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Mapping of Trends and Impacts in the Green Sukuk Research Landscape: A Bibliometric Analysis (2005-2025)

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ABSTRACT

This study uses bibliometric analysis to examine the research landscape of Green Sukuk (GS), an alternative ethical financing option for sustainable development. The study exhaustively exported all 74 publications relating to GS on Scopus, and adopted VosViewer and Excel software for various analyses. The study reveals that GS research is dominated by Malaysia and Indonesia, with the International Islamic University Malaysia leading institutionally. A few authors, including Haron, R., Azhgaliyeva, D., Kapoor, A., and Liu, Y., have made significant contributions. The study notes that a surge in publications, post-COVID-19, is likely due to increased interest in sustainable development and safe-haven investments. Keyword Co-occurrence Analysis (KCA) identifies three research hotspots, informing future research directions. The findings highlight the need for further research in GS to support sustainable development and environmental mitigation. This study provides a comprehensive overview of the GS research landscape, identifying gaps and opportunities for future studies. It contributes to the growing body of research on green financing and sustainable development.

Keywords: Analysis; Bibliometric; Bonds; Energy; Green; Sukuk.

INTRODUCTION

Climate change is increasingly impacting social and environmental systems in a manner previously unknown (Morshed, 2025). Projections indicate that by 2100, the global average temperature will likely surpass pre-industrial levels by 1–5.7 °C, accompanied by a potential sea-level rise of 0.28–1.01 m (IPCC, 2022). The need to address the multidimensional manifestations of climate, such as flooding and food insecurity, is globally taking center stage as a key component of good governance objectives (Echendu, 2020). However, developing innovative green solutions to mitigate environmental issues also comes with significant costs (Butz *et al.*, 2018). Incorporating green finance

into sustainable growth initiatives enhances the assessment of sustainable practices (Zhang, 2023; Andreassen & Lind, 2024; Thompson & Pescaroli, 2024; Nepal *et al.*, 2024; Ghaemi & Shahzad, 2024; Liu *et al.*, 2024). Green finance drives inclusive development by fostering innovation, adaptation, and human capital improvement (Dong *et al.*, 2024; Khan *et al.*, 2025). With resources severely constrained globally, prioritizing alternative ethical financing options, such as Sukuk, is essential for driving sustainable development and mitigating environmental challenges.

Sukuk is an important instrument of Islamic finance, currently gaining traction as an alternative means of funding critical projects. (Awn & Azam, 2020; AbdulKareem *et al.*, 2021). The traction being recently gained by Sukuk is borne out of increased information and heightened consciousness about ethical investment and the need for institutions to bridge their funding gaps (Akinde *et al.*, 2025). However, there is a sustainable variant of Sukuk, Green Sukuk (GS), a non-interest, risks sharing, and islamically compliant variant of green bonds, which offers a unique vista for galvanizing socially responsible and religiously inclined investors to synchronising their investment objectives with their ideological principles and essentially promote projects that are focused on actualizing the seventeen (17) Sustainable Development Goals (SDGs) (Ali *et al.*, 2024; Hakim, 2024; Hamidi *et al.*, 2024). GS is theoretically underpinned by compliance with sharia and the requirements of the SDGs (Malauna and Tika, 2022). Hence, it is premised on both Islamic ethics and environmental sustainability. GS offers reasonable risk-adjusted returns and affords funding for environmentally sustainable projects. When adequately advertised and governed by effective frameworks, it could be essentially attractive to environment-oriented investors. Moreover, investors have confidence that, owing to its underlying Shariah principles, capital raised through the issuance of Sukuk must be invested in identifiable green ventures. The almost non-existent opportunity for diversion of investors' resources equally affords investors a sense of security (Aassouli *et al.*, 2018; Yahuza *et al.*, 2022).

The existing body of research on sukuk investment has predominantly centered on the conventional sukuk market, with a limited number of studies exploring the nuances of GS. Notwithstanding this scarcity, several notable studies have made significant contributions to the field. For instance, Alam *et al.* (2016) examined the innovative aspects of GS within Islamic capital markets, shedding light on its potential benefits. Furthermore, researchers such as Brahim (2018), Abubakar and Handayani (2020), and Fitrah and Soemitra (2022) have investigated the viability of GS as a means of financing Sustainable Development Goals (SDGs), highlighting its potential role in promoting sustainable development. In addition to these studies, Endri *et al.* (2022) employed an analytical network process (ANP) to assess the feasibility of GS issuance for sustainable financing in Indonesia, providing valuable insights into its potential applications. Similarly, Hariyani and Kusuma (2020) examined the application of GS in sustainable waste management, demonstrating its potential to drive environmental sustainability. Abdullah and Keshminder (2022) also made a significant contribution to the field by investigating the factors that drive investment in GS. Studies like Faisal *et al.* (2023) equally consider marketing insights such as product perceptions, attitudes, intentions, and consumer behavior as being the determinants of Green Sukuk's patronage. However, there are other critical variables, such as awareness, political will, impact assessment, legalities, socio-religious persuasions, risk management, age of retail investors or managers of institutional investment companies, local capacity, qualification criteria, and greenness of school curricula, not yet explored. However, despite the growing interest in GS, the majority of existing studies have focused primarily on Indonesia and Malaysia (Alkadi, 2024), leaving a notable research gap in other regional contexts. Specifically, there is limited research on GS in countries with substantial Muslim populations, such as Nigeria (Grim & Hsu, 2011), where understanding the factors that drive potential investors' interest in GS could have significant implications for sustainable development.

