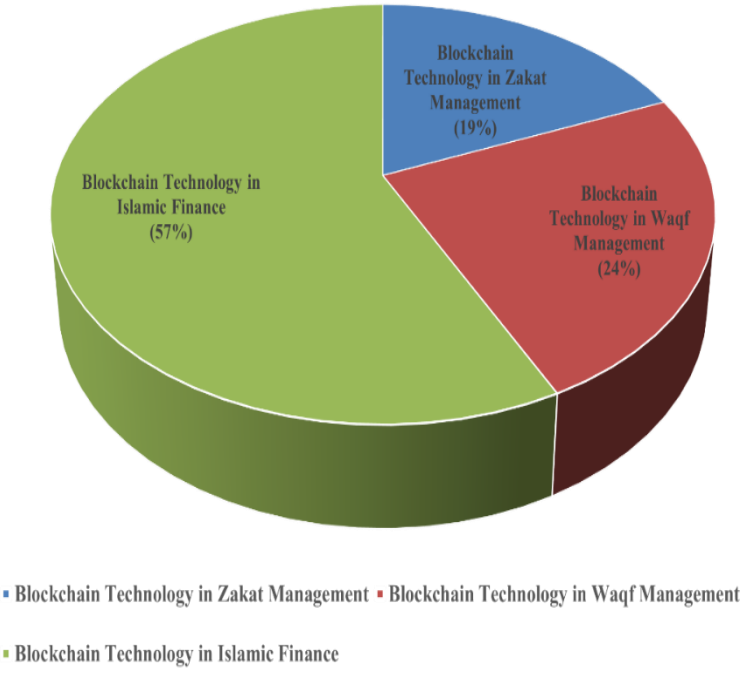


Figure 5: Blockchain Technology in ISF, Source: Authors' compilation

Among the 78 selected articles, three key applications of blockchain technology in Islamic social finance were identified. First, blockchain applications in zakat management account for 19% of the reviewed studies. Second, blockchain applications in Waqf management represent 24% of the literature. Third, a larger proportion, 57% of the studies, focus on the broader application of blockchain technology in Islamic finance. The analysis primarily focuses on blockchain applications in zakat and Waqf management, as these areas align closely with the objectives of Islamic social finance.

4.1.1 Blockchain Technology in Zakat Management

Establishing public trust in Zakat institutions significantly depends on transparency. Numerous studies have emphasized the importance of transparency in effective organizational governance and the functionality of financial markets. It entails the timely and precise disclosure of information that the public can independently verify, acting as a communication link between the institution and the community. Transparency enhances management effectiveness through information sharing, clarity, and accuracy, ultimately building public trust. Furthermore, it supports good governance by equipping stakeholders with clear insights into their activities, which fosters greater trust and strengthens the institution's reputation (Bloomfield & O'Hara, 1999; Carroll & Shabana, 2010; Nicolaou & McKnight, 2006; Potosky, 2008; Schnackenberg & Tomlinson, 2016).

Blockchain technology, functioning as a public distributed ledger, may facilitate transparency through its concepts of transparency, immutability, and traceability. Moreover, decentralization and the removal of third-party intervention in blockchain technology will be crucial for achieving transparency; they may also indirectly reduce the risks of human error, fraud, and data management concerns. Blockchain technology provides real-

time transaction updates, thereby eliminating human error, ensuring dependable operations, and guaranteeing correct information (Fischer, 2018; Hambiralovic & Karlsson, 2018). This procedure is particularly essential in the zakat collection and distribution processes to bolster societal confidence. Zakat institutions that oversee public contributions to sustenance are urgently needed. The distributed ledger, powered by blockchain technology and a consensus process, will ensure that each transaction is accountable and visible, as it is constructed and aggregated into a block. Consequently, the likelihood of manipulation and concealment is negligible, thereby protecting the contributions of the zakat payers. Moreover, blockchain technology can ensure that zakat contributors allocate money for the benefit of asnaf (Nazeri et al., 2023). Smart contracts and blockchains will transform several sectors and organizations by enabling electronic transactions without human intervention. An algorithm governs an electronically executed agreement known as a smart contract. A smart contract is a blockchain-recorded agreement or rule automatically executed during specific blockchain transactions (Dutta, 2020).

Blockchain technology fosters zakat institutions through its peer-to-peer transaction procedure, which is primarily facilitated by the adoption of smart contracts. Additionally, its end-to-end transaction characteristics facilitate data dissemination and serve as a gatekeeper for automated data access, particularly when using the intelligent contract approach. This approach may address the need for confidence in Islamic social finance by offering greater transparency, reliability, and credibility. The smart contract associated with zakat transactions ensures efficiency, traceability, and confidence; hence, it enhances the collection of zakat money (Khairi et al., 2023). The use of blockchain will improve the governance framework of zakat organizations. Contributors to Zakat will receive information about Zakat allocations and their utilization. Effective governance enhances accountability for zakat payments. Consequently, this has resulted in enhanced collection and improved economic conditions for Muslims in Malaysia. Blockchain positively influences zakat distribution by improving its efficiency, usability, and speed. Prospective beneficiaries would benefit from a streamlined zakat application procedure, which could potentially disseminate information on potential zakat recipients(Mohd Nor et al., 2021).

