

Green Finance in the Islamic Context: Assessing Its Implementation in Indonesian Banking

Andi Ayu Frihatni*

Institut Agama Islam Negeri Parepare, South Sulawesi, Indonesia

Neks Triani

Universitas Sembilanbelas November Kolaka, Southeast Sulawesi, Indonesia

Arnadi Chairunnas

Chung Yuan Christian University, Taoyuan City, Taiwan

ABSTRACT

Green finance has emerged as an important mechanism for promoting sustainable development by directing financial resources toward environmentally responsible activities. In the Islamic context, green finance is closely aligned with the principles of Maqasid Sharia, which emphasize social welfare and environmental stewardship. Despite growing interest in sustainable finance, empirical evidence regarding the implementation of green finance in Islamic banking remains limited, particularly in developing countries. This study aims to assess the implementation of green finance in Indonesian banking by examining the extent to which it has been adopted in Islamic banking, comparing its adoption with conventional banking, and evaluating its impact on sustainable economic growth. Using a quantitative approach, panel data were collected from annual reports, sustainability reports, and Financial Services Authority publications covering the period 2013-2022. The sample consists of conventional and Islamic commercial banks selected through purposive sampling. Descriptive statistics and panel data regression were employed for data analysis. The findings indicate that Islamic banks exhibit a higher level of green finance implementation than conventional banks, reflecting the strong compatibility between Islamic finance principles and sustainability objectives. However, green finance does not significantly affect sustainable economic growth in either banking system. These results suggest that green finance in Indonesia remains at an early stage of development, with its scale and maturity still insufficient to generate meaningful macroeconomic impacts. This study contributes to the growing literature on sustainable and Islamic finance by providing comparative evidence from Indonesia's dual banking system and highlighting the need for stronger regulations, expanded Sharia-compliant green financial instruments, and greater institutional capacity to support sustainable development.

Keywords: Green Finance, Islamic Banking, Sustainability, Sustainable Economic Growth

Received: 14 May 2025

Revised: 31 August 2026

Accepted: 31 August 2026

Published: Vol. 5, No. 2, 2026, pp. 143-152

INTRODUCTION

Economic growth remains a primary objective of developing countries, including Indonesia. However, rapid economic expansion is frequently accompanied by environmental degradation, climate change, and the excessive exploitation of natural resources. Consequently, policymakers and financial institutions have increasingly promoted sustainable development strategies aimed at balancing economic growth with environmental preservation (Sharma & Choubey, 2022; Tawiah et al., 2021). In response to these challenges, green finance has emerged as an important financial mechanism for supporting sustainable economic development. Green finance refers to financial activities, investments, and funding allocations that encourage environmentally friendly projects while promoting economic prosperity and social welfare (Falcone, 2020; Fu et al., 2023; Yang et al., 2021). Unlike conventional financing approaches that primarily emphasize profitability, green finance incorporates environmental considerations into investment and financing decisions to achieve long-term sustainability (Tawiah et al., 2021; Zhou et al., 2022).

Green finance is increasingly recognized as a strategic instrument for addressing the limitations of traditional financial systems, which often overlook environmental consequences and long-term resource efficiency (Sachs et al., 2017). By directing financial resources toward environmentally responsible sectors, green finance contributes to ecological protection, technological innovation, energy efficiency, and structural economic transformation, thereby supporting high-quality and sustainable economic growth (Agrawal, 2024; Kumar et al., 2024; Zhou et al., 2022). Nevertheless, its development faces several challenges, including policy uncertainty, regulatory constraints, and inadequate sustainable energy infrastructure, which may reduce the effectiveness of environmentally oriented investments (Sachs et al., 2017). Despite these obstacles, empirical evidence suggests that green finance can stimulate corporate innovation, accelerate the transition toward greener production systems, and support climate change mitigation efforts (Salari et al., 2021; Kumar et al., 2024). Therefore, green finance has become an increasingly important component of sustainable development strategies in both developed and emerging economies (Haddad & Hornuf, 2019).

Sustainable economic growth represents a development paradigm in which economic expansion is achieved without compromising environmental quality and the welfare of future generations (Aneja et al., 2023; Kang & Geng, 2025). Within this framework, green finance serves as a critical catalyst by internalizing environmental externalities, improving the allocation of financial resources, and mobilizing long-term capital toward low-carbon technologies, renewable energy projects, and climate-resilient infrastructure (Dikau & Volz, 2021; Xu et al., 2023). By redirecting capital flows away from carbon-intensive activities toward environmentally responsible investments, green finance supports technological innovation, industrial transformation, and sustainable economic development (Aneja et al., 2023; Xiong & Dai, 2023; Wang & Wang, 2021). Accordingly, green finance is increasingly recognized as an important mechanism for achieving high-quality economic growth while simultaneously addressing environmental challenges.

