I-iECONS 2025

| e-ISSN: 2805-474 | http://iiecons.usim.edu.my

DIGITAL ECONOMY, GREEN INNOVATION, AND THE ISLAMIC ECONOMIC FRAMEWORK: A SYSTEMATIC LITERATURE SYNTHESIS

Dede R Oktini[1], Rabiatul Adwiyah[2], Silmi Millatina Wahdini[3]

[123]*Faculty of Economics and Business, Bandung Islamic University*

*Corresponding Author: cleodarwinazzikradawood@gmail.com

Abstract: *In the twenty-first century, the nexus between faith-based economic principles, environmental sustainability, and digital economic revolution has become a crucial topic of scholarly discussion. The integration of the digital economy and green innovation within the context of Islamic economics is examined in this study's methodical literature synthesis. This article examines conceptual connections, real-world applications, and research gaps that impact the creation of a sustainable, technologically advanced, and morally sound economic system by referencing peer-reviewed literature published between 2010 and 2024. Using databases including Scopus, Web of Science, and ScienceDirect, the analysis is informed by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology. The review reveals that topics including blockchain for halal traceability, Islamic finance, digital zakat platforms, and Shariah-compliant, eco-friendly investment strategies are receiving more scholarly attention. It also emphasizes how the goals of environmental conservation, economic justice, and responsible innovation are inherently compatible with Islamic economic principles, which are based on maqasid al-shariah. Significant gaps still exist in technology inclusion, empirical validation, and regulatory integration despite this potential synergy. In both Muslim-majority and global contexts, this synthesis advances our understanding of how Islamic economics may function as a framework based on values to propel green digital transformation.*

Keywords: Digital Economy, Green Innovation, Islamic Economics, Sustainable Development

1. Introduction

The development of the global economy in the 21st century is marked by three major intersecting dynamics: the digital revolution, the environmental crisis, and the need for an economic system based on ethical values. On the one hand, digital transformation is driving major changes in the

way humans produce, transact, and interact economically through technologies such as blockchain, artificial intelligence, and fintech. On the other hand, the issues of climate change and environmental degradation have driven the birth of a green innovation approach that aims to balance economic growth with ecological sustainability.

In this context, there is a need to formulate an economic framework that not only prioritizes efficiency and growth, but also ensures social justice, environmental sustainability, and moral integrity. One relevant approach is the Islamic economic framework, which normatively emphasizes the principles of justice, sustainability, and balance in resource utilization through the concept of maqasid al-shariah. These values are in line with global efforts to build an economic system that is not exploitative, but inclusive and responsible. Although the literature on each topic—digital economy, green innovation, and Islamic economics—has grown, the integration of the three has rarely been studied comprehensively in a single integrated analytical framework. In fact, the potential synergy between digital technology, environmentally friendly solutions, and Islamic economic principles can be the basis for building a future economic system that is value-based, adaptive to technology, and oriented towards sustainability.

Based on this background, this study is designed to present a systematic synthesis of scientific literature to explore the conceptual relationships, empirical applications, and research gaps between the three pillars. With a comprehensive approach, this study is expected to contribute to the development of theory and practice towards a green digital economy that is in accordance with Islamic principles.

2. Data And Methods

2.1 Method Of Collecting Data

This study applies a mixed-method approach that combines quantitative analysis through bibliometric studies and qualitative approaches through literature review studies. The objects of the study focus on three main themes: digital economy, green innovation, and the Islamic economic framework. Methodologically, bibliometric studies are used to measure the development of scientific publication trends, map collaborative networks between authors and institutions, and identify key topics that are most frequently discussed in related fields. This approach allows researchers to obtain a systematic quantitative picture of the dynamics of academic literature over a certain period. Meanwhile, a qualitative literature review is conducted to explore a deeper understanding of the context, concepts, and relationships between the digital economy, environmentally sustainable innovation (green innovation), and the principles of Islamic economics. This study was conducted by critically examining the contents of various relevant scientific publications, in order to develop a holistic and interdisciplinary conceptual framework.

