



Sharia-driven sustainable business models in the energy sector: A bibliometric and systematic review

Windiani Windiani¹, Dhofirotn Nadifah², Muhammad Saiful Hakim³, Muhammad Alfarizi⁴

¹Department of Development Studies, Faculty of Creative Design and Digital Business, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

^{2,3,4}Department of Business Management, Faculty of Creative Design and Digital Business, Institut Teknologi Sepuluh Nopember, Surabaya, Indonesia

Article history

Received : 2025-11-11

Revised : 2026-06-08

Accepted : 2026-07-05

Published : 2026-07-13

Keywords:

Sharia principles, Sustainable business models, Renewable energy, Bibliometric analysis, Systematic review

DOI:

<https://doi.org/10.20885/AJIM.vol8.iss1.art8>

JEL classification:

Q42, L26, M14, G38

Corresponding author:

Windiani Windiani
windiani@its.ac.id

Author's email:

6031241015@student.its.ac.id
ms_hakim@its.ac.id
6031241004@student.its.ac.id

Paper type:

Research paper

Abstract

Purpose – This study maps global research on the integration of Sharia principles, sustainability, and energy business models using bibliometric and systematic review approaches. It identifies publication trends, thematic structures, and scholarly contributions, showing how *maqasid al-Sharia* values, particularly justice, well-being, and ecological responsibility, can guide ethical and sustainable energy transitions.

Methodology – This study combines bibliometric analysis using Biblioshiny and VOSviewer with a PRISMA-based systematic review. The dataset covered 112 Scopus-indexed publications published between 2013 and 2025, with an annual growth rate of 32.77%. The analysis examined publication trends, citation patterns, author collaboration, thematic mapping, and keyword co-occurrence.

Findings – Bibliometric evidence shows that research on Sharia-driven sustainable energy business models accelerated after 2018 and peaked in 2024. Keyword co-occurrence analysis identified seven clusters: ESG governance and CSR, green innovation, climate change and green finance, renewable energy and emission reduction, financial inclusion, ethical technology, and Islamic fintech, digital finance, and energy governance. Thematic mapping positions sustainable development, environmental management, and the circular economy as basic themes, while financial technology and banking signal emerging directions.

Implications – This study supports Islamic ESG performance reporting, ethical technology, green innovation, and inclusive finance. For policymakers, it recommends regulating green sukuk, institutionalizing energy waqf, and designing incentives for renewable energy, emission reduction, and *maqasid*-based sustainable SDG transition pathways.

Originality – This study offers an integrative bibliometric and systematic synthesis of sustainable energy business models based on Islamic ethical values.

Cite this article:

Windiani, W., Nadifah, D., Hakim, M. S., & Alfarizi, M. (2026). Sharia-driven sustainable business models in the energy sector: A bibliometric and systematic review *Asian Journal of Islamic Management*, 8(1), 136-157.
<https://doi.org/10.20885/AJIM.vol8.iss1.art8>



Center for Islamic Economics Studies
and Development, Faculty of Business
and Economics, Universitas Islam
Indonesia

Introduction

The global energy sector is currently at a pivotal stage of transformation toward a more sustainable system. The pressures of energy transition, decarbonization agendas, and the implementation of environmental, social, and governance (ESG) principles are driving major shifts across the industry. The growing awareness of the climate crisis and dependence on fossil fuels has urged both

governments and corporations to develop low-carbon energy systems (Asif, 2022; Muhammad et al., 2022). The International Energy Agency (IEA, 2023) reports that the energy sector accounts for more than 75% of global greenhouse gas emissions, and the USD 755 billion investment in clean energy in 2021 reflects a strong global commitment to green development (Vetrova et al., 2024). Governments and industries are accelerating decarbonization through transportation electrification, technological innovation, and energy system digitalization (Asif, 2024). This transformation highlights sustainability as a strategic priority, demanding the integration of social, economic, and environmental values into global energy policies (Vanegas Cantarero, 2020).

Sustainable business models (SBMs) balance value creation with economic, social, and environmental objectives (Proka et al., 2018). In the energy sector, SBMs support renewable adoption, resilience, and collaboration (Bankel & Mignon, 2022; Effendi et al., 2024). Nevertheless, the SBM literature remains shaped by conventional sustainability logic, especially the Triple Bottom Line and ESG approaches, which prioritize efficiency, disclosure, market value, and environmental performance while giving limited attention to ethical accountability, distributive justice, and spiritual responsibility. This is important because energy transition may reproduce inequality when green technologies mainly benefit large firms, while communities remain excluded.

This limitation becomes clearer when SBMs are connected to ESG and green finance debates, where sustainability is often translated into investment criteria, reporting mechanisms, and risk management tools rather than deeper ethical transformation. ESG and green finance address sustainability risks and support low-carbon projects (Ayaz & Zahid, 2024). However, ESG and green finance may become compliance-driven, disclosure-oriented, or financially instrumental without having strong ethical foundations. Islamic finance complements this because Sharia principles reject exploitation and emphasize fairness, transparency, risk sharing, public welfare, and environmental stewardship (Kismawadi et al., 2024). Green sukuk, waqf, zakat-based investments, and Islamic ESG can support sustainable energy while embedding the *maqasid al-Sharia* values of justice, welfare, balance, and ecological responsibility (Oseni et al., 2025; Rahim et al., 2024).

Previous bibliometric and systematic reviews have contributed to the Islamic finance, sustainability, and energy scholarship. Harahap et al., (2023) clarified the links between Islamic law, Islamic finance, and SDGs; however, their broad SDG orientation limits the explanation of energy-sector business models. Hartanto et al., (2024) advanced Islamic banking sustainability mapping; however, its institutional banking focus narrows the discussion to financial-sector sustainability rather than cross-sector energy transition. Fodol and Aslan (2025) enriched the Islamic finance sustainability discourse but did not critically trace the interaction between Sharia values, ESG governance, digital finance, and energy sector transformation. Prayogo et al., (2024) reviewed green sukuk, although their instrument-specific approach leaves Islamic ESG, energy waqf, SBMs, and green energy governance underexplored. Kemeç and Altınay (2023) and Singh and Vashishtha (2023) contributed sustainable energy bibliometrics, but their technology-oriented analyses do not position *maqasid al-Shari* ah as a central lens.

This comparison revealed three fragmentation patterns. First, Islamic finance and SDG studies emphasize broad development outcomes without explaining how Sharia principles shape energy sector SBMs. Second, Islamic banking and green sukuk bibliometric studies provide insights into institutions and capital market instruments but do not explain how Sharia-based finance interacts with ESG governance, green innovation, digital finance, and energy transformation. Third, sustainable energy bibliometrics examine renewables, consumption, and technology without Islamic ethical principles as analytical foundations; the intellectual convergence between Sharia principles, *maqasid al-Sharia*, ESG governance, sustainable business models, and energy transition remains underexplored.

This creates both theoretical and practical gaps. Theoretically, limited synthesis explains how Sharia principles, *maqasid* values, ESG governance, green finance, digital innovation, and SBM innovation interact in energy transition. Practically, green sukuk and Islamic green bonds exist, but clean energy applications remain limited. *maqasid* values are insufficiently translated into operational indicators for performance, screening, reporting, and governance (Oseni et al., 2025; Rahim et al., 2024). Weak links between Islamic financial institutions and green energy reflect regulatory fragmentation and project risks.

Digitalization further complicates this debate. Blockchain, digital twins, fintech platforms, and zero-energy buildings can enhance transparency and efficiency in sustainable energy financing (Bibri et al., 2025; Morshed, 2026). However, digital innovation does not automatically guarantee ethical or inclusive outcomes, and digital finance may widen access gaps without governance. This raises the critical question of how *maqasid al-Sharia* can serve as an ethical governance lens for digital financial innovation in the energy sector, a question that the existing literature has not systematically addressed.

Against this background, this study maps research on Sharia principles, sustainability, and energy business models using bibliometric and systematic approaches. Combining Biblioshiny, VOSviewer, and PRISMA-based synthesis identifies publication trends, intellectual structures, thematic clusters, and emerging directions. The findings are organized into seven thematic clusters that map the intellectual convergence of these domains and culminate in an integrated Sharia–ESG–energy transition framework.

The novelty of this study is three-fold. First, to the best of our knowledge, no prior bibliometric-systematic review has simultaneously integrated Sharia principles, *maqasid al-Sharia*, ESG governance, and SBMs within energy transition. Second, it maps the convergence between Islamic finance, sustainability, and energy research through publication trend analysis, keyword co-occurrence, thematic clustering, and PRISMA-based synthesis. Third, it proposes an integrated Sharia–ESG–energy transition framework that positions *maqasid* values not only as normative principles but also as analytical foundations for green energy governance, SBM transformation, and Islamic financial innovation.

Literature Review

Sustainable business models in the energy sector

Sustainable Business Models (SBMs) embed economic, social, and environmental value into business logic through the Triple Bottom Line (TBL) framework (Alonso-Martinez et al., 2021). In the energy sector, this integration is crucial because the low-carbon transition requires technological innovation, such as smart grids, green hydrogen, CCUS, circular models, and energy-as-a-service (EaaS), together with inclusive governance and social responsibility (Effendi et al., 2024; Shinde et al., 2025). However, conventional SBM frameworks remain normatively limited: they explain how value is created, delivered, and captured, but insufficiently clarify whose welfare is prioritized, how transition benefits are distributed, and what ethical principles should govern value capture. This gap provides an entry point for Islamic economics.