As the body of knowledge on the distinctive factors and technicalities driving Green Sukuk (GS) continues to expand, a critical assessment of the current milestones and prospective research vistas and developments in the field is essential. A thorough examination of global research patterns on GS is noticeably absent from existing scientific literature, to the authors' knowledge, particularly in the application of bibliometric techniques. Therefore, this study seeks to map the knowledge landscape of GS research and identify potential future research directions via bibliometric analysis. Additionally, this paper aims to evaluate the trends, patterns, and intellectual structure of GS-related research. The study's scope includes retrieving the most prolific authors and conducting network analyses of host nations and research institutions using the Scopus database. Furthermore, a thorough analysis of keyword co-occurrence patterns was conducted using data extracted from the selected publications through bibliometric analysis. This analytical approach offers a broad perspective on global trends in specific research areas, catering to a wide range of readers with varied expertise. This bibliometric analysis provides valuable insights for policymakers and funding agencies, enabling informed decision-making that guides future research priorities and development initiatives in the field. Moreover, this study also provides emerging researchers with potential research avenues and facilitates strategic partnerships or collaborations for seasoned researchers.

METHODOLOGY

As canvassed by Nyakuma *et al.* (2023), Web of Science (WoS) and Scopus are the most suitable for bibliometric analysis. This follows a detailed comparison of potential databases. For this study, an advanced search was conducted in the Scopus Core Collection on March 7, 2025, to retrieve publications related to GS from 2005 to 2025. The selection process essentially focused on articles that are written in English, as the language is most dominant in the international research ecosystem. This choice enabled access to a broader range of globally relevant works, as the English language affords seamless engagement among international academics. Further screening was activated to eliminate duplicate titles and ensure the selected publications were not extraneous to the theme under investigation. This caution is in light of observations made by Wong *et al.* (2020) and Nyakuma *et al.* (2023) in respect of how keyword searches in scholarly databases often return outcomes that are irrelevant to subjects being researched. This process ensured the quality and relevance of the articles included in the study. Ultimately, 74 relevant documents were selected, exported, and saved in CSV format to facilitate data analysis and visualization. The comprehensive selection process, as illustrated in Figure 1, essentially follows the PRISMA guidelines (Page *et al.*, 2021). This systematic approach ensured transparency and rigor in the article selection process. The eliminated publications included those with irrelevant keyword usage and studies that are irrelevant to GS.