With this approach, the study is expected to contribute to bridging the understanding between the ever-growing digital economy phenomenon, the urgency of environmentally friendly innovation, and the values and principles upheld by the Islamic economic system.

3. Results And Discussion

3.1 Input Data

In an effort to understand the latest research developments in the fields of digital economy, green innovation, Islamic economics, and sustainable development, this study utilizes a bibliometric approach as the main analysis tool. Literature data was collected from the Scopus database, which is widely known as one of the most comprehensive and credible scientific databases. The search process was carried out using the keywords: Digital Economy, Green Innovation, Islamic Economics, and Sustainable Development. The selection of these keywords is based on thematic relevance that reflects the focus of cross-field studies in the realm of contemporary economics. For more details, see the table below:

Table 1. Research Document Information Statistics

Document Information	Statistics
Year of research article	2013-2025
Number of research document articles	736
Average publications per year	37
Number of Document Citations per Author	17
Average citations per document	17
Number of document citations	8.335
Average document citations per year	641,154
Number of Authors	485
Average Number of authors per document	1

Based on the analysis of 736 research documents published between 2013 and 2025, there is a fairly stable trend in academic productivity in the field studied. The average number of publications per year reaches 37 articles, reflecting consistency in the production of scientific works for more than a decade. The total number of citations received by all documents is 8,293, with an average of 17 citations per document. This figure shows that each article, in general, has a fairly good level of visibility and impact in the scientific community. Furthermore, the average annual citation of all documents reaches 638.69 citations per year. This indicates that the research contributions in this dataset receive continued attention from other researchers during the time period analyzed. In addition, there are 1,129 unique authors involved, with an average of three authors per article, reflecting quite intensive collaboration in the publication process. Interestingly, the average number of document citations per author is recorded at 17, which can be interpreted that each author, in aggregate, has a significant contribution to the visibility of publications in this

field. These findings overall describe the characteristics of scientific publications that are quite active and collaborative, with a relatively even citation impact among documents and their authors.

3.2 Co-Authorship Analysis

3.2.1 State Co-Authorship

Co-authorship analysis between countries is an important part of bibliometric studies because it can show patterns of scientific collaboration across geographical boundaries. Through this approach, it can be seen which countries are most active in establishing research collaborations, as well as how strong the scientific relationships are between them. This analysis provides strategic insights into the global role of certain countries in the development of literature in the fields of digital economy, green innovation, and Islamic economic frameworks. In addition, these findings can also be a basis for policy makers and research institutions to expand international networks to increase research capacity and impact. For more details on the origins of the countries that are Co-Authorship, please see the table below.

Table 2. Research Document Information Statistics

No	Country	Documents	Citation	Percentage
1	China	319	6997	49.38%
2	Pakistan	28	1934	4.33%
3	India	57	691	8.82%
4	Saudi Arabia	17	447	2.63%
5	United Kingdom	32	443	4.95%
6	Japan	10	338	1.55%
7	Turkey	11	320	1.70%
8	United States	22	301	3.41%
9	Italy	24	247	3.72%
10	Australia	18	216	2.79%
11	Malaysia	27	194	4.18%
12	Poland	7	160	1.08%
13	Germany	17	158	2.63%
14	Spain	19	144	2.94%
15	Uzbekistan	7	131	1.08%
16	Nigeria	5	114	0.77%
17	Finland	5	62	0.77%
18	Bangladesh	8	54	1.24%
19	Belgium	5	37	0.77%
20	Azerbaijan	8	6	1.24%