Islamic economics, *maqasid al-Sharia*, and sustainability

Islamic economics strengthens SBMs by grounding economic activity in fairness, transparency, and accountability through the prohibition of *riba* (usury), *gharar* (uncertainty), and *maysir* (gambling) (Aziz & Suryanto, 2024). Sharia-based governance further emphasizes *amanah* and *khalifah fil ardh*, framing business as a moral responsibility to society and the environment (Awais et al., 2024). *Maqasid al-Sharia* extends this ethical logic by linking economic activity to the preservation of religion, life, intellect, lineage, and wealth while supporting social justice, ecological responsibility, and intergenerational welfare (Abdullah et al., 2024). Hence, Islamic ethics does not replace sustainability frameworks; rather, it deepens them by embedding sustainability within the moral architecture of justice, welfare, and accountability. This aligns with Zainal et al., (2024) who argue that ESG principles can be harmonized with *maqasid al-Sharia* to strengthen ethical credibility, social impact, and environmental stewardship.

ESG, Islamic ESG, and Sharia-based instruments

ESG translates sustainability into investment criteria, corporate reporting and risk management. However, without a strong ethical foundation, ESG may become compliance driven, disclosure oriented, and financially instrumental. This risk is acute in the energy sector, where green finance can accelerate renewable investment while concentrating benefits among capital-intensive firms

and excluding local communities. Islamic ESG addresses this limitation by embedding *maslahah*, justice, ethical screening, Sharia compliance, and ecological accountability into governance metrics, thereby transforming ESG from a reporting mechanism into a *maqasid*-oriented accountability framework (Sivanandan & Ahmad, 2025).

This framework was operationalized using four instruments. Green sukuk mobilizes Sharia-compliant capital for renewable energy and low-carbon infrastructure, but its distributive impact remains under-examined (Endri et al., 2022). Energy waqf supports rural electrification and community renewable systems; however, its governance and scalability remain weak. Zakat-based green investment can finance solar home systems, clean cooking, and energy subsidies for low-income groups; however, it remains fragmented and poorly integrated into formal energy business models. Islamic fintech and blockchain enhance transparency and traceability; however, without *maqasid*-based digital governance, they may reproduce exclusion by privileging technologically capable actors (Aldhaheer, 2025). Thus, these instruments are complementary rather than interchangeable: green sukuk is strongest in capital mobilization, waqf in community inclusion, zakat in redistribution, Islamic ESG in governance and accountability, and fintech in transparency and scalability.

Integrated Sharia–ESG–energy transition framework

The literature converges into a four-layer framework: Sharia principles and *maqasid al-Sharia* as the ethical foundation; TBL and sustainability as macro-objectives; ESG and Islamic ESG as operational governance mechanisms; and energy business models as the practical implementation arena. A feedback loop returns outcomes to the *maqasid*-based ethical reassessment, making the framework iterative rather than linear. This framework clarifies the operational relevance of bibliometric findings. Prior bibliometric studies remain largely institution-centered or technology-oriented without positioning *maqasid al-Sharia* as an analytical lens (Hartanto et al., 2024; Kemeç & Altınay, 2023a). In contrast, this framework interprets clusters such as green sukuk, waqf, zakat, Islamic finance, ESG, fintech, and renewable energy as interconnected components of an emerging Sharia-driven sustainable energy business model paradigm. Accordingly, the bibliometric clusters are not merely frequency-based keyword groupings but evidence of theoretical convergence between Islamic ethical finance, sustainability governance, and energy-sector business model transformation.

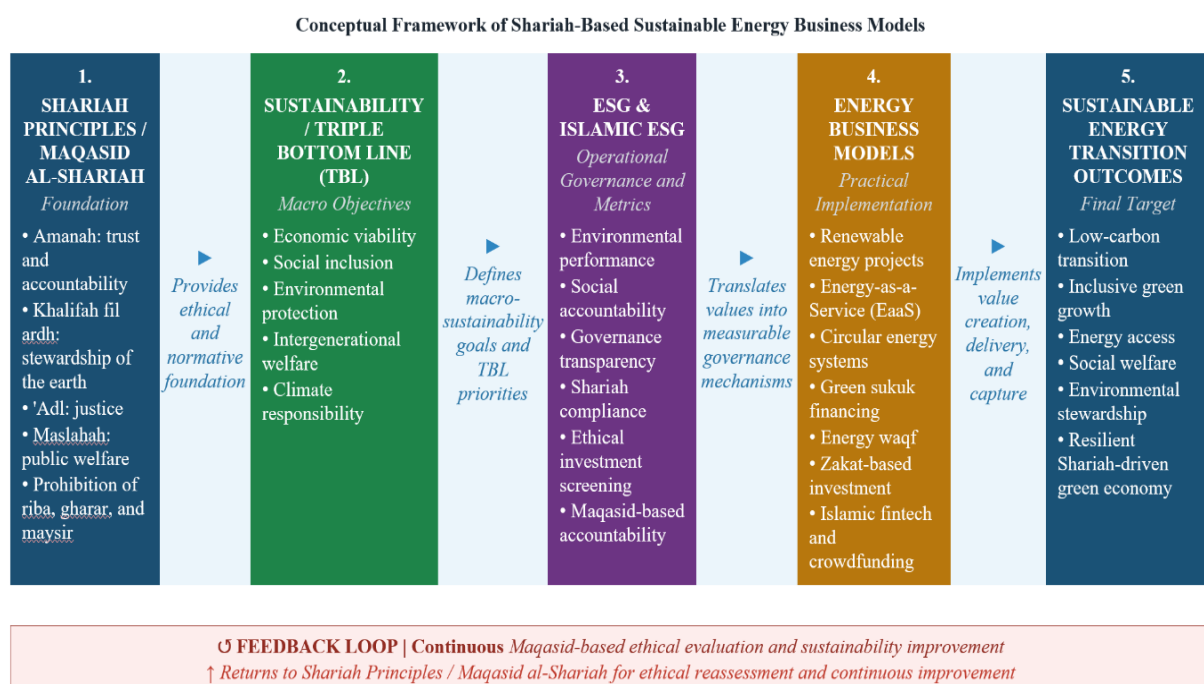


Figure 1. Integrated Sharia–ESG–Energy transition framework

Source: Developed by the authors (2025)

Figure 1 illustrates the conceptual flow from Sharia principles and *maqasid al-Sharia* as the ethical foundation, through sustainability objectives and ESG governance, to energy business model implementation and sustainable energy transition outcomes. The feedback loop indicates a continuous *maqasid*-based ethical reassessment.

Research Methods

This study combines bibliometric analysis and a systematic literature review (SLR) to examine Sharia-based business models in the renewable energy sector. This combination is appropriate because bibliometric analysis maps the macro-level structure of a field, including publication trends, citation patterns, influential authors, collaboration networks, and keyword co-occurrence clusters (Aria & Cuccurullo, 2017; Donthu et al., 2021; Van Eck & Waltman, 2010). The SLR complements this by providing a micro-level interpretation of theoretical arguments, empirical findings, conceptual gaps, and areas of scholarly convergence or divergence (Snyder, 2019). Together, both methods enable the systematic mapping and conceptual synthesis of an emerging interdisciplinary field. The Scopus database was chosen for its extensive coverage and standardized metadata, which ensured accuracy and reliability in the bibliometric analysis (Ghorbani, 2024).

Scopus was selected because of its broad peer-reviewed coverage, standardized metadata, citation information, and compatibility with Biblioshiny and VOSviewer software. The search strategy used a three-cluster Boolean structure linking business model concepts, Sharia/Islamic principles, and the energy sector. The search was applied to the TITLE-ABS-KEY field using OR operators within clusters and AND operators between clusters. The keyword structure was: (“business model” OR “sustainable business model” OR “green business model” OR “circular business model” OR “responsible business model” OR “inclusive business model” OR “low carbon business model” OR “ESG business model” OR “digital business model” OR “innovation business model” OR “value creation model” OR “shared value model”) AND (“Sharia” OR “Sharia” OR “Islamic” OR “Islamic finance” OR “Islamic business” OR “Islamic economy” OR “Islamic investment” OR “Islamic banking” OR “Islamic entrepreneurship” OR “halal industry”) AND (“energy sector” OR “renewable energy” OR “sustainable energy” OR “clean energy” OR “energy transition” OR “power generation” OR “solar energy” OR “wind energy” OR “geothermal energy” OR “hydropower” OR “bioenergy”).

The inclusion criteria covered English-language journal articles in Business, Management, and Accounting, published in final form between 2013 and 2025, and thematically linked to business models, Sharia-compliant principles, and/or energy-sector applications. Excluded records included conference papers, book chapters, editorials, non-English publications, preprints, retracted papers, and studies lacking meaningful integration with the business model-Sharia-energy nexus. Figure 2 depicts the PRISMA flow diagram for the study selection process, in which 2,399 initial records were identified from the Scopus database. After excluding 438 records, 1,961 were screened. Phase 1 demographic filtration excluded 1,849 records, leaving 112 full-text articles for eligibility assessments. These 112 articles formed the final dataset for the bibliometric analysis and SLR (Sharma et al., 2024). Biblioshiny was used to analyze publication performance, citation trends, productive authors, institutions, and journals, while VOSviewer was used to visualize co-authorship, co-citation, bibliographic coupling, and keyword co-occurrence networks. The SLR then interpreted the thematic clusters generated from bibliometric mapping. This study has several limitations. Reliance on Scopus may exclude relevant studies from other databases. Keyword choices may omit emerging terms such as green sukuk, energy waqf, Islamic ESG, and *maqasid*-based environmental governance. English-language and journal-only filters may underrepresent regional and practice-based research. Citation indicators may also disadvantage recent publications and should not be treated as direct measures of intellectual quality (Donthu et al., 2021; Mukherjee et al., 2022).

