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Zakat and Digitalisation: A Bibliometric Analysis

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ABSTRACT

This study presents a comprehensive bibliometric analysis of global research on zakat and digitalisation, exploring how technological innovation is reshaping the theory and practice of zakat management within Islamic social finance. In recent years, the convergence of digital technologies, such as fintech, blockchain, and artificial intelligence, with zakat administration has drawn growing scholarly attention, yet systematic mapping of this emerging field remains limited. Addressing this gap, the present study investigates publication trends, collaborative networks, and thematic developments to provide an integrated overview of the intellectual landscape. Data were collected using Scopus advanced searching, applying the search string TITLE-ABS-KEY ((zakat OR zakah) AND (online OR digital OR technology OR virtual OR innovation OR AI OR "artificial intelligence")) for publications between 2010 and 2025, yielding 250 relevant documents. The data were cleaned and standardised using OpenRefine, while descriptive analyses, such as publication trends by year, country, and citation impact, were conducted through the Scopus Analyzer. Visual mapping of keyword co-occurrence and international collaboration networks was performed using VOSviewer, employing the full counting method with specified thresholds to ensure analytical precision. The results reveal a rapid rise in publications after 2020, with Indonesia and Malaysia emerging as the most prolific contributors and key collaboration hubs. Nine keyword clusters were identified, highlighting major research themes including Islamic finance, fintech, blockchain, and digital zakat management. The co-authorship network analysis further demonstrates regional leadership by Southeast Asia, complemented by emerging participation from the Middle East and Western institutions. In conclusion, the findings underscore that research on zakat and digitalisation is evolving toward a more interdisciplinary and globally connected domain, contributing valuable insights into how digital transformation enhances transparency, efficiency, and inclusivity in Islamic social finance systems.

Keywords: Zakat, Digital, Virtual, Technology, Online

INTRODUCTION

The integration of digital technology into zakat management represents a significant evolution in the administration of this essential Islamic practice. Zakat, a mandatory form of almsgiving in Islam, aims to redistribute wealth and alleviate poverty. The digitalisation of zakat processes promises to enhance efficiency, transparency, and accessibility, aligning with the broader objectives of zakat to improve public welfare and reduce poverty (Abidin & Utami, 2020; Beik et al., 2021). This study explores the background, problem statement, the necessity of this research, and key concepts from the literature on the digitalisation of zakat.

The background of zakat digitalisation highlights its potential to transform traditional zakat management practices. Digital technology can streamline the collection and distribution of zakat, making the process more efficient and transparent (Asni et al., 2025; Beik et al., 2021). For instance, the National Board of Zakat of Indonesia (BAZNAS) has implemented various digital tools such as websites, mobile applications, and e-wallets to facilitate zakat payments (Beik et al., 2021). These advancements are crucial in ensuring that zakat reaches those in need promptly and effectively, especially in the context of the COVID-19 pandemic, which has exacerbated poverty levels (Rachmawati & Nor, 2021; Yusof et al., 2024). However, the transition to digital platforms also presents challenges, including data security concerns and the need for robust regulatory frameworks (Asni et al., 2025; Hamsin et al., 2024).

The problem statement addresses the gap between the potential benefits of digital zakat and the current state of its implementation. Despite the advantages, many zakat institutions struggle with issues such as trust, ineffective distribution, and inefficient databases (Nor et al., 2025). The lack of advancement in digital technology can hinder the effectiveness of zakat in addressing poverty and inequality (Beik et al., 2021). Moreover, there are concerns about the security of digital transactions and the potential for fraud, which can undermine public trust in digital zakat systems (Hamsin et al., 2024). These challenges highlight the need for comprehensive strategies to enhance the digitalisation of zakat, ensuring it is secure, transparent, and efficient.

The need to carry out this study is underscored by the significant impact that digital zakat can have on poverty alleviation and public welfare. Digital zakat management has been shown to increase the potential for zakat collection and improve public support for zakat initiatives (Abidin & Utami, 2020). For example, digital platforms have enabled more efficient fundraising and distribution processes, as seen with BAZNAS's use of AI and other technologies to manage zakat (Beik et al., 2021; Salim et al., 2025). Additionally, the digitalisation of zakat can enhance accountability and transparency, which are critical for maintaining public trust and ensuring the effective use of zakat funds (Arwen et al., 2026; Hadi et al., 2024). This study aims to explore these aspects in detail, providing insights into how digital technology can optimise zakat management.

The literature review reveals several key concepts related to the digitalisation of zakat. First, the efficiency of digital technology in zakat management is a recurring theme. Studies have shown that digital platforms can significantly improve the collection and distribution of zakat, making the process more streamlined and accessible (Arwen et al., 2026; Asni et al., 2025; Beik et al., 2021). Second, transparency and accountability are crucial for the success of digital zakat initiatives. Digital tools can enhance reporting and monitoring, ensuring that zakat funds are used appropriately and effectively (Hadi et al., 2024; Nor et al., 2025). Third, the role of digital literacy and access to technology is vital. Younger, more educated individuals are more likely to adopt digital zakat platforms, highlighting the need for inclusive approaches that address digital literacy gaps (Amilahaq et al., 2021; Arwen et al., 2026). Finally, the integration of advanced technologies such as AI and blockchain can further enhance the efficiency and security of zakat management, although these innovations also bring new challenges and ethical considerations (Nor et al., 2025; Salim et al., 2025).

Accordingly, the digitalisation of zakat presents a promising avenue for enhancing the efficiency, transparency, and impact of zakat management. However, it also poses significant challenges that need to be addressed through comprehensive strategies and robust regulatory frameworks. This study aims to contribute to the growing body of literature on digital zakat, providing insights and recommendations for optimising its implementation. By exploring the potential and challenges of digital zakat, this research seeks to support the broader goal of leveraging technology to improve public welfare and reduce poverty in the Muslim world.