The effectiveness of green finance largely depends on the role of the banking sector as the primary financial intermediary responsible for credit creation and capital allocation (Sharma & Choubey, 2022). In emerging economies characterized by bank-dominated financial systems, such as Indonesia, banks play a strategic role in channeling funds toward sustainable economic activities. Recognizing this role, the Financial Services Authority issued Regulation No. 51/POJK.03/2017 on Sustainable Finance Implementation, which transformed sustainable finance from a voluntary initiative into a mandatory regulatory framework (Setyowati, 2023). Under this regulation, financial institutions are required to formulate Sustainable Finance Action Plans, develop sustainable financing portfolios, and publish sustainability reports as part of their accountability mechanisms (OJK, 2017). Consequently, both conventional and Islamic commercial banks are increasingly encouraged to integrate Environmental, Social, and Governance (ESG) principles into their financing decisions and business strategies in support of Indonesia's sustainable development agenda (Hafsyah Idris et al., 2024; Sharma & Choubey, 2022).

In Islamic economics, environmental preservation is not merely a regulatory concern but a religious obligation embedded in the concept of *khalifah* (stewardship) and *maqasid sharia* (Al-Tamimi et al., 2026; Shompa et al., 2025). Consequently, financial activities should support environmental sustainability and prevent harm (*mafsadah*) to society and future generations. These principles provide a strong normative foundation for the adoption of green finance within Islamic banking. From the perspective of Islamic finance, green finance is particularly relevant because its principles are closely associated with ethical finance, social justice, and environmental stewardship. Islamic banking operates under the principles of *maqasid sharia* (Abbas & Sari, 2022), which emphasize the protection of human welfare and natural resources for future generations (Lebdaoui & Wild, 2016; Kassim, 2016). Therefore, Islamic banking is expected to have a natural alignment with sustainable finance objectives. Nevertheless, despite the growing interest in green finance, empirical

evidence regarding the extent to which green finance has been implemented in Islamic banking remains limited, particularly in developing countries such as Indonesia.

Existing studies have highlighted the growing importance of green finance in supporting sustainable development and strengthening the role of the banking sector in environmental transformation. [Akomea-Frimpong et al. \(2022\)](#) demonstrate that green finance development is influenced by environmental policies, climate change concerns, banking regulations, risk management practices, and social inclusion factors. Similarly, [Liu & Wu \(2023\)](#) indicates a substantial increase in green finance adoption in recent years, reflecting the growing integration of sustainability considerations into financial systems. Furthermore, green finance has been recognized as a catalyst for circular economy practices and environmentally sustainable business activities ([Agrawal, 2024](#)). The increasing volume of scholarly publications on green finance also reflects the growing academic and practical interest in sustainable finance worldwide ([Benameur et al., 2025](#)).

Despite this growing body of literature, existing studies predominantly focus on conceptual discussions, bibliometric analyses, policy frameworks, and regulatory developments related to green finance ([Mohanty et al., 2023](#)). In the Indonesian context, studies on green banking have mainly concentrated on conventional banking institutions or examined green finance from a normative and regulatory perspective ([Chandran et al., 2025](#); [Goni et al., 2026](#); [Handayani et al., 2023](#); [Julia & Kassim, 2020](#)). Consequently, existing studies primarily examine green finance from conceptual, regulatory, or bibliometric perspectives, while empirical comparative evidence between Islamic and conventional banking remains scarce. Moreover, little attention has been paid to whether differences in green finance implementation translate into different contributions to sustainable economic growth in a dual banking system such as Indonesia. This gap is particularly important in Indonesia, where Islamic and conventional banks operate within a dual banking system under the same sustainable finance regulatory framework while adhering to different institutional principles and financing mechanisms. To address this gap, this study examines the extent to which green finance has been adopted in Indonesian Islamic banking and compares its implementation with that of conventional banking institutions. In addition, this study evaluates whether green finance contributes differently to sustainable economic growth across the two banking systems. By providing comparative empirical evidence from Indonesia's dual banking system, this study contributes to the literature on green finance and Islamic banking while offering insights for policymakers and financial institutions seeking to strengthen sustainable finance implementation and achieve long-term sustainable development objectives.

This study contributes to the literature in three ways. First, it provides empirical evidence regarding the implementation of green finance in Islamic banking. Second, it offers a comparative analysis between Islamic and conventional banks operating under the same regulatory framework. Third, it examines whether green finance contributes to sustainable economic growth within Indonesia's dual banking system.

