



# A Bibliometric analysis of green sukuk literature

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## Abstract

**Purpose** – The objective of this study is to provide a comprehensive analysis of the current body of literature on green sukuk.

**Methodology** – To achieve this objective, this study uses a bibliometric analysis and visualization and mapping of green sukuk research from 2015-2023. The process of retrieving data through the Scopus database with the keywords "green sukuk" OR "global green sukuk" OR "retail green sukuk" OR "project based green sukuk."

**Findings** – The findings included the identification of the most pertinent journals, highly cited articles, prominent authors, nations with prolific publishing in green sukuk, top research affiliations, and journal quality. The study also highlights the fundamental factors that contribute to the emergence of green sukuk, such as the incorporation of Islamic finance principles, adherence to green bond standards, emphasis on sustainability, implementation of environmental, social, and governance (ESG) principles, and the desire of investors to buy such instruments.

**Implications** – This study examines the effects of government policies on the issuance of green sukuk to support all 2030 Sustainable Development Goals (SDGs) programs, particularly in mitigating and preventing the negative effects of climate change. Furthermore, it examines the potential consequences for future studies, as other scholars can use the discoveries of this analysis to investigate new research prospects concerning the correlation between green sukuk and sustainable development goals (SDGs).

**Originality** – The analysis provides insights into the evolution of green sukuk, identifies gaps in current research, and highlights emerging areas of interest.

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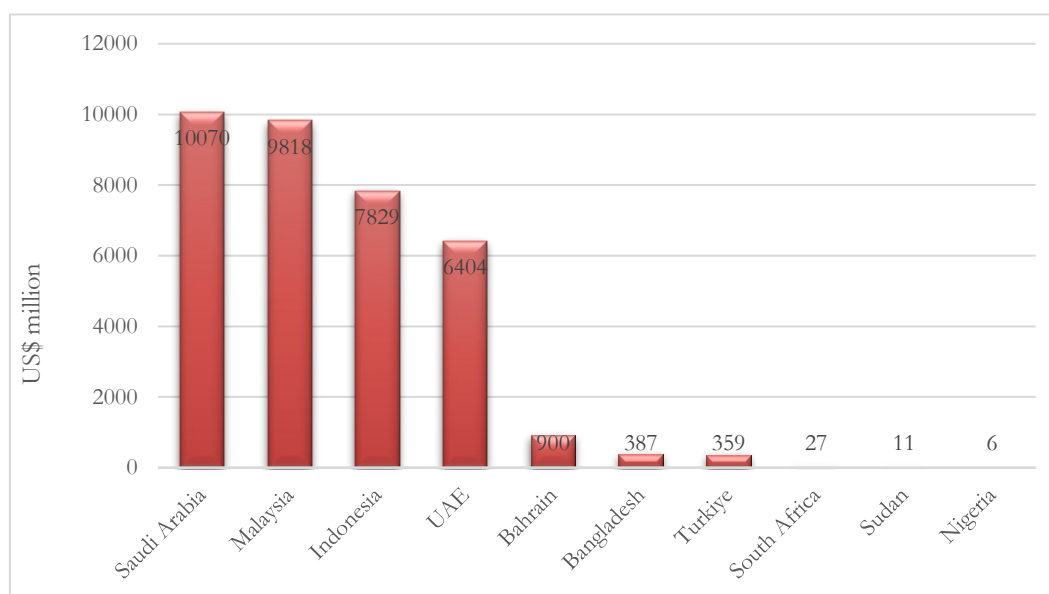
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## Introduction

The notion of a green economy and sustainable development has arisen as a popular worldwide movement and has attracted substantial interest from nations worldwide. The goal is to integrate economic, social, and environmental benefits (Shalhoob, 2023). Globally, nations have been advocating for a green economy as a remedy for climate problems, as well as challenges related to food and financial products. An aspect of the green economy's progress is achieved by utilizing inventive green financial products such as green sukuk. Sharia law encompasses Islamic financial

products, based on the principles of environmental sustainability (Aliyu et al., 2016). Islamic scholars believe that Islamic finance should be used to promote environmental conservation and climate action (Obaidullah, 2017). Green sukuk, which expresses economic, environmental, and Islamic values simultaneously, has the potential to address some of the issues faced by green finance.

Green Sukuk is specifically structured to provide funding for initiatives that promote environmental sustainability in alignment with the objectives of the United Nations Framework Convention on Climate Change. These projects also aim to advance the field of Islamic finance (Abdullah & Keshminder, 2022). Before the issuance of green sukuk in Indonesia, the Green Bond and Green Sukuk Framework was established in 2017. This framework outlines the eligible sectors, project selection procedures, revenue administration, and sukuk reporting criteria, and consists of nine (9) sectors. The Republic of Indonesia made history in 2018 by becoming the first country to issue green sukuk, and in 2022, it released its fifth worldwide green sukuk, raising a total of USD 6.9 billion. During a period of uncertain global economic conditions, the Global Green Sukuk 2022 issuance achieved significant milestones. These include the largest ever internationally printed Green Sukuk tranche and the first Green Sukuk issuance in Indonesia with a maturity period of 10 years. Figure 1 illustrates a surge in green sukuk issuances in Indonesia amounting to USD 7.8 billion during the third quarter of 2023. Furthermore, the Republic of Indonesia has introduced the inaugural project-based Green Sukuk issuance, enabling the country to develop a range of climate finance instruments outside the budgetary framework in a methodical and progressive manner (Indonesian Ministry of Finance, 2023).



