



## Exploring green entrepreneurship for global economic sustainability: A bibliometric and systematic review

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### ABSTRAK

Penelitian ini mengeksplorasi peran kewirausahaan hijau dalam mendukung keberlanjutan ekonomi global melalui tinjauan literatur sistematis dan analisis bibliometrik. Dengan menggunakan data dari database Scopus dan perangkat lunak VOSviewer, 19 artikel yang relevan dianalisis untuk mengidentifikasi tren dan kontribusi utama. Temuan menunjukkan peningkatan yang signifikan dalam penelitian tentang kewirausahaan hijau sejak tahun 2017, yang mencapai puncaknya pada tahun 2024, didorong oleh agenda keberlanjutan global. Analisis tematik mengungkapkan enam peran utama kewirausahaan hijau: mengintegrasikan nilai-nilai ekonomi dan lingkungan, mentransformasi industri, mendorong inovasi hijau dan kolaborasi kebijakan, menciptakan lapangan kerja hijau dan inovasi sosial, memperkuat UMKM melalui digitalisasi yang berkelanjutan, dan menanamkan etika dan keadilan sosial dalam praktik bisnis. Peran-peran tersebut menyoroti kewirausahaan hijau sebagai pendorong strategis pertumbuhan ekonomi yang inklusif dan tangguh. Studi ini menyimpulkan bahwa kewirausahaan hijau memberikan manfaat ekonomi dan meningkatkan ketahanan sosial dan lingkungan. Penelitian di masa depan didorong untuk mengeksplorasi praktik dan tantangan sektoral, terutama di negara-negara berkembang, dan untuk memperluas pendekatan lintas disiplin. Pemahaman yang lebih mendalam mengenai dukungan kebijakan, inovasi teknologi, dan dampak sosial-lingkungan sangat penting untuk memperkuat peran kewirausahaan hijau dalam pembangunan berkelanjutan.

## ABSTRACT

This study explores the role of green entrepreneurship in supporting global economic sustainability through a systematic literature review and bibliometric analysis. Using data from the Scopus database and VOSviewer software, 19 relevant articles were analyzed to identify key trends and contributions. Findings show a significant increase in research on green entrepreneurship since 2017, peaking in 2024, driven by global sustainability agendas. Thematic analysis reveals six main roles of green entrepreneurship: integrating economic and environmental values, transforming industries, fostering green innovation and policy collaboration, creating green jobs and social innovation, strengthening MSMEs through sustainable digitalization, and embedding ethics and social justice in business practices. These roles highlight green entrepreneurship as a strategic driver of inclusive and resilient economic growth. The study concludes that green entrepreneurship delivers economic benefits and enhances social and environmental resilience. Future studies are encouraged to explore sector-specific practices and challenges, particularly in developing countries, and to expand cross-disciplinary approaches. A deeper understanding of policy support, technological innovation, and socio-environmental impact is essential to strengthen green entrepreneurship's role in sustainable development.

## INTRODUCTION

For the last few decades, economic and environmental challenges have worried a lot of people across the globe (Brunn, 2017). The widening problem of global environmental health alert highly motivates economists and ecologists to tackle the issue together (Liang et al., 2024). In light of these issues, one proposed solution is green entrepreneurship (Mondal et al., 2023). Entrepreneurial approach Development of new environmentally friendly technologies and business ideas that combine entrepreneurial initiatives to be environmentally protective and eco-friendly, promoting sustainable economic development (Huang et al., 2023). Green entrepreneurship provides innovations that are not only profitable but also relevant to protect natural resources and minimize negative impacts on the global environment such as climate change, pollution, and depletion of its resources (Xin & Gao, 2023).

Green entrepreneurship plays a critical role in strengthening global economic sustainability by fostering innovative business practices that not only generate economic benefits but also promote sustainable environmental management. This approach ensures that businesses contribute to achieving sustainability without compromising economic growth. The shift towards sustainable business models helps create resilient economies that are better equipped to handle ecological and financial crises, ultimately reinforcing long-term economic stability.

As entrepreneurs' awareness of the environment grows, they are no longer focused on the profit motive alone but rather on patterns of sustainability (Buzohera & Mwakipesile, 2024). Unlike entrepreneurs of the past who were only concerned with short-term profits and turned a deaf ear to them, today's entrepreneurs are also focused on preserving natural resources amidst sustainable environments and sustainability practices (Sharma et al., 2023; Khan et al., 2023). Entrepreneurship in business activities is moving towards "green" practices by using renewable energy, waste reclamation, and recycling systems and conserving natural resources. Green entrepreneurship is considered an important factor in global economic sustainability (Avelar et al., 2024).