METHOD

This study employs a quantitative approach using secondary panel data obtained from annual reports, sustainability reports, and publications issued by the Financial Services Authority during the period 2013-2022. The population consists of all commercial banks operating in Indonesia, including conventional and Islamic banks. A purposive sampling technique was employed to select banks that consistently published financial and sustainability reports and disclosed information related to green finance activities during the observation period. The final sample comprised both conventional and Islamic banks, generating 302 observations for conventional banks and 149 observations for Islamic banks. The unit of analysis in this study is bank-year observations.

The sample was selected based on the following criteria: (1) banks operating continuously during the observation period; (2) banks that published complete annual reports and sustainability reports; and (3) banks that disclosed information related to green finance activities throughout the study period. The Green Finance Index was constructed using four dimensions: green credit, green securities, green insurance, and green investment, following the measurement framework proposed by [Udeagha & Ngepah \(2023\)](#).

Table 1. Research Variables

Variable	Measurement	Source
Green Finance	Composite index of Green Credit, Green Securities, Green Insurance, and Green Investment	Udeagha & Ngepah (2023)
Sustainable Economic Growth Variable	Natural logarithm of GDP Measurement	Udeagha & Ngepah (2023)

Source. Processed by author(s)

Data analysis was conducted in several stages. First, descriptive statistics were employed to provide an overview of the characteristics and distribution of the research variables, including the Green Finance Index and Sustainable Economic Growth. The descriptive analysis consisted of mean, median, maximum, minimum, standard deviation, skewness, and kurtosis values.

Second, panel data regression analysis was applied to examine the effect of green finance on sustainable economic growth in both Islamic and conventional banking sectors. Given that the dataset combines cross-sectional observations (banks) and time-series observations (2013–2022), panel regression was considered the most appropriate analytical approach.

RESULTS AND DISCUSSION

Descriptive Statistics

This study examines the implementation of green finance in Islamic and conventional banking in Indonesia and its implications for sustainable economic growth during the period 2013–2022. Prior to estimating the panel regression model, descriptive statistics were employed to provide an overview of the characteristics and distribution of the research variables. The analysis includes the Green Finance Index (GF) as the independent variable and Sustainable Economic Growth (SEG), measured by the natural logarithm of Gross Domestic Product (GDP), as the dependent variable. Descriptive statistics consisting of mean, median, maximum, minimum, standard deviation, skewness, and kurtosis were calculated separately for conventional and Islamic banking observations

Table 2. Descriptive Statistics of Islamic Banks

Variable	Mean	Median	Maximum	Minimum
LN_Y (Sustainable Economic Growth)	16.98	17.04	17.28	16.28
LN_X (Green Finance Index)	12.72	15.61	24.74	0.00

Source. SPSS Output

Table 2 presents the descriptive statistics of conventional banks. The results indicate that the average value of sustainable economic growth (LN_Y) is 16.98, with a median value of 17.08. The maximum and minimum values are 17.28 and 16.28, respectively, suggesting relatively low variation in economic growth during the observation period. Furthermore, the Green Finance Index (LN_X) records an average value of 10.76, indicating that the adoption of green finance practices among conventional banks remains at a moderate level. The relatively high standard deviation of the Green Finance Index suggests considerable variation in green finance implementation across conventional banking institutions.

Table 3. Descriptive Statistics of Conventional Banks

Variables	Mean	Median	Maximum	Minimum
LN_Y (Sustainable Economic Growth)	16.98	17.08	17.28	16.28
LN_X (Green Finance Index)	10.76	11.13	26.34	0.00

Source. SPSS Output

Table 3 reports the descriptive statistics of Islamic banks. The results show that the average value of sustainable economic growth (LN_Y) is 16.98 with a median value of 17.04. Meanwhile, the Green Finance Index (LN_X) records an average value of 12.72, which is higher than that observed in conventional banks. This finding suggests that Islamic banking demonstrates a relatively stronger adoption of green finance practices during the study period. However, the substantial standard deviation indicates that the level of implementation differs considerably among Islamic banking institutions.

Table 4. Comparative Descriptive Statistics

Variable	Conventional Banks	Islamic Banks
Mean LN_Y	16.98	16.98
Median LN_Y	17.08	17.04
Mean Green Finance Index (LN_X)	10.76	12.72
Maximum Green Finance Index	26.34	24.74
Minimum Green Finance Index	0.00	0.00

Source. SPSS Output

Prior to estimating the regression model, model selection tests were conducted to determine the most appropriate panel data estimation technique. The Chow test produced a probability value of 1.0000, indicating that the Common Effect Model (CEM) is preferred to the Fixed Effect Model

(FEM). Furthermore, the Hausman test yielded a probability value of 0.0000, suggesting that the Fixed Effect Model (FEM) is more appropriate than the Random Effect Model (REM). Based on these results, the Fixed Effect Model (FEM) was selected as the most suitable model for estimating the relationship between green finance and sustainable economic growth.