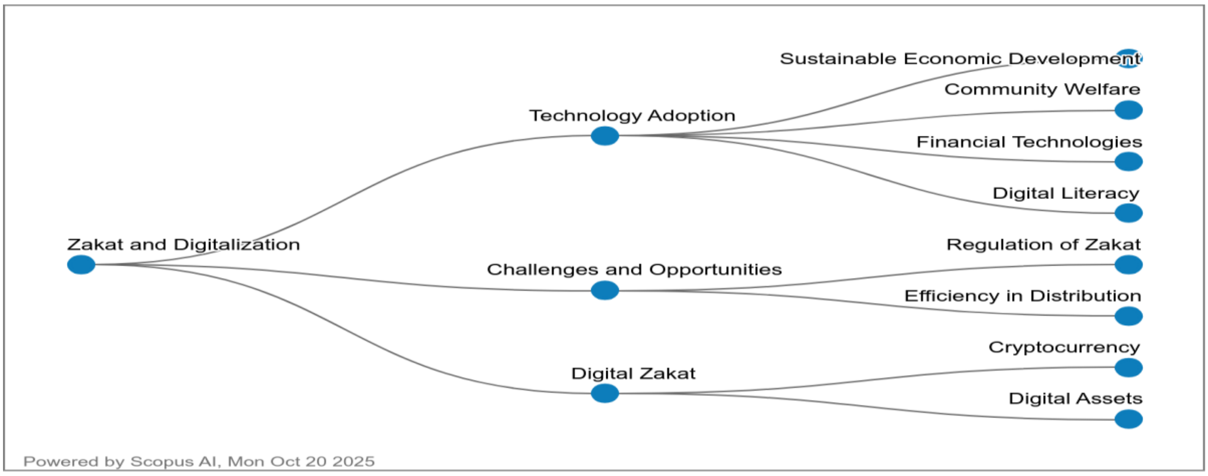

Figure 1. Key concepts generated on zakat and digitalisation

The concept map in Figure 1, generated by Scopus AI, presents an interconnected framework of twelve key concepts branching from the central theme of "Zakat and Digitalisation." The map unfolds deductively from left to right, demonstrating how the process of integrating digital technologies into zakat administration is conceptualised across three major dimensions, Technology Adoption, Challenges and Opportunities, and Digital Zakat. Under Technology Adoption, the discussion extends into four sub-concepts: Sustainable Economic Development, Community Welfare, Financial Technologies, and Digital Literacy, highlighting how the digital transformation of zakat systems can foster inclusive growth, enhance welfare outcomes, and leverage fintech innovations for greater accessibility and transparency. The second dimension, Challenges and Opportunities, connects to Regulation of Zakat and Efficiency in Distribution, underscoring both the need for clear governance frameworks and the potential of digital platforms to optimise zakat collection and disbursement. The third dimension, Digital Zakat, links to Cryptocurrency and Digital Assets, reflecting emerging debates on the legitimacy, valuation, and ethical management of new digital forms of wealth within Islamic financial jurisprudence. Collectively, this conceptual structure illustrates how digitalisation is not merely a technological shift but a transformative process that redefines zakat governance, efficiency, and social justice objectives within contemporary economic systems.

Accordingly, this conceptual structure illustrates how digitalisation is not merely a technological shift but a transformative process that redefines zakat governance, efficiency, and social justice objectives within contemporary economic systems. The integration of digital tools, from financial technologies and digital literacy to emerging digital assets, signals a paradigm shift in how zakat institutions operate, manage resources, and engage with communities. It reflects a movement toward a more transparent, data-driven, and inclusive zakat ecosystem capable of addressing contemporary socio-economic challenges while maintaining Shariah compliance. Digitalisation enhances efficiency in collection and distribution, strengthens accountability, and facilitates real-time monitoring and reporting, thereby fostering greater public trust. Moreover, it aligns zakat management with global sustainable development goals by promoting financial inclusion, supporting community welfare, and stimulating equitable economic growth. Ultimately, the digital transformation of zakat represents not only an operational advancement but also a moral and ethical evolution in Islamic finance, bridging tradition with innovation to ensure that the timeless principles of zakat remain effective and impactful in the digital age.

Research Questions

This study investigates the following five research questions:
RQ1: What are the research trends of zakat and digitalisation according to the year of publication?
RQ2: What are the top 10 cited articles of zakat and digitalisation?
RQ3: Which are the top 10 countries on zakat and digitalisation based on number of publication?
RQ4: What are the popular keywords related to of zakat and digitalisation?
RQ5: What are co-authorship by countries' collaboration of zakat and digitalisation?

METHODOLOGY

Bibliometrics constitutes a systematic approach to collecting, organising, and analyzing bibliographic data derived from scientific publications (Alves et al., 2021; Assyakur & Rosa, 2022; Verbeek et al., 2002). Extending beyond descriptive statistics, such as identifying publication outlets, temporal trends, and prolific authors (Wu & Wu, 2017) bibliometric analysis employs advanced methodologies, including document co-citation and network mapping, to uncover intellectual structures and themzatic evolutions within a research domain. The execution of a rigorous literature review necessitates an iterative and methodical process involving precise keyword selection, comprehensive database searches, and analytical refinement to ensure both breadth and depth of coverage (Fahimnia et al., 2015). Grounded in this methodological rigor, the present study concentrated on high-impact scholarly works, recognising their capacity to illuminate the theoretical and conceptual foundations guiding the discipline. To uphold data validity and reliability, SCOPUS was utilised as the principal database for data extraction, given its extensive indexing of peer-reviewed academic literature (Al-Khoury et al., 2022; di Stefano et al., 2010; Khiste & Paithankar, 2017). Accordingly, bibliographic data were retrieved from Elsevier's Scopus database, encompassing publications from 2010 through October 2025, to provide a robust empirical basis for subsequent analytical procedures.

Data Search Strategy

To ensure methodological rigor and comprehensive data collection, this study employed a structured bibliometric search strategy using Elsevier's Scopus database, recognised for its extensive indexing of peer-reviewed academic publications across multidisciplinary domains. The advanced search query applied was *TITLE-ABS-KEY ((zakat OR zakah) AND (online OR digital OR technology OR virtual OR innovation OR AI OR "artificial* *intelligence"))*, designed to capture a broad yet relevant corpus of literature addressing the intersection of zakat and digitalisation-related themes. This Boolean-based search string strategically integrated both religious and technological terminologies to encompass a wide conceptual spectrum, including studies on the modernisation, digitisation, and innovation of zakat management systems, as well as emerging applications of artificial intelligence in Islamic finance. To ensure the temporal relevance of the data, the search was refined to include only publications within the period 2010 to 2025 (i.e., PUBYEAR > 2009 AND PUBYEAR < 2026), thereby capturing fifteen years of scholarly progression corresponding to the rapid global acceleration of digital transformation and the concurrent evolution of Islamic financial practices. Furthermore, the search was restricted to works published in English through the inclusion criterion (LIMIT-TO (LANGUAGE, "English")) to maintain linguistic consistency and analytical comparability across studies. Publications in other languages were excluded to avoid interpretative ambiguity and ensure that all bibliographic data could be processed uniformly using the VOSviewer software.

The initial data retrieval yielded a total of 264 documents, representing a significant body of research that reflects growing academic and institutional interest in the digital transformation of zakat administration and related technological innovations in Islamic finance. This corpus encompasses journal articles, conference papers, and reviews, collectively illuminating various aspects of zakat's digital evolution, from online payment systems, mobile zakat applications, and blockchain integration, to AI-based zakat distribution models and virtual engagement platforms for donor-recipient interaction. The inclusion-exclusion criteria were systematically applied during the screening stage to ensure that only publications adhering to the study's thematic scope and methodological requirements were retained. Specifically, inclusion criteria comprised works written in English, published between 2010 and 2025, and explicitly addressing zakat in connection with digital, technological, or innovative frameworks. Exclusion criteria, conversely, filtered out non-English publications, works published prior to 2010, and studies unrelated to zakat or those that merely mentioned digitalisation without substantive engagement with technological or governance implications.