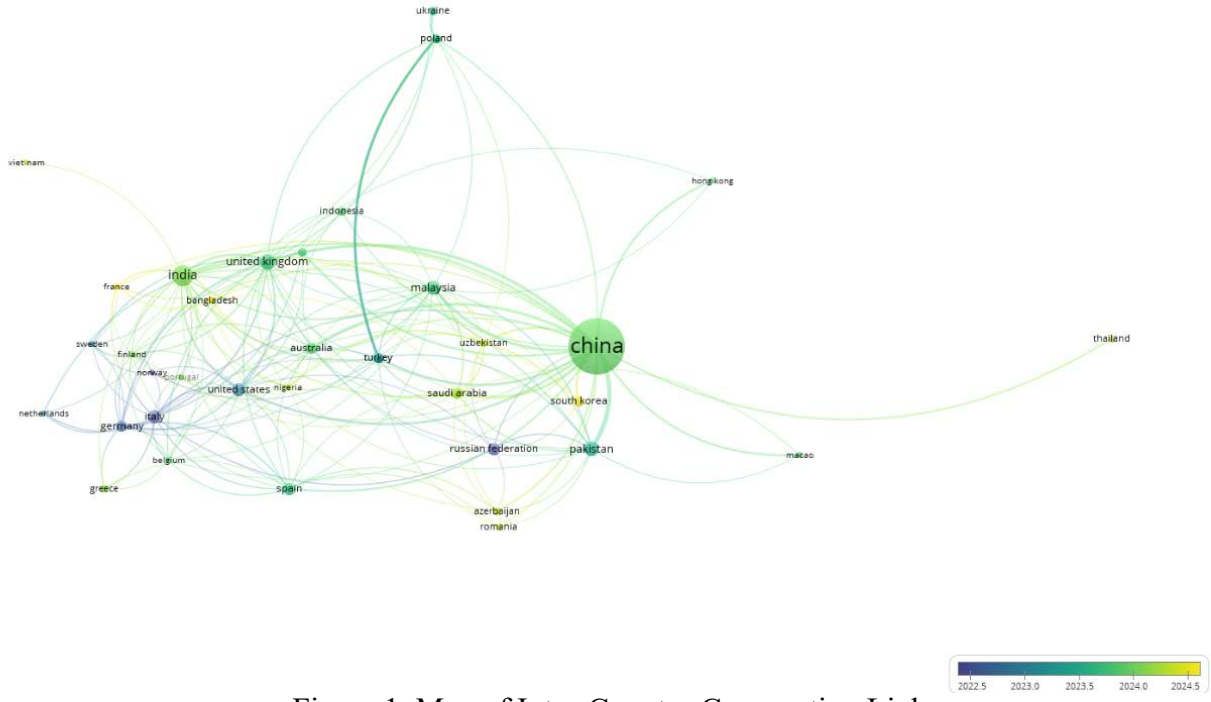

Figure 1. Map of Inter-Country Cooperation Linkages

The results of the analysis of co-authorship between countries show that China plays a dominant role in global scientific collaboration in the fields of digital economy, green innovation, and Islamic economy. With the largest node size and a very central position in the visualization, China is recorded as having intensive cooperation with countries such as Pakistan, Malaysia, India, and Poland. This reflects China's strategic role as a major link in international research networks in the Asian region and beyond. This cross-country collaboration is an important indicator of the increasing globalization of scientific activities. Countries such as India, the United Kingdom, and Turkey also appear as active actors that strengthen transnational connectivity. The color gradation shows that collaboration with China and India tends to occur in the last two years (2023–2025), indicating a growing trend of collaboration. This finding is in line with a study by Leydesdorff et al. (2013) which states that the intensity of co-authorship between countries is often closely related to the direction of science policy and academic diplomacy. Rahman et al. (2021) also noted that international collaboration in the fields of economics and sustainability tends to increase, especially in the context of developing countries, due to the global push for green development and digital economic integration.