Despite the advantages of blockchain in enhancing transparency and efficiency in zakat management, several limitations should be acknowledged. The effectiveness of blockchain largely depends on the accuracy of input data, as errors cannot be corrected once the data is immutable. Additionally, adopting blockchain requires significant technological infrastructure, financial resources, and skilled personnel, which may limit its applicability in resource-constrained zakat institutions. Furthermore, while smart contracts improve automation, they may introduce challenges related to coding errors, legal enforceability, and Shariah compliance, as zakat distribution often requires contextual human judgment. From a theoretical perspective, although blockchain aligns with the Technology Acceptance Model (TAM) and supports the objectives of Maqaṣid al-Shariah, its practical implementation depends on institutional readiness, regulatory support, and integration with governance frameworks. Therefore, while blockchain presents a promising solution, its successful adoption requires a balanced approach that integrates technological innovation with human oversight and supportive regulatory frameworks.

Table 1: Influential Article on Blockchain Technology in Zakāt Management, Source: Authors' Compilation

SL	Authors name	Title	Journal name	Country (S) Context	Database
1	Nazeri (Nazeri et al., 2023)	Exploration of a New Zakāt Management System Empowered by Blockchain Technology in Malaysia	ISRA International Journal of Islamic Finance	Malaysia	Wos
2	Muneeza (Muneeza et al., 2022)	Zakāt Payment from Cryptocurrencies and Crypto Assets	International Journal of Islamic and Middle Eastern Finance and Management	Not specific	Wos
3	Khairi (Khairi et al., 2023)	The Development and Application of the Zakāt Collection Blockchain System	Journal of Governance and Regulation	Malaysia	Scopus
4	Ghofar (Ghofar et al., 2024)	Young Muslim Generation's Preferences for Using Digital Platforms for Zakāt Payments: A Cross-Country Study of Indonesia and Malaysia	Journal of Infrastructure, Policy and Development	Indonesia and Malaysia	Scopus
5	Abdul-Rahman (Abdul-Rahman et al., 2023)	Technological Integration within Zakāt Institutions: A Comprehensive Review and Prospective Research Directions	International Journal of Islamic Thought	Not specific	Scopus
6	Rahmatullah (Rahmatullah et al., 2024)	Legal Reform of Zakāt Management Based on Personal Data Protection Law in Indonesia	Mazahib Jurnal Pemikiran Hukum Islam	Indonesia	Scopus
7	Hadi (Hadi et al., 2024)	Digital Zakāt Management, Transparency in Zakāt Reporting, and The Zakāt Payroll System Toward Zakāt Management Accountability and Its Implications on Zakāt Growth Acceleration	International Journal of Data and Network Science	Not specific	Scopus
8	Syed (Syed et al., 2020)	An Artificial Intelligence and NLP-Based Islamic Fintech Model Combining Zakāt and Qardh-Al-Hasan for Countering the Adverse Impact of Covid-19 on SMEs and Individuals	International Journal of Economics and Business Administration	Not specific	Scopus
9	Razzak (Razzak et al., 2024)	The Effect of Digital Zakāt and Accounting on Corporate Sustainability through Financial Transparency	Asian Economic and Financial Review	Malaysia	Scopus
10	Basarud-Din & Abdullah (Basarud-Din & Abdullah, 2023)	Can bitcoin be used for zakāt payment?	International Journal of Economics and Management	Not specific	Scopus

11	Alam (Alam et al., 2022b)	Generation Z Perceptions in Paying Zakāt, Infaq, and Sadaqah Using Fintech: A Comparative Study of Indonesia and Malaysia	Investment Management and Financial Innovations	Indonesia and Malaysia	Scopus
12	Bashori (Bashori et al., 2024)	The Transformation of Zakāt Law: An Analysis of Ijtihād Maqāṣidī in The Modernization of Zakāt Practices in Indonesia	Jurisdictie: Jurnal Hukum Dan Syariah	Indonesia	Scopus
13	Al-Taani (Al-Taani et al., 2024)	Exploring the Impact of Digital Accounting and Digital Zakāt on Improving Business Sustainability in The Middle East and Malaysia	International Journal of Advanced and Applied Sciences	Malaysia	Scopus
14	Rosele (Rosele et al., 2022)	The Digitalized Zakāt Management System in Malaysia and The Way Forward	Al-Ihkam: Jurnal Hukum Dan Pranata Sosial	Malaysia	Scopus

4.1.2 Blockchain Technology in Waqf Management

The management of endowment funds serves as a critical function for non-profit organizations seeking to mitigate income volatility associated with fluctuating donations and grants. Effective management ensures a stable flow of resources necessary to sustain institutional missions and finance administrative and operational activities. Islamic endowments (Waqf) present a significant opportunity for the application of blockchain technology to oversee and administer substantial asset portfolios. Historically, Waqf has been a cornerstone of socio-economic development, facilitating the provision of education, healthcare, and public goods. However, institutional neglect and underdeveloped property management have historically diminished this role, adversely affecting the ongoing contribution of Waqf to community welfare. Blockchain technology possesses the potential to address these structural challenges, particularly in asset development, making it a valuable instrument for modernized Waqf wealth management. Beyond introducing a novel array of investable assets, blockchain transforms the processes of registration, aggregation, monitoring, and institutional organization. The integration of a decentralized ledger significantly improves the efficiency of Waqf asset management. By enhancing transparency within the portfolio's structure and dynamics, blockchain strengthens auditing and oversight mechanisms. This, in turn, restores public confidence in Waqf management and re-establishes the institution as a fundamental pillar of socio-economic welfare within the Muslim community (Al-Saudi, 2024; Aysan et al., 2021). The convergence of blockchain technology and crowdsourcing further facilitates Waqf expansion. Recent trends indicate that Islamic crowdfunding can effectively promote Waqf initiatives. Specifically, a donation-based crowdfunding approach—or direct scheme—can be utilized to rehabilitate abandoned Waqf assets. This involves leveraging accumulated funds to construct essential infrastructure, such as mosques, schools, and hospitals, on endowment sites (Kasmon et al., 2023). This digital revolution fundamentally alters institutional behaviors, necessitating a state of readiness for technological change. Such a paradigm shift enhances the management of Waqf, promoting optimal welfare and sustainability, particularly during global emergencies where alternative funding sources beyond government budgets—such as public contributions through Islamic financial channels—are urgently required (Vidiati et al., 2021).