The final dataset of 250 documents (after exclusion) was exported from Scopus in PlainText format, containing detailed bibliographic information such as titles, authors, keywords, source journals, and citation counts, forming the foundation for subsequent bibliometric mapping and analysis. This systematic search approach ensured both precision and comprehensiveness, minimising publication bias and enabling a robust exploration of the intellectual, thematic, and collaborative structures underlying the emerging scholarship on zakat and digitalisation. The access date for the dataset was October 2025, ensuring inclusion of the most recent publications up to that period. Overall, this methodological process underscores a disciplined and replicable strategy that aligns with best practices in bibliometric research, providing a credible empirical basis for understanding how digitalisation is reshaping the theory and practice of zakat in contemporary Islamic socio-economic discourse.

Table 1. The search string

Source	Search String
Scopus	TITLE-ABS-KEY ((zakat OR zakah) AND (online OR digital OR technology OR virtual OR innovation OR AI OR "artificial intelligence")) Access date: October 2025

Table 2. The selection criterion of searching

Criterion	**Inclusion**	**Exclusion**
Language	English	Non-English
Time line	2010 – 2025	< 2010

Data Analysis

VOSviewer is a sophisticated and user-oriented bibliometric analysis software developed by Nees Jan van Eck and Ludo Waltman at Leiden University, the Netherlands (van Eck & Waltman, 2010, 2017). Renowned for its capacity to visualise and interpret complex bibliometric data, VOSviewer facilitates the creation of intuitive network maps, clustering analyses, and density visualisations that reveal structural relationships within scientific literature. Its analytical versatility encompasses co-authorship, co-citation, and keyword co-occurrence networks, thereby enabling a holistic understanding of research patterns, collaborations, and thematic evolutions across disciplines. The software's dynamic and interactive interface, regularly updated to accommodate expanding research needs, ensures seamless navigation through large datasets while supporting both basic and advanced analytical functionalities. Moreover, VOSviewer's ability to compute bibliometric indicators, generate customisable visualisations, and integrate data from diverse bibliographic sources has established it as an indispensable tool for contemporary scholars seeking to map and interpret intellectual landscapes.

A defining strength of VOSviewer lies in its capacity to transform intricate bibliometric datasets into coherent, visually interpretable structures through its advanced network visualisation algorithms. It excels in identifying keyword co-occurrence patterns, clustering related items, and generating density maps that highlight the intensity of research activity. Its user-friendly design enables accessibility for both novice and expert researchers, promoting efficiency and analytical precision in examining large-scale publication data. The continuous development and refinement of VOSviewer further reinforce its position at the forefront of bibliometric research, offering enhanced metric computation and visualisation customisation to meet evolving scholarly demands.

For the present study, datasets encompassing publication year, title, author, journal, citation count, and keywords were extracted from the Scopus database in PlainText format, covering the period from 2010 to October 2025. These data were subsequently processed using VOSviewer version 1.6.20, employing clustering and mapping techniques to generate co-occurrence and relational maps. Unlike the traditional Multidimensional Scaling (MDS) approach, which primarily relies on computing similarity measures such as cosine or Jaccard indices, VOSviewer utilises a Visualisation of Similarities (VOS) technique that positions items within a low-dimensional space such that the proximity between any two items accurately represents their degree of relatedness (van Eck & Waltman, 2010). This approach, while conceptually akin to MDS (Appio et al., 2014), enhances normalisation accuracy by adopting the association strength (AS_{ij}) as a weighting method, thereby ensuring a more precise representation of co-occurrence frequencies and inter-item linkages (Van Eck & Waltman, 2007). Consequently, VOSviewer provides an analytically robust and visually compelling platform for uncovering structural and thematic patterns within the global research landscape.

$$AS_{ij} = \frac{C_{ij}}{w_i w_j}$$

where C_{ij} represents the observed co-occurrence frequency between items *i* and *j*, while w_i and w_j correspond to their individual occurrence frequencies. The association strength metric quantifies the proportional relationship between the *observed* and *expected* co-occurrences, assuming statistical independence between the items (Van Eck & Waltman, 2007). By incorporating this normalisation principle, VOSviewer refines the measurement of relational intensity among bibliometric entities, thereby enhancing the analytical accuracy and interpretive depth of its visual mappings. This methodological advancement enables the software to more effectively reveal the latent intellectual structures and conceptual linkages that define and shape scholarly fields.

FINDINGS AND DISCUSSION

This section deliberates on each of the five research questions of the study.

Research Question 1: What are the research trends of zakat and digitalisation according to the year of publication? The publication trend on "zakat and digitalisation" between 2010 and 2025 demonstrates a gradual growth in scholarly attention as shown in Figure 2.

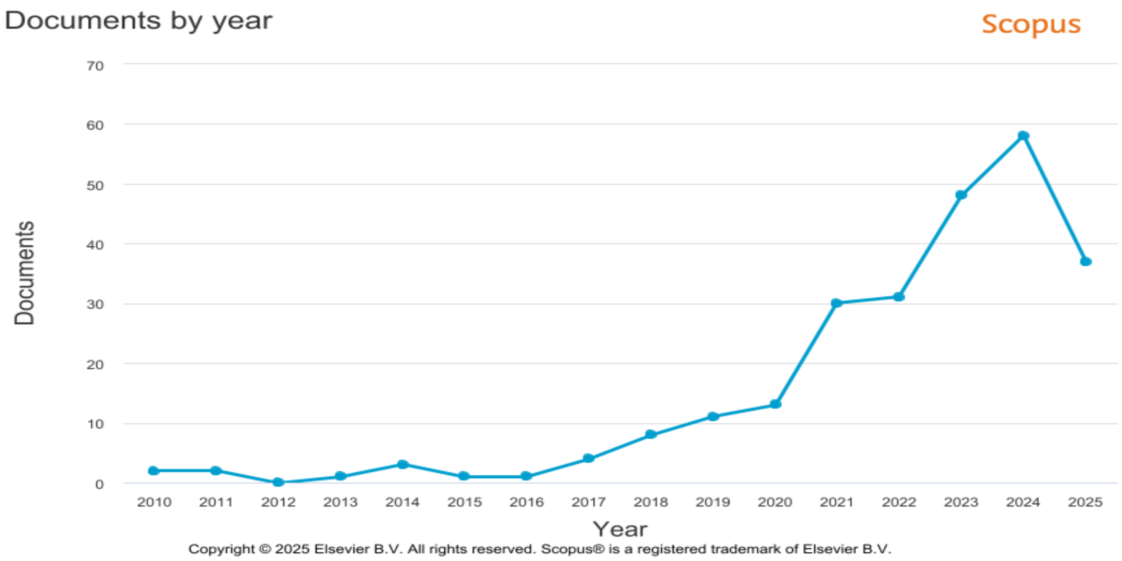

Figure 2. Publication trend by year of publication

The bibliometric trend presented in Figure 2 demonstrates a progressive and accelerating growth in scholarly publications on the topic of zakat and digitalisation from 2010 to 2025. The data reveal a modest beginning in the early part of the decade, with publication counts remaining below five per year until 2017, reflecting the limited integration of digital technologies in zakat systems during that period. Between 2018 and 2020, a gradual increase is observable, coinciding with the broader global shift toward digital financial systems and the early adoption of fintech innovations within Islamic finance. A significant upsurge is evident from 2021 onwards, marking the period in which digitalisation became a central discourse in Islamic economic research. Notably, the number of publications nearly tripled between 2020 (13 papers) and 2024 (58 papers), before slightly declining to 37 in 2025 (as of October). This surge indicates a heightened academic and institutional interest in digital transformation, particularly following the COVID-19 pandemic, which accelerated the reliance on online platforms and digital financial tools for zakat collection, distribution, and governance.