**Figure 1.** Top issuers of green and sustainability sukuk (Q3 2023)

Source: LSEG workspace (London Stock Exchange Group, 2023)

Over the past two decades, there has been a notable increase in investment in Islamic finance and socially responsible investment (SRI) (Tahiri Jouti, 2019). With the emergence of alternative financing mechanisms, such as Islamic sukuk, green sukuk, Islamic debt instruments, SRI sukuk, and investments in traditional finance have been outpaced (Tan & Mohamad Shafi, 2021). Green sukuk not only offers economic and financial advantages but also facilitates the mobilization of resources to achieve Sustainable Development Goals (SDGs) in poor nations (Prakash & Sethi, 2022). Industries and enterprises can significantly boost their social, economic, and financial efficiency by capitalizing on the worldwide demand for eco-friendly initiatives, which offers extremely lucrative commercial opportunities (El Amri et al., 2021). Furthermore, prominent international entities such as the World Bank, International Institute of Environmental Affairs, and United Nations Insurance have acknowledged the necessity of alternative development tools to attain a more equitable and enduring global ecosystem (Lian et al., 2022).

In comparison to conventional sukuk, the issuance of green sukuk necessitates additional procedures due to its increased level of administration and disclosure. The issuer is required to obtain a "greenness" assessment from an additional opinion provider. To satisfy green project requirements, the issuer is required to disclose all pertinent information, including the project objectives, the issuer's overall strategy, policies, and procedures (World Bank, 2019). Before green certification is granted, many studies have been conducted, including social impact studies, environmental studies, reporting, and inquiries. Issuers believe that this process is time-consuming, costly, and makes it difficult for projects to achieve green certification (Organization for Economic Cooperation and Development, 2017). The scarcity of published literature on green sukuk reinforces this concern. Nevertheless, there is a lack of research examining the challenges encountered by issuers in the green sukuk market. Since 2017, green sukuk has been part of the Islamic capital market.

Previous research related to green sukuk opportunities and development has focused on environmentally friendly and sustainable programs (Morea & Poggi, 2017). Green sukuk also supports financial institutions and markets (Karim & Naeem, 2022). Green sukuk also faces product challenges from financial market participants, competitiveness, and global demand (Abdullah & Keshminder, 2022; Alam et al., 2016). Green Sukuk financial instruments still have many shortcomings in development and require continuous evaluation to determine the development gap. Green sukuk play a crucial role in tackling climate change, and their potential is immense. Thus, the purpose of this study was to examine the following research questions:

RQ1: What is the development trend of scholarly research on the topic of green sukuk, both globally and in Indonesia?

## Literature Review

In recent years, the sukuk market has experienced remarkable growth, and Islamic finance has witnessed unprecedented expansion in numerous sectors (Paltrinieri et al., 2023). Sukuk is the plural form of the Arabic word "*Sakk*," which signifies certificate, deed, or check. In 1988, the International Islamic Fiqh Academy established the groundwork for the modernization of sukuk as an Islamic financial instrument. A sukuk is a legal instrument that grants permission for a transaction and specifies the rights and terms of the parties involved, as viewed from a *fiqh* (Islamic jurisprudence) perspective (Alam et al., 2016). In other words, sukuk is a standardized term that denotes an asset that is not associated with ownership, projects, investment activities, profits, losses, or costs. For example, this can occur subsequent to the issuance of sukuk, reception of sukuk value, and utilization of funds obtained through sukuk transactions (Hassan & Raza Rabbani, 2023). This explanation provides an overview of the nature of sukuk as a financial instrument that represents ownership or a share of tangible assets, benefits, or services or may also represent ownership of specific project assets or specific investment activities.

Following the global financial crisis, sukuk emerged as a novel phenomenon in the global financial system. This Islamic instrument is one of the most recent innovations in the field of capital raising, and is designed to support companies' financial requirements and promote sustainable economic development (Zulhibri, 2015). Sukuk are transforming into a global asset class that fosters development through the involvement of a diverse array of issuers and investors, irrespective of their religious beliefs. The sukuk market has experienced substantial growth since its initial issuance in 1990 by Shell Mds Bhd in Malaysia. This expansion has been primarily driven by the influx of new entrants from non-Islamic countries and corporations as well as an increase in cross-border transactions. Sukuk are becoming an increasingly significant source of funding for numerous countries in Asia, Europe, and Africa (Paltrinieri et al., 2023).

Sukuk is a type of Sharia-compliant security that takes the form of a certificate or proof of ownership. This is not dictated by the boundaries (*musya'*) of the underlying asset (*Ushul al-Shukuk*). After receiving payments from sukuk, the order is closed and the funds are used according to their designated purpose. Sukuk Asset refers to the underlying asset used for issuing sukuk, which includes tangible assets (*al-a'yan*), the value of tangible asset benefits (*manafi' al-a'yan*), services (*al-khadamat*), specific project assets (*maujudat masyru' mu'ayyan*), and predetermined investment activity