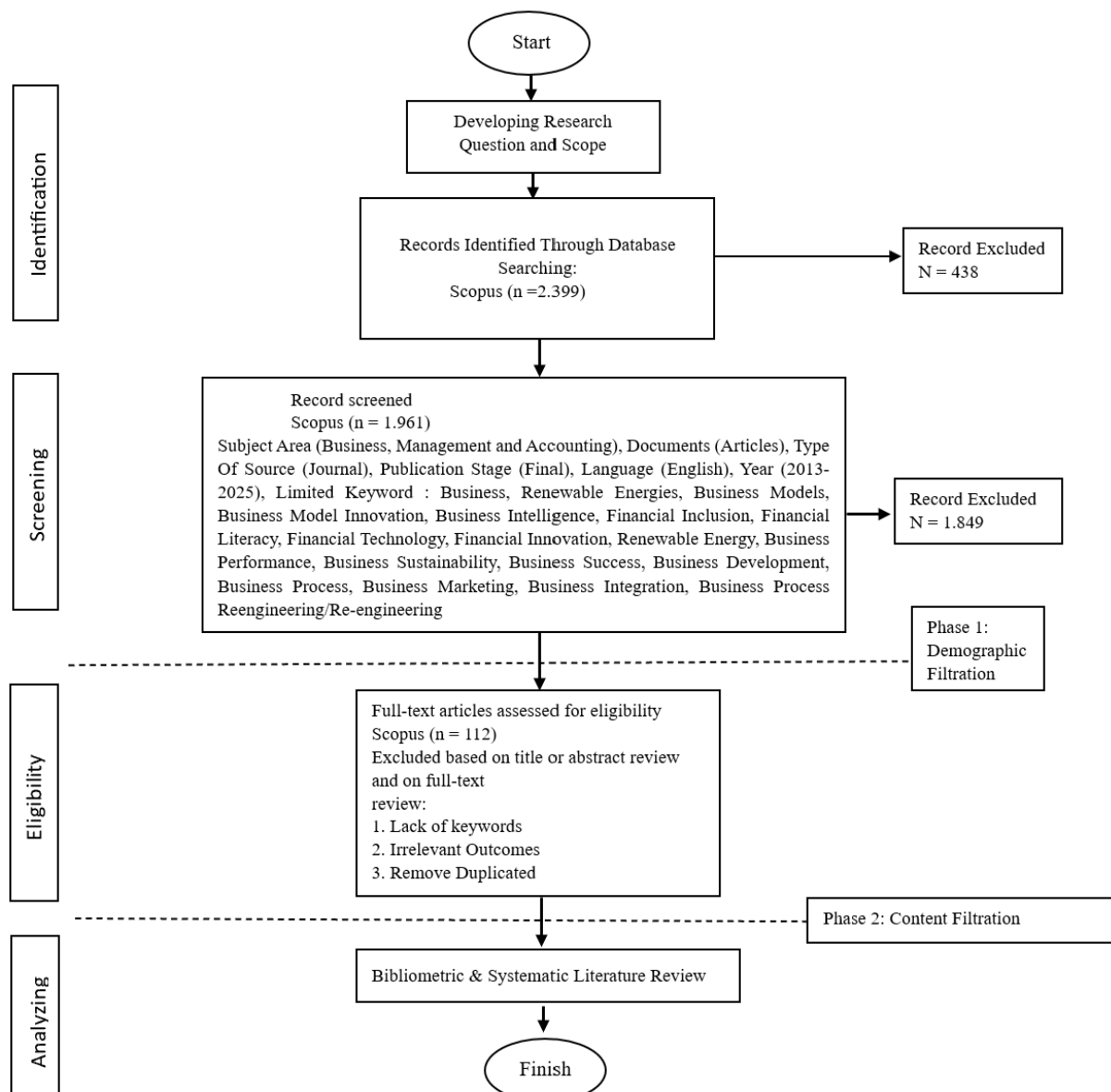


Figure 2. PRISMA screening results
Source: Developed by the authors (2025)

Results and Discussion

Descriptive statistics of scientific literature metadata

The bibliometric results indicate the consolidation of an emerging research field at the intersection of Sharia principles, sustainable business models, and the energy sector. Figure 3 presents the descriptive characteristics of the bibliometric dataset used in this study. The dataset comprises 112 documents published in 51 sources between 2013 and 2025, with an annual growth rate of 32.77% and an average of 30.38 citations per document. These indicators suggest that the field has gained increasing scholarly visibility and relevance in broader debates on Islamic finance, sustainability, and energy transition.

The keyword structure also reflects a strong conceptual diversity. The presence of 577 Keywords Plus and 505 author keywords indicates that the literature extends across several interconnected themes, including Islamic finance, renewable energy, ESG, sustainability, governance, and business model innovation. Meanwhile, the authorship pattern shows an increasingly collaborative research landscape, with 371 authors, an average of 3.54 collaborators per article, and 46.43% international co-authorship. This suggests that the field is expanding in volume and becoming more internationally connected and interdisciplinary. Overall, the findings demonstrate growing

thematic diversification, global collaboration, and strengthening of an academic knowledge network on Sharia-based sustainability pathways in the energy sector.

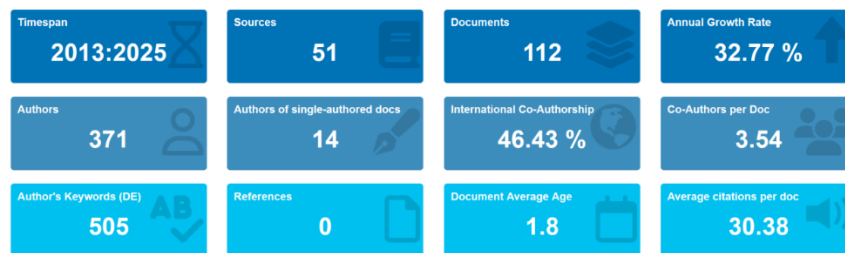


Figure 3. Main information

Source: Data processed by R-Biblioshiny (2025)

The Most Cited Countries analysis in Figure 4 shows that China is the most influential country in this research domain, with 761 citations, followed by Turkey (363), Italy (293), the United Arab Emirates (289), Malaysia (262), Iran (244), Brazil (180), Serbia (156), the Czech Republic (99), and Spain (95). China's dominant citation position indicates that the intellectual foundation of this field is strongly influenced by broader research on green finance, digital transformation, ESG performance, and energy transition rather than being limited to Islamic finance scholarship alone. The presence of Turkey, the United Arab Emirates, Malaysia, and Iran among the most cited countries suggests that Muslim-majority economies play an important role in linking Sharia-based ethical principles to sustainability, finance, and energy-sector transformation. Meanwhile, the inclusion of Italy, Brazil, Serbia, the Czech Republic, and Spain reflects the interdisciplinary and global character of the field, especially through contributions related to environmental governance, the circular economy, technological innovation, and sustainable business models. Overall, the citation pattern indicates that research on Sharia-driven sustainable business models in the energy sector is shaped by both Islamic finance contexts and broader international sustainability scholarship. This finding strengthens the bibliometric contribution of this study by identifying the geographical concentration of intellectual influence and showing that the field is developing through cross-country and cross-disciplinary knowledge integration (Donthu et al., 2021; Zupic & Cater, 2015).

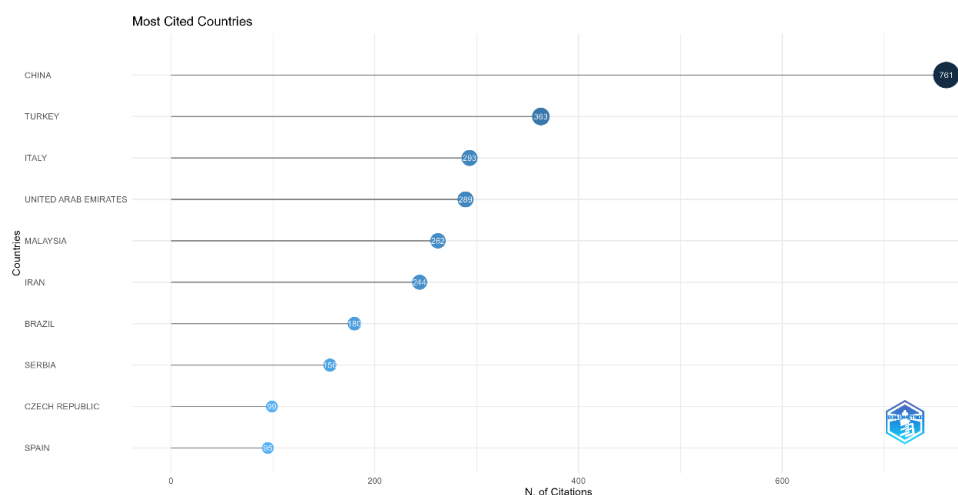


Figure 4. Most cited countries

Source: Data processed by R-Biblioshiny (2025)

The annual scientific production analysis in Figure 5 indicates a marked increase in publications on “Sharia-Driven Pathways to Sustainable Business Models in the Energy Sector” after 2018. Following one publication in 2013 and no recorded output between 2014 and 2017, research activity resumed in 2018 with two articles and continued to rise, reaching five articles in 2019, eight in 2021, 13 in 2022, 18 in 2023, thirty-four in 2024, and 30 in 2025. This acceleration

reflects the convergence of several scholarly and policy developments, including the growing influence of the SDGs, particularly SDG 7 on affordable and clean energy (Fuso Nerini et al., 2017), the strengthening of global decarbonization and renewable energy transition agendas following the Paris Agreement (Berrich et al., 2024), and the increasing relevance of Islamic green finance, green sukuk, and Maqasid-oriented sustainability frameworks in supporting ethical and Sharia-compliant energy financing (Harahap et al., 2023). In addition, the rising academic interest in sustainable business models for renewable energy has further encouraged research at the intersection of Islamic finance, sustainability governance and energy sector transformation (Effendi et al., 2024). Thus, post-2018 publication growth indicates not only an increase in research volume but also a broader intellectual convergence between Islamic finance, sustainable business model innovation, and the global energy transition.