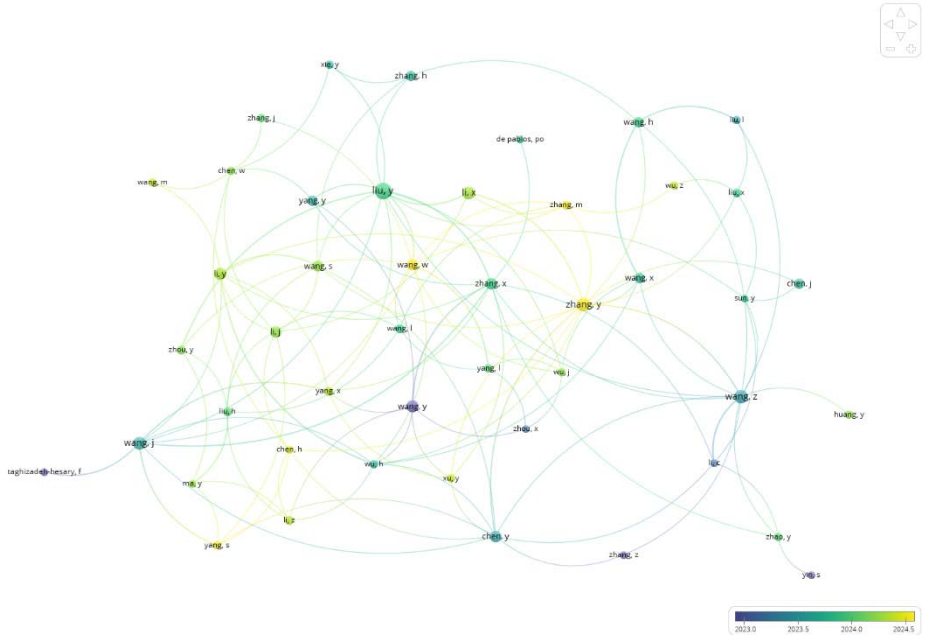

Figure 2. Map of Collaborative Relationships Between Authors

3.2.2 Author Co-Authorship

Co-authorship analysis was conducted to map collaboration patterns between authors in scientific publications related to the digital economy, green innovation, and Islamic economics. Using VOSviewer software, the collaboration network visualization was constructed based on joint involvement in the publication. Each node represents an author, while the connecting lines indicate collaboration between them. This analysis helps identify key authors and the structure of the scientific network formed within the studied field of study.

The results of co-authorship visualization using VOSviewer show that authors such as Zhang Y, Liu Y, and Wang W have central positions in the scientific collaboration network. This position indicates that they actively collaborate with many other researchers, and play an important role in the dissemination of knowledge in the fields of digital economy, green innovation, and Islamic economics. The clusters formed indicate the existence of closely connected groups of researchers, although not all of them are interconnected. This finding has strategic value for educational or research institutions. By identifying authors who have broad connections, institutions can build stronger collaboration networks, both at the national and international levels. This kind of collaboration has been shown to increase the visibility and impact of publications, as explained by

Huang et al. (2020) and Yan et al. (2023), which show that collaborative networks are significantly correlated with increased citations and scientific reputation.

3.3 Keyword Analysis

Keyword analysis in bibliometrics aims to identify the main themes, topic trends, and the most dominant research focus in a field of study. Using VOSviewer software, this analysis maps the most frequently appearing keywords in scientific publications, while grouping keywords into related topic clusters. In the context of this study, the analysis was conducted on publications discussing the issues of the digital economy, green innovation, and the Islamic economic framework. Through keyword visualization, terms that often appear together can be seen, indicating thematic relationships and directions of research development. In addition, color gradation also provides information on the time of keyword emergence, which is useful for identifying new or emerging topics. The results of this analysis provide a comprehensive picture of the structure of knowledge in the literature, and help identify opportunities for further research based on gaps or current topic developments.