Furthermore, blockchain addresses the significant risks associated with property transfers. In many jurisdictions, existing records consist of manual, paper-based documents that are difficult to organize and vulnerable to loss. Blockchain facilitates the maintenance of immutable transactional records, ensuring that Waqf assets are managed in strict accordance with the founder's original stipulations. This level of transparency precludes the potential for the exploitation of families and vulnerable populations (Alharthi, 2021). Consequently, the primary utility of blockchain in this context is its ability to address financial constraints sustainably, reinforcing the Waqf institution's historical role in facilitating economic growth (Laili, 2022). Despite this significant potential, several limitations and practical challenges remain. The efficacy of blockchain-based systems is fundamentally dependent on the accuracy and digitization of legacy records; however, many institutions still rely on fragmented, manually maintained documentation. This poses a significant hurdle for the initial stages of blockchain integration. Moreover, implementation requires substantial financial capital, technical infrastructure, and skilled personnel—resources that may be limited in developing countries. While blockchain-enabled crowdfunding and smart contracts enhance operational efficiency, they also introduce complexities regarding legal enforceability, governance, and Shari'ah compliance, particularly when managing diverse beneficiary structures. Theoretically, while blockchain supports transparency and aligns with the objectives of Maqāṣid al-Sharīʿah in promoting equitable distribution, its successful adoption is constrained by institutional readiness and regulatory uncertainty. Therefore, the implementation of blockchain in Waqf management requires an integrated approach that harmonizes technological innovation with robust regulatory frameworks and human oversight to ensure sustainable, Shari'ah-compliant outcomes.

Table 2: Influential Article on Blockchain Technology in Waqf Management, Source: Authors' Compilation

SL	Authors Name	Title	Journal name	Country (S) Context	Database
1	Kasmon (Kasmon et al., 2023)	Potential blockchain applications in Waqf for sustainability: a Middle East and Asia perspective	Islamiyyat-the International Journal of Islamic Studies	Middle East and Asia perspective	Wos
2	Mohaiyadin (Mohaiyadin, 2022)	Addressing accountability and transparency challenges in Waqf management using blockchain technology	Journal of Islamic Monetary Economics and Finance	Malaysia	Scopus
3	Mohaiyadin (Mohaiyadin, 2021)	Understanding the issues of Waqf at public universities: Preliminary findings	International Journal of Islamic Thought	Malaysia	Scopus
4	Laallam (Laallam et al., 2020)	Intellectual capital in non-profit organizations: lessons learnt for Waqf institutions	ISRA International Journal of Islamic Finance	Not specific	Scopus
5	Listana (Listana et al., 2024)	Issues on Waqf and roles of Waqf authorities: Evidence from Indonesia and Singapore	Hamdard Islamic	Indonesia and Singapore	Scopus
6	Hapsari (Hapsari et al., 2024)	Managing Waqf land in Indonesia: ANP-driven strategies	Pertanika Journal of social sciences and humanities	Indonesia	Scopus
7	Rashid (Rashid, 2018)	Potential of Waqf in contemporary World	Journal of king Abdulaziz university, Islamic economics	Not specific	Scopus
8	Qurrata (Qurrata et al., 2024)	Waqf sustainability or sustainable Waqf? A Bibliometric Analysis	Millah: Journal of Religious Studies	Not specific	Scopus
9	Meskini & Aboulaich (Meskini & Aboulaich, 2024)	Insurance based on Waqf and blockchain technology: a strong social impact & efficiency	Wseas transactions on business and economics	Morocco	Scopus
10	Febriandika (Febriandika et al., 2023)	An empirical study on the Muslims' intention to use digital Waqf innovation	Journal of system and management sciences	Not specific	Scopus
11	Syarifuddin (Syarifuddin, 2024)	Productive Waqf business models through the integration of Islamic social and commercial finance	Edelweiss applied science and technology	Indonesia	Scopus