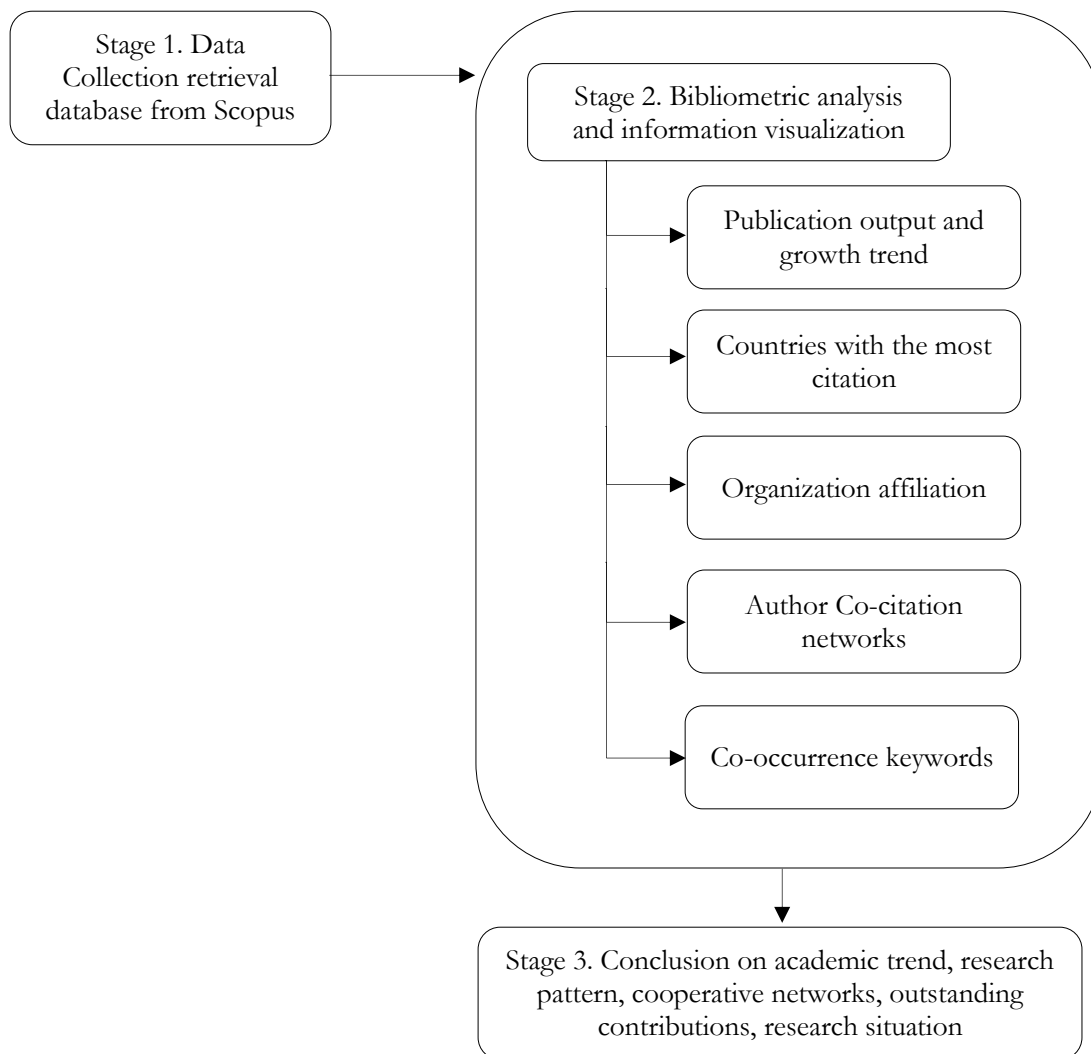
assets (*nasyath istitsmar khashsh*) (Fauzi & Tanjung, 2017). Detailed explanation of the characteristics of sukuk: All assets utilized to issue sukuk must adhere to the Sharia principles. It is the sukuk holder who is the owner of the sukuk asset. All the sukuk had the same value. At that time, the sukuk issued by the issuer indicated that sukuk holders were the owners of sukuk assets, rather than a debt that the issuer should pay. Sukuk assets may be converted into receivables (*dain*) for sukuk holders, resulting in the conversion of sukuk into debt (*dain*). Generally, sukuk issuance must be subject to a specific term unless the contract specifies otherwise or is governed by pertinent rules and regulations. At maturity, the issuer is accountable for repaying sukuk funds in accordance with the contractual scheme and for providing returns, margins, or fees to sukuk holders. The *mudharabah* and *musyarakah* contracts pertaining to sukuk returns must be derived from commercial enterprises that produce sukuk assets (Hassan & Lewis, 2007).

The Islamic counterpart of green bonds, green sukuk is a cutting-edge green financial instrument that aims to facilitate the shift to a low-carbon economy and net-zero emissions by allowing funds to be raised from a variety of sources for a wide range of green and sustainable projects, including waste management, renewable energy, transportation, green building, and sustainable water (Reboredo, 2018). These proceedings will assist industry participants in implementing alternative strategies and moving to a point where many stakeholders will gain as a result. A functional system was established in June 2018, with full support from the International Capital Market Association (ICMA). Green sukuk are financial instruments that integrate the principles of Islamic finance (Sharia) with a focus on environmental stewardship. They are used to raise funding from Islamic capital markets, specifically for projects that prioritize environmental considerations. This Islamic financial instrument serves as a potent vehicle for financing climate-change initiatives. This is in accordance with the Islamic legal-ethical framework and aims to enhance the well-being of the Earth and its inhabitants (Abdullah & Keshminder, 2022). Green sukuk is a combination of green investments and Shariah principles, intended to fund ecologically beneficial and sustainable initiatives (Liu & Lai, 2021). Since the Paris Climate Agreement in 2015, green sukuk have become increasingly popular as a funding method for sustainability. This is true for a range of stakeholders such as governments, corporations, investors, and researchers. An in-depth examination of green sukuk provides unique insights into the simultaneous integration of economic, environmental, and religious elements into the design, regulation, and promotion of financial products.