Table 5. Regression Results

Variables	Conventional Banks	Islamic Banks
Constant	17.183	16.980
Green Finance	0.0005	-5.1400
Probability (p-value)	0.800	0.900
Result	Not Significant	Not Significant

Source. SPSS Output

The regression results indicate that green finance does not significantly affect sustainable economic growth in either conventional or Islamic banks. For conventional banks, green finance has a positive coefficient of 0.0005; however, the relationship is statistically insignificant ($p = 0.800 > 0.05$). Similarly, in Islamic banks, green finance exhibits a negative coefficient of -5.1400 and is also statistically insignificant ($p = 0.900 > 0.05$). These findings suggest that the implementation of green finance has not yet generated a measurable contribution to sustainable economic growth in Indonesia's banking sector during the observation period.

Discussion

The findings indicate that Islamic banks exhibit a higher average Green Finance Index than conventional banks, suggesting a relatively stronger adoption of green finance practices within the Islamic banking sector. This result is consistent with the theoretical foundations of Islamic finance, which emphasize ethical investment, social responsibility, and environmental stewardship through the framework of Maqasid Sharia. As a result, sustainability-oriented financing is conceptually more compatible with Islamic banking principles than with conventional profit-oriented financial models. The growing emergence of Sharia-compliant sustainable financial instruments, such as green sukuk and value-based intermediation initiatives, further reinforces the alignment between Islamic finance and sustainable development objectives (Lebdaoui & Wild, 2016; Kassim, 2016; Ben & Ghroubi, 2025).

The stronger adoption of green finance among Islamic banks may also be explained by the normative foundations of Islamic economics. The concepts of *maqasid sharia*, *khalifah*, and *hifz al-bi'ah* (environmental preservation) encourage financial institutions to support activities that generate social welfare while protecting natural resources. Therefore, the adoption of green finance in Islamic banking is not merely a response to regulatory requirements but is also consistent with the ethical objectives of Sharia.

Nevertheless, the higher level of green finance adoption observed in Islamic banks does not necessarily translate into a substantial contribution to sustainable economic growth. The empirical results indicate that green finance has no statistically significant effect on sustainable economic growth in either conventional or Islamic banking, suggesting that its current scale and intensity remain insufficient to generate measurable macroeconomic outcomes. This aligns with broader evidence showing that although financial institutions increasingly incorporate Environmental, Social, and Governance (ESG) criteria into their decision-making processes, the overall share of green financing remains marginal compared with traditional credit allocation structures.

As a result, the ability of green finance to drive economic restructuring, particularly toward low-carbon and resource-efficient sectors, has not yet reached a threshold capable of producing significant aggregate effects. Dikau & Volz (2021) emphasize that without substantial expansion in green credit flows and stronger regulatory alignment, green finance will struggle to influence macro-level sustainability transitions. Similarly, Zhang et al. (2019) demonstrate that the macroeconomic impact of green finance tends to materialize only when green investment reaches a critical mass supported by robust institutional frameworks and market readiness.

In the Indonesian context, this gap is further compounded by structural constraints such as limited availability of bankable green projects, uneven institutional capacity, and the early developmental stage of sustainable finance ecosystems. Although Islamic banks may exhibit stronger normative alignment with sustainability principles—rooted in Maqasid Sharia and environmental stewardship—their practical contribution remains constrained by the same market and regulatory limitations faced by conventional banks. Consequently, the current level of green finance implementation is not yet sufficient to generate statistically detectable effects on sustainable economic growth, reinforcing the need for deeper market development, stronger regulatory incentives, and broader integration of sustainability principles across the financial sector.

The insignificant relationship may also reflect the current state of green finance development in Indonesia. Although sustainable finance initiatives have expanded following the implementation

of POJK No. 51/POJK.03/2017, the proportion of green financing remains relatively small compared to total banking portfolios. As a result, the scale of environmentally oriented investments may still be insufficient to generate observable effects on aggregate economic growth. This finding suggests that regulatory progress has not yet been accompanied by a substantial expansion of green financial activities within the banking sector.