The observed growth pattern can be attributed to multiple interrelated factors. Firstly, the increased emphasis on digital finance and financial inclusion across Muslim-majority economies has catalyzed academic engagement with zakat digitalisation, particularly through the lens of fintech, blockchain, and artificial intelligence applications. Secondly, the emergence of national digital zakat platforms in countries such as Malaysia, Indonesia, and the Gulf states has provided real-world cases that stimulate empirical and policy-oriented research. Additionally, the steady institutionalisation of Islamic social finance within the Sustainable Development Goals (SDGs) framework has encouraged scholars to explore the potential of digital zakat as a tool for poverty alleviation and socio-economic development. The minor decline in 2025 may be attributed to publication lag, as many ongoing studies from that year are still in press or forthcoming. Overall, this temporal distribution reflects an evolving research trajectory, shifting from conceptual explorations in the early 2010s to applied, data-driven, and innovation-focused analyses in the post-2020 period, signifying that zakat and digitalisation has matured into a robust interdisciplinary field bridging technology, economics, and Islamic social ethics.

Research Question 2: What are the top 10 cited articles of zakat and digitalisation?
Produced below in **Table 3** is the list of top 10 cited articles on the topic of zakat and digitalisation.

Table 3: Top 10 cited articles

Authors	Title	Year	Source title	Citation count
Syed et al. (2020)	An artificial intelligence and NLP based Islamic FinTech model combining zakat and Qardh-Al-Hasan for countering the adverse impact of COVID 19 on SMEs and individuals	2020	International Journal of Economics and Business Administration	96
Ascarya (2022)	The role of Islamic social finance during Covid-19 pandemic in Indonesia's economic recovery	2022	International Journal of Islamic and Middle Eastern Finance and Management	69
Baber (2020)	FinTech, Crowdfunding and Customer Retention in Islamic Banks	2020	Vision	60
Kasri & Yuniar (2021)	Determinants of digital zakat payments: lessons from Indonesian experience	2021	Journal of Islamic Accounting and Business Research	56
Mansour Nomran & Haron (2019)	Dual board governance structure and multi-bank performance: a comparative analysis between Islamic banks in Southeast Asia and GCC countries	2019	Corporate Governance (Bingley)	52
Bin-Nashwan (2022)	Toward diffusion of e-Zakat initiatives amid the COVID-19 crisis and beyond	2022	Foresight	48
Mohd-Nor et al. (2021)	The role of blockchain technology in enhancing Islamic social finance: the case of Zakah management in Malaysia	2021	Foresight	47
Yusuf & Derus (2013)	Measurement model of corporate zakat collection in Malaysia: A test of diffusion of innovation theory	2013	Humanomics	46

Hudaefi et al. (2022)	Zakat administration in times of COVID-19 pandemic in Indonesia: a knowledge discovery via text mining	2022	International Journal of Islamic and Middle Eastern Finance and Management	42
Hudaefi & Beik (2021)	Digital zakāh campaign in time of Covid-19 pandemic in Indonesia: a netnographic study	2021	Journal of Islamic Marketing	41

An analysis of the ten most cited papers on zakat and digitalisation reveals a strong concentration of scholarship emerging during the COVID-19 pandemic period (2019–2022), reflecting how the global crisis catalyzed the integration of digital technologies into Islamic social finance. The most cited article, by Syed et al. (2020) with 96 citations, introduces an innovative AI- and NLP-based Islamic FinTech model that merges zakat and Qardh-al-Hasan mechanisms to mitigate pandemic-induced socio-economic disruptions. Its high citation count underscores the novelty of combining artificial intelligence with Islamic financial ethics, a subject of considerable interdisciplinary interest. Similarly, Ascarya, (2022) and Bin-Nashwan (2022) emphasize the resilience of Islamic social finance during COVID-19, demonstrating how zakat and related instruments supported economic recovery in Muslim-majority countries. The prominence of these pandemic-focused works indicates a temporal spike in academic attention as scholars sought to explore the adaptive potential of zakat systems under digital and crisis-driven transformations. This period also witnessed heightened interest from international journals such as the International Journal of Islamic and Middle Eastern Finance and Management and Foresight, which frequently publish on innovation-driven Islamic economics, enhancing the visibility and citation potential of these works.

Thematically, the top-cited papers cluster around three key domains: technological innovation, digital adoption behavior, and institutional governance. Studies such as Kasri & Yuniar (2021) and Hudaefi & Beik (2021) investigate determinants of digital zakat payment and campaign effectiveness, drawing upon behavioral and diffusion of innovation theories to explain public receptivity toward digital giving. Meanwhile, Mohd-Nor et al. (2021) explore the role of blockchain in enhancing zakat transparency and accountability, aligning with global trends in financial technology and governance innovation. Earlier foundational works, including Yusuf & Derus (2013), continue to receive citations for their theoretical contributions, particularly the adaptation of innovation diffusion models in corporate zakat collection. Collectively, the citation trends suggest that papers achieving higher impact are those that (1) address contemporary global crises, (2) apply emerging technologies to zakat management, and (3) integrate empirical analysis with strong theoretical framing. This indicates that future high-impact research in zakat and digitalisation will likely emerge at the intersection of technology, ethics, and socio-economic resilience, where innovation serves as a bridge between Islamic social finance principles and the demands of an increasingly digitalised world economy.

Research Question 3: Which are the top 10 countries on zakat and digitalisation based on number of publication?
The following Figure 3 reveals the top 10 countries based on number of publication in the area of zakat and digitalisation.

Figure 3. Top 10 countries based on number of publications
(*Source:* Figure created using Mapchart.net for producing visual representation)

The publication distribution by country reveals a clear regional concentration of research on zakat and digitalisation, with Indonesia (124 publications) and Malaysia (99 publications) leading global scholarly contributions. Together, they account for more than three-quarters of the total research output, signifying Southeast Asia's central role in shaping discourse at the intersection of Islamic social finance and technological innovation. Indonesia's dominance stems from its demographic scale as the world's largest Muslim-majority nation and its institutional commitment to modernising zakat governance through digital technologies. Key national bodies such as BAZNAS and LAZ have pioneered online zakat platforms, mobile applications, and digital record-keeping systems that have subsequently inspired academic inquiry into technology-driven zakat management. Similarly, Malaysia's position as a global hub for Islamic finance and fintech innovation, supported by strategic frameworks such as MyDIGITAL and the Islamic Digital Economy initiative, has stimulated robust scholarly engagement. Its universities and research institutions, including International Centre for Education in Islamic Finance (INCEIF), International Islamic University Malaysia (IIUM) and Universiti Utara Malaysia (UUM), have consistently produced interdisciplinary studies integrating zakat governance, financial technology, and Shariah-compliant accountability. Together, both nations have effectively transformed digital zakat from a conceptual innovation into an operationally significant component of their national socio-economic policies.