Green Sukuk is an exceptional Islamic funding instrument that adheres to a rigorous Islamic ethical and legal framework. The purpose of this initiative is to protect the environment and its inhabitants from the detrimental effects of climate change (Alam et al., 2016). Green sukuk are extended investments in environmentally conscious projects, specifically those related to clean and sustainable energy sources. Environmental assets are combined through investment certificates that adhere to Shariah norms (Moghul & Safar-Aly, 2015). Green Sukuk is an Islamic financing tool for impact investments that plays an important role in solving environmental and community problems (Laldin & Djafri, 2021). Investments in green sukuk aim to generate renewable energy and manage environmental assets, thereby certifying Islamic financial institutions' social legitimacy in their efforts to protect the environment.

The concept of green sukuk offers a practical financial instrument to support sustainable economic development, with a focus on environmental considerations. Green sukuk, akin to the sukuk concept, follows Sharia rules by incorporating risk-sharing, prohibiting interest (*riba*), avoiding uncertainty (*gharar*), and discouraging speculative conduct (*maysir*). Islamic finance prohibits gambling, short selling, and financing of certain products while actively encouraging real economic activity and sustainable development. Maladaptive actions that have detrimental effects on society. Green Sukuk encompasses a range of contract forms, including *ijarah*, *murabahah*, *salam*, *ishtisna'*, *mudharabah*, and *musyarakah*. The fundamental basis of this system is its strict adherence to the Shariah principles. Green sukuk are structured in compliance with several aspects of Shariah Law to establish financial obligations and relationships between issuers and investors. Typically, sukuk arrangements are based on lease-, agency-, sale-, and partnership-based Shariah contracts. It is imperative to adhere to the norms and principles of shariah in all transactions involving green sukuk (World Bank, 2019).

Figure 2 shows the structure used for this method. The framework commences with the identification of relevant literature based on the search parameters and then proceeds to analyze the literature both quantitatively and qualitatively to derive conclusions and findings (Ji et al., 2019; Qiu et al., 2014).