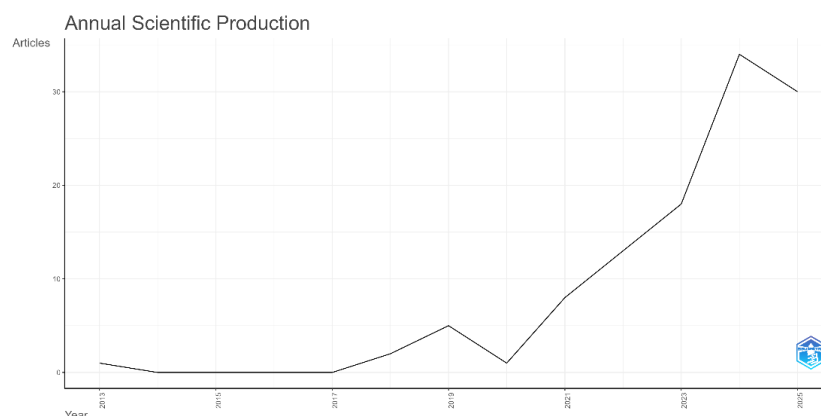


Figure 5. Annual scientific production
Source: Data processed by R-Biblioshiny (2025)

Word cloud analysis

Word cloud analysis provides an initial view of the dominant concepts shaping the literature (Dragović et al., 2024; Kulevich et al., 2020; Shaikh et al., 2021). Figure 6 presents the keyword co-occurrence network, highlighting the dominant themes in the literature. The prominence of “sustainable development” indicates that the field is primarily framed around broader sustainability goals, while the frequent occurrence of terms such as “sustainability,” “finance,” and “fintech” reflects the growing integration of Sharia-based business models with sustainable finance and digital financial innovation. Terms such as “circular economy,” “blockchain,” and “renewable energy” further suggest that the literature is moving toward operational themes, including technology-enabled governance, resource efficiency, and clean energy transformation. Overall, the word cloud reflects the convergence of Islamic finance, digital innovation, circular economy practices, and renewable energy development in shaping sustainable business models.



Figure 6. Word cloud
Source: Data processed by R-Biblioshiny (2025)

Thematic mapping analysis

The thematic map shows that research on Sharia-driven sustainable business models in the energy sector is moving from normative sustainability discourse toward more operational and policy-relevant themes. Figure 7 presents a thematic map of the research field. The positioning of sustainable development, energy, business performance, and decision-making as major themes indicates growing scholarly attention to how Sharia-based principles can be translated into measurable sustainability and business outcomes. Sustainability, environmental management, and the circular economy function as foundational themes, while ethical technology, innovation management, financial technology, and banks represent emerging areas linking Islamic ethics with digital finance, green investment, and energy transition. However, claims regarding the effectiveness of Islamic finance instruments should be treated cautiously, as existing evidence remains concentrated in conceptual reviews and selected case studies rather than in broad empirical impact assessments (Alam et al., 2023; Harahap et al., 2023; Rahim et al., 2024). Therefore, managerial and policy implications should be made more concrete by proposing Maqasid-based ESG indicators, verified green sukuk reporting, Sharia-compliant sustainability disclosure, Islamic fintech-based fund traceability, and climate risk screening by Islamic banks. To strengthen the analytical depth, this interpretation should be complemented by citation analysis identifying the most influential authors, journals, institutions, and countries in the field (Muñoz-Leiva et al., 2012).

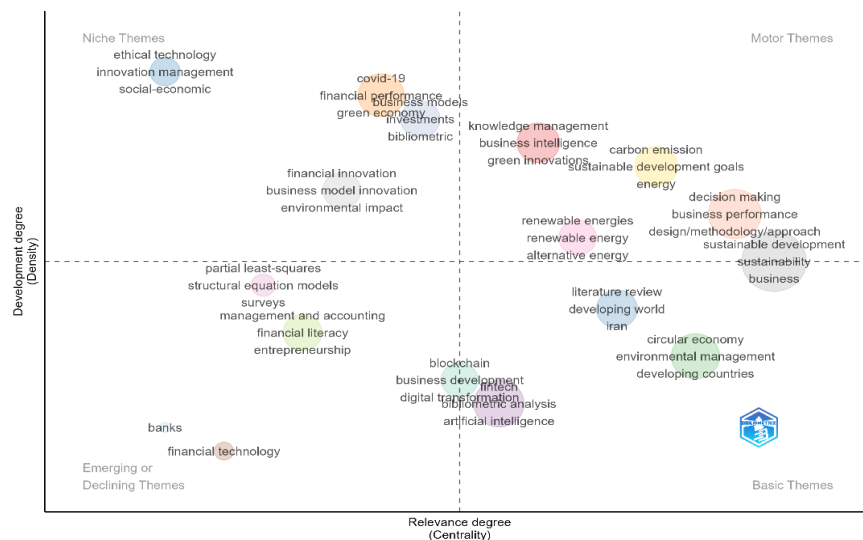


Figure 7. Mapping analysis

Source: Data processed by R-Biblioshiny (2025)

Conceptual structure mapping analysis

The conceptual structure map reveals how knowledge of Sharia-driven sustainable business models in the energy sector is organized across interrelated thematic areas. Co-word mapping is useful because it identifies conceptual subdomains and shows how themes are connected within a research field rather than merely displaying word frequency (Dwivedi et al., 2023). In this study, sustainable development, environmental management, and the circular economy form the core sustainability foundation, while financial performance, green investment, finance, and digital transformation indicate a growing link between sustainability outcomes, Islamic finance, and technology-enabled business transformation. However, this pattern should be interpreted with caution.

Figure 8 presents the conceptual structure of this research field. Although the map reveals a strong conceptual convergence among Islamic finance, sustainability, and the green transition, it does not provide empirical evidence of the effectiveness of Islamic finance instruments in accelerating the green transition. Existing studies suggest that instruments such as green sukuk have considerable potential to support renewable energy financing; however, the current evidence is derived primarily from literature reviews and selected case studies, rather than comprehensive empirical impact assessments (Rahim et al., 2024).

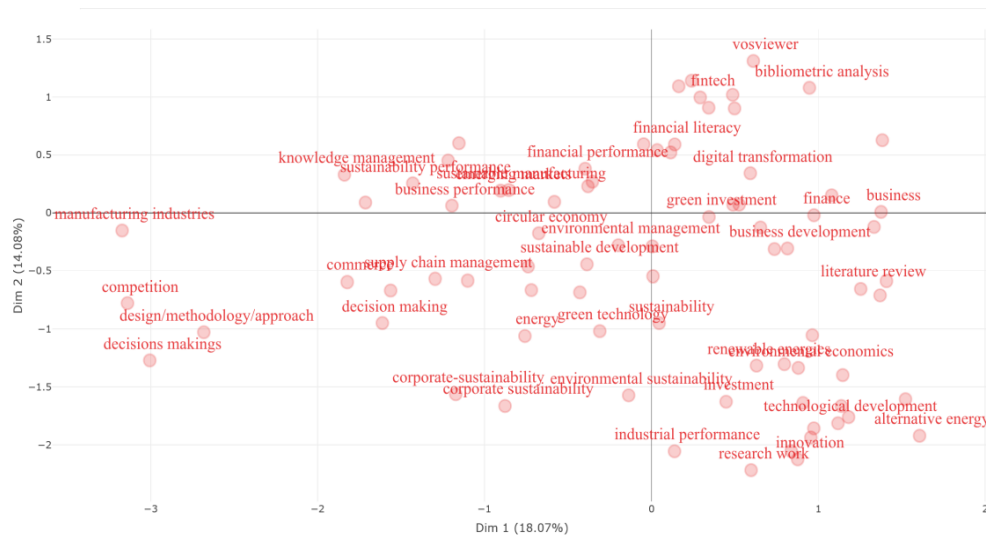


Figure 8. Conceptual structure mapping visualization
Source: Data Processed by R-Biblioshiny (2025)

Keyword co-occurrence analysis

Keyword co-occurrence analysis reveals the relationships among frequently associated terms in scholarly publications, enabling the mapping of thematic structures and research evolution (Bhuyan et al., 2021). Figure 9 presents the keyword clustering analysis generated using VOSviewer. The analysis identifies seven major thematic clusters, illustrating the principal research streams that characterize the literature on “Sharia-driven pathways to sustainable business models in the energy sector.” Cluster 1 (Red) highlights the strong interrelationship between *corporate governance*, *corporate social responsibility (CSR)*, and *Environmental, Social, and Governance (ESG)*, emphasizing that Sharia-based governance forms the ethical foundation for transparency, accountability, and public trust. The integration of *maqasid al-Sharia* strengthens ethical business conduct, oriented not only toward profit but also toward social welfare and environmental stewardship. Clusters 2 (Green) and 3 (Blue) focus on *sustainable development*, *decision making*, and *green innovation*, and *climate change*, *green finance*, and *economic growth*, underscoring how Islamic finance instruments, such as *green sukuk* and *productive waqf* support low-carbon economies and climate action.