Beyond these two frontrunners, countries such as Brunei Darussalam, Bahrain, Saudi Arabia, the United States, Pakistan, Turkey, Oman, and the United Arab Emirates contribute to a secondary but meaningful layer of scholarship, with publication counts ranging between four and eight. Within Southeast Asia, Brunei Darussalam demonstrates growing academic engagement in this field, consistent with its broader national strategy to promote digital governance and strengthen Islamic finance infrastructure under Brunei Vision 2035. The participation of Gulf states, particularly Bahrain and Saudi Arabia, reflects their commitment to embedding zakat digitalisation within wider Vision 2030 economic diversification and digitalisation agendas. The inclusion of the United States in the dataset highlights contributions from diaspora Muslim scholars and international collaborations exploring the technological evolution of Islamic philanthropy from a global perspective. Meanwhile, emerging interest from Pakistan and Turkey corresponds with their expanding Islamic banking sectors and transnational research linkages with Southeast Asian academic networks. Although Oman and the UAE exhibit fewer publications, these nations have made significant policy and institutional strides in digitising zakat systems, with research output likely to increase in subsequent years. Overall, the distribution of publications underscores that the most prolific countries are those with advanced Islamic financial ecosystems, proactive digital economy policies, and strong academic infrastructures capable of integrating technological progress with Islamic socio-economic objectives.

Research Question 4: What are the popular keywords related to of zakat and digitalisation?
The following Figure 4 highlights the main keywords used by the authors related to the study of zakat and digitalisation.

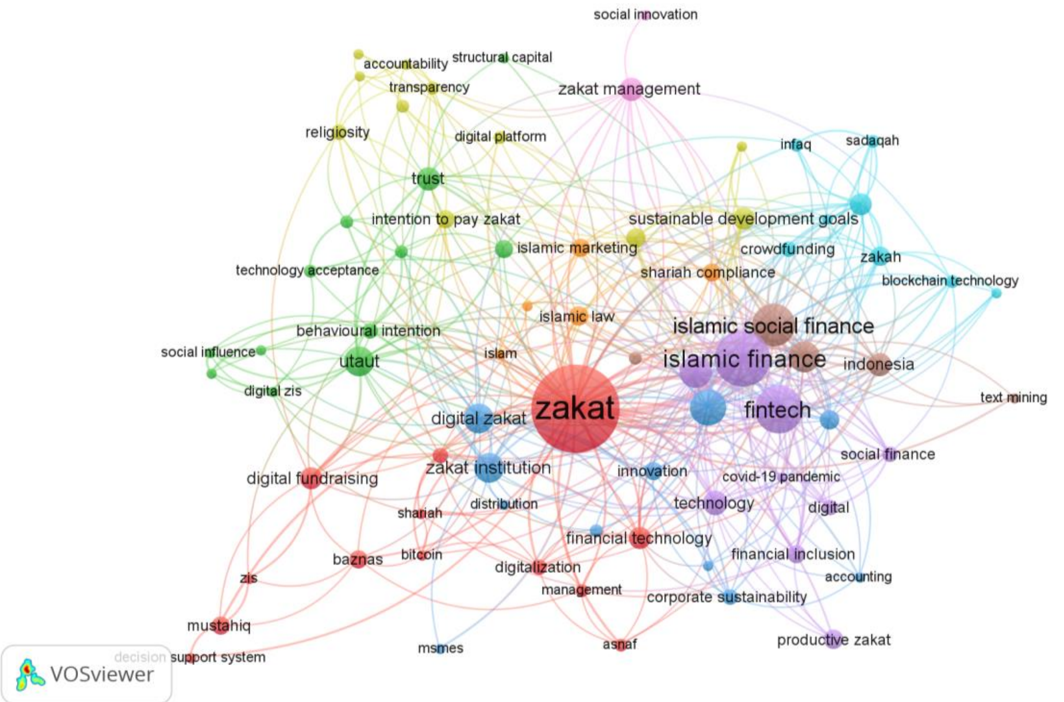

Figure 4: Network visualisation map of keywords' co-occurrence

The co-occurrence analysis of author keywords using VOSviewer identifies the frequency with which specific terms appear together across publications, revealing thematic relationships and intellectual structures within the research field. In this context, each keyword represents a conceptual element of the study, while their co-occurrence indicates the strength of association between those concepts in the literature. The visualisation map thus functions as a knowledge network, where nodes (keywords) are connected through links representing their joint appearances, and the size of each node corresponds to the number of occurrences. The present analysis applied a full counting method, meaning each co-occurrence was counted equally, regardless of how many times a keyword appeared within a single document. A minimum threshold of three occurrences was established, filtering out less frequent or isolated terms to enhance analytical clarity and focus on recurrent themes. Out of a total of 545 author keywords, 76 met this inclusion threshold, which were subsequently grouped into nine distinct clusters, each representing a subdomain of scholarly focus. The minimum cluster size of three ensured that each thematic group was sufficiently interconnected to form a meaningful conceptual pattern. Through this approach, the resulting map reveals the relational density and conceptual proximities within the field of zakat and digitalisation, illustrating how research topics evolve and interlink across geographical and disciplinary boundaries.

The findings from this analysis substantially contribute to the body of knowledge on zakat and digitalisation by elucidating the thematic landscape and emerging intellectual directions of the field. The most dominant keywords, zakat (66 occurrences, total link strength 143), Islamic finance (33; 85), fintech (26; 79), and Islamic social finance (22; 66), form the core conceptual cluster, signifying the centrality of digital and financial innovation in contemporary zakat research. Surrounding clusters highlight specialised areas of study, including blockchain and cryptocurrency (reflecting technological infrastructure for transparency), trust and behavioural intention (indicating socio-psychological factors in digital zakat adoption), and COVID-19, poverty alleviation, and sustainable development goals (linking digital zakat to broader socio-economic resilience and sustainability agendas). The inclusion of Malaysia and Indonesia as high-frequency keywords further reflects regional leadership in digital zakat implementation and academic discourse. Meanwhile, emerging terms such as UTAUT, technology acceptance, digital platform, and AI point to the increasing incorporation of theoretical models and computational methods in explaining digital zakat adoption behaviour. Collectively, these interconnected clusters demonstrate that the literature is evolving from descriptive studies of digital zakat systems toward analytical, technology-driven, and impact-oriented research, enriching both theoretical and practical understandings of how digitalisation can strengthen zakat governance, efficiency, and its role in promoting socio-economic justice.