12	Salleh, Kassim, Muhammad (Salleh, Kassim, Muhammad, Mohd Yusoff, et al., 2023)	Application of blockchain technology in the management of Waqf institutions: concepts, challenges, and recommendations	2023 IEEE International Conference on Computing, ICOCO 2023	Malaysia	Scopus
13	Hasibuan & Lubis (Hasibuan & Lubis, 2024)	Halal value chain integration in food court establishment through cash Waqf-linked Sukuk: evidence from Indonesia	Cogent Business and Management	Indonesia	Scopus
14	Yusuf & Maulana (Yusuf & Maulana, 2023)	Waqf core principles for the economic recovery of covid 19 in Indonesia	Quality - Access to Success	Indonesia	Scopus
15	Zakariyah (Zakariyah et al., 2023)	The determinants of financial technology adoption amongst Malaysian Waqf institutions	International Journal of Social Economics	Malaysia	Scopus
16	Nour Aldeen (Nour Aldeen et al., 2022)	Cash Waqf from the millennials' perspective: a case of Indonesia	ISRA International Journal of Islamic Finance	Indonesia	Scopus
17	Bintarto (Bintarto et al., 2022)	Zakah and Waqf for cryptocurrency in Islamic law	Al-Istinbath: Jurnal Hukum Islam	Not specific	Scopus

5.1 Bibliometric Analysis

The bibliometric analysis sections address Research Objective Two (RO_2). A Bibliographic analysis elucidates the contributions of the top journals, authors, papers, institutions, and countries (Zeng et al., 2018). Bibliometric analysis creates a map based on bibliographic data, text data, and thematic evolution.

5.1.1 Descriptive Analysis

Table 3 presents an exhaustive synopsis of the key aspects of the concepts under investigation. Understanding the particulars of the selected documents is essential before proceeding with the analysis. This study selected 78 documents for analysis, which used 4593 references. These documents used 265 author keywords (DE) and 1311 keywords plus (ID) during the analysis period, spanning 2018 to 2024. The average number of citations per document was 6.184. Furthermore, 250 authors have contributed to this emerging field. Figure 6 shows the annual publication output. There were 78 publications on Islamic Social Finance and Blockchain Technology from 2018 to 2024, with the highest number in 2023.

Table 3: Descriptive characteristics of blockchain Technology and Islamic Social Finance
Source: Authors' Compilation through RStudio Software

Description	Criteria	Results
Main Information about the Data	Timespan	2018:2024
	Sources (Journals, Books, etc.)	59
	Documents	78
	Annual Growth Rate %	61.89
	Document Average Age	1.61
	Average citations per doc	6.184
	References	4593
Document Contents	Keywords Plus (ID)	86
	Author's Keywords (DE)	265
Authors information	Authors	250
	Authors of single-authored docs	11
	Single-authored docs	12
	Co-Authors per Doc	3.67
	International co-authorships %	15.79
Document Types	article	62
	article; book chapter	3
	article; early access	3
	conference paper	1
	review	7

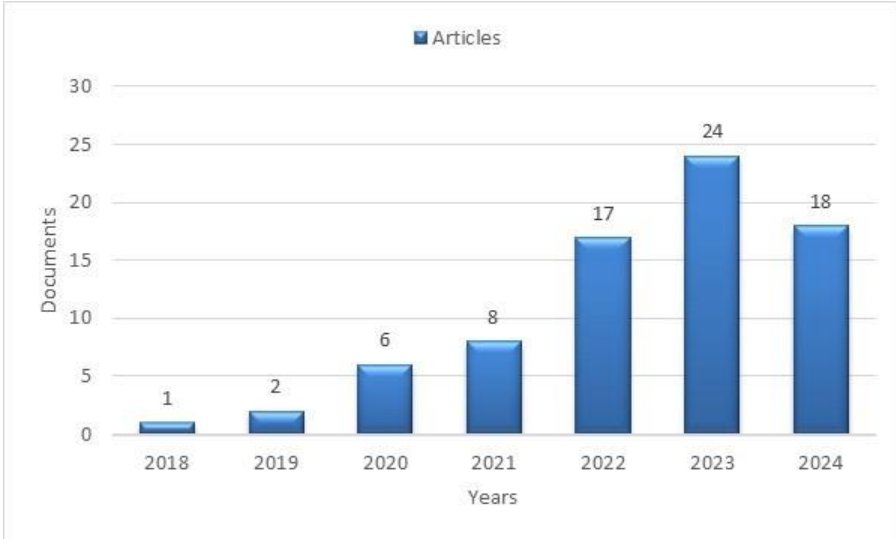


Figure 6: Annual publication of Islamic Social Finance Blockchain Technology
Source: Authors' Compilation through RStudio Software

5.1.2 Leading Authors, Institutions, Countries, and Journals

Table 4 provides an overview of the foremost contributors to this field between 2018 and 2024. Muneeza A is the leading author, with 4 published articles, followed by Hassan M and Herianingrum S, each with 3. Other authors who have significantly impacted this area include Ratnasari, Abd, Al-Zaqeba, Alam, Aman, Hapsari, and Ishak; based on the impact factor, Alam A is the top author, followed by Aman A, Hassan M, Herianingrum S, Ishak M, Mohaiyadin N, Muneeza A, Ratnasari R, Widiastuti T, and Ab A, as shown in Table 5.

Table 6 shows the top institutions that contributed to blockchain technology and Islamic social finance. As expected, the University of Malaya, followed by Universitas Airlangga, University Utara Malaysia, Universiti Kebangsaan Malaysia, INCEIF University, University of New Orleans, Ahmadu Bello University, Bahcesehir University, the Institute of Management Science, and the International Islamic University Malaysia. According to Table 7, the publisher with the most ISRA International Journal of Islamic Finance publications is Edelweiss Applied Science and Technology, with six titles. This is followed by the International Journal of Islamic Thought, Journal of Islamic Monetary Economics and Finance, Qualitative Research in Financial Markets, Hamdard Islamicus, Heliyon, Journal of Islamic Accounting and Business Research, Journal of Risk and Financial Management, and Kocatepe Islami Ilimler Dergisi.