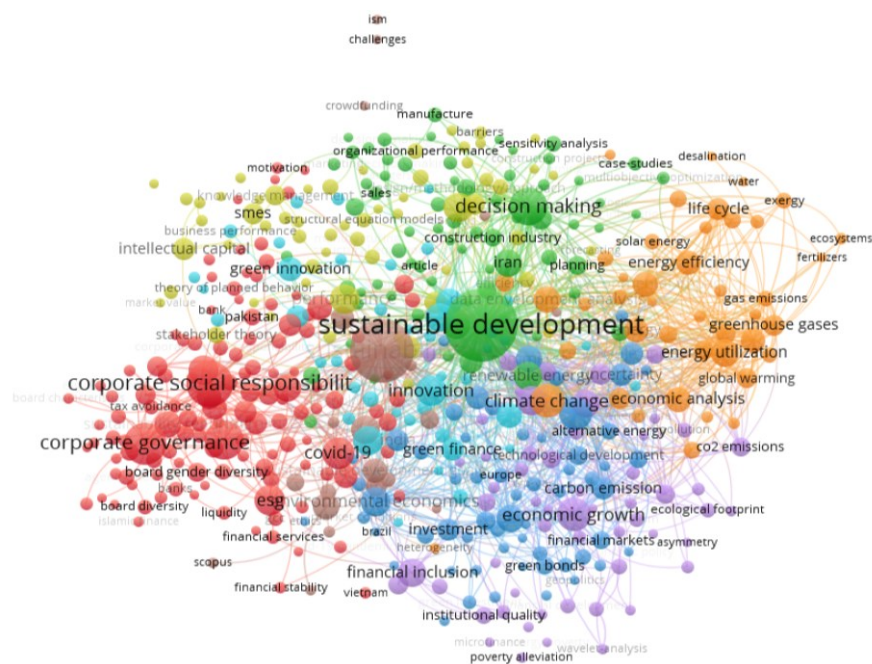


Figure 9. Keyword co-occurrence analysis
Source: Data processed by Vosviewer (2025)

enforcement (Jamali & Karam, 2018). Therefore, the relationship between maqasid al-Sharia and green consumption remains partly theoretical, particularly when behavioral outcomes such as renewable energy adoption and green investment have not been directly tested (Shaikh et al., 2021). The Big Data may support energy monitoring and transparency, but its implementation in Islamic-majority energy markets faces barriers related to data fragmentation, digital infrastructure, cybersecurity, and regulatory readiness (Khan, 2022). Thus, future studies should empirically test whether Sharia governance, GIS-DEA efficiency tools, maqasid-based consumption, and Big Data systems improve measurable energy transition outcomes.

Orange cluster literature review: Green economic transition, financial innovation, and sustainable business transformation

The orange cluster shows that ESG performance, digital transformation, and financial innovation are increasingly connected; however, this relationship should be interpreted as context-dependent rather than universally positive. Zhou et al. (2022) found that ESG performance improved the market value of Chinese listed firms from 2014 to 2019, with financial performance and operating capacity acting as important mediating mechanisms. The effect was stronger among state-owned firms, suggesting that ownership structure and institutional support influence ESG outcomes. However, this evidence cannot be directly generalized to Islamic firms or energy companies without comparative testing. Similarly, claims that the sharing economy improves energy efficiency should be linked to the specific metrics and geographic samples used by Khan et al., (2023), rather than being presented as a general finding. AlNuaimi et al., (2021) further suggest that ecological leadership and organizational culture can support green transformation, but these factors operate through managerial capacity, innovation routines, and employee engagement. Therefore, the key research question is not simply whether *al-'adl* and *maslahah* support sustainability, but whether Sharia ethical norms provide additional explanatory power beyond the conventional ESG frameworks. Future studies should compare Islamic and non-Islamic firms to test whether Sharia governance produces stronger green-transition outcomes.

Green cluster literature review: Green transition, technological innovation, and sustainable finance

The green cluster highlights the interactions among green finance, carbon markets, technological innovation, and Sharia-compliant investments. However, the evidence should be interpreted critically. Ren et al., (2022) examined the relationship between carbon markets and green bonds using wavelet quantile-on-quantile methods across short-, medium-, and long-term horizons and under different market conditions, indicating that market connectedness varies by time frequency and market regime rather than remaining stable in all contexts. Thus, “enhanced stability” should not be understood as a universal effect but as conditional on market maturity, volatility, and policy credibility (Ren et al., 2022). Abakah et al., (2023) suggest that Sharia-compliant stocks may offer hedging potential, but this should be treated as market-cycle dependent rather than valid across all crises or asset classes. The Environmental Kuznets Curve evidence from Malaysia also requires caution, as EKC findings are often sensitive to model choice, income level, and development stage (Suki et al., (2020). Finally, although hydrogen technology and industrial robotics may support decarbonization, their connection to Islamic moral responsibility remains indirect unless empirically linked to Sharia governance, ethical investment, or maqasid-based performance indicators (Calandra et al., 2023). Therefore, future research should test how Islamic finance, green bonds, carbon pricing, and clean technologies interact in actual energy projects.

Purple cluster literature review: Institutional governance, green supply chains, and environmental transparency

The purple cluster connects institutional quality, green logistics, renewable energy, and environmental transparency; however, the relationship should be framed as conditional rather than deterministic. Salman et al., (2019) examined Indonesia, South Korea, and Thailand and showed

that institutional quality is relevant to the economic growth-carbon emissions relationship, but such findings depend on which institutional variables are measured and how governance quality is operationalized. Similarly, [Khan et al., \(2019\)](#) link green logistics and renewable energy with environmental and economic performance; however, the distinction between short-run adjustments and long-run structural effects remains important. Findings from selected Asian or developing economies should not be automatically generalized to all Islamic-majority countries or energy systems. [Socol and Iuga, \(2025\)](#) show that democracy is positively associated with banking performance in EU member states, while economic freedom shows a negative effect in their sample, indicating that governance–finance relationships vary by institutional context. Therefore, the connection to Sharia governance should be presented as a hypothesis: Islamic governance norms may reinforce accountability and transparency, but this remains empirically underexplored in green supply chains and energy sector financing.

Red cluster literature review: ESG, sustainable governance, and organizational innovation in Sharia-based sustainable business models

The red cluster shows that ESG, sustainability reporting, Sharia-based CSR, and organizational innovation are closely related, but their relationship is not linear or automatically value-enhancing. [El Khoury et al., \(2023\)](#) found a non-linear ESG–financial performance relationship among 46 listed banks in the MENAT region between 2007 and 2019, where ESG investments remained beneficial only up to an inflection point; environmental, social, and governance pillars also showed different effects depending on the performance measure used. This implies that Islamic finance practitioners should avoid treating ESG adoption as a symbolic requirement and identify the level of ESG investment that generates measurable value. GRI-based sustainability reporting may improve transparency, but self-reported data can also function as strategic legitimacy if not supported by external assurance and verifiable indicators ([Kuzey et al., 2024](#)). The Sharia CSR Index offers a more context-specific way to assess Islamic ethical responsibility, but its treatment of *hifẓ al-bi'ah* should be compared empirically with conventional ESG indicators ([Zafar & Sulaiman, 2020](#)). Migdadi's evidence on knowledge management and innovation suggests that organizational learning can improve innovation capability and performance; however, longitudinal evidence is still needed to test whether Sharia-aligned governance produces superior sustainability outcomes.

Light blue cluster literature review: Religious values, green behavior, and sustainable investment in Sharia-driven business models

The light blue cluster suggests that religiosity, spirituality, and ethical values may influence green behavior and sustainable investment; however, the causal mechanisms remain underdeveloped. [Qureshi et al., \(2023\)](#) showed that religious values can moderate green purchasing behavior among consumers, but the generalizability of this finding depends on whether the sample represents one national context or multiple Muslim-majority markets. [Batool et al., \(2023\)](#) provide stronger behavioral evidence by showing, through 417 Muslim consumer responses and PLS-SEM, that perceived Covid-19 knowledge directly motivated sustainable consumption behavior, while religiosity acted as a significant mediator. However, religiosity may operate differently across income groups, education levels, and green product access. [Azad et al., \(2024\)](#) should also be interpreted cautiously: ethical and interest-free investment preferences do not automatically translate into large-scale green investments unless supported by product availability, regulatory incentives, financial literacy, and credible certification. Therefore, the cluster should conclude that religious values already drive green investment, but that future research should test the policy, market, and institutional conditions under which spiritual motivation becomes a measurable investment in renewable energy, green sukuk, or Sharia-compliant sustainable funds.

Theoretical and practical implications

This study contributes to sustainable business model (SBM) theory by proposing the Sharia-driven sustainability framework (SDSF), which extends the Triple Bottom Line by adding an ethical-spiritual

accountability dimension grounded in *maqasid al-Sharia*. Figure 11 illustrates the SDSF, highlighting 'adl, maslahah, mizan, amanah, and rahmah as the foundational principles that guide sustainable business strategy, governance, finance, and operational practices. Conceptually, the SDSF consists of three layers: Sharia ethical foundations, implementation mechanisms and sustainability outcomes. The ethical foundation defines the moral objectives of sustainability. The implementation layer includes Sharia governance, Islamic green finance, stakeholder accountability, *halal-tayyib* innovation, and digital transparency. The outcome layer measures economic resilience, social inclusion, environmental protection, and spiritual legitimacy. Thus, the SDSF clarifies how Islamic ethical values can move from abstract principles to measurable sustainability practices in the energy sector.