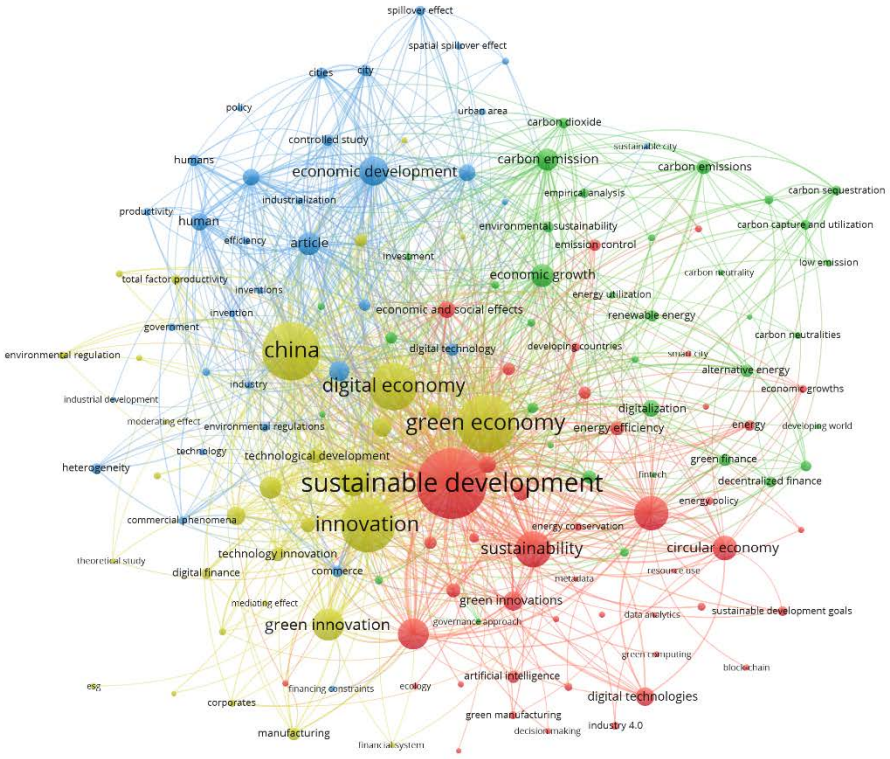

Figure 5. Keyword Analysis Visualization Map

The keyword visualization results show a complex and interconnected thematic structure in the analyzed literature. Keywords such as "sustainable development", "digital economy", "green innovation", and "green economy" appear as major nodes with large sizes, indicating high frequency and central position in the academic discourse network. There are several color clusters that indicate thematic groupings:

1. The red cluster focuses on issues of sustainability, green innovation, circular economy, and digital technologies, reflecting the intersection between environmental innovation and digital transformation.
2. The green cluster represents a focus on carbon emissions, renewable energy, and green finance, indicating attention to the energy transition and green financing.
3. The blue cluster relates to economic development, productivity, and policy, leading to macroeconomic foundations that are an important context for the integration of the digital and green economy.
4. The yellow cluster appears to be a connecting node between digital and environmental themes, with terms such as digital economy, green economy, technological development, and even China indicating case studies or dominance of literature from a particular country.

The results of keyword visualization show a close relationship between the themes of digital economy, green innovation, and the Islamic economic framework in the scientific literature landscape. The keyword digital economy appears as one of the main hubs in the network, indicating that this issue is a frequently studied theme and is closely connected to other terms such as technological development, digital finance, and artificial intelligence. This indicates that the digital economy is not only understood as a technology-based economic transformation, but also as a foundation for encouraging sustainable innovation. On the other hand, green innovation and green economy also occupy a central position in the same cluster as sustainable development and sustainability, confirming that environmentally friendly innovation is an integral part of the global development agenda.

Although explicit keywords related to the Islamic economic framework did not emerge as the main node, concepts representing Islamic economic values such as sustainability, green finance, and economic development indicate the potential for integration between sharia principles and the green and digital economy agenda. This is in line with the Islamic economic approach that emphasizes social justice, sustainable resource management, and ethical financial systems. Thus, the results of this keyword analysis support that the three research focuses—digital economy, green innovation, and Islamic economic framework—have strong conceptual intersections, especially in the context of sustainable development and value-based economic transformation.