Table 4: Top ten authors in ISF and Blockchain Technology

SL	Authors	Articles
1	Muneeza A	4
2	Hassan M	3
3	Herianingrum S	3
4	Ratnasari R	3
5	Abd W N	2
6	Al-Zaqeba M	2
7	Alam A	2
8	Aman A	2
9	Hapsari M	2
10	Ishak M	2

Source: Authors' Compilation through RStudio Software

Table 5: Top ten authors' impact on ISF and Blockchain technology

Author	*H_index*	*G_index*	*M_index*	*Total Citations*	*No. of publications*	*Publication year start*
Alam A	*2*	*2*	0.	14	2	2022
Aman A	*2*	*2*	0.	8	2	2021
Hassan M	*2*	*3*	0.	20	3	2019
Herianingrum S	*2*	*3*	0.	15	3	2022
Ishak M	*2*	*2*	1	14	2	2023
Mohaiyadin N	*2*	*2*	0.	8	2	2021
Muneeza A	*2*	*4*	0.	22	4	2021
Ratnasari R	*2*	*3*	0.	21	3	2022
Widiastuti T	*2*	*2*	0.	15	2	2022
Ab A	1	1	0.	1	1	2023

Source: Authors' Compilation through RStudio Software

Table 6: Most relevant institutions

Rank	**Affiliation**	**Articles**
1	University Malaya	8
2	Universitas Airlangga	7
3	University Utara Malaysia	6
4	Universiti kebangsaan Malaysia	5
5	INCEIF University	4
6	University New Orleans	4
7	Ahmadu Bello University	3
8	Bahcesehir university	3
9	Institute of Management Science	3
10	International Islamic University Malaysia	3

Source: Authors' Compilation through RStudio Software

Table 7: Top ten journals, according to production

Rank	Sources	Articles
1	ISRA International Journal of Islamic Finance	6
2	International Journal of Islamic Thought	3
3	Journal of Islamic Monetary Economics and Finance	3
4	Qualitative Research in Financial Markets	3
5	Edelweiss Applied Science and Technology	2
6	Hamdard Islamicus	2
7	Heliyon	2
8	Journal of Islamic Accounting and Business Research	2
9	Journal of Risk and Financial Management	2
10	Kocatepe Islami Ilimler Dergisi	2

Source: Authors' Compilation through RStudio Software

Figure 7 presents the analysis of countries with the highest number of citations. Malaysia ranks as the leading country in terms of citations, with 146, followed by Indonesia and Australia, with 42 and 36, respectively.

This dominance of Malaysia can be attributed to its strong institutional infrastructure in Islamic finance, including organizations such as ISRA and INCEIF, as well as proactive regulatory support for fintech innovation. Furthermore, the concentration of research in specific regions indicates a geographical imbalance, suggesting that blockchain applications in Islamic social finance remain underexplored in other regions such as Africa and the Middle East. The relatively low average citation per document indicates that this field is still emerging and has not yet reached maturity in terms of academic impact.

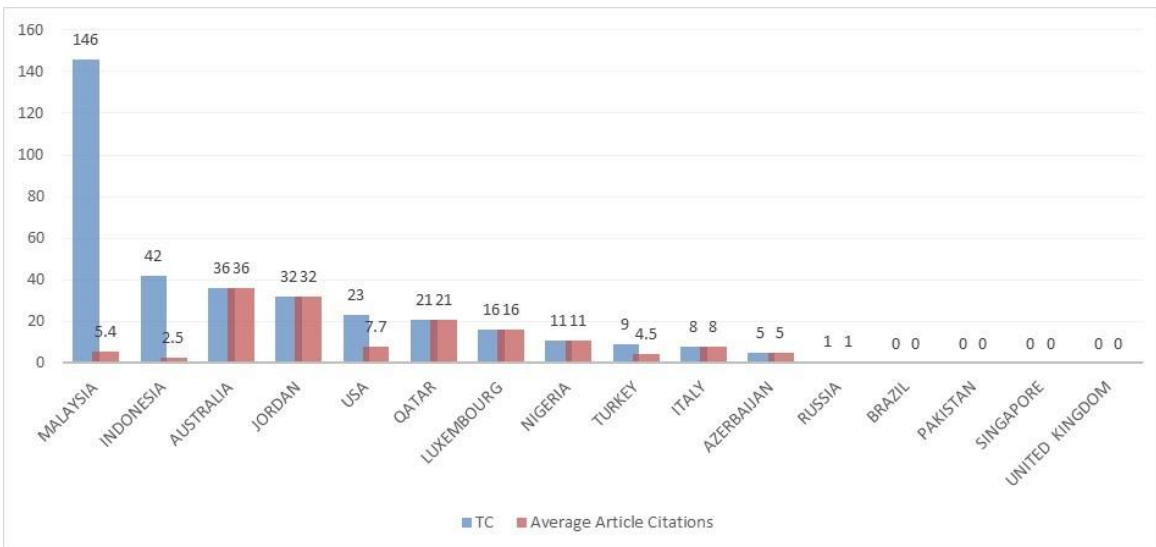


Figure 7: Most cited countries, Source: Authors' Compilation through RStudio Software

5.1.3 Keywords analysis

The keyword analysis identifies the principal themes of the documents, including the title, abstract, keywords, and author (Nasir et al., 2021). Table 8 presents details on the keywords used in Blockchain technology and Islamic Social Finance in the social sciences from 2018 to 2024. This table presents keywords in four segments: author keywords, keyword plus, title, and abstract. In all categories, the most frequently occurring keyword is "Blockchain," which appears the most, while "Islamic social finance" ranks second. Figure 8 shows a word cloud image.