Specifically, green entrepreneurship may further lower the global footprint of carbon (Khezri & Muhamad, 2023). Green entrepreneurship supports mitigating greenhouse gas emissions, a major contributor to global warming, by the adoption of environment-friendly technologies and sustainable business practices (Khan et al., 2023). Much literature related to the involvement of the business sector, particularly micro, small, and medium enterprises (MSMEs), in saving the environment has been found (Lin & Xu, 2024). One of the solutions entrepreneurs can do to minimize negative environmental impacts due to pollution and waste is the use of green energy as well as recyclable product packaging (Hajam et al., 2023; Kurniawan et al., 2023).

However, in reality, the practice of green entrepreneurship has several obstacles. Green entrepreneurs often feel limited by a lack of funding or regulations less supportive of their business (Ameer & Khan, 2023). Therefore, the role of the government and private sector is needed in encouraging green entrepreneurship practices (Bensoussan et al., 2024). The government's function can be maximized through fiscal policies, and such activities can help provide incentives for environmentally friendly products and technologies (Xiong et al., 2024). Meanwhile, the function of financial support from entrepreneurs is carried out by the private sector (Long et al., 2022). This partnership is expected to encourage businesses to shift their business ethos from conventional business practices towards more sustainable business units (Niankara, 2022).

Looking at developed countries, the concept of green entrepreneurship has become part of economic policy (Gawel et al., 2024). For instance, we have seen different green entrepreneurship startup funds in Europe and North America. On the contrary, even developing world countries began practicing this model, though with several infrastructural and technological obstacles. As a consequence, developing countries still stand far from most developed countries in creating any real change in implementing green entrepreneurship as an effective concept.

This research was triggered by the growing implementation of the Sustainable Development Goals (SDGs), where one of the indispensable contributions to meeting the SDG targets is the resolution for sustainable consumption and production patterns

(SDGs-12) (Shaikh et al., 2024; Opoku et al., 2022; Lorente et al., 2024). The SDGs became a worldwide proposed mandate and have since given rise to various new methods in different fields, one example being green entrepreneurship (Backes & Traverso, 2022). Green entrepreneurship innovation is a way forward that describes opportunities for entrepreneurs to market in a responsible environment. Firms engaged in green entrepreneurship are expected to combine technological innovation and environmentally friendly approaches to mitigate the negative impact of business activities on the environment (Hällstrand et al., 2023).

The background of this research is also based on changes in mindset and public awareness of environmental concerns. Global warming has a very significant negative impact on the environment, including an increase in the earth's temperature, forest fires, rising sea levels, and depletion of the ozone layer (Scafetta, 2024). These negative impacts need to be addressed immediately so as not to worsen environmental conditions. The emergence of the concept of entrepreneurship is the answer to changing the attitude and mindset of the community to create a better environment in the future (Rasheed et al., 2024).

Earlier work by Mondal et al. (2023) highlighted that green entrepreneurship contributes to both the environment and economic welfare. Regarding the environment, green entrepreneurship practices are designed to improve energy efficiency and waste management while promoting cleaner production processes and innovation in resource use (including reuse or recycling). With the development of a green economy, the ecological problem is welcome. Additionally, Green entrepreneurship also contributes to the economic side by creating new jobs in sustainable and recycling sectors, aiding governments to pursue policies and incentives for backing up green entrepreneurs' lineups, and stimulating innovation that can generate competitive advantage by companies.

Another study from Badjeena et al. (2024) has highlighted green entrepreneurs play a role in minimizing the unnerving ecological influences against improved entrepreneurial strategies toward environment friendly. These acts include using environmentally sound technologies and sustainable production processes. Green entrepreneurship can lead to a circular economy based on the eco-efficiency principle. Moreover, green entrepreneurship can also serve as a means to provide job and business opportunities for society to improve income levels eventually and people's welfare.

This study uses a bibliometric approach to analyze the contribution of literature related to green entrepreneurship in strengthening global economic sustainability. Against the backdrop of the urgency of achieving the Sustainable Development Goals (SDGs), this study aims to explore trends and patterns in research focusing on green entrepreneurship, both in terms of subjects, publications, author, and country contributions. Through this method, the research also aims to identify the most

influential articles, the most frequently used methodologies, and the main topics that are frequently raised in the related literature. The research questions of this study include: 1. What are the annual publication trends, most prolific countries, keyword patterns, and network structures in the research on green entrepreneurship and global economic sustainability? 2. According to the findings of recent studies, what specific roles does green entrepreneurship play in advancing global economic sustainability? 3. What are the future research directions that can enhance the role of green entrepreneurship in promoting global economic sustainability?