Another explanation relates to the long-term nature of green investments. Financing directed toward renewable energy infrastructure, energy efficiency projects, and climate-resilient development typically requires substantial initial capital and extended implementation periods before economic benefits become observable. As a result, a time-lag often exists between green financing activities and their contribution to economic performance (Hang et al., 2019; Zhou et al., 2023). This argument supports the threshold-effect perspective, which suggests that the economic benefits of green finance become visible only after sustainable investment reaches a sufficient scale and maturity (Taghizadeh-Hesary & Yoshino, 2019; Wei & Zhong, 2025).

The insignificant effect observed in Islamic banking also reflects structural constraints within the Islamic finance ecosystem. Although Islamic banks demonstrate a stronger commitment to sustainability principles, the availability of dedicated Sharia-compliant green financial instruments remains relatively limited. In addition, Islamic financial institutions face dual compliance requirements, namely adherence to both Sharia governance standards and sustainability or ESG frameworks. These requirements may increase transaction costs, prolong financing approval processes, and slow the transmission of green investments to the real sector. Consequently, the relatively higher adoption of green finance in Islamic banking has not yet been accompanied by a statistically significant contribution to sustainable economic growth (Alam et al., 2016; Hassan et al., 2022; Keshminder et al., 2019).

Furthermore, the negative coefficient observed in Islamic banking, although statistically insignificant, deserves further attention. This result does not necessarily indicate that green finance hinders sustainable economic growth. Rather, it may reflect the fact that green investments within Islamic banking are still concentrated in projects characterized by long gestation periods, high initial costs, and delayed economic returns. Consequently, the short-term economic benefits of green financing may not yet be fully reflected in macroeconomic indicators, despite their potential contribution to long-term sustainability objectives.

From a theoretical perspective, the findings indicate that the ethical alignment between Islamic finance and sustainability principles does not automatically translate into measurable macroeconomic outcomes. Although Islamic banks often demonstrate stronger commitment to green finance, driven by Sharia values such as *hifz al-bī'ah* (environmental preservation) and stewardship—their macroeconomic impact depends heavily on the scale, effectiveness, and maturity of green investments, rather than on institutional commitment alone. This observation is consistent with Daoulhadj & Hussin (2023), who argue that Islamic green finance remains constrained by structural bottlenecks that limit its ability to scale sustainable investments effectively. Similarly, Ejaz et al. (2025) highlight that while Islamic banks may adopt ESG and green finance frameworks more actively, the translation of these commitments into economic performance is mediated by internal governance quality, institutional readiness, and the availability of viable green projects. These findings reinforce the notion that normative alignment alone is insufficient without robust operational capacity and market depth.

Overall, the evidence suggests that green finance in Indonesia remains in a developmental stage. Regulatory initiatives, particularly POJK No. 51/POJK.03/2017, which mandates the integration of sustainability principles into financial institutions—have accelerated institutional adoption. However, challenges persist, including limited market depth, uneven institutional preparedness, and a shortage of bankable green projects. Park & Kim (2020) emphasize that regulatory frameworks play a pivotal role in strengthening climate-related risk management and guiding financial institutions toward more effective green banking practices.

To strengthen Indonesia's sustainable finance ecosystem, several strategic measures are required:

- a) enhancing regulatory support through clearer taxonomies, incentives, and supervisory mechanisms;
- b) expanding Sharia-compliant green financial products, such as green sukuk and equity-based green financing;
- c) improving environmental-financial literacy among industry practitioners and the public;
- d) and deepening collaboration among regulators, financial institutions, and industry stakeholders.

These measures are essential to increase both the scale and effectiveness of green finance, enabling it to contribute more substantially to Indonesia's long-term sustainable economic growth. This aligns with broader literature suggesting that Islamic finance can play a transformative role in

sustainability transitions when supported by mature regulatory frameworks and strong governance structures (Zulfiqar et al., 2024).

CONCLUSION

Green finance has made greater inroads into Islamic banking in Indonesia than into conventional banking. This finding indicates a stronger alignment between the principles of Islamic finance and sustainability goals, particularly through the values of Maqasid Sharia, social responsibility, and a focus on sustainable development. Nevertheless, the implementation of green finance in both banking systems has not yet been able to generate a significant impact on sustainable economic growth. This situation indicates that the development of green finance in Indonesia is still in a transitional phase and has not yet reached a sufficient scale to produce measurable macroeconomic impacts. In the Islamic context, the findings reaffirm that, within the Islamic context, the commitment to environmental sustainability embodied in Maqasid Sharia provides a strong foundation for green finance adoption, although its economic benefits may only become evident when supported by sufficient scale and effective implementation.