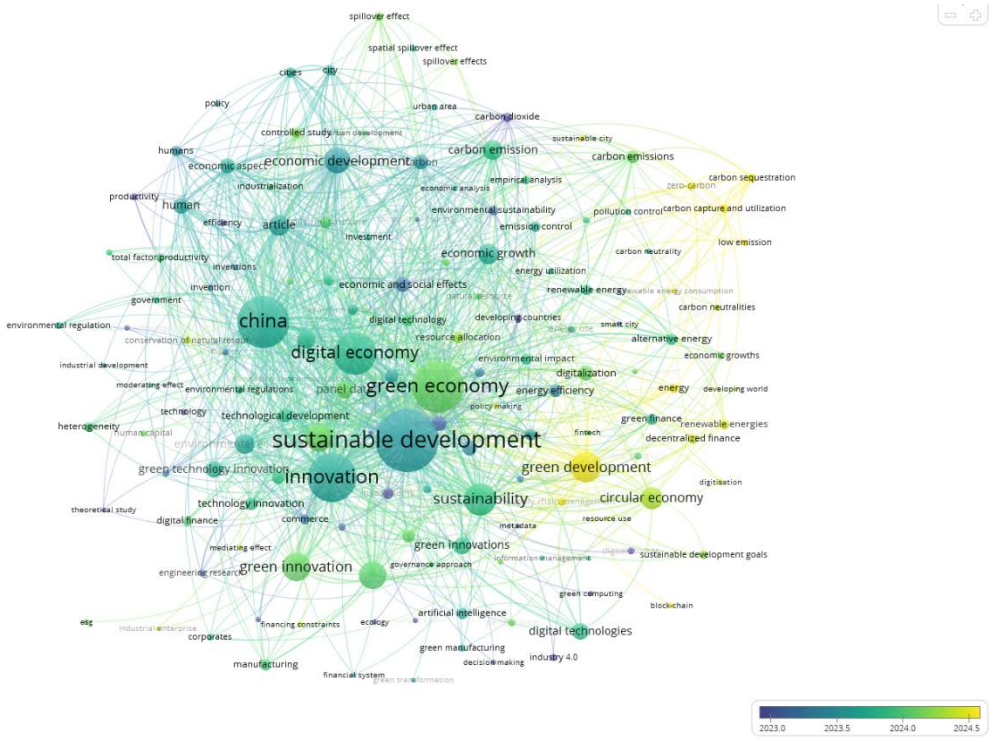

Figure 6. Keyword Analysis Visualization Map or Keyword Overlay Visualization

This visualization shows keyword co-occurrence in the analyzed scientific literature, with the color dimension representing the average year of occurrence of the term. The time scale is shown by the color gradient: dark blue indicates keywords that are dominant in older literature (around 2022), while light yellow indicates keywords that have recently emerged or are more frequently used in recent publications (2024–2025). Keywords such as “sustainable development”, “digital economy”, and “green economy” are located at the center of the network in blue, indicating that these terms have long been a major focus of research and are still relevant today. Meanwhile, terms such as “green development”, “circular economy”, “green finance”, “renewable energies”, and “decentralized finance” appear in yellow, indicating that these themes are receiving increasing attention in recent publications.

In addition, more technological topics such as "blockchain", "digital technologies", and "industry 4.0" also show a yellowish color, indicating that literature linking digital technology to sustainable economy is a growing trend in the last 1-2 years. In contrast, several keywords such as "economic development", "efficiency", and "productivity" are colored blue, indicating that these issues appear a lot in previous literature and become the foundation for the development of newer discourses such as sustainability and green innovation. Overall, this analysis shows a shift in research focus from development and productivity issues to new topics that are more integrated with digital transformation and environmental sustainability. This confirms the relevance of the

research objects—digital economy, green innovation, and the Islamic economic framework—in responding to the contemporary challenges of global development based on values and technology.