Research Question 5: What are co-authorship by countries' collaboration of zakat and digitalisation?
Produced below is Figure 5, depicting the network visualisation mapping of the authors' co-authorship collaboration by country.

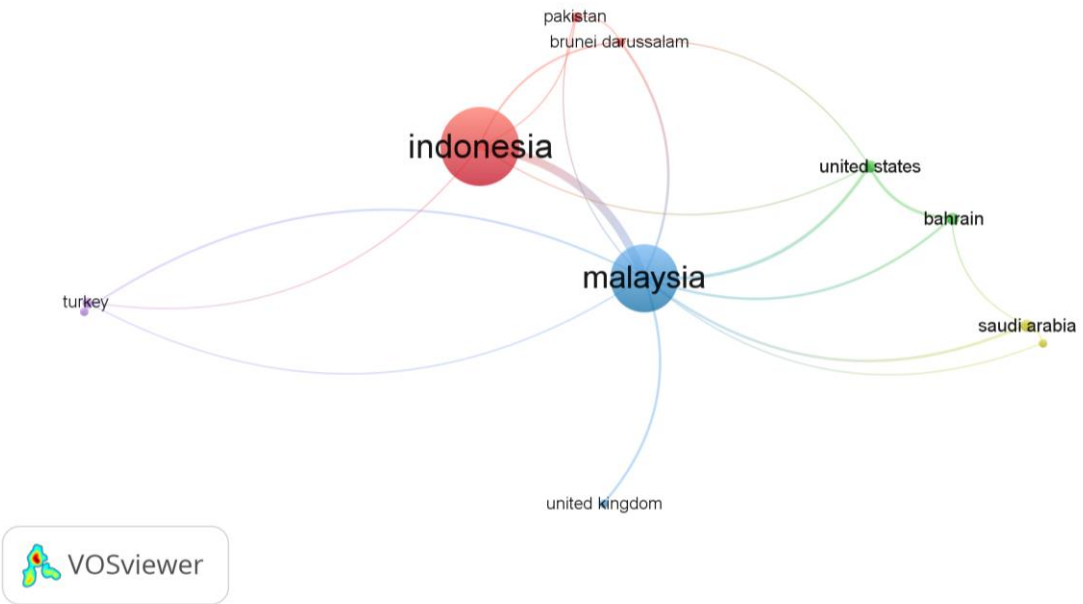

Figure 5. Network visualisation map of authors' collaboration by country

The co-authorship by country collaboration analysis in VOSviewer illustrates the network of international research partnerships by mapping how authors from different countries collaborate on scholarly publications relating to zakat and digitalisation. Each node in the visualisation represents a country, and the links between nodes signify co-authorship relationships, indicating shared contributions to research outputs. The strength of each link reflects the intensity of collaboration, while the node size corresponds to the number of publications produced by that country. This analysis adopted the full counting method, meaning that each co-authored paper contributes fully to every collaborating country's total count, thus providing a holistic view of global research cooperation. A minimum threshold of four documents per country was applied to ensure the inclusion of only those nations with substantial contributions to the field. Out of the 40 countries identified, 11 met this inclusion threshold, resulting in the generation of five distinct clusters. The minimum cluster size of four further ensured that each group represented a meaningful collaborative pattern, capturing both regional partnerships and cross-continental research linkages. Through this method, VOSviewer enabled the identification of knowledge hubs, collaboration intensity, and transnational research networks that drive the intellectual development of zakat and digitalisation studies.

The findings reveal a Southeast Asian dominance in collaborative research activity, led by Indonesia (125 documents; 778 citations; total link strength 31) and Malaysia (100 documents; 596 citations; total link strength 48). These two countries form the central nodes of the collaboration network, highlighting their leadership and interconnectivity in shaping global discourse on zakat digitalisation. The strong citation metrics and link strengths suggest that Malaysia and Indonesia not only produce a high volume of research but also engage in significant international partnerships, particularly with countries such as Brunei Darussalam, Bahrain, and Saudi Arabia, reflecting shared interests in Islamic social finance and technology integration. The participation of the United States, Turkey, Pakistan, the United Arab Emirates, the United Kingdom, and Oman, though quantitatively smaller, demonstrates the field's growing global reach and interdisciplinary appeal. These nations contribute expertise in areas such as financial technology, behavioural modelling, and digital governance, enriching the conceptual and methodological diversity of the field. The formation of five clusters indicates the emergence of regional and thematic collaboration groups, often anchored around Islamic finance research centres and digital innovation hubs. Collectively, this co-authorship network contributes to the body of knowledge by highlighting how international partnerships facilitate knowledge diffusion, promote cross-cultural exchange, and strengthen the academic infrastructure needed to advance digital zakat systems as instruments of socio-economic empowerment in the digital era.

DISCUSSION

The bibliometric mapping indicates a rapidly consolidating field where digitalisation has moved from peripheral experimentation to a central analytic and practical concern in zakat studies. Output accelerated markedly after 2020, with Southeast Asia, especially Indonesia and Malaysia, functioning as the principal knowledge hubs and collaboration anchors. The most influential papers concentrate on technology-forward responses to crisis contexts, notably COVID-19, and blend Islamic social finance with artificial intelligence, natural language processing, blockchain, and crowdfunding logics. Keyword co-occurrence patterns form nine clusters around a stable core of zakat, Islamic finance, fintech, and Islamic social finance, while adjacent clusters emphasise governance (transparency, accountability, trust), user behaviour (UTAUT constructs such as performance expectancy, social influence, perceived risk), and policy outcomes (poverty alleviation, SDGs). Co-authorship networks reveal five collaboration clusters, with sustained ties among Southeast Asian and Gulf institutions and growing links to Western partners, signalling an interdisciplinary and increasingly international research architecture. These patterns together suggest a field transitioning from descriptive cataloguing of digital tools toward theoretically informed, evaluation-oriented analyses of adoption, impact, and compliance in real institutional settings.

Several structural drivers help explain these trends. First, the pandemic acted as a punctuated shock that accelerated the uptake of online payment rails, mobile platforms, and data-driven targeting for mustahiq, thereby generating publishable "natural experiments" and comparative materials. Second, policy frameworks and national digital economy agendas in leading jurisdictions created favourable conditions for programmatic trials and open collaboration across zakat agencies, regulators, and universities. Third, theory borrowing from technology adoption research (e.g., UTAUT) provided shared constructs and measurement strategies, improving comparability across studies and enabling cumulative knowledge on behavioural intention, literacy, and religiosity in digital zakat contexts. Finally, the maturing of tools for bibliometric visualisation (e.g., VOSviewer) and data cleaning standardisation unlocked clearer visibility of intellectual structures, allowing the field to move beyond narrative review into quantifiable maps of influence, themes, and partnerships. Together, these drivers help account for the prominence of AI- and blockchain-oriented studies, the concentration of citations around pandemic-era innovations, and the emergence of Southeast Asia as both a laboratory and exporter of frameworks for digital zakat governance.