**Figure 2.** Conceptual framework

Source: Author's illustration

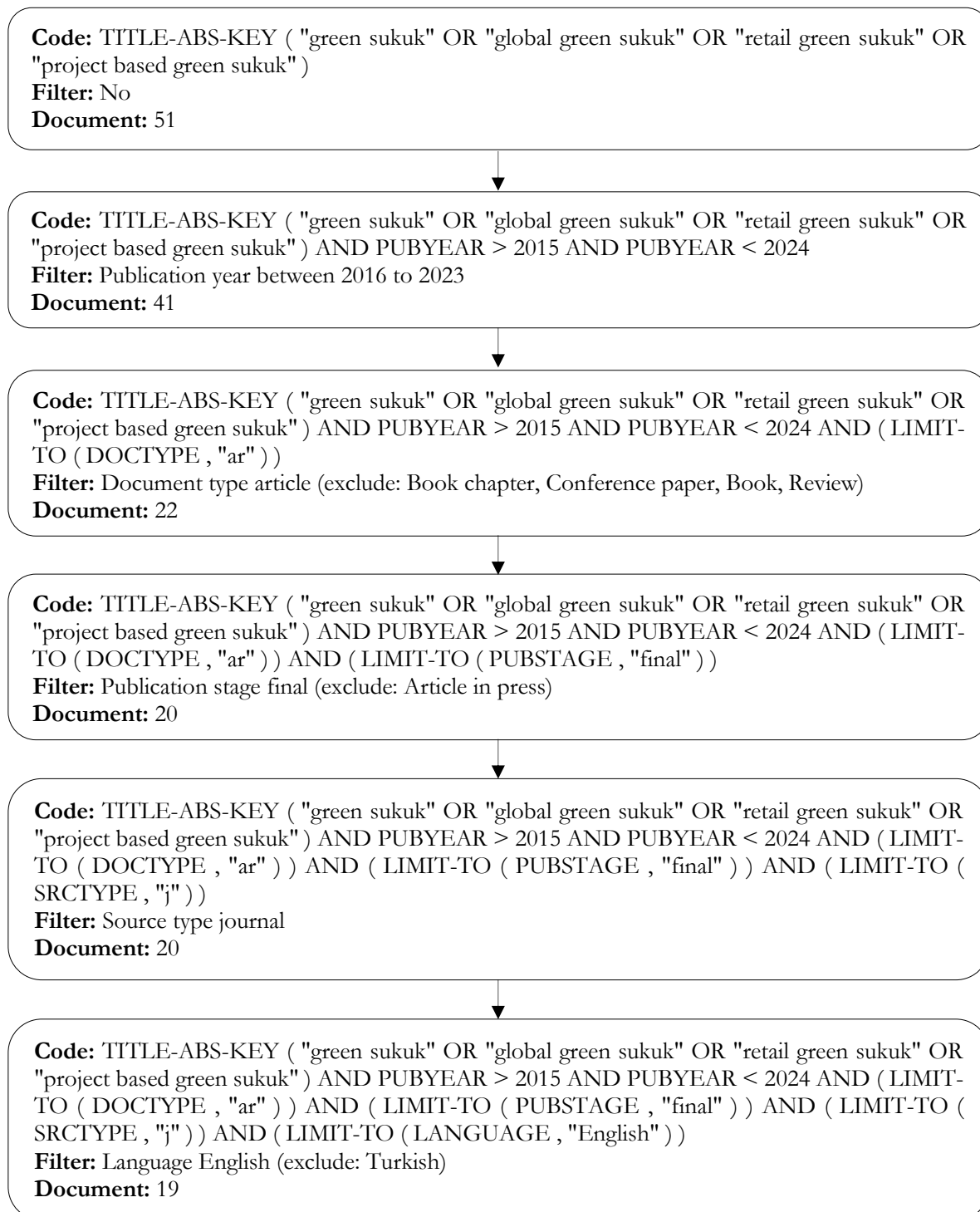
## Research Methods

This study employed a quantitative methodology and descriptive technique to examine the utilization of green sukuk. Climate change has unquestionably become a top issue in the development agenda owing to the rising occurrence of severe weather events, which disproportionately affect vulnerable and low-income populations. The lack of money impeded the advancement towards the goals of the Paris Agreement and Sustainable Development Goals (SDGs) in addressing climate change. This study advocates the utilization of green sukuk as a pioneering form of green finance to secure fiscal resources to achieve a sustainable world and address the challenges posed by climate change.

The data-gathering processes involved undertaking a comprehensive assessment of pertinent literature, including books, scholarly papers, journals, articles, and other important resources. Online searches were performed on the Scopus website. The search string comprised a combination of different phrases using the Boolean operator "AND." Furthermore, the Boolean operator "OR" is employed to merge crucial phrases in each search string. The search process was constructed in the search string: TITLE-ABS-KEY ("green sukuk" OR "global green sukuk" OR

"retail green sukuk" OR "project based green sukuk") AND PUBYEAR > 2015 AND PUBYEAR < 2024 AND ( LIMIT-TO ( DOCTYPE, "ar" ) ) AND ( LIMIT-TO ( PUBSTAGE, "final" ) ) AND ( LIMIT-TO ( SRCTYPE, "j" ) ) AND ( LIMIT-TO ( LANGUAGE, "English" ) ).

Moreover, the data analysis was descriptive in nature. The descriptive analysis aims to provide a more explicit, transparent, and in-depth explanation of the study's findings. They are commonly employed to describe real-life occurrences or phenomena. During the selection process, an evaluation was conducted on the sources sought to eliminate any potential duplication and sources that did not align with the appropriate stance on the significance of data in analyzing green sukuk issuance.

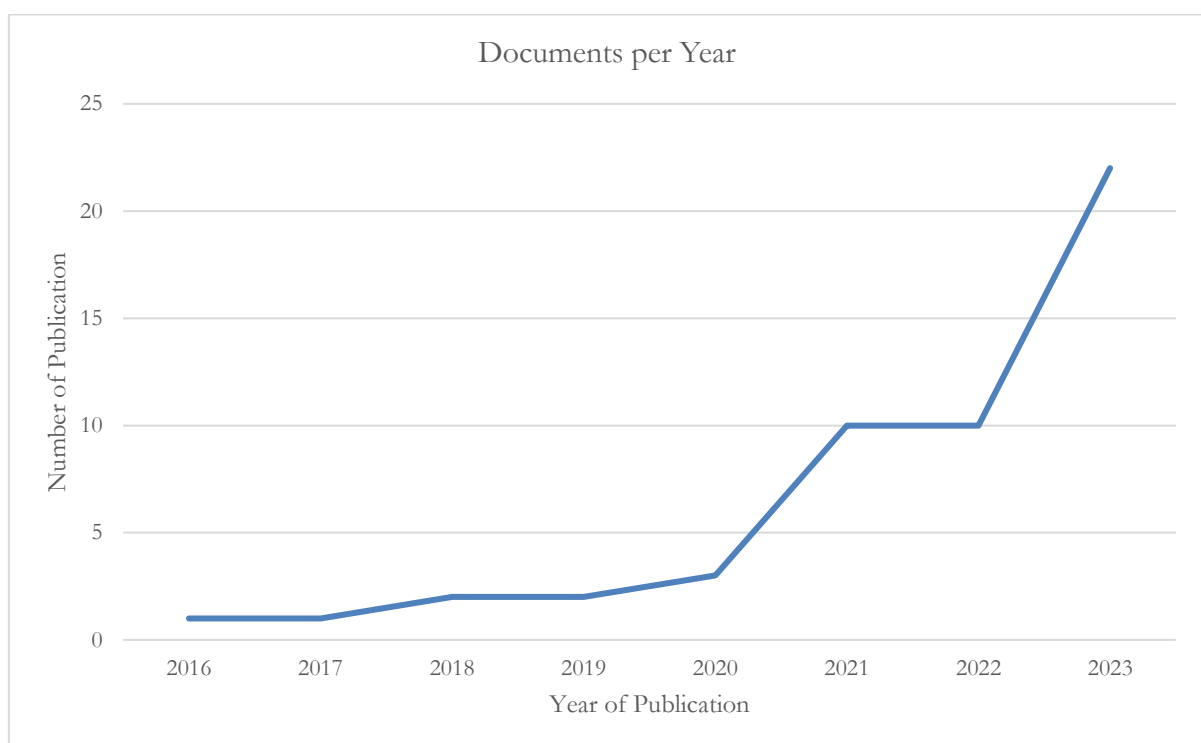


**Figure 3.** Search query and filter in Scopus  
Source: Author's illustration

Figure 3 shows that a grand total of 51 articles were obtained from the Scopus online library. Subsequently, the articles were filtered based on their publication dates, specifically from 2016 to 2023. The selected documents were in the form of articles and journal publications in the final stage of publishing. Only articles that were written in English were included. Ultimately, 19 papers were successfully aligned to address the difficulties pertaining to research topics. Subsequently, the chosen sources provided pertinent data to address the research inquiries posited in this investigation. These sources provide empirical data on the strategies associated with green sukuk. Relevant material comprises technical studies and dissertations pertaining to the issuing of green sukuk, together with reports from reputable organizations, such as the Ministry of Finance of the Republic of Indonesia and the Financial Services Authority of the Republic of Indonesia.