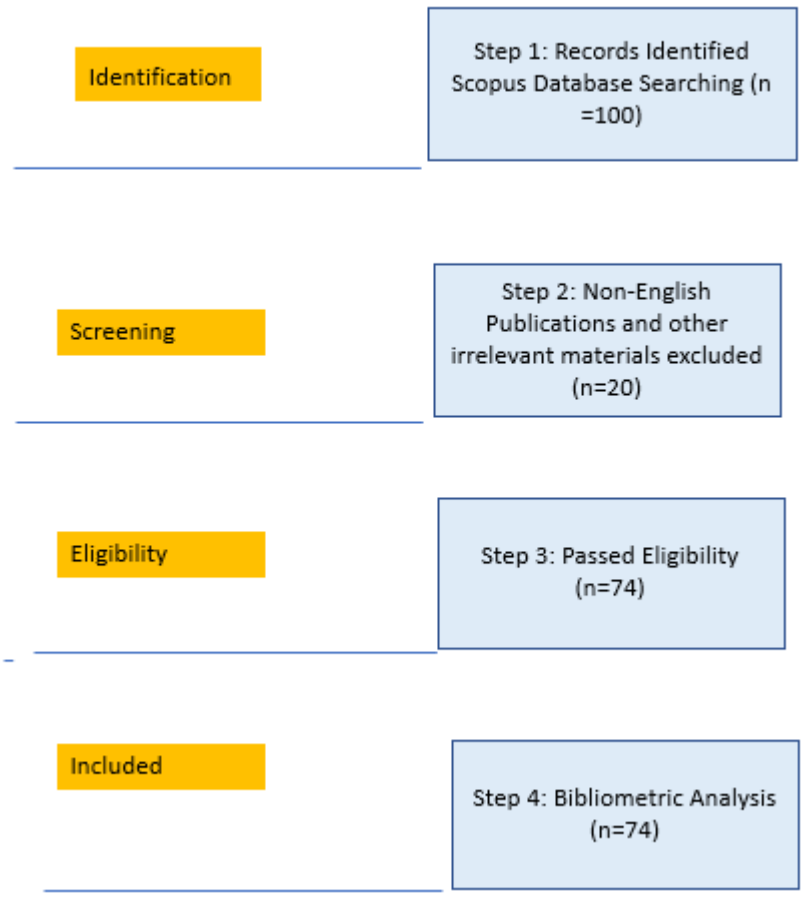

Figure 1: The Process of Articles' Selection

This study analyzed general trends in GS research using data extracted from Scopus. The dataset included full publication records, comprising authors, titles, and references, which were exported for in-depth analysis. Cueing from Nyakuma *et al.* (2023) and Wong *et al.* (2020), metrics such as publication count and citation analysis were used to evaluate productivity and research impact. Furthermore, the VosViewer software was deployed to effectuate social network analysis for the purpose of visualizing relationships between countries, organizations, and authors. This was executed through the exportation of a CSV file from Scopus and activation of the different stages of the mapping process on the software's graphical interface. The maps ultimately produced by the software are graphically expressed as networks of nodes that are linked via lines. While the nodes' sizes are proportional to the weight of publications, the lines' widths represent the number of publications produced jointly by the

connected nodes. Similarly, VosViewer was employed for keyword co-occurrence analysis (KCA) based on the keywords extracted from the selected publications in this study.

RESULTS AND DISCUSSION

General Publication and Citation Trends

The study, as shown in Figure 2, reveals that all the 74 studies published in Scopus-indexed journals with respect to GSI were published between 2016 and 2025. The first paper relating to GS published on a Scopus-indexed journal was published by Alam *et al.* (2016). The work, titled Green Sukuk: An innovation in Islamic capital markets, was published in Energy and Finance: Sustainability in the Energy Industry.

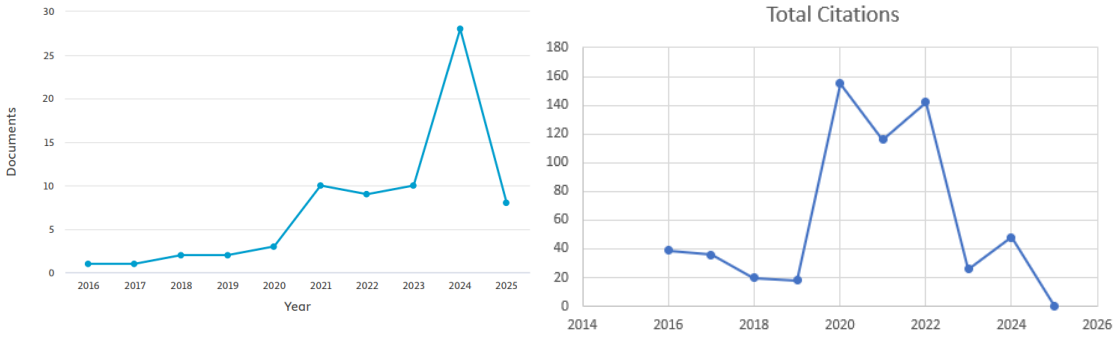

Figure 2: Changes over time in: (a) Publication Volume and (b) Citation Counts Related to GS.

The findings indicate that the 74 published documents on GS from 2016 to 2025 are essentially made up of articles (45.9%), book chapters (36.5%), conference publications (8.1), reviews (5.4%), and books (4.1%). Up till the year 2020, GS-based studies published in Scopus-based journals were about 8, with the year 2020 accounting for 3 out of the publications. More research activities can, however, be observed after the year 2020, as the total annual number of publications increased from 3 (2020) to 28 (2024). Moreover, as displayed in Figure 2, the total citations plunged from 40 (2020) to 18 (2019), and then peaked at 155 in the year 2020. The low number of publications related to this subject from 2005 to 2020 and citations between 2016 to 2019 suggests that attention received by the theme in the scientific community was low before the COVID-19 epoch. As corroborated by Danilla (2023), the development challenges of the post-COVID-19 era brought to the fore the expediency of exploring safe-haven investment options for grappling with the severity of economic shocks on asset portfolios. This probably made imperative the need for investors, government-based institutions, and academics to start exploring and interrogating alternative means of financing sustainable development projects such as GS.

Top-Cited Publications in GSI research

The average of 8.6 was observed as the per publication citation number for research relating to GS. This is borne out of the relatively inchoate nature of the research area. However, the top-cited publications in research about GS retrieved from the Scopus database are presented in Table 1.

Table 1: Top-cited Publications in GS Research, Total Citations, and Affiliated Countries.