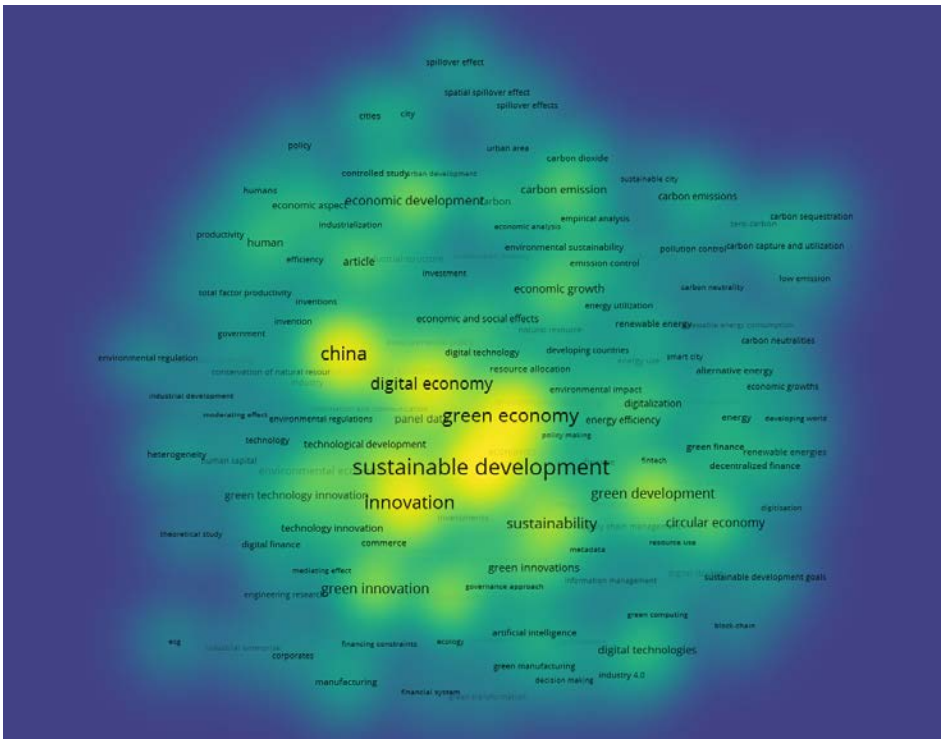

Figure 4. Density of Inter-Keyword Linkages

Keyword density analysis shows a density map of the main terms used in scientific publications on the topics of digital economy, green innovation, and sustainable development. The colors in the visualization represent the density or frequency of the keywords in the literature—with bright yellow indicating high density, green for medium density, and dark blue for low density. The keywords with the highest density are “sustainable development,” “green economy,” “digital economy,” “innovation,” and “green innovation.” The position and bright colors surrounding these keywords indicate that these themes were the main focus that were most discussed in the publication time span analyzed. The dominance of these terms indicates an academic consensus that digital transformation and green innovation are key elements in the pursuit of sustainable development.

Around this dense center, keywords with medium density such as “green finance”, “circular economy”, “technology innovation”, and “renewable energy” appear. The emergence of these terms indicates the development of increasingly specific literature and is starting to lead to more concrete solutions and applied approaches in the context of sustainability and technology. Meanwhile, in the peripheral area of the map—marked in purplish blue—there are keywords such

as “blockchain”, “digital technologies”, “industry 4.0”, and “green manufacturing”. Although not yet dominant keywords, their emergence reflects new topics that are starting to gain attention and have the potential to develop into research trends in the future. Overall, the results of this analysis illustrate that academic literature has actively explored the integration of the digital economy and green innovation within the framework of sustainable development. However, some new technologies and value-based approaches, such as Islamic economics, have not been fully depicted in the dense center, indicating that there is open space for further research contributions in this area.