The findings have important implications for the development of Islamic sustainable finance. Although Islamic banks demonstrate a stronger adoption of green finance practices, the results indicate that alignment between Islamic financial principles and sustainability objectives does not automatically generate significant economic outcomes. The effectiveness of green finance appears to depend on the scale, maturity, and quality of sustainable investment activities rather than solely on institutional commitment to sustainability. Therefore, the operationalization of Maqashid Sharia in the financial sector requires not only ethical orientation but also effective financial instruments and broader market participation.

From a policy perspective, the findings suggest the need to strengthen Indonesia's sustainable finance ecosystem through enhanced regulatory support, improved institutional capacity, and the expansion of Sharia-compliant green financial instruments. Greater collaboration among regulators, financial institutions, and industry stakeholders is necessary to increase the scale and effectiveness of green finance implementation. Such efforts may accelerate the integration of sustainability principles into the financial sector and support long-term sustainable development objectives.

This study is limited to the banking sector in Indonesia and uses the Green Finance Index as the primary variable for measuring the implementation of green finance. Future research is encouraged to incorporate more comprehensive sustainability indicators, consider institutional and governance factors, and conduct cross-country comparative studies to gain a broader understanding of the relationship between green finance and sustainable economic growth.

References

- Abbas, A., & Sari, N. W. (2022). Lanskap Kinerja Keuangan Unit Usaha Syariah di Indonesia. *BANCO: Jurnal Manajemen dan Perbankan Syariah*, 4(2), 75-82. <https://ejurnal.iainpare.ac.id/index.php/banco/article/view/3369>
- Agrawal, R., Agrawal, S., Samadhiya, A., Kumar, A., Luthra, S., & Jain, V. (2024). Adoption of green finance and green innovation for achieving circularity: An exploratory review and future directions. *Geoscience Frontiers*, 15(4). <https://doi.org/10.1016/J.GSF.2023.101669>
- Akomea-Frimpong, I., Kukah, A. S., Jin, X., Osei-Kyei, R., & Pariafsai, F. (2022). Green finance for green buildings: A systematic review and conceptual foundation. *Journal of cleaner production*, 356, 131869. <https://doi.org/10.1016/j.jclepro.2022.131869>
- Al-Tamimi, S. M. A., & Abdellatif, M. S. (2026). Maqāṣid al-Sharī'ah (the higher objectives of Islamic law) as an alternative perspective for contemporary environmental sustainability. *Research Journal in Advanced Humanities*, 7(1). <https://doi.org/10.58256/fxbcpz88>
- Alam, N., Duygun, M., & Ariss, R. T. (2016). Green sukuk: An innovation in Islamic capital markets. In B. S. Sergi (Ed.), *Energy and finance: Financial market integration and risk management* (pp. 167-185). Springer International Publishing. https://doi.org/10.1007/978-3-319-32268-1_10
- Aneja, R., Kappil, S. R., Das, N., & Banday, U. J. (2023). Does the green finance initiatives transform the world into a green economy? A study of green bond issuing countries. *Environmental Science and Pollution Research*, 30(15), 42214-42222. <https://doi.org/10.1007/s11356-023-25317-w>