Title, Author, Year	Total Citations	Country of the Corresponding Author
Ecologies of green finance: Green sukuk and development of green Islamic finance in Malaysia, Liu and Lai (2021)	69	Malaysia
Green Sukuk: An innovation in Islamic capital markets, Alam *et al.* (2016)	39	Malaysia
An innovative model for the sustainability of investments in the wind energy sector: The use of green sukuk in an Italian case study, Morea and Poggi (2017)	36	Italy
Green sukuk: Malaysia surviving the bumpy road: performance, challenges and reconciled issuance framework Keshminder *et al.*, (2022)	31	Malaysia
What drives green sukuk? A leader's perspective, Abdullah and Keshminder (2022)	26	Malaysia
Development and evaluation of Islamic green financing: A systematic review of green sukuk, Alam *et al.* (2023)	19	Indonesia

Performance of Indonesian green sukuk (Islamic bond): A sovereign bond comparison analysis, climate change concerns? Siswantoro (2018)	16	Indonesia
Green sukuk: Malaysia taking the lead, Keshminder *et al.* (2019)	14	Malaysia
Examining the Purchase Intentions of Indonesian Investors for Green Sukuk, Faisal *et al* (2023)	14	Indonesia
Green sukuk and sustainable economic development goals: Mitigating climate change in Indonesia, Santoso (2020)	11	Indonesia

GS's role in actualising sustainable economic development was reported by Santoso (2020). The study adopted a descriptive qualitative approach and ultimately revealed that projects funded by the issuance of GS complied with Islamic regulations. Faisal *et al.* (2023) utilized the Partial Least Squares Structural Equation Model (PLS-SEM) to examine the influence of various values (functional, social, emotional, religious, and knowledge) on customers' intentions to invest in green sukuk products. Their findings offer valuable insights into the key drivers of GS investment decisions. Moreover, the fact that the GS's market is sluggish but robust enough in enabling transition from the energy industry to the building industry, and that Shariah contracts employed are based on the issuers' underlying assets, was reported by Keshminder *et al.* (2019). Siswantoro (2018) used a descriptive method to compare the price movements of green sukuk and conventional green bonds post-issuance. The study also conducted benchmarking and correlation analysis with similar bonds, providing valuable insights into their performance. The only systematic review paper in the top-ten cited papers on GS, Alam *et al.* (2023), essentially adopted both the quantitative and synthesis approach to profile metadata along the dimensions of models' development, opportunities, problems, and evaluations of GS. Furthermore, Abdullah and Keshminder (2022) adopted a qualitative case study conducted with the participation of stakeholders in the GS value chain to explore the drivers influencing the issuance of GS in Malaysia. Similarly, Keshminder *et al.* (2022) employed the qualitative approach through sundry interviews with green sukuk issuers to investigate the issues encountered by GS issuers and assess the structure of a reconciled GS issuance framework. A robust proposal regarding the adoption of Sukuk to fund wind power systems was reported by Morea and Poggi (2017). Moreover, Alam *et al.* (2016)'s primary objective is to assess the viability of Green sukuk in major Islamic finance markets and also account for operational variations between conventional socially responsible investments (SRI) and their ethical variants. However, Liu and Lai (2021), the most highly cited work on GS, at the time of data extraction, employed a financial ecologies approach. This study examined Malaysia's GS configuration, considering factors such as the international green bond regime, World Bank partnership, and Malaysia's expertise in Islamic finance. Their research provided valuable insights into the development of GS in Malaysia.

Funding Agencies, Organizations, and Countries' Representation in GS research

It is imperative to examine financial support sources for GS research. This is owing to how funding is key to the viability and seamlessness of research. Foremost, it is relevant to mention that a total of 57 publications retrieved for analysis did not indicate their funding means. As evident in Table 2, there was a lack of funding for GS-based research before 2018. Over 94% of the GS-related works were published in the post-Covid 19 epoch. This could also be connected to Danilla (2023)'s rationalisation that the development needs of the post-COVID-19 era heightened attention to alternative means of funding infrastructure, such as the GS, in the face of the economic difficulties, nations across the world were confronted with.

Table 2: Major Funding Agencies and Number of Publications

		Funding Organization
Number Of Publications	**Year**	**Funding Agencies**
1	2022	European Commission
1	2022	Federal Ministry for the Environment, Nature Conservation; GGGI; Global Green Growth Institute; Inclusive Energy program; Nature Conservation; Nuclear Safety; SIEP; Asian Development Bank, ADB; Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, BMU.
1	2024	University of the Punjab, Lahore-Pakistan
1	2023	HAJJ FUND; UNIVERSITAS
1	2022	Malaysia Development Bank
3	2023, 2024 & 2024	LPPM
1	2024	UiTM and Malaysia Development Bank.
1	2020	Malaysia Securities Commission SRI Sukuk Framework August

1	2024	UPM
2	2022 & 2024	UiTM
1	2021	Newcastle University
1	2018	Environment Trust Fund
1	2022	ESC
1	2022	UTM

It is instructive to note, as indicated in Table 3, that Universiti Teknologi Mara (UiTM) in Malaysia and Lembaga Penelitian dan Pengabdian Kepada Masyarakat (LPPM) in Indonesia, which have each funded about 3 GS-based research are members of the Association of South East Asian Nations (ASEAN). As a matter of fact, over 80% of funding agencies that have financed GS research are affiliated with the Asian continent. Moreover, it is pertinent to mention that the International Islamic University Malaysia, Kuala Lumpur, Malaysia, with about 12 publications, emerged as the institution where most GS-related works are associated. They are followed by the Universiti Teknologi Malaysia with about 8 publications, King Abdulaziz University in Saudi Arabia with about 4 publications, and the National University of Singapore and Universitas Indonesia, each with about 3 publications. This represents a challenge for funding agencies in other countries with huge Muslim populations, like Nigeria (Grim & Hsu, 2011), to start focusing on GS-based research in a bid to make available ample scientific information requisite to attracting investments that can drive sustainable development objectives of the nations.