Practical implications flow directly from the mapped clusters. Governance-related terms (transparency, accountability, shariah compliance) co-occurring with technology terms (blockchain, digital platforms) point to a clear agenda: embed traceability and auditability by design, using tamper-evident ledgers, standardised metadata, and real-time dashboards for donors and regulators. Behavioural clusters imply that platform design should explicitly address perceived risk and trust through robust privacy controls, third-party certification, and clear explanations of eligibility, nisab, and distribution logic. Regional leadership suggests pathways for policy transfer: codify technical and reporting standards so platforms interoperate across agencies, and align digital zakat indicators with national SDG monitoring to demonstrate externalities beyond immediate disbursement. Co-authorship patterns recommend institutional mechanisms—data trusts, joint methods repositories, and shared evaluation protocols—to reduce duplication and improve comparability of impact measures across countries. In short, the evidence supports a practice turn toward standards-based, privacy-preserving, and impact-verified digital zakat ecosystems.

Future research should prioritise four fronts. First, impact evaluation: move from adoption proxies to outcome-level evidence using quasi-experimental designs that link digital workflows to poverty, livelihoods, and inclusion metrics over time. Second, comparative governance: study how regulatory choices (data protection, e-money rules, crypto-asset treatment) shape platform trust, compliance behaviour, and cross-border interoperability. Third, methodological breadth: complement full-count bibliometrics with fractional counting, co-citation, and temporal burst analysis; incorporate non-English corpora to capture Arabic, Bahasa Indonesia, and Malay scholarship; and triangulate with altmetrics for diffusion beyond academia. Fourth, frontier technologies: examine AI assurance, bias mitigation, explainability for eligibility scoring, and the jurisprudential treatment of digital assets, including stablecoins and tokenised waqf, with careful attention to maqasid and consumer protection. Addressing these gaps will mature the field from technology-led promise to validated practice and will support evidence-informed policy on digital zakat design, oversight, and scaling.

CONCLUSION

The purpose of this bibliometric analysis was to systematically examine global research trends, intellectual structures, and collaborative networks within the domain of zakat and digitalisation. The study sought to answer several research questions regarding publication growth over time, the most influential works, leading contributing countries, popular thematic keywords, and patterns of international collaboration. By analysing publications indexed in the Scopus database from 2010 to 2025, this study aimed to provide a comprehensive overview of how digital innovation, financial technology, and artificial intelligence have been integrated into the theoretical and practical dimensions of zakat management. The findings offer an evidence-based understanding of the evolution and diversification of research in this emerging field.

This study contributes to the existing body of knowledge by establishing a structured overview of research progress, intellectual linkages, and thematic convergence within the field. It advances scholarly understanding by identifying key drivers of academic interest, such as fintech innovation, institutional transparency, and the social implications of digital zakat systems, and by contextualising these themes within broader technological and policy developments. Practically, the findings have implications for zakat institutions, policymakers, and technology developers, offering insights into best practices for enhancing efficiency, accountability, and inclusivity in digital zakat systems. The integration of blockchain and artificial intelligence, as evidenced in the literature, holds potential for improving traceability, donor confidence, and real-time decision-making in zakat distribution.

However, the study also recognises several limitations. The analysis was restricted to English-language publications indexed in Scopus, which may exclude relevant works published in other languages or databases. The dynamic nature of digital innovation also means that the field is continuously evolving, requiring regular updates to capture emerging technologies and new policy frameworks. Future research could expand by incorporating comparative analyses between zakat and other forms of Islamic social finance, exploring legal and ethical dimensions of digital transformation, or applying advanced bibliometric tools to map real-time data trends.

In conclusion, this bibliometric study demonstrates that research on zakat and digitalisation has matured into a distinct, interdisciplinary field that integrates technology, ethics, and social welfare. The findings underscore the importance of digital transformation as a catalyst for improving zakat governance and enhancing socio-economic equity in Muslim societies. Bibliometric analysis, as demonstrated here, serves as a crucial instrument for understanding intellectual progress and guiding future scholarly inquiry. As digital ecosystems continue to evolve, sustained academic engagement in this area will be essential to ensure that technological innovation aligns with the ethical and humanitarian objectives of zakat in the digital era.

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REFERENCES

Abidin, A., & Utami, P. (2020). The Regulation of Zakat Digital Technology in Creating Community Welfare Impact on Economic Development. *Journal of Legal, Ethical and Regulatory Issues*, *23*(5), 1–9. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85096320342&partnerID=40&md5=8cf0d4b4b6e6961d5ccd6ac47f7c8409

Al-Khoury, A., Hussein, S. A., Abdulwhab, M., Aljuboori, Z. M., Haddad, H., Ali, M. A., Abed, I. A., & Flayyih, H. H. (2022). Intellectual Capital History and Trends: A Bibliometric Analysis Using Scopus Database. *Sustainability (Switzerland)*, *14*(18). https://doi.org/10.3390/su141811615

Alves, J. L., Borges, I. B., & De Nadae, J. (2021). Sustainability in complex projects of civil construction: Bibliometric and bibliographic review. *Gestao e Producao*, *28*(4). https://doi.org/10.1590/1806-9649-2020v28e5389

Amilahaq, F., Wijayanti, P., Mohd Nasir, N. E., & Ahmad, S. (2021). Digital platform of zakat management organization for young adults in indonesia. In B. L., P.-M. A., & E. T. (Eds.), *Advances in Intelligent Systems and Computing: Vol. 1194 AISC* (pp. 454–462). Springer. https://doi.org/10.1007/978-3-030-50454-0_46

Appio, F. P., Cesaroni, F., & Di Minin, A. (2014). Visualizing the structure and bridges of the intellectual property management and strategy literature: a document co-citation analysis. *Scientometrics*, *101*(1), 623–661. https://doi.org/10.1007/s11192-014-1329-0

Arwen, D., Kosasih, A., & Hayati, A. (2026). Zakat in the age of digital transformation: Technology plat-form for effective collection and distribution management. *Multidisciplinary Science Journal*, *8*(4). https://doi.org/10.31893/multiscience.2026269

Ascarya, A. (2022). The role of Islamic social finance during Covid-19 pandemic in Indonesia's economic recovery. *International Journal of Islamic and Middle Eastern Finance and Management*, *15*(2), 386–405. https://doi.org/10.1108/IMEFM-07-2020-0351

Asni, F., Ahmad, K. A., Hasbulah, M. H., Tambak, S., Ahmad, H. H., & Mustafa, W. A. (2025). A Recent Systematic Review of Zakat Digitalization: Efficiency and Challenges. *Journal of Advanced Research in Applied Sciences and Engineering Technology*, *53*(2), 130–146. https://doi.org/10.37934/araset.53.2.130146

Assyakur, D. S., & Rosa, E. M. (2022). Spiritual Leadership in Healthcare: A Bibliometric Analysis. *Jurnal Aisyah : Jurnal Ilmu Kesehatan*, *7*(2). https://doi.org/10.30604/jika.v7i2.914