## Results and Discussion

This study conducted an analysis and constructed a knowledge map of green sukuk research gathered from the Scopus database. It interprets and discusses the literature by examining the research institutions involved, the keywords used, and the publication dates. The number of research papers on green sukuk literature published each year between 2016 and 2023 is depicted in Figure 4. The number of publications is increasing exponentially each year, with only one article published in 2016–2017 and 20 papers published in 2023. By the end of the year, more articles will be published; thus, this trend should continue in 2024 and 2025. It is clear that these challenges are becoming increasingly accepted by the financial sector, general public, and discourse. The topic is anticipated to gain more traction as the Sustainable Development Goals deadline approaches.



**Figure 4.** Publication trend by year  
Source: Author's illustration

This study generated a map illustrating the collaboration between countries in the field of green sukuk research, as shown in Table 1. The countries with the largest number of published documents were Indonesia, the United Kingdom, Singapore, Italy, and Malaysia. The table indicates that the United Kingdom has the most number of citations, with a total of 156, followed by Singapore, Cote d'Ivoire, and Japan. This implies that the research has had a significant impact on other countries. Figure 5 presents a detailed map of the collaboration network among significant countries. The lines depicted on the map represent collaborative connections, and the thickness of

the lines reflects the degree of cooperation. Indonesia boasts the most extensive network of collaborative partners and is a remarkably productive publisher, generating nine publications.

**Table 1.** List Countries with the most document

No.	Countries	Total document	Total citation
1	Indonesia	9	70
2	United Kingdom	4	156
3	Singapore	2	144
4	Italy	2	30
5	Saudi Arabia	1	0
6	Cote d'Ivoire	1	102
7	Japan	1	102
8	Malaysia	3	43
9	Australian	1	19
10	Pakistan	1	19
11	Qatar	1	8

Source: Author's analysis



**Figure 5.** Country collaboration map

Source: Author's analysis

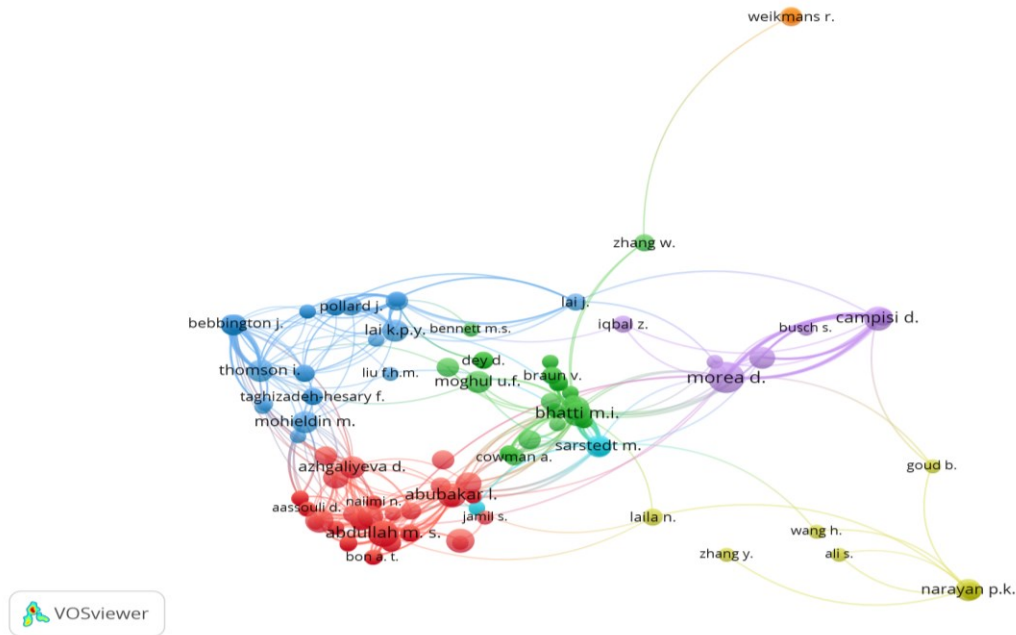
Table 2 shows the publishing pattern by affiliation in relation to the organization, from 2016 to 2023, using data from the Scopus database. Universiti Teknologi Mara in Malaysia ranked first on the list, and published three documents on green sukuk. Subsequently, the National University of Singapore, University of Birmingham in the United Kingdom, and University of Rome Tor Vergata each have two documents. These prominent educational institutions have made substantial contributions to research on green sukuk, specifically in terms of its connection to climate change mitigation, investor motivations, and the role of Islamic financing. Their results are substantial and provide essential insights for researchers, constituents, and policymakers. The diversity of these sources illustrates the interdisciplinary nature of green sukuk research and the importance of multidisciplinary collaboration in the pursuit of carbon emission reduction.