Table 8: Keyword Analysis

Author Keyword		**Keyword Plus**	
Words	**Frequency**	**Words**	**Frequency**
Blockchain	27	Blockchain	7
Islamic social finance	15	Islamic social finance	3
Waqf	12	Indonesia	3
Cryptocurrency	9	Finance	3
Bitcoin	8	Islamic fintech	2
Zakāt	7	Banking	2
Cryptocurrencies	5	Challenges	2
Fintech	5	Cryptocurrency	2
Cash Waqf	4	Economics	2
Digitalization	4	Hedge	2
Title		**Abstract**	
Words	**Frequency**	**Words**	**Frequency**
Blockchain	9	Blockchain	35
Islamic social finance	7	Islamic social finance	30
Islamic finance	6	Blockchain technology	25
Bibliometric analysis	5	Waqf institutions	25
Social finance	5	Zakāt management	24
Zakāt management	5	Social finance	21
Islamic financial	4	Cash Waqf	20
Digital zakāt	3	Islamic social	20
Waqf institutions	3	Islamic financial	19
Blockchain applications	2	Crypto assets	18

Source: Authors' Compilation through RStudio Software

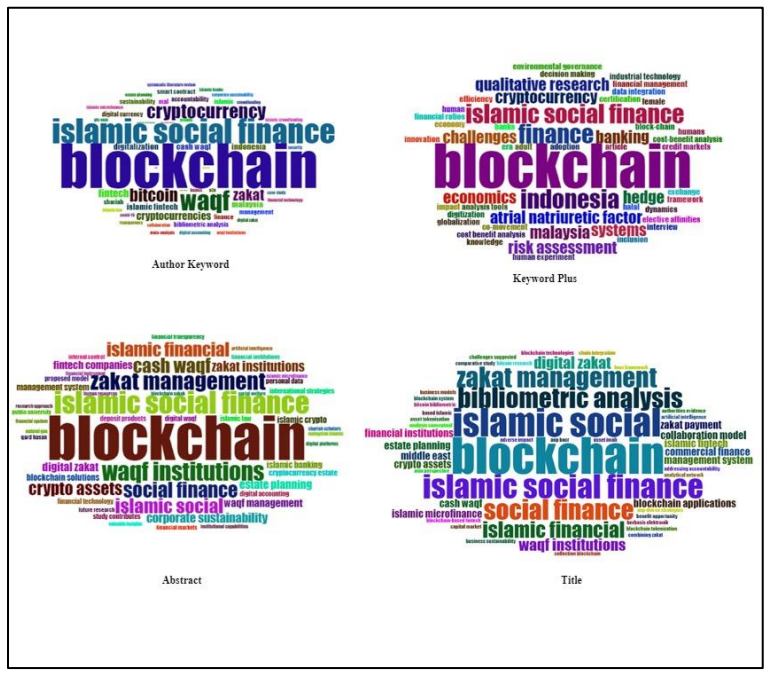


Figure 8: Word Cloud
Source: Authors' Compilation through RStudio Software

5.1.4 Co-authorship analysis

In the context of academic research, co-authorship refers to the designation of an individual who has made a significant contribution to a journal article and thus shares both responsibility and accountability for the research outcomes published in the article (Ullah et al., 2022).

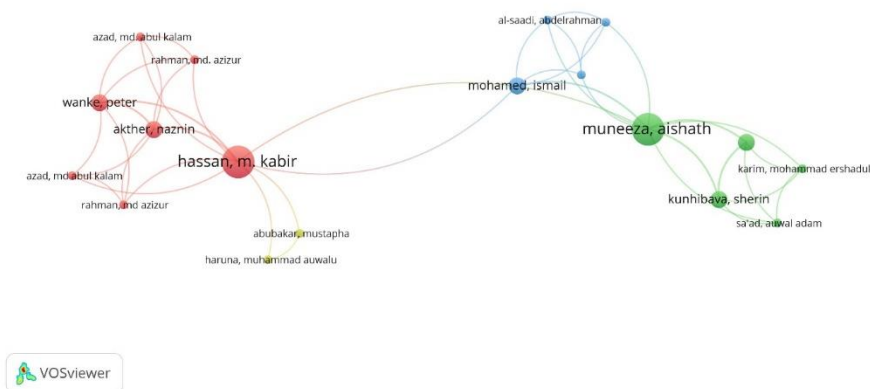


Figure 9: Co-authorship Analysis (Network Visualization)
Source: Authors' Compilation through VOSviewer

This study set a minimum citation threshold of 1, resulting in the identification of 18 source documents and 42 links, and achieving a total link strength of 49. According to (Van Eck & Waltman, 2010). A higher link strength score indicates a stronger interconnection between documents. In this instance, the overall link strength was considered moderate. Figure 9 illustrates the four co-authorship clusters identified in the VOSviewer analysis. There are red, green, blue, and yellow clusters. Hassan and Kabir lead the red cluster, which comprises seven co-authors linked together. Muneeza Aishath, Mohamed Ismail, and Haruna Muhammad Auwalu, representing the green, blue, and yellow clusters, respectively, demonstrated co-authorship links within their respective groups. The moderate link strength within these clusters indicates the need for combined efforts among authors from various areas to investigate the different aspects of blockchain and Islamic social finance.