Table 3: Top Productive Institutions with Respect to GS Researches

Institutions	**Number of Publications**	**Countries**
International Islamic University Malaysia, Kuala Lumpur	12	Malaysia
Universiti Teknologi Malaysia	8	Malaysia
King Abdulaziz University	4	Saudi Arabia
National University of Singapore	3	Singapore
Universitas Indonesia	3	Indonesia

Similarly, as indicated in Figure 3, both Malaysia and Indonesia account for over 70% of GS-related publications that have featured in Scopus-based journals. The relatively higher productivity of researchers from Malaysia and Indonesia is clearly intertwined with the higher level of financial support that researchers from both countries are afforded when it comes to GS-related research.

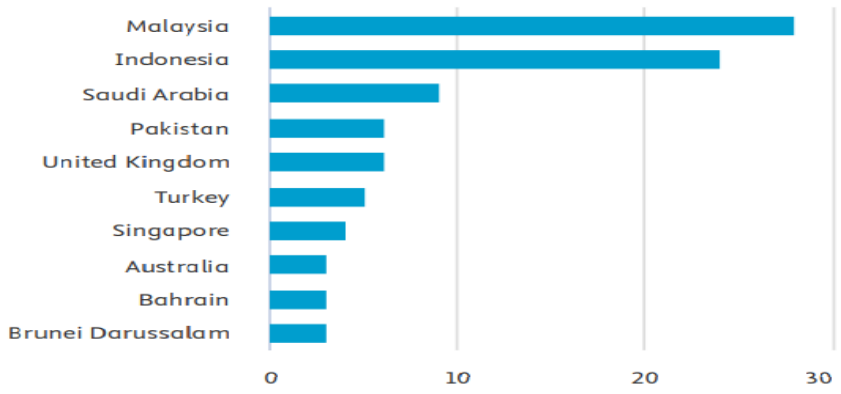

Figure 3: Countries' Representation in GS research.

This funding dominance and disproportionately large representations of the two members of the ASEAN bloc with respect to GS-related research conform with the observations of the Author (2025) and Alkadi (2024) that existing GS researches are disproportionately skewed to Southeast Asian countries such as Malaysia and Indonesia. The relatively better funding, attention, and academic focus that organisations from Malaysia and Indonesia are affording GS research is borne out of a combination of critical variables such as their strong Islamic culture, viable Islamic finance framework, government initiatives, and an increasing interest in sustainable development and good governance (Fitrah and Soemitra, 2022).

Productivity and Collaboration Network

The intensity of collaborative endeavours among the top productive countries, through co-authorship, with respect to GS-related research, is graphically expressed in Figure 4. As well mapped out, there is no evidence that

researchers in countries such as Singapore, Australia, Bahrain, and Brunei Darussalam have significantly collaborated with those of other countries. Hence, they are not represented in the network visualization map for the country-level shown in Figure 5. However, Malaysia, with a total link strength (TLS) of 9, is ahead of Indonesia, Saudi Arabia, Pakistan, Turkey, and the United Kingdom with TLSs of 6,4,3, 2, and 2, respectively. As evident in the map, Malaysian researchers have collaborated with researchers across Indonesia, Saudi Arabia, Pakistan, Turkey, and the United Kingdom. The next to Malaysia in terms of collaborative presence of researchers is Indonesia. However, researchers based in Indonesia have only collaborated with their counterparts in Malaysia, Pakistan, Turkey, and the United Kingdom, with Saudi Arabia being the only exception.

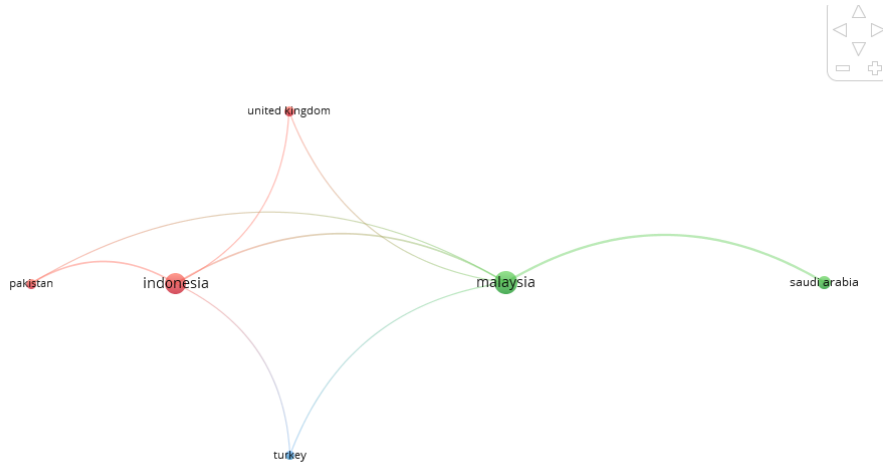

Figure 4: Country-Level Co-Authorship Network Map

Similar to what was observed with respect to international collaboration, a very limited extent of partnership is observed at the organization level. Only one cluster, as evident in Figure 5, has significant co-authorship networks. The collaboration expressed in the cluster is between Kingdom University Bahrain, Hayat Holding-IIc, Qatar, International Islamic University Malaysia, and King Faisal University, Saudi Arabia.