- Benameur, K., Hassanein, A., Mostafa, M. M., Elmaghrabi, M., & Tharwat, H. (2025). A decade of sustainable finance scholarly research: performance analysis, science mapping and future pathways. *Journal of Financial Reporting and Accounting*. Vol. ahead-of-print No. ahead-of-print. <https://doi.org/10.1108/JFRA-10-2024-0722>
- Ben Jedidia, K., & Ghroubi, M. (2025). Islamic finance and SDGs: bibliometric review and future research agenda. *Journal of Chinese Economic and Business Studies*, 23(3), 329–362. <https://doi.org/10.1080/14765284.2024.2445959>
- Chandran, R., Chandran, M.C.S., Achuthan, K., & Sahib, Padma Rao. (2025). Theoretical perspectives on green banking adoption in India: regulatory uncertainty, institutional barriers, and policy solutions. *Discover Sustainability*, 6, 581. <https://doi.org/10.1007/s43621-025-01406-3>
- Daoulhadj, B., & Hussin, N. (2023). Islamic green finance, ecosystem and prospects in scaling up sustainable investments. *Islamic Finance*, 21. https://business.utm.my/wp-content/uploads/2024/10/update-VOL-III_AHIBS-ACT-Conference-Proceedings.pdf#page=30
- Dikau, S., & Volz, U. (2021). Central bank mandates, sustainability objectives and the promotion of green finance. *Ecological Economics*, 184, Article 107022. <https://doi.org/10.1016/j.ecolecon.2021.107022>
- Ejaz, M., Ashraf, M., Shahid, M. S., & Kamran, M. (2025). Impact of green finance and ESG on the sustainable performance of Islamic banks. *Sustainable Business and Society in Emerging Economies*, 7 (2), 221–240. <https://doi.org/10.26710/sbsee.v7i2.3353>
- Falcone, P. M. (2020). Environmental regulation and green investments: The role of green finance. *International Journal of Green Economics*, 14(2), 159–173. <https://doi.org/10.1504/IJGE.2020.109735>
- Fu, C., Lu, L. & Pirabi, M. (2023). Advancing green finance: a review of sustainable development. *DESD* 1, 20. <https://doi.org/10.1007/s44265-023-00020-3>
- Goni, M.O., Uddin, S.M.S., Alam, S., Meinhold, R., & Maria, S. (2026). Regulator-led sustainable finance governance for climate-resilient development in Bangladesh through green finance participation, banking disclosure, and implementation gaps. *Discover Sustainability*. <https://doi.org/10.1007/s43621-026-04162-0>
- Haddad, C., & Hornuf, L. (2019). The emergence of the global fintech market: economic and technological determinants. *Small Business Economics*, 53(1), 81–105. <https://doi.org/10.1007/s11187-018-9991-x>
- Handayani, A., & Rokhim, R. (2023). A Comparative Study of Financial Performance between Sustainable and Conventional Investment. *Journal of Entrepreneurship & Business*, 4(2), 114 - 124. <https://doi.org/10.24123/jeb.v4i2.5691>
- Hang, M., Geyer-Klingenberg J, Rathgeber A.W. (2019). It is merely a matter of time: A meta-analysis of the causality between environmental performance and financial performance. *Business Strategy and the Environment*, 28, 257–273. <https://doi.org/10.1002/bse.2215>
- Hassan, M. K., Aliyu, S., Huda, M., & Rashid, M. (2019). A survey on Islamic Finance and accounting standards. *Borsa Istanbul Review*, 19. <https://doi.org/10.1016/J.BIR.2019.07.006>
- Julia, T & Kassim, S (2020). Exploring green banking performance of Islamic banks vs conventional banks in Bangladesh based on *Maqasid Shariah* framework. *Journal of Islamic Marketing*, Vol. 11 No. 3 pp. 729–744, doi: <https://doi.org/10.1108/JIMA-10-2017-0105>
- Kang, S., & Geng, W. (2025). Green finance innovation and high-quality economic development: Evidence from a quasi-natural experiment. *Finance Research Letters*, 78, 107209. <https://doi.org/10.1016/j.frl.2025.107209>
- Kassim, S. (2016). Islamic finance and economic growth: The Malaysian experience. *Global Finance Journal*, 30, 66–76. <https://doi.org/10.1016/j.gfj.2015.11.007>
- Keshminder, J. S., Singh, G. K. B., Wahid, Z. A., & Abdullah, M. S. (2019). Green sukuk: Malaysia taking the lead. *Malaysian Journal of Consumer and Family Economics*, 22(2), 1-22. <https://majcafe.com/wp-content/uploads/2022/11/2019-Vol-22-S2-Article-1.pdf>
- Kumar, B., Kumar, L., Kumar, A., Kumari R., Tagar, U., & Sassanelli, C. (2024). Green finance in circular economy: a literature review. *Environ Dev Sustain* 26, 16419–16459. <https://doi.org/10.1007/s10668-023-03361-3>