**Table 2.** Article most production based on organization

No.	Organization	Documents	Countries
1	Universiti Teknologi Mara	3	Malaysia
2	National University of Singapore	2	Singapore
3	University of Birmingham	2	United Kingdom
4	University of Rome Tor Vergata	2	Italy

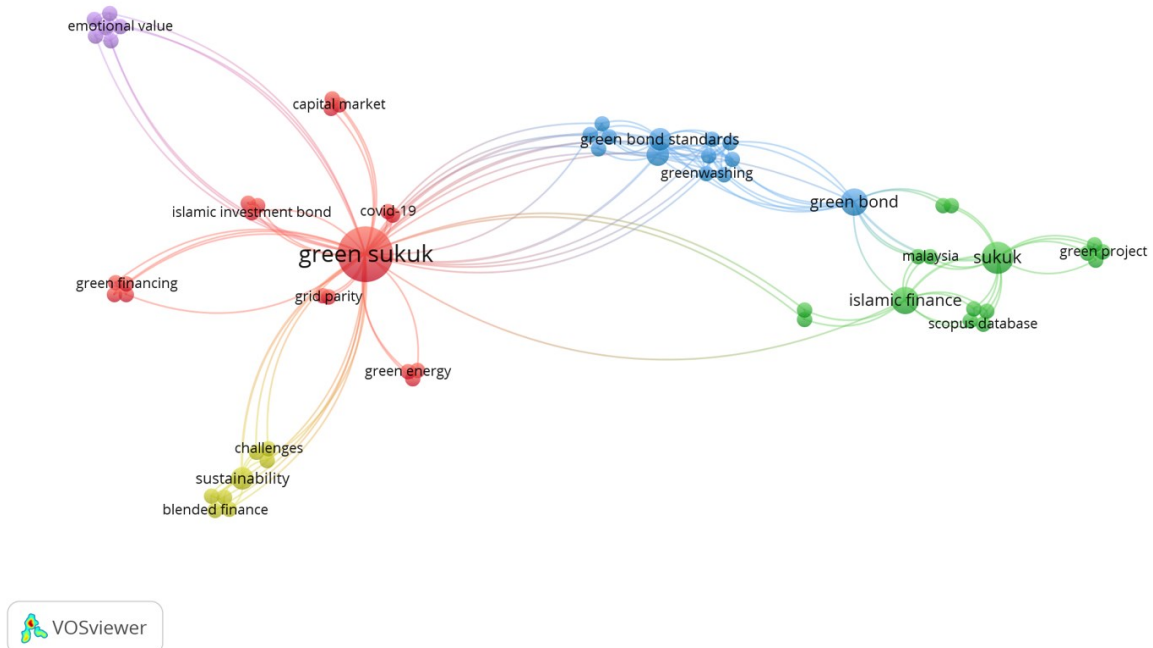
Source: Author's analysis





**Figure 6.** Co-citation network  
Source: Author's analysis

The co-citation analysis performed using VOS viewer (Figure 6) has yielded significant and noteworthy findings in the field of green sukuk study. Papers that share the same color reflect a cluster in the relevant study areas. The size of the circles representing the articles was determined based on the cumulative number of citations. A total of 212 citations were discovered, originating from 1417 writers and categorized into seven clusters. The red cluster consists of 67 authors who exhibited a significant degree of influence and activity. A total of 45 authors were co-cited in both the green and blue clusters, indicating a considerable level of collaboration and research between these two clusters. The yellow and purple clusters include 20 and 19 cited authors, respectively, indicating the importance and concentration of several research domains within the issue. Similarly, the clusters consisting of 10 authors in the cyan group and 5 authors in the orange group had a small number of authors.



**Figure 7.** Co-occurrence keywords  
Source: Author's analysis

Author keywords play a crucial role in scientific articles, as they facilitate the rapid identification of primary themes and study focus by readers and fellow researchers. Figure 7 presents the results of a co-occurrence network analysis performed on 68 keywords obtained from the titles and abstracts of the research publications using a VOS viewer. The aim of this study was to identify patterns of co-occurrence among the terms. Subsequently, each keyword was allocated a unique color and categorized into five separate clusters. The initial cluster is highlighted in red and comprises 18 keywords, including "green sukuk," "green financing," "Islamic investment bond," and "capital market." This cluster primarily focuses on the characteristics associated with green sukuk. The second cluster is characterized by a green tint and consists of sixteen terms, with the most prominent ones being "sukuk" and "Islamic finance." This cluster highlights the fundamental concept of green sukuk, which combines the principles of sukuk and Islamic financing to promote environmental conservation. The third cluster, displayed in blue, comprises 13 keywords, with "green bond," "green bond standard," and "greenwashing" being the most notable. This cluster focuses on the disparities between Islamic and conventional finance as well as the obstacles encountered, such as the issue of greenwashing. The fourth cluster, depicted in yellow, has eight prominent keywords, namely "blended finance," "sustainability," and "challenges," which exhibit the highest frequency of occurrence. This text elucidates that green sukuk encompasses a fusion of Sharia and finance principles and their correlation with sustainability initiatives. The final cluster in the purple category consists of six keywords, with "emotional value" being one of them. This cluster elucidates investors' comprehension of green sukuk and their inclination to invest.

**Table 3.** Top 10 co-occurrence keywords

No.	Keywords	Occurrence	Total Link Strength
1	green sukuk	12	50
2	sukuk	4	16
3	green bond	3	16
4	islamic finance	3	12
5	green bond standards	2	15
6	sustainable finance	2	15
7	sustainability	2	9
8	climate change	2	6
9	esg principles	1	9
10	eu taxonomy regulationm	1	9

Source: Author's analysis

Table 3 presents the findings of the study on the research history of green sukuk, highlighting the 10 most significant terms. It can be inferred that there are still areas of inquiry that warrant additional exploration, particularly in the field of green projects. The review of this research is crucial because green sukuk, an Islamic financial instrument, exhibits a high level of transparency in the allocation of funds towards the support of environmentally friendly projects. Researchers and academics have numerous opportunities to investigate various aspects of green projects, including sustainable transportation, climate change resilience, renewable energy, energy efficiency, sustainable water and wastewater management, green building, sustainable natural resource management, and waste-to-energy and waste management.