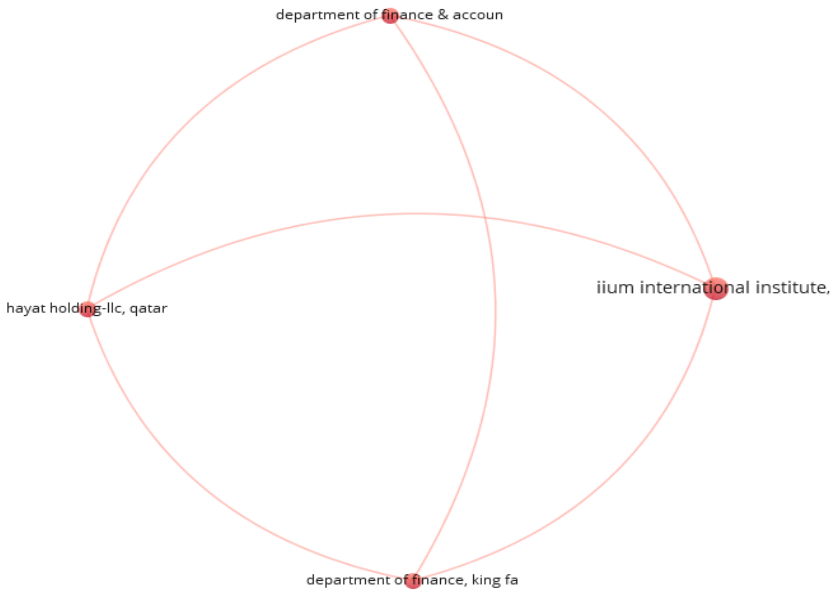

Figure 5: Co-Authorship Network Map at the Organizational Level (minimum number of 2 publications per organization)

Moreover, it is also instructive to mention that a total of 185 authors have participated in GS-related research. However, only 21 authors, representing about 11.3% have published more than 1 publication relating to GS. The top-ten widely published authors in GS-related research are presented in Table IV. Haron R is the most productive author with five publications, which have been cited only two times. This is followed by Keshminde J.S. with 4 publications that have been cited 87 times, Abdullah M.S. with 3 currently uncited publications, and Muhamat, A.

A with 3 publications that have been cited 71 times. However, the triad of Azhgaliyeva, D, Kapoor, A, and Liu, Y share citation counts of 137 and essentially rank as the most cited authors in the GS research landscape.

Table 4: Top-ten Widely Published Authors in GS Related Researches

Authors	Documents	Citations	Total Link Strengths
Haron R	5	2	8
Keshminde J.S	4	87	3
Abdullah. M.S	3	71	3
Muhamat, AA	3	0	7
Azhgaliyeva, D	2	137	4
Kapoor, A.	2	137	4
Liu, Y	2	137	4
Musari, K	2	8	0
Nizar, N	2	0	7
Senawi. A.R	2	0	7

Moreover, the co-authorship network is well mapped in Fig. 6. Three clusters defined by distinctive total link strengths of 14, 11, and 4, respectively, have been well defined in the map. While cluster 1 is constituted by Abdullah, M.S., Abdul, K.N., Keshminder J.S., Muhamat, AA., Senawi A.R., cluster 2 consists of Azhgaliyeva, D., Kapoor, A., and Liu Y. However, the third cluster only contains Nizar, N.

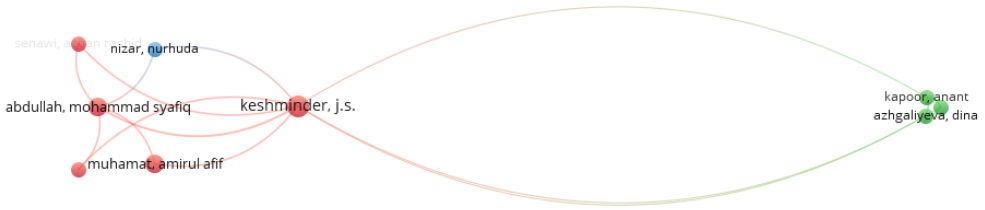

Figure 6: Visualization map for co-authorship networks

Keyword Co-Occurrence Analysis (KCA)