This study makes an important contribution through bibliometric analysis and comprehensive systematic assessment. Analyzing the trends, publication patterns, and key contributions of international researchers in the field, it aims to find the most influential articles and key issues focusing on green entrepreneurship studies. Through this approach, it is hoped that the impact will no longer only provide deep insights into how green entrepreneurship efforts support the realization of the SDGs but also guide future researchers and practitioners in promoting more sustainable innovation globally.

## LITERATURE REVIEW

### Green Entrepreneurship

Green Entrepreneurship (GE) is an important part of the broader green economy, which includes various sectors and industries focused on sustainability goals (Demirel et al., 2019). Muo & Azeez (2020) state that GE is important in providing sustainable solutions to the sector's environmental issues today. They argue that sustainable corporate practices can help mitigate the adverse effects of conventional corporate activities that often contribute to environmental pollution. Farinelli et al. (2011) also state that GE is crucial in promoting sustainable economic growth and addressing environmental challenges, including climate change and various serious environmental problems.

The term “green entrepreneurship” emerged in the 1990s, and researchers started to look at enterprise possibilities that were not only economically profitable but also had a beneficial impact on the surroundings. The emergence of GE can be traced to the advent of numerous terms together with “environmental entrepreneur”, “green entrepreneur”, and “eco-entrepreneur” in a few literatures.

GE has a close relationship with the Circular Economy (CE). GE is considered one of the approaches associated with the circular economy and is a key driver in the implementation of the circular economy (Soleimani et al., 2023). In practice, GE focuses on developing environmentally friendly businesses that aim to create solutions to environmental problems while supporting economic growth and community welfare. Kaim (2020) explains that GE positively impacts the global economy, including

economic transformation, investment and trade, job creation, environmental awareness, and technology innovation.

Domańska et al. (2018) explain that GE plays an essential position in connecting and integrating the three pillars of sustainable development, which include social, environmental, and economic. They emphasize that GE's fulfilment relies on financial returns and advantageous social and environmental impacts. Furthermore, O'Neill & Gibbs (2016) explain why GE functions no longer simplest as a precept by using which businesses are trying to find earnings but additionally as an agent of the alternate that promotes the concept of sustainability. GE often acts as an educator, seeking to change how society perceives sustainability practices, especially in the context of improvement and the use of environmentally pleasant substances.

### **Economic Sustainability**

Economic sustainability is defined as the ability to fulfil the wants of the present without compromising the capabilities of future generations (Wang et al., 2024). This means that economic sustainability prioritizes economic growth and considers sustainable environmental, social, and economic elements. The concept emphasizes the need to undertake guidelines and practices that help continuous improvement, which include the use of renewable energy and resource management from the beginning and more efficient use of assets, to create sustainable economic growth and reduce adverse environmental impacts (Zeng et al., 2024; Wang et al., 2024).

Economic sustainability also refers to maintaining a balance of economic growth without compromising the sustainability of social and the environment. This involves integrating community-conscious business practices (CSR) with efficient use of natural assets and environmentally friendly environmental improvements. Typically, economic sustainability includes wise control of useful resources, breakthroughs in green technology, and dedication to social obligations to achieve the dream of continuous improvement (Xing et al., 2024).

Economic sustainability is one of the three main pillars of sustainable development, the others being environmental and social sustainability (Chen et al., 2024). Thus, economic sustainability plays an important role in ensuring that resources are used to meet the current generation's needs without preventing future generations from meeting their needs. Moreover, economic sustainability also means using natural resources and technology in an integrated way to avoid damaging the ecosystem and ensure the same quality environment in the future.

## **RESEARCH METHODS**

This research uses two main research methods, systematic literature review and bibliometric analysis, are used in this work to generate wider and deeper insights into

the role of green entrepreneurs in building global economic sustainability. Simply put, an SLR systematically reviews and synthesizes the relevant research work (Priyashantha et al., 2023; Sauer & Seuring, 2023; Crawford & Jabbour, 2024). In contrast, bibliometrics makes it possible to discover research trends, interactions among researchers, and the impact of different topics in the field (Hassan & Duarte, 2024).

In SLR, PRISMA diagrams were initially used to sort through appropriate and relevant literature from the Scopus database to obtain reliable literature (Albhirat et al., 2024; Galletta et al., 2024; Pati & Lorusso, 2018). The screening was done in one round using appropriate keywords aided by the Boolean operator “AND” concerning articles addressing the topics of GE and economic sustainability. Each article obtained from the search was critiqued based on strict inclusion and exclusion criteria to ensure that the quality of the research-maintained relevance in the synthesis.