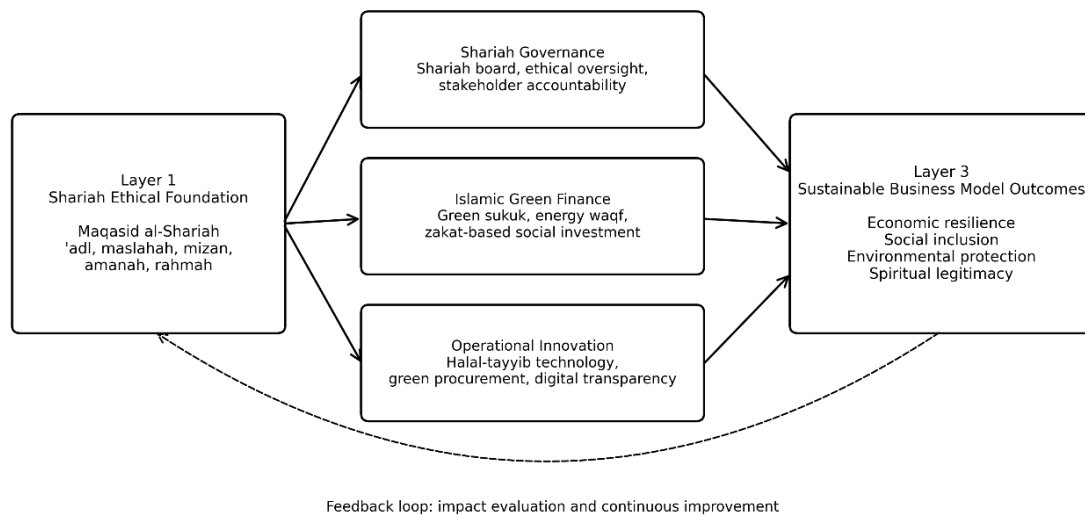


Figure 11. Sharia-driven sustainability framework (SDSF)

Source: Author's own elaboration based on (Chapra, 2008, Faizi et al., 2024, Hartanto et al., 2024b, Issa et al., 2025, Mohd Zain et al., 2024).

The main theoretical implication lies in redefining the relationship between ethical leadership, innovation, and sustainability. This study demonstrates that the application of Sharia principles in corporate governance and energy innovation strengthens value-based governance theory and expands stakeholder theory by adding a spiritual dimension as a driver of social legitimacy. The bibliometric and systematic review approach further generates a new conceptual mapping that connects green finance, ethical technology, and Islamic ESG as the theoretical pillars shaping sustainable energy business models. Furthermore, this study underscores the significance of Maqasid al-Sharia as an analytical lens that enriches sustainability theory with a strong moral and normative foundation. Accordingly, SBMs evolve into a more holistic form, the Ethical-Sustainability Convergence Model, which integrates economic sustainability with spirituality and social justice. Thus, this study opens new theoretical pathways for advancing contemporary Islamic economics and sustainability literature by positioning Sharia ethics as a transformative core of innovation and green energy policy on a global scale.

Practically, the findings suggest that Sharia-driven sustainability should be translated into specific strategies. Energy companies can operationalize Islamic ethical values by adopting Maqasid-based ESG indicators, including carbon emission reduction, renewable energy capacity, community access to clean energy, green supply chain compliance, and transparent use of Islamic financing. These indicators should be integrated into corporate sustainability reporting, investment appraisals, supplier selection, and climate risk assessments.

Islamic financial institutions can support the green transition by designing green sukuk, energy waqf, and zakat-based financing with clear allocation and impact reporting mechanisms. For example, financing should be linked to measurable outcomes, such as megawatts of renewable energy installed, tonnes of CO₂ reduced, number of community beneficiaries, and percentage of funds allocated to verified green projects. Digital tools, such as Islamic fintech platforms, blockchain-based zakat, and waqf crowdfunding, can also be used to improve fund traceability and public

accountability. Policymakers and regulators should establish Islamic ESG guidelines, require third-party verification for green sukuk, provide tax incentives for Sharia-compliant renewable energy projects, and integrate climate risk screening into Islamic banking supervision. They should also promote pilot projects involving energy companies, Islamic banks, Sharia boards, and research institutions to test the real impact of Sharia-based green financing. These actions would make Sharia-driven sustainability more measurable, accountable, and practically relevant to the energy transition.

Conclusion

This study maps the intellectual structure, thematic development, and research gaps in Sharia-driven sustainable business models in the energy sector through bibliometric analysis and a systematic literature review. The findings show that research in this field has grown significantly since 2018 and is centered on sustainable development, green finance, renewable energy, ESG, digital transformation, and ethical innovation. These results address the research objectives by showing that Sharia-based sustainability has moved beyond normative ethical discourse toward practical debates on governance, financing, and energy transitions.

The study contributes theoretically by proposing the Sharia-Driven Sustainability Framework (SDSF), which extends the Sustainable Business Model theory through *maqasid al-Sharia* values such as justice, public welfare, balance, accountability, and ecological responsibility. However, the findings also reveal an important empirical gap: instruments such as green sukuk, energy waqf, zakat-based financing, and Islamic crowdfunding remain promising mechanisms rather than fully validated solutions for green transition.

Energy companies should adopt *maqasid*-based ESG indicators, including carbon reduction, renewable energy capacity, clean energy access, green supply chain compliance, and transparent use of Islamic financing. Islamic financial institutions should strengthen green sukuk, waqf, and zakat-based financing through allocation tracking, third-party verification, impact reporting, and digital traceability. Policymakers should develop Islamic ESG guidelines, provide incentives for Sharia-compliant renewable energy projects, integrate climate risk screening into Islamic banking regulations, and support pilot projects involving regulators, Islamic banks, Sharia boards, and energy firms.

This study is limited by its reliance on Scopus-indexed publications, selected keywords, and bibliometric indicators that show associations rather than causality. The SLR process also involves interpretive judgement in theme selection and synthesis. Future research should empirically test the SDSF through cross-country comparisons, SEM-based validation, panel data, case studies, and project-level impact assessments to examine whether Sharia-based governance and Islamic finance instruments generate measurable outcomes in emissions reduction, renewable energy development, financial inclusion, and community welfare.

Abbreviations

CCUS: Carbon capture, utilization, and storage
 CO₂: Carbon dioxide
 CSR: Corporate social responsibility
 DEA: Data envelopment analysis
 EaaS: Energy-as-a-service
 EKC: Environmental Kuznets curve
 ESG: Environmental, social, and governance
 EU: European Union
 GIS-DEA: Geographic information system–data envelopment analysis
 GRI: Global reporting initiative
 IEA: International energy agency
 MENAT: Middle East, North Africa, and Turkey
 SBM: Sustainable business model
 SDG: Sustainable development goal
 SDSF: Sharia-driven sustainability framework

SLR: Systematic literature review

TBL: Triple bottom line

USD: United States Dollar

Author contributions

Conceptualization: Windiani

Data curation: Dhofirotn Nadifah

Formal analysis: Dhofirotn Nadifah

Investigation: Muhammad Alfarizi

Methodology: Windiani

Project administration: Windiani

Supervision: Muhammad Saiful Hakim

Validation: Muhammad Saiful Hakim

Visualization: Muhammad Alfarizi

Writing – original draft: Dhofirotn Nadifah

Writing – review & editing: Muhammad Saiful Hakim, Muhammad Alfarizi

Funding statement

This research did not receive any specific grants from any funding agency in the public, commercial, or not-for-profit sectors.

Data availability statement

The data supporting the findings of this study were obtained from the Scopus database using the search strategy and screening procedures described in the Research Methods section of this paper. Owing to Scopus licensing restrictions, the raw bibliographic dataset cannot be publicly deposited. However, the processed data and analytical results generated using Biblioshiny and VOSviewer are presented in this study. Additional processed data are available from the corresponding author upon reasonable requests.

Declaration of generative AI and AI-assisted technologies in the writing process

During the preparation of this manuscript, the authors used ChatGPT by OpenAI to support language refinement, improve readability, and check the grammar and clarity. The tool was used only for editorial assistance and did not replace the authors' intellectual contributions, analysis, interpretation, or scholarly judgment. After using this tool, the authors carefully reviewed, edited, and verified the manuscript. The authors take full responsibility for the accuracy, originality, integrity, and final content of this publication.

Conflict of interest statement

The authors declare that they have no competing financial interests or personal relationships that could have influenced the work reported in this manuscript. The authors declare no conflicts of interest regarding the publication of this manuscript.

Ethic approval and consent to participate

Ethics approval and informed consent were not required for this study because it did not involve human participants, animals, biological materials, or personally identifiable information. This study was based exclusively on secondary bibliographic data retrieved from the Scopus database and previously published scholarly literature, which were analyzed using bibliometric and systematic literature review methods. Therefore, institutional ethics approval or participant consent was not required.

Acknowledgements

The authors sincerely thank the Library of Institut Teknologi Sepuluh Nopember (ITS) for providing access to the Scopus database used in this study. The authors also express their

appreciation to their colleagues and academic peers who provided constructive comments and engaged in scholarly discussions during the preparation of this manuscript.