As captured in studies such as Nyakuma *et al* (2021), Nadi-Ravandi and Batooli 2022, and Zhao 2022, KCA affords an exploration of the underpinning concepts, current focus, patterns, and emerging trends in specific spheres of research. Similarly, She *et al.* (2022) and Zhang *et al.* (2021) consider KCA a critical component of bibliometric studies conducted to interrogate specific research landscapes to highlight the most dominant themes that represent knowledge areas' hotspots. KCA, using the VOSviewer, reveals that there are about 229 keywords associated with GS-related research. However, out of this 229, only 10 keywords met the minimum threshold of 4 occurrences. As observed in Figures 7 and 8, 3 clusters are evident in the KCA. The revealed 3 clusters are indicated by different-sized coloured nodes (C1 =red, C2=green, C3=blue). While the coloured nodes indicate a research hotspot or theme related to the topic, their sizes represent their frequency of occurrence or relevance to the sphere of research. As evident in the network visualisation map, the top 10 keywords on the research area based on occurrence and total link strength, respectively, are Green Sukuk (20), Islamic Finance (20), Sustainability (13), Climate Change (12), Indonesia (12), SDGs (11), Finance (10), Sustainable Development (10), Sukuk (7), Sustainable Finance (5). However, the cluster analysis reveals that the GS research landscape is dominated by three broad hotspots or themes, highlighting key areas of focus in the field. Cluster 1, made of keywords like Green

Sukuk, Islamic Finance, SDGs, Sukuk, and Sustainable Finance, is broadly profiled as Sustainable Islamic Finance and Green Sukuk for SDGs. Cluster 2. Made up of keywords like Climate Change, Finance, Indonesia, Sustainable Development, it is broadly categorised as Climate Finance and Sustainable Development in Indonesia. However, Cluster 3, encapsulating only one keyword, is profiled as Sustainability.

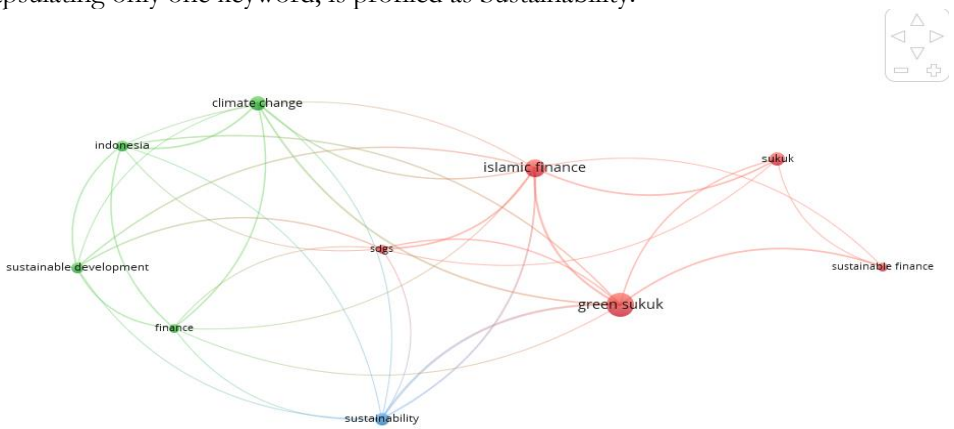

Figure 7: Network visualisation map of KCA for GS-related Research

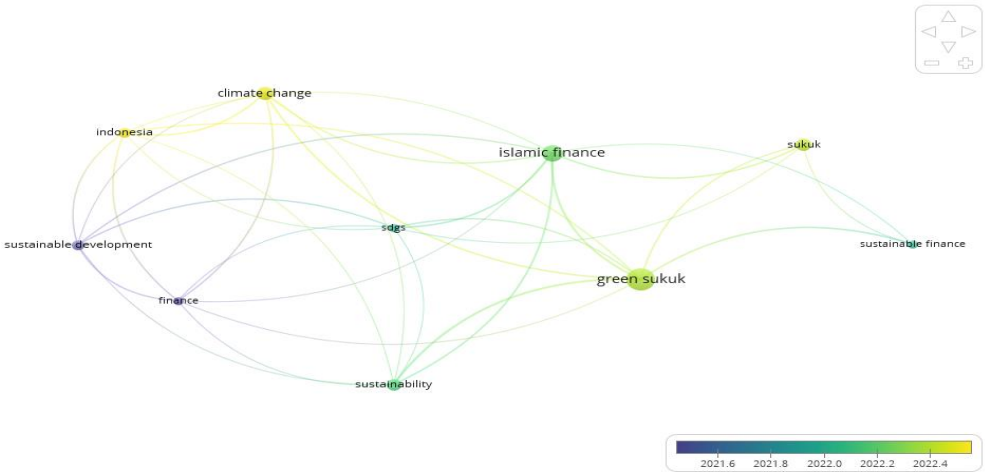

Figure 8: KCA Overlay Map for GS Research (visualizing relationships between frequently occurring keywords)