- Lebdaoui, H., & Wild, J. (2016). Islamic banking presence and economic growth in Southeast Asia. *International Journal of Islamic and Middle Eastern Finance and Management*, 9(4), 551–569. <https://doi.org/10.1108/IMEFM-03-2015-0037>
- Liu, C., & Wu, S. S. (2023). Green finance, sustainability disclosure and economic implications. *Fulbright Review of Economics and Policy*, 3(1), 1–24. <https://doi.org/10.1108/FREP-03-2022-0021>
- Mohanty, S., Nanda, S. S., Soubhari, T., Vishnu, N. S., Biswal, S., & Patnaik, S. (2023). Emerging Research Trends in Green Finance: A Bibliometric Overview. *Journal of Risk and Financial Management*, 16(2). <https://doi.org/10.3390/jrfm16020108>
- OJK. (2017). Peraturan Otoritas Jasa Keuangan Nomor 51/POJK.03/2017 tentang Penerapan Keuangan Berkelanjutan bagi Lembaga Jasa Keuangan, Emiten, dan Perusahaan Publik. Otoritas Jasa Keuangan Republik Indonesia. <https://www.greenfinanceplatform.org/policies-and-regulations/indonesias-regulation-application-sustainable-finance-no-51poj032017>
- Park, H., & Kim, J. D. (2020). Transition towards green banking: role of financial regulators and financial institutions. *Asian Journal of Sustainability and Social Responsibility*, 5(1), 1–25. <https://doi.org/10.1186/s41180-020-00034-3>
- Sachs, J. D., Woo, W. T., Yoshino, N., & Taghizadeh-Hesary, F. (2017). WHY IS GREEN FINANCE IMPORTANT? Asian Development Bank Institute. *Institute of Sciences*, 917. <https://www.adb.org/publications/why-green-finance-important>
- Setyowati, A. B. (2023). Governing sustainable finance: Insights from Indonesia. *Climate Policy*, 23(1), 108–121. <https://doi.org/10.1080/14693062.2020.1858741>
- Sharma, M., & Choubey, A. (2022). Green banking initiatives: a qualitative study on Indian banking sector. *Environment, Development and Sustainability*, 24(1), 293–319. <https://doi.org/10.1007/s10668-021-01426-9>
- Shompa Z.A., Akbar, M.A, Mohadis H.M. (2025). Harmonizing Maqasid al-Shari'ah with sustainable waste management practices: a conceptual framework for principles and implementation. *International Journal of Islamic and Middle Eastern Finance and Management*, (18) 1. 142–165. <https://doi.org/10.1108/IMEFM-02-2024-0061>
- Tawiah, V., Zakari, A., & Adedoyin, F. F. (2021). Determinants of green growth in developed and developing countries. *Environmental Science and Pollution Research*, 28(29), 39227–39242. <https://doi.org/10.1007/s11356-021-13429-0>
- Taghizadeh-Hesary, F., & Yoshino, N. (2019). The way to induce private participation in green finance and investment. *Finance Research Letters*, 31, 98–103. <https://doi.org/10.1016/j.frl.2019.04.016>
- Udeagha, M. C., & Ngpah, N. (2023). The drivers of environmental sustainability in BRICS economies: Do green finance and fintech matter? *World Development Sustainability*, 3(August), 100096. <https://doi.org/10.1016/j.wds.2023.100096>
- Wang, X., & Wang, Q. (2021). Research on the impact of green finance on the upgrading of China's regional industrial structure from the perspective of sustainable development. *Resources Policy*, 74, 102436. <https://doi.org/10.1016/j.resourpol.2021.102436>
- Wei, Y., & Zhong, F. (2025). Effect of green finance on sustainable growth: evidence from China. *Environ Dev Sustain*. <https://doi.org/10.1007/s10668-025-06696-1>
- Xiong, Y., & Dai, L. (2023). Does green finance investment impact on sustainable development: Role of technological innovation and renewable energy. *Renewable Energy*, 214, 342–349. <https://doi.org/10.1016/j.renene.2023.06.002>
- Xu, J., She, S., Gao, P., & Sun, Y. (2023). Role of green finance in resource efficiency and green economic growth. *Resources Policy*, 81. <https://doi.org/10.1016/j.resourpol.2023.103349>
- Yang, X., Zhang, J., Ren, S., & Ran, Q. (2021). Can the new energy demonstration city policy reduce environmental pollution? Evidence from a quasi-natural experiment in China. *Journal of Cleaner Production*, 287(xxxx), 125015. <https://doi.org/10.1016/j.jclepro.2020.125015>
- Zhang, D., Zhang, Z., & Managi, S. (2019). A bibliometric analysis on green finance: Current status, development, and future directions. *Finance Research Letters*, 29, 425–430. <https://doi.org/10.1016/j.frl.2019.02.003>

- Zhou, G., Zhu, J., & Luo, S. (2022). The impact of fintech innovation on green growth in China: Mediating effect of green finance. *Ecological Economics*, 193, 107308. <https://doi.org/10.1016/j.ecolecon.2021.107308>
- Zhou, Z., Zhou, Y., Wu, Y., & Ge, X. (2023). The impact of green finance policy on total factor productivity: based on quasi-natural experiment evidence from China. *Journal of cleaner production*, 425, 138873. <https://doi.org/10.1016/j.jclepro.2023.138873>
- Zulfiqar, B., Ijaz, M.S., Hanif, M. (2024). Nurturing Sustainable Futures: Islamic Green Finance and the Sustainable Development Agenda. In: Hunjra, A.I., Goodell, J.W. (eds) *The Palgrave Handbook of Green Finance for Sustainable Development*. *Palgrave Studies in Impact Finance*(.). Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-031-65756-6_7