References

- Abakah, E. J. A., Tiwari, A. K., Ghosh, S., & Doğan, B. (2023). Dynamic effect of Bitcoin, fintech and artificial intelligence stocks on eco-friendly assets, Islamic stocks and conventional financial markets: Another look using quantile-based approaches. *Technological Forecasting and Social Change*, 192, 122566. <https://doi.org/10.1016/j.techfore.2023.122566>
- Abdullah, N. A. I. N., Hamid, N. A., & Haron, R. (2024). Issues and challenges of sustainable finance: An experience from the Islamic banking industry. In *Islamic Finance and Sustainable Development: A Global Framework for Achieving Sustainable Impact Finance* (pp. 187–194). Taylor and Francis. <https://doi.org/10.4324/9781003468653-21>
- Ahmad, S., Wong, K. Y., & Rajoo, S. (2019). Sustainability indicators for manufacturing sectors: A literature survey and maturity analysis from the triple-bottom line perspective. *Journal of Manufacturing Technology Management*, 30(2), 312–334. <https://doi.org/10.1108/JMTM-03-2018-0091>
- Alam, A., Tri Ratnasari, R., Latifathul Jannah, I., & El Ashfahany, A. (2023). Development and evaluation of Islamic green financing: A systematic review of green sukuk. *Environmental Economics*, 14(1), 61–72. [https://doi.org/10.21511/ee.14\(1\).2023.06](https://doi.org/10.21511/ee.14(1).2023.06)
- Aldhaheeri, W. (2025). Islamic green finance: Sharia-compliant pathways towards sustainable development goals (SDGs). *Open Journal of Applied Sciences*, 15(05), 1294–1309. <https://doi.org/10.4236/ojapps.2025.155090>
- AlNuaimi, B. K., Singh, S. K., & Harney, B. (2021). Unpacking the role of innovation capability: Exploring the impact of leadership style on green procurement via a natural resource-based perspective. *Journal of Business Research*, 134, 78–88. <https://doi.org/10.1016/j.jbusres.2021.05.026>
- Alonso-Martinez, D., De Marchi, V., & Di Maria, E. (2021). The sustainability performances of sustainable business models. *Journal of Cleaner Production*, 323, 129145. <https://doi.org/10.1016/j.jclepro.2021.129145>
- Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, 11(4), 959–975. <https://doi.org/10.1016/j.joi.2017.08.007>
- Asif, M. (2022). Sustainable energy transition in the 21st century. In *Handbook of Energy and Environmental Security* (pp. 27–38). Elsevier Inc. <https://doi.org/10.1016/B978-0-12-824084-7.00023-0>
- Awais, M., Öztürk, A. O., Bhatti, O. K., & Ellahi, N. (2024). *The Islamic economic system: Cultural context in a global economy*. Taylor and Francis. <https://doi.org/10.4324/9781003484349>
- Ayaz, G., & Zahid, M. (2024). Trends, shifts and future prospects of sustainable finance research: A bibliometric analysis. *Sustainability Accounting, Management and Policy Journal*, 15(5), 1094–1117. <https://doi.org/10.1108/SAMPJ-06-2022-0340>
- Azad, S., Tulasi Devi, S. L., & Mishra, A. K. (2024). Investing in our planet: Examining retail investors' preference for green bond investment. *Business Strategy and the Environment*, 33(6), 5151–5173. <https://doi.org/10.1002/bse.3743>
- Aziz, J. A., & Suryanto, T. (2024). Is an Islamic economic system possible without the prohibition of interest (Riba): A critical appraisal of a Shari'ah compliant economic system as envisioned by Sjafruddin Prawiranegara (1911-1989) in Indonesia. *Manchester Journal of Transnational Islamic Law and Practice*, 20(4), 39–52.

- Bankel, A., & Mignon, I. (2022). Solar business models from a firm perspective: An empirical study of the Swedish market. *Energy Policy*, 166, 113013. <https://doi.org/10.1016/j.enpol.2022.113013>
- Batool, A., Shabbir, R., Abrar, M., & Bilal, A. R. (2023). Do fear and perceived knowledge of Covid-19 drive sustainable consumption behaviour in Muslims? The mediating role of religiosity. *Journal of Islamic Marketing*, 14(7), 1645–1668. <https://doi.org/10.1108/JIMA-08-2021-0258>
- Berrich, O., Mafakheri, F., & Dabbou, H. (2024). Renewable energy transition and the Paris Agreement: How governance quality makes a difference? *Energies*, 17(17), 4238. <https://doi.org/10.3390/en17174238>
- Bhuyan, A., Sanguri, K., & Sharma, H. (2021). Improving the keyword co-occurrence analysis: An integrated semantic similarity approach. In *2021 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)* (pp. 482–487). IEEE. <https://doi.org/10.1109/IEEM50564.2021.9673030>
- Bibri, S. E., Huang, J., Omar, O., & Kenawy, I. (2025). Synergistic integration of digital twins and zero energy buildings for climate change mitigation in sustainable smart cities: A systematic review and novel framework. *Energy and Buildings*, 333, 115484. <https://doi.org/10.1016/j.enbuild.2025.115484>
- Bidmon, C. M., & Knab, S. F. (2018). The three roles of business models in societal transitions: New linkages between business model and transition research. *Journal of Cleaner Production*, 178, 903–916. <https://doi.org/10.1016/j.jclepro.2017.12.198>
- Calandra, D., Wang, T., Cane, M., & Alfiero, S. (2023). Management of hydrogen mobility challenges: A systematic literature review. *Journal of Cleaner Production*, 410, 137305. <https://doi.org/10.1016/j.jclepro.2023.137305>
- Chapra, M. U. (2008). *The Islamic vision of development in the light of Maqāṣid al-Sharī‘ah*. The International Institute of Islamic Thought.
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, 285–296. <https://doi.org/10.1016/j.jbusres.2021.04.070>
- Dragović, A., Zrnić, N., Dragović, B., & Dulebenets, M. A. (2024). A comprehensive review of maritime bibliometric studies (2014–2024). *Ocean Engineering*, 311, 118917. <https://doi.org/10.1016/j.oceaneng.2024.118917>
- Dwivedi, R., Nerur, S., & Balijepally, V. (2023). Exploring artificial intelligence and big data scholarship in information systems: A citation, bibliographic coupling, and co-word analysis. *International Journal of Information Management Data Insights*, 3(2), 100185. <https://doi.org/10.1016/j.jjime.2023.100185>
- Effendi, P. L., Wirjodirdjo, B., & Rosdaniah, S. I. (2024). A strategic framework for sustainable business model of renewable energy services. *Revista de Gestao Social e Ambiental*, 18(9), e05397. <https://doi.org/10.24857/rgsa.v18n9-037>
- El Khoury, R., Nasrallah, N., & Alareeni, B. (2023). ESG and financial performance of banks in the MENAT region: Concavity–convexity patterns. *Journal of Sustainable Finance & Investment*, 13(1), 406–430. <https://doi.org/10.1080/20430795.2021.1929807>
- Endri, E., Tahya Hania, B., & Ma’ruf, A. (2022). Corporate green sukuk issuance for sustainable financing in Indonesia. *Environmental Economics*, 13(1), 38–49. [https://doi.org/10.21511/ee.13\(1\).2022.04](https://doi.org/10.21511/ee.13(1).2022.04)

- Faizi, F., Kusuma, A. S., & Widodo, P. (2024). Islamic green finance: Mapping the climate funding landscape in Indonesia. *International Journal of Ethics and Systems*, 40(4), 711–733. <https://doi.org/10.1108/IJOES-08-2023-0189>
- Fodol, M. Z., & Aslan, H. (2025). Mapping the evolution of Islamic finance for sustainability: A bibliometric analysis. *Sustainability Accounting, Management and Policy Journal*. Advance online publication. <https://doi.org/10.1108/SAMPJ-08-2024-0926>
- Fuso Nerini, F., Tomei, J., To, L. S., Bisaga, I., Parikh, P., Black, M., Borrión, A., Spataru, C., Castán Broto, V., Anandarajah, G., Milligan, B., & Mulugetta, Y. (2017). Mapping synergies and trade-offs between energy and the sustainable development goals. *Nature Energy*, 3(1), 10–15. <https://doi.org/10.1038/s41560-017-0036-5>
- Ghorbani, B. D. (2024). Bibliometrix: Science mapping analysis with R Biblioshiny based on Web of Science in applied linguistics. In *A Scientometrics Research Perspective in Applied Linguistics* (pp. 197–234). Springer Nature. https://doi.org/10.1007/978-3-031-51726-6_8
- Harahap, B., Risfandy, T., & Futri, I. N. (2023). Islamic law, Islamic finance, and sustainable development goals: A systematic literature review. *Sustainability*, 15(8), 6626. <https://doi.org/10.3390/su15086626>
- Hartanto, A., Nachrowi, N. D., Samputra, P. L., & Huda, N. (2024). A bibliometric analysis of Islamic banking sustainability: A study based on Scopus scientific database. *Journal of Islamic Marketing*, 15(9), 2245–2285. <https://doi.org/10.1108/JIMA-04-2023-0123>
- Issa, S. O., Alabi, A. T., & Ubandawaki, A. T. (2025). Climate change governance, Sharia governance quality, and financed emission mitigation: Evidence from Islamic banks in Southeast and West Asia. *Borsa Istanbul Review*, 25(4), 722–732. <https://doi.org/10.1016/j.bir.2025.03.011>
- Izadikhah, M., & Saen, R. F. (2016). A new preference voting method for sustainable location planning using geographic information system and data envelopment analysis. *Journal of Cleaner Production*, 137, 1347–1367. <https://doi.org/10.1016/j.jclepro.2016.08.021>
- Jamali, D., & Karam, C. (2018). Corporate social responsibility in developing countries as an emerging field of study. *International Journal of Management Reviews*, 20(1), 32–61. <https://doi.org/10.1111/ijmr.12112>
- Kemeç, A., & Altınay, A. T. (2023). Sustainable energy research trend: A bibliometric analysis using VOSviewer, RStudio Bibliometrix, and CiteSpace software tools. *Sustainability*, 15(4), 3618. <https://doi.org/10.3390/su15043618>
- Khan, S. (2022). Barriers of big data analytics for smart cities development: A context of emerging economies. *International Journal of Management Science and Engineering Management*, 17(2), 123–131. <https://doi.org/10.1080/17509653.2021.1997662>
- Khan, S. A. R., Jian, C., Zhang, Y., Golpîra, H., Kumar, A., & Sharif, A. (2019). Environmental, social and economic growth indicators spur logistics performance: From the perspective of South Asian Association for Regional Cooperation countries. *Journal of Cleaner Production*, 214, 1011–1023. <https://doi.org/10.1016/j.jclepro.2018.12.322>
- Khan, S., Kaushik, M. K., Kumar, R., & Khan, W. (2023). Investigating the barriers of blockchain technology integrated food supply chain: A BWM approach. *Benchmarking: An International Journal*, 30(3), 713–735. <https://doi.org/10.1108/BIJ-08-2021-0489>
- Kismawadi, E. R., Irfan, M., Haron, R., & Masitah, M. (2024). Bridging finance and sustainability: Islamic financial institutions' contributions to the transition to sustainable energy. In *Issues of Sustainability in AI and New-Age Thematic Investing* (pp. 138–161). IGI Global. <https://doi.org/10.4018/979-8-3693-3282-5.ch009>