5.1.5 Co-citation analysis

Co-citation analysis is a research method that examines how often pairs of articles are cited together (Shiau et al., 2017). This study identified three distinct clusters, shown in Figure 10. The red cluster exhibits strong connections with the green and blue clusters, with an overall link strength of 30. In contrast, the green and blue clusters demonstrated moderate interconnections, with link strengths of 28 and 24, respectively.

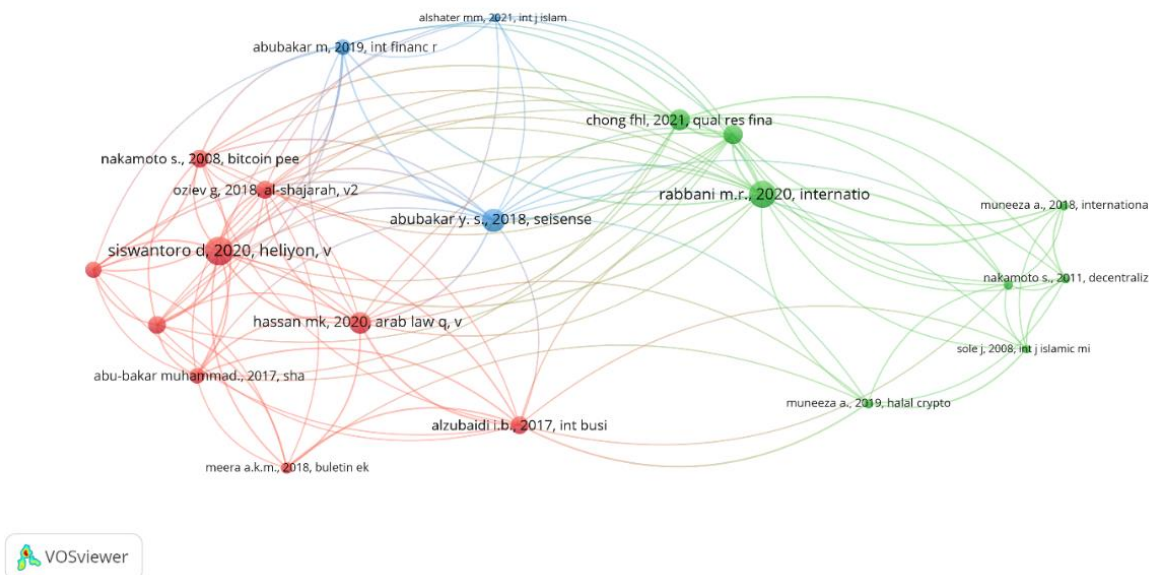


Figure 10: Co-citation Analysis of references (Network Visualization)
Source: Authors' Compilation through VOSviewer Software

5.1.6 Thematic evolution

Thematic To enhance the precision and robustness of the research findings, a thematic analysis was conducted using the Bibliometrix R-package (Musa & Musa, 2022). Figure 11 presents a thematic map based on two fundamental dimensions: centrality (the degree of relevance) and density (the degree of internal development). These dimensions categorize research topics into four distinct quadrants: Motor Themes, Niche Themes, Emerging/Declining Themes, and Basic Themes. The analysis reveals that "blockchain technology" is situated within the Motor Themes quadrant, characterized by high centrality and moderate density. This positioning suggests that blockchain plays a pivotal and increasingly influential role in shaping the field's intellectual structure. This finding is consistent with the Technology Acceptance Model (TAM), as the

perceived utility and efficiency of blockchain in enhancing institutional transparency and accountability drive its adoption within Islamic financial systems.

In contrast, "Islamic social finance" is located in the Basic Themes quadrant (high centrality but low density). This indicates that while the concept is foundational and widely relevant to the discourse, it remains theoretically and empirically underdeveloped. From the perspective of Maqaṣid al-Shariah, this underscores a critical need to strengthen the role of ISF in achieving socio-economic justice through more structured, technology-driven frameworks. Furthermore, "Zakat" is positioned near the Niche Themes quadrant, reflecting a specialized yet moderately developed research area that remains somewhat isolated from the broader thematic structure. Similarly, the term "analysis" appears in the Niche Themes quadrant, suggesting the existence of methodologically rigorous yet relatively fragmented research streams that have yet to be fully integrated into the core nexus of blockchain and ISF. Significantly, the absence of dominant themes in the Emerging or Declining quadrant suggests that the field is in a state of maturation rather than transition. This provides substantial opportunities for future scholarship, particularly in developing empirical models, conducting cross-country comparative analyses, and fostering deeper integration between blockchain technology and traditional ISF instruments such as Zakat and Waqf.

In summary, the thematic structure highlights that while blockchain technology is the primary driver of innovation in this space, the core components of Islamic social finance require more profound theoretical integration and empirical validation to realize their potential for sustainable socio-economic development.