From the KCA, it is easy to distil that there are existential gaps in the GS research terrain that are yet to be addressed. One, just as observed by Alkadi (2024), most research endeavours relating to GS have only focused on ASEAN member States like Malaysia and Indonesia. This leaves a gap with respect to understanding the peculiarities around GS in other parts of the world. Similarly, it is observable that studies such as Faisal *et al.* (2023) validate factors such as product perceptions, attitudes, intentions, and consumer behavior as critical to the tendency of making decisions about whether to invest or not invest in the GS. However, other broader ranges of factors that drive intention about GS investment, such as standardization, awareness, political will, age of retail investors and institutional investment managers, impact assessment reporting, effective risk management tools, local capacity, qualification criteria, legal issues, socio-religious persuasions, and the integration of environmental education in school curricula, are under-researched. Moreover, there is still a huge vista for factors governing the viability of GS to be interrogated and validated using Machine Learning (ML) or Deep Learning (DL) techniques that afford smarter and accurate predictive models. While studies like Akinde *et al* (2025) leveraged ML in predicting investment drivers. Their data is limited to the Nigerian context. Furthermore, there is limited research on the nexus between Sukuk and green bonds. It is noteworthy that Billah *et al.* (2023) attempted to investigate the asymmetric nexus and spillover effects between Sukuk and green bonds. However, deeper studies adopting different techniques would help investigate the robustness of their outcome, validate the degree of the relationship between green bonds and sukuk, and ultimately recommend pragmatic strategies in the area of financial contagion and portfolio allocation. Gaps also exist with respect to the exploration of means for expanding the GS market and developing common regional and international standards, an expanded investor base, and supportive regulatory frameworks to foster growth and scale the GS market. Addressing these gaps, recognizable from the

outcome of KCA, can help unleash the full potential of GS in the quest to further sustainable development and good governance objectives.

CONCLUSION

This study methodically examined the research terrain of GS based on 74 publications indexed in the Scopus database from 2005 to 2025. The terrain of GS research is characterised by a few moderately high-profile authors, affiliations, countries, and funding, with publication and citation trends showing a staggeringly low scientific interest, evident in only 8 publications up to 2020. Conversely, the publications increased from less than 8 to 74 at the point data was retrieved for the research. Similarly, the total citations plunged from 40 (2020) to 18 (2019), and then reached their peak at 155 in the year 2020. The low number of publications related to this topic from 2005 to 2020 and citations between 2016 and 2019 suggests that attention received by the theme in the scientific community was low before the COVID-19 epoch. This is borne out of the inchoate nature of the subject and the low level of awareness about the subject, considering that it is ethical, ideological, and socio-cultural in nature. However, the observed increase in publications/citations shows that interest in GS research may be growing due to heightened interest in sustainable development and post-COVID-19's expediency of exploring safe-haven investment options for grappling with the severity of economic risks. Other factors that could have contributed to the moderate increase in productivity in the GS research landscape include increased interdisciplinary research, global collaborations, and enhanced financial support from funding agencies. Funding analysis reveals that over 80% of top funding agencies that have financed GS research are affiliated with the Asian continent, with the majority of them domiciled in Malaysia. This, of course, explains why both Malaysia and Indonesia account for over 70% of GS-related publications that have featured in Scopus-based journals. Funding availability has also enhanced collaborative endeavours and enabled the production of moderately highly cited publications. When it comes to productivity in terms of number of publications, Haron, R. holds the ace with 5 publications. However, with respect to impacts, as measured by citation levels, the triad of Azhgaliyeva, D, Kapoor, A, and Liu, Y, who share citation counts of 137, ranks as the most impactful in the GS research landscape. Moreover, KCA revealed three (3) major research hotspots. Cluster 1, made up of keywords like Green Sukuk, Islamic Finance, SDGs, Sukuk, and Sustainable Finance, is broadly profiled as Sustainable Islamic Finance and Green Sukuk for SDGs. Cluster 2, made up of keywords like Climate Change, Finance, Indonesia, Sustainable Development, is broadly categorised as Climate Finance and Sustainable Development in Indonesia, and cluster 3, encapsulating only one keyword, is profiled as Sustainability. However, from the KCA, existential gaps distilled suggest that the future work agenda should be dimensioned around the need to understand the peculiarities of GS in other parts of the world, beyond Malaysia and Indonesia. Similarly, other factors of GS's viability such as standardization, awareness, political will, age of retail investors and institutional investment managers, impact assessment reporting, effective risk management tools, local capacity, qualification criteria, legal issues, socio-religious persuasions, and the integration of environmental education in school curricula that are currently under researched should be considered in future model specifications of works about GS. Moreover, there is a need to leverage smarter and more accurate ML or DL techniques in the development of predictive models for GS work. In addition, there is a need to intensify research on the connections between Sukuk and green bonds. There is also a need to explore further means of expanding the GS market and developing common regional and international standards, an expanded investor base, and supportive regulatory frameworks to foster growth and scale the GS market. Implementation of these future works can help unlock the full potential of GS as a veritable means of funding climate mitigation schemes and advancing sustainable development goals.

Declarations

Competing Interests: The authors have no relevant financial or non-financial interests to disclose.
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