- Kulevicz, R. A., Porfirio, G. E. D. O., De Oliveira, O. S., Zavala Zavala, A. A., Silva, B. A. D., & Constantino, M. (2020). Influence of sustainability reports on social and environmental issues: Bibliometric analysis and the word cloud approach. *Environmental Reviews*, 28(4), 380–386. <https://doi.org/10.1139/er-2019-0075>
- Kuzey, C., Uyar, A., Ellili, N. O. D., & Karaman, A. S. (2024). Corporate social responsibility performance and social reputation via corporate social responsibility awarding: Is there a threshold effect? *Corporate Governance: The International Journal of Business in Society*, 24(5), 993–1020. <https://doi.org/10.1108/CG-03-2023-0128>
- Mohd Zain, F. A., Muhamad, S. F., Abdullah, H., Sheikh Ahmad Tajuddin, S. A. F., & Wan Abdullah, W. A. (2024). Integrating environmental, social and governance (ESG) principles with maqasid al-Sharia: A blueprint for sustainable Takaful operations. *International Journal of Islamic and Middle Eastern Finance and Management*, 17(3), 461–484. <https://doi.org/10.1108/IMEFM-11-2023-0422>
- Morshed, A. (2026). Sustainable energy revolution: Green finance as the key to the Arab Gulf States' future. *International Journal of Energy Sector Management*, 20(2), 556–577. <https://doi.org/10.1108/IJESM-10-2024-0007>
- Muhammad, H. A., Asim, M., Imran, M., Khan, Z. A., Wilberforce, T., & Baik, Y.-J. (2022). Renewable energy systems. In *Handbook of Energy Transition* (pp. 63–94). CRC Press. <https://doi.org/10.1201/9781003315353-6>
- Mukherjee, D., Lim, W. M., Kumar, S., & Donthu, N. (2022). Guidelines for advancing theory and practice through bibliometric research. *Journal of Business Research*, 148, 101–115. <https://doi.org/10.1016/j.jbusres.2022.04.042>
- Muñoz-Leiva, F., Viedma-del-Jesús, M. I., Sánchez-Fernández, J., & López-Herrera, A. G. (2012). An application of co-word analysis and bibliometric maps for detecting the most highlighting themes in the consumer behaviour research from a longitudinal perspective. *Quality & Quantity*, 46(4), 1077–1095. <https://doi.org/10.1007/s11135-011-9565-3>
- Oseni, A. A., Bamiro, N. B., Ashafa, S. A., & Olohunlana, S. D. (2025). Sustainable halal financing framework for blue and green economy. In *Green and Blue Economy Frameworks for Halal Industry Sustainability* (pp. 253–273). Springer Nature. https://doi.org/10.1007/978-981-96-1729-6_14
- Prayogo, S. M. S., Raditya, A., & Sarea, A. (2024). A bibliometric analysis of green sukuk literature. *Review of Islamic Social Finance and Entrepreneurship*, 3(2), 184–198. <https://doi.org/10.20885/RISFE.vol3.iss2.art6>
- Proka, A., Beers, P. J., & Loorbach, D. (2018). Transformative business models for sustainability transitions. In *CSR, Sustainability, Ethics & Governance* (pp. 19–39). Springer Nature. https://doi.org/10.1007/978-3-319-73503-0_2
- Qureshi, M. A., Khaskheli, A., Qureshi, J. A., Raza, S. A., & Khan, K. A. (2023). Factors influencing green purchase behavior among millennials: The moderating role of religious values. *Journal of Islamic Marketing*, 14(6), 1417–1437. <https://doi.org/10.1108/JIMA-06-2020-0174>
- Rahim, R., Rathore, H. S., Rabbani, M. R., & Alam, M. N. (2024). Maqasid al-Sharia and green finance: A theoretical framework on Islamic finance with sustainable development goals for a greener future. In *International Conference on Sustainable Islamic Business and Finance (SIBF)* (pp. 255–261). IEEE. <https://doi.org/10.1109/SIBF63788.2024.10883847>
- Ren, X., Li, Y., Yan, C., Wen, F., & Lu, Z. (2022). The interrelationship between the carbon market and the green bonds market: Evidence from wavelet quantile-on-quantile method. *Technological Forecasting and Social Change*, 179, 121611. <https://doi.org/10.1016/j.techfore.2022.121611>

- Salman, M., Long, X., Dauda, L., & Mensah, C. N. (2019). The impact of institutional quality on economic growth and carbon emissions: Evidence from Indonesia, South Korea and Thailand. *Journal of Cleaner Production*, 241, 118331. <https://doi.org/10.1016/j.jclepro.2019.118331>
- Sedighi, M. (2015). Using of co-word analysis method in mapping of the structure of scientific fields (case study: The field of Informetrics). *Journal of Information Processing and Management*, 31(1), 40–59. <https://doi.org/10.35050/JIPM010.2015.040>
- Shaikh, A. K., Ahmad, N., Khan, I., & Ali, S. (2021). E-participation within e-government: A bibliometric-based systematic literature review. *International Journal of Electronic Government Research*, 17(4), 15–39. <https://doi.org/10.4018/IJEGR.2021100102>
- Sharma, G. S., Chintalapati, N., & Verma, P. (2024). A bibliometric analysis of social media use for personal learning outcomes using Biblioshiny & VOSviewer. *International Journal of System Assurance Engineering and Management*. Advance online publication. <https://doi.org/10.1007/s13198-024-02599-y>
- Shinde, S. S., Khandare, N. B., Kale, G. M., & Nalbalwar, S. L. (2025). Transforming industries with green business models: Strategic management approaches to sustainable energy and technology. In *2025 International Conference in Advances in Power, Signal, and Information Technology (APSIT)* (pp. 1–6). IEEE. <https://doi.org/10.1109/APSIT63993.2025.11086153>
- Singh, K., & Vashishtha, S. (2023). Relationship trend of energy consumption and economic growth studies: A global examination based on bibliometric and visualization analysis. *International Journal of Energy Sector Management*, 17(2), 310–332. <https://doi.org/10.1108/IJESM-06-2021-0022>
- Sivanandan, P., & Ahmad, R. (2025). Ethical investment in Islamic finance: The role of ESG toward sustainable growth. In *Islamic Finance and Corporate Governance: Synergies for Sustainable Growth* (pp. 43–56). Emerald Group Publishing. <https://doi.org/10.1108/978-1-83662-346-520251006>
- Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333–339. <https://doi.org/10.1016/j.jbusres.2019.07.039>
- Socol, A., & Iuga, I. C. (2025). Does democracy matter in banking performance? Exploring the linkage between democracy, economic freedom and banking performance in the European Union member states. *International Journal of Finance & Economics*, 30(1), 86–116. <https://doi.org/10.1002/ijfe.2911>
- Suki, N. M., Sharif, A., Afshan, S., & Suki, N. M. (2020). Revisiting the environmental Kuznets curve in Malaysia: The role of globalization in sustainable environment. *Journal of Cleaner Production*, 264, 121669. <https://doi.org/10.1016/j.jclepro.2020.121669>
- 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>
- Vanegas Cantarero, M. M. (2020). Of renewable energy, energy democracy, and sustainable development: A roadmap to accelerate energy transition in developing countries. *Energy Research & Social Science*, 70, 101716. <https://doi.org/10.1016/j.erss.2020.101716>
- Vetrova, M., Solovey, T., Arenkov, I., & Ivanova, D. (2024). Value-based vs pragmatic approach to the sustainable development of energy sector companies in the context of Industry 5.0. In A. Appolloni, V. Kumar, A. Appolloni, E. Kuzmin, & V. Akberdina (Eds.), *Lecture Notes in Information Systems and Organisation* (Vol. 70, pp. 104–120). Springer. https://doi.org/10.1007/978-3-031-66801-2_8

- Zafar, M. B., & Sulaiman, A. A. (2020). Measuring corporate social responsibility in Islamic banking: What matters? *International Journal of Islamic and Middle Eastern Finance and Management*, 13(3), 357–388. <https://doi.org/10.1108/IMEFM-05-2019-0227>
- Zainal, F. A., Muhamad, S. F., Abdullah, H., Sheikh Ahmad Tajuddin, S. A. F., & Wan Abdullah, W. A. (2024). Integrating environmental, social and governance (ESG) principles with maqasid Al-Sharia: A blueprint for sustainable Takaful operations. *International Journal of Islamic and Middle Eastern Finance and Management*, 17(3), 461–484. <https://doi.org/10.1108/IMEFM-11-2023-0422>
- Zhou, G., Liu, L., & Luo, S. (2022). Sustainable development, ESG performance and company market value: Mediating effect of financial performance. *Business Strategy and the Environment*, 31(7), 3371–3387. <https://doi.org/10.1002/bse.3089>
- Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), 429–472. <https://doi.org/10.1177/1094428114562629>