Baber, H. (2020). FinTech, Crowdfunding and Customer Retention in Islamic Banks. *Vision*, *24*(3), 260–268. https://doi.org/10.1177/0972262919869765

Beik, I. S., Swandaru, R., & Rizkiningsih, P. (2021). Utilization of Digital Technology for Zakat Development. In *Islamic FinTech: Insights and Solutions* (pp. 231–248). Springer International Publishing. https://doi.org/10.1007/978-3-030-45827-0_13

Bin-Nashwan, S. A. (2022). Toward diffusion of e-Zakat initiatives amid the COVID-19 crisis and beyond. *Foresight*, *24*(2), 141–158. https://doi.org/10.1108/FS-08-2020-0082

di Stefano, G., Peteraf, M., & Veronay, G. (2010). Dynamic capabilities deconstructed: A bibliographic investigation into the origins, development, and future directions of the research domain. *Industrial and Corporate Change*, *19*(4), 1187–1204. https://doi.org/10.1093/icc/dtq027

Fahimnia, B., Sarkis, J., & Davarzani, H. (2015). Green supply chain management: A review and bibliometric analysis. In *International Journal of Production Economics* (Vol. 162, pp. 101–114). https://doi.org/10.1016/j.ijpe.2015.01.003

Gu, D., Li, T., Wang, X., Yang, X., & Yu, Z. (2019). Visualizing the intellectual structure and evolution of electronic health and telemedicine research. *International Journal of Medical Informatics*, *130*. https://doi.org/10.1016/j.ijmedinf.2019.08.007

Hadi, R., Shafrani, Y. S., Hilyatin, D. L., & Riyadi, S. (2024). Digital zakat management, transparency in zakat reporting, and the zakat payroll system toward zakat management accountability and its implications on zakat growth acceleration. *International Journal of Data and Network Science*, *8*(1), 597–608. https://doi.org/10.5267/j.ijdns.2023.8.025

Hamsin, M. K., Halim, A., & Anggriawan, R. (2024). Securing Digital Zakat Transactions from Fraud in a Smart Society: Legal Insights and Recommendations. In M. D., A. M., C. D., S. J., S. M., R. A., S. P., & N. A. (Eds.), *E3S Web of Conferences* (Vol. 594). EDP Sciences. https://doi.org/10.1051/e3sconf/202459407001

Hudaefi, F. A., & Beik, I. S. (2021). Digital zakāh campaign in time of Covid-19 pandemic in Indonesia: a netnographic study. *Journal of Islamic Marketing*, *12*(3), 498–517. https://doi.org/10.1108/JIMA-09-2020-0299

Hudaefi, F. A., Caraka, R. E., & Wahid, H. (2022). Zakat administration in times of COVID-19 pandemic in Indonesia: a knowledge discovery via text mining. *International Journal of Islamic and Middle Eastern Finance and Management*, *15*(2), 271–286. https://doi.org/10.1108/IMEFM-05-2020-0250

Kasri, R. A., & Yuniar, A. M. (2021). Determinants of digital zakat payments: lessons from Indonesian experience. *Journal of Islamic Accounting and Business Research*, *12*(3), 362–379. https://doi.org/10.1108/JIABR-08-2020-0258

Khiste, G. P., & Paithankar, R. R. (2017). Analysis of Bibliometric term in Scopus. *International Research Journal*, *01*(32), 78–83.

Mansour Nomran, N. M., & Haron, R. (2019). Dual board governance structure and multi-bank performance: a comparative analysis between Islamic banks in Southeast Asia and GCC countries. *Corporate Governance (Bingley)*, *19*(6), 1377–1402. https://doi.org/10.1108/CG-10-2018-0329

Mohd-Nor, S., Abdul-Majid, M., & Esrati, S. N. (2021). The role of blockchain technology in enhancing Islamic social finance: the case of Zakah management in Malaysia. *Foresight*, *23*(5), 509–527. https://doi.org/10.1108/FS-06-2020-0058

Nor, S. M., Nazeri, A. N. N. B., Abdul-Rahman, A., & Ali, M. H. (2025). Will the application of blockchain technology in Malaysia's Zakat management lead to sustainability? In *The Routledge Handbook of Islamic Economics and Finance* (pp. 155–166). Taylor and Francis. https://doi.org/10.4324/9781003168508-13

Rachmawati, I., & Nor, M. Z. M. (2021). Legal And Shariah Framework of Crowdfunding in Batling Covid-19: Some Observation in Indonesia. *BiLD Law Journal*, *6*(2), 1–9. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85130023838&partnerID=40&md5=9cc9571decad5cb5401681d4f11b96be

Salim, K., Mohd Noor, W. N. W., & Ramadili Mohd, S. M. (2025). The Potential Applications of Artificial Intelligence in Managing Zakat Funds. In *Disruptive Technologies and Muslim Societies: From AI and Education to Food and Fintech* (pp. 371–387). World Scientific Publishing Co. https://doi.org/10.1142/9781800616295_0016

Syed, M. H., Khan, S., Rabbani, M. R., & Thalassinos, Y. E. (2020). An artificial intelligence and NLP based Islamic FinTech model combining zakat and Qardh-Al-Hasan for countering the adverse impact of COVID 19 on SMEs and individuals. *International Journal of Economics and Business Administration*, *8*(2), 351–364. https://doi.org/10.35808/IJEBA/466

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

van Eck, N. J., & Waltman, L. (2017). Citation-based clustering of publications using CitNetExplorer and VOSviewer. *Scientometrics*, *111*(2), 1053–1070. https://doi.org/10.1007/s11192-017-2300-7

Van Eck, N. J., & Waltman, L. (2007). Bibliometric mapping of the computational intelligence field. *International Journal of Uncertainty, Fuzziness and Knowldege-Based Systems*, *15*(5), 625–645. https://doi.org/10.1142/S0218488507004911

Verbeek, A., Debackere, K., Luwel, M., & Zimmermann, E. (2002). Measuring progress and evolution in science and technology - I: The multiple uses of bibliometric indicators. *International Journal of Management Reviews*, *4*(2), 179–211. https://doi.org/10.1111/1468-2370.00083

Wu, Y. C. J., & Wu, T. (2017). A decade of entrepreneurship education in the Asia Pacific for future directions in theory and practice. In *Management Decision* (Vol. 55, Issue 7, pp. 1333–1350). https://doi.org/10.1108/MD-05-2017-0518

Yusof, Z. A. M., Rahman, A. A., & Shamsuddin, S. S. S. (2024). Systematic Literature Analysis of The Zakat Management Approach To Eradicate Poverty After The Pandemic. *Journal of Fatwa Management and Research*, *29*(1), 167–185. https://doi.org/10.33102/jfatwa.vol.29no1.578

Yusuf, M.-B. O., & Derus, A. M. (2013). ,.Measurement model of corporate zakat collection in Malaysia: A test of diffusion of innovation theory. *Humanomics*, *29*(1), 61–74. https://doi.org/10.1108/08288661311299321