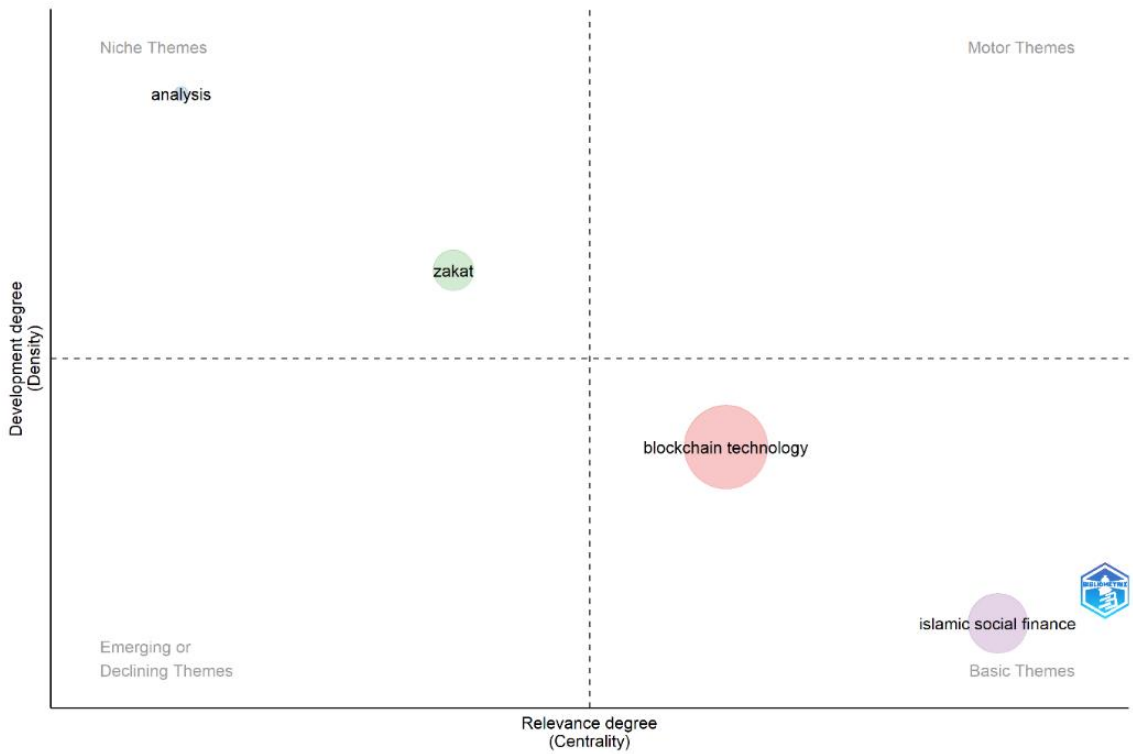


Figure 11: Thematic evolution, Source: Authors' Compilation through RStudio Software

6. Conclusion

This study presented an integrated systematic literature review and bibliometric analysis to evaluate the implementation of blockchain technology within the Islamic social finance (ISF) sector. The findings underscore the transformative potential of blockchain for Zakat and Waqf institutions, particularly in augmenting transparency, operational efficiency, and institutional accountability. By decentralizing the governance of fund collection and distribution, blockchain technology offers a robust mechanism to enhance social welfare and bolster the socio-economic resilience of Muslim communities globally. The research

further demonstrates that blockchain serves as a primary driver of digital transformation, reshaping traditional financial systems and institutional practices. Within Waqf management, the technology provides a viable pathway to institutional sustainability and optimized resource allocation, which is particularly critical in jurisdictions where alternative funding mechanisms are required to supplement state support.

Despite its contributions, this study is subject to several limitations. First, the search protocol relied exclusively on the Scopus and Web of Science databases; consequently, relevant studies indexed in alternative or regional databases may have been excluded. Second, the relatively small sample size of 78 documents reflects the nascent nature of the field, which may limit the generalizability of the findings. Third, the exclusion of non-English publications introduces a potential language bias, particularly given the significance of Islamic finance research in non-English speaking jurisdictions. Finally, while bibliometric analysis offers powerful descriptive and structural insights, it may not fully capture the qualitative depth or nuanced theoretical contributions present in the individual texts.

To advance the field, future scholarship must move beyond conceptual frameworks toward the development of rigorous empirical and theoretical models. Specifically, the following research trajectories are recommended: first, quantitative inquiries utilizing panel data and longitudinal case studies are essential to evaluate the real-world impact of blockchain adoption on institutional performance. Second, cross-jurisdictional studies are needed to identify how differing regulatory environments and Shariah governance structures act as either barriers or enablers to technological adoption. Furthermore, future research should investigate technological convergence by exploring the synergy between blockchain and other Fourth Industrial Revolution (4IR) technologies—such as Artificial Intelligence (AI) and Big Data analytics—to improve the scalability and predictive capabilities of ISF systems. From a policy perspective, the successful institutionalization of blockchain requires a balanced approach that addresses regulatory frameworks, Shariah compliance nuances, and technical risk management. While the transformative potential of the technology is evident, its realization is contingent upon institutional readiness and the establishment of supportive, harmonized regulatory environments. Ultimately, this study serves as a foundational roadmap for researchers and practitioners aiming to modernize Islamic social finance through digital innovation.

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