The bibliometric analysis of green sukuk reveals rapid and diverse growth in the field, with significant collaboration among researchers from 11 countries, including the United Kingdom, Singapore, Côte d'Ivoire, Japan, Indonesia, Malaysia, Italy, Australia, Pakistan, Qatar, and Saudi Arabia. Table 4 reveals that the green sukuk research list is led by 19 writers based on the number of citations. Their writings encompass a range of topics and viewpoints pertaining to green sukuk, and are frequently referenced collectively, highlighting their robustness and importance. Fourteen highly referenced articles highlighted the significance of green sukuk as a research advancement. According to the Scimago Rank Journal, there were six journals indexed in Q1 and Q2, three journals indexed in Q3, two journals indexed in Q4, and two journals that were not indexed. Articles that described green bonds backed by renewable energy received the highest number of

citations, totaling 102. This was followed by articles that highlighted the ecological aspects of green sukuk and received 42 citations.

**Table 4.** Shortlisted articles

No.	Authors	Journal	Scimago rank	Year	Total Citation
1	(Bin-Armia, 2023)	Petita: Jurnal Kajian Ilmu Hukum dan Syariah	-	2023	0
2	(Mangunjaya, 2023)	Journal of the Siam Society	Q2	2023	0
3	(Faisal et al., 2023)	Sustainability (Switzerland)	Q1	2023	6
4	(Corapi, 2023)	European Business Law Review	Q2	2023	0
5	(Supriyadi et al., 2023)	El-Mashlahah	-	2023	0
6	(Shalhoob, 2023)	Journal of Governance and Regulation	Q4	2023	0
7	(Alam et al., 2023)	Environmental Economics	Q2	2023	9
8	(Narayan et al., 2022)	Financial Innovation	Q1	2022	19
9	(Suroso et al., 2022)	Environmental Science and Policy	Q1	2022	19
10	(Keshminder et al., 2022)	Qualitative Research in Financial Markets	Q2	2022	19
11	(Endri et al., 2022)	Environmental Economics	Q2	2022	8
12	(Raeni et al., 2022)	Social and Environmental Accountability Journal	Q3	2022	12
13	(Abdullah & Keshminder, 2022)	Journal of Sustainable Finance and Investment	Q1	2022	17
14	(Liu & Lai, 2021)	Environment and Planning A: Economy and Space	Q1	2021	42
15	(Santoso, 2020)	Global Journal Al-Thaqafah	Q3	2020	9
16	(Azhgaliyeva et al., 2020)	Journal of Sustainable Finance and Investment	Q1	2020	102
17	(Ibrahim & Shirazi, 2020)	Journal of Economic Cooperation and Development	Q3	2020	8
18	(Keshminder et al., 2019)	Malaysia Journal of Consumer and Family Economics	Q4	2019	7
19	(Morea & Poggi, 2017)	International Journal of Energy Economics and Policy	Q2	2017	30

Source: Author's analysis

This study offers a comprehensive analysis of the conceptual landscape of publications pertaining to green sukuk, and the elements that impact them. By performing keyword analysis, clustering analysis, and journal identification of the relevant publication content, we identified five main subjects that significantly influenced green sukuk as important antecedents. These include Islamic finance; criteria for green bonds; sustainability; principles for environmental, social, and governance (ESG); and investors. The findings highlight the importance of policymakers, financial institutions, and industry leaders giving top priority to establishing the fundamental principles of Islamic finance, including green bond requirements, sustainability concepts, and ESG principles. Furthermore, it is imperative to examine investor behavior, including factors such as buying intention, social values, religion, and knowledge. Integrating these elements into policy and planning frameworks can effectively promote sustainable development and achieve zero net emissions in the future.

## Conclusion

This study examines studies pertaining to green sukuk and emphasizes areas where further research is needed as well as promising avenues for future research. This study presents a thorough bibliometric analysis that offers a full review of prior research on green sukuk. The findings that can be uncovered include the identification of the most significant journals by Liu and Lai (2021), articles with the highest number of citations by Azhgaliyeva et al. (2020), influential authors like (Morea & Poggi, 2017), nations with the most prolific writing in the field of green sukuk such as

Indonesia, and the quality of the resulting journals. An examination of 19 research publications published between 2016 and 2023 revealed the primary factors that contributed to the development of green sukuk. These factors include Islamic financing, green-bond standards, sustainability, ESG principles, and investor involvement. This study is limited in that it exclusively relies on data acquired from the Scopus database, potentially excluding significant publications from other databases, such as Web of Science. Furthermore, this analysis exclusively examined papers released between 2016 and 2023, with a focus on articles that were exclusively accessible within that time period. Furthermore, this work specifically concentrates on research articles, excluding other types of publications, such as conference proceedings and books. Future research on green sukuk should focus on investigating the knowledge gaps revealed in this study to further enhance our understanding of this subject. Additional research is required to elucidate government rules pertaining to the adoption of green sukuk for green initiatives and the significant role that green sukuk plays in mitigating emissions to attain net-zero emission targets. It is also possible to compare and analyze the effectiveness of different policy paths by examining the issuance of green sukuk in various countries.

### Author contributions

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Writing – review & editing: Syamsi Mustofa Singgih Prayogo, Aji Raditya, Adel Sarea

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