4. Conclusion

This study presents a systematic synthesis of the scientific literature on the integration of the digital economy, green innovation, and the Islamic economic framework. The analysis shows that there is a strong potential for synergy between the three elements in realizing sustainable, equitable, and value-based economic development. The digital economy—through technologies such as blockchain, artificial intelligence, and fintech—offers opportunities to accelerate the transformation towards a more efficient and inclusive economic system. Green innovation provides direction towards environmental solutions needed amid the global climate crisis. Meanwhile, the principles of Islamic economics based on maqasid al-shariah provide a moral foundation that emphasizes balance, social justice, and sustainability.

Bibliometric analysis reveals that the literature on this topic is actively developing with an increasing trend of international collaboration, especially from countries such as China, Pakistan, and India. However, there are still research gaps in terms of the integration of Islamic financial technology, empirical validation of the application of Islamic principles in a digital and green context, and harmonization of regulations that support the development of an Islamic value-based economic system.

Thus, this study recommends the need for further exploration of the real application of the integration of digital economy and green innovation within the framework of Islamic economics, both through theoretical approaches and cross-country empirical studies. This is important so that Islamic economics does not only function as a normative framework, but also as an operational model in driving an inclusive, ethical, and sustainable global economic transformation.

BIBLIOGRAPHY

Al-Saadi, T., & Abdul-Rahim, AS (2022). The role of Islamic finance in supporting green innovation and sustainable development: A systematic review. Journal of Islamic Accounting and Business Research, 13(4), 678–695. https://doi.org/10.1108/JIABR-11-2021-0271

ElMassah, S., & Mohieldin, M. (2020). Greening the Islamic financial system: A review of sustainable finance and environmental, social and governance (ESG) issues. Sustainability, 12(24), 10604. https://doi.org/10.3390/su122410604

Huang, W., Wang, Y., & Guo, F. (2020). Mapping the evolution of scientific collaboration: A network analysis of co-authorship in economics. Journal of Informetrics, 14(1), 101002. https://doi.org/10.1016/j.joi.2019.101002

Haseeb, M., Hussain, H.I., Kot, S., & Androniceanu, A. (2021). The role of digitalization and green innovation in achieving sustainable economic growth: Evidence from Asian economies. Technological and Economic Development of Economy, 27(4), 705–725. https://doi.org/10.3846/tede.2021.14566

Khan, I., Hou, F., & Le, H. P. (2021). The impact of natural resources, energy consumption, and population growth on environmental quality: Fresh evidence from the United States using a novel dynamic ARDL simulation approach. Resources Policy, 70, 101907. https://doi.org/10.1016/j.resourpol.2020.101907

Khan, MI, & Rabbani, MR (2023). Islamic finance and green economy: A roadmap for sustainable development. Journal of Islamic Marketing, 14(3), 545–567. https://doi.org/10.1108/JIMA-08-2021-0246

OECD. (2020). The Digitalisation of Science, Technology and Innovation: Key Developments and Policies. OECD Publishing. https://doi.org/10.1787/b7c58809-en

Usman, O., Makhdum, M. S. A., & Kousar, R. (2022). Green innovation and environmental performance: The role of digital economy and technological readiness. Journal of Cleaner Production, 350, 131508.https://doi.org/10.1016/j.jclepro.2022.131508

Yan, E., Ding, Y., & Sugimoto, C.R. (2023). Scientific collaboration and impact: A longitudinal analysis of global research networks. Scientometrics, 128, 349–369. https://doi.org/10.1007/s11192-022-04562-1

Yousaf, M., Ali, S., Mehmood, M., & Ahmad, N. (2023). How digital financial inclusion drives green innovation in emerging markets: The moderating role of institutional quality. Technological Forecasting and Social Change, 189, 122323. https://doi.org/10.1016/j.techfore.2023.122323