On the other hand, bibliometric methods quantitatively assess research development on environmental and economic sustainability topics. They provide researchers with knowledge of publication patterns, such as temporal and geographical trends, and synergies between authors and institutions (Kut & Urbanik, 2024; Nageye et al., 2024; Hakkaraki, 2024; Megawati et al., 2023). In this study, software such as VOSviewer was used to conduct network analysis, which allows visualization of relationships between articles, authors and keywords. Through this approach, we can see how GE topics are evolving and contributing to global economic sustainability.

### **Data Source**

The database source for this study was Scopus, the largest and most trustworthy academic literature database. The determination of this database is essentially linked to its credibility for providing access to journals that go through rigorous peer reviews. According to Kushwaha et al. (2021) and Amato et al. (2024), it is alluded that the selection of Scopus is justified on a basis of its wide and multidisciplinary coverage. Therefore, it is thought to be appropriate for the present study to draw correct and pertinent conclusions, as it avoided research biases and guaranteed a comprehensive outcome.

### **Data Search Strategy**

To ensure relevant coverage, we used a combination of keywords focused on the title, abstract, and keywords (TITLE-ABS-KEY). The keyword combinations used were “green entrepreneurship,” “economic,” and “sustainability,” linked by the boolean operator “AND.” This approach ensured that the search results included research that comprehensively examined the link between green entrepreneurship and economic sustainability.

This search strategy is expected to produce relevant and reliable literature on the topic under study. The boolean operator “AND” was used to narrow the search

results so that only articles that included the three keywords “green entrepreneurship,” “economic,” and “sustainability” were displayed. The search process was conducted with an unrestricted period to gain insights from various periods and understand how this topic has evolved. After obtaining initial results, relevant literature was further screened based on inclusion and exclusion criteria, such as language, document type, research focus, and full access to article text to ensure the quality of data used in further analysis.

From the initial search using the keywords “green entrepreneurship,” “economic,” and “sustainability,” we found 58 articles that will enter the relevance screening stage using the inclusion and exclusion criteria.

### Relevance Filtering

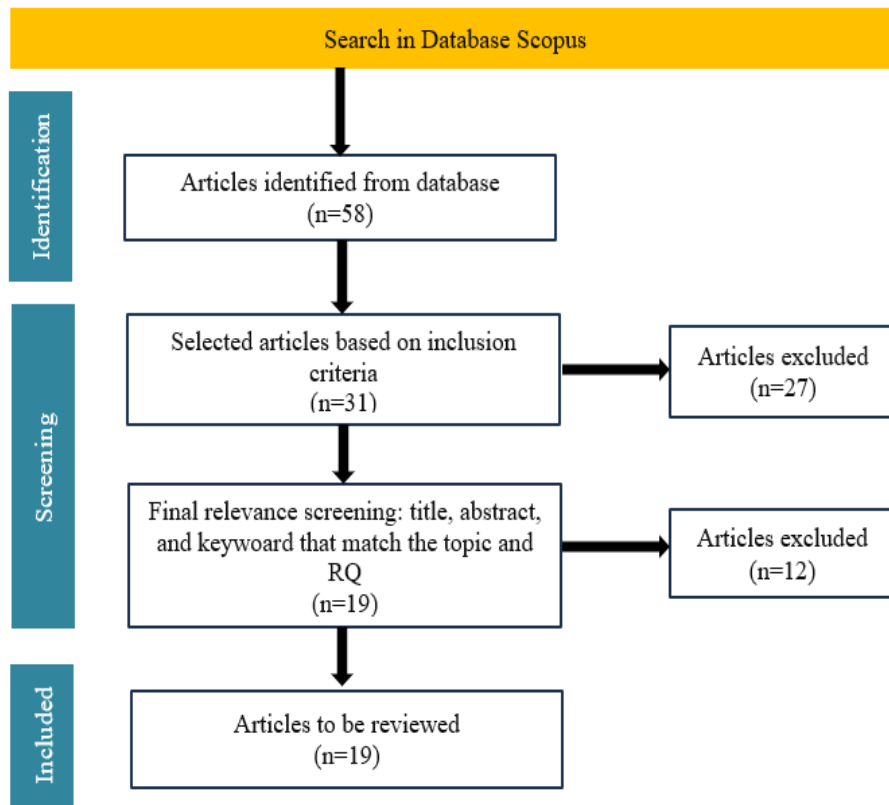
In this study, a relevance screening process was conducted to ensure that only articles that fit the topic focus were included in the analysis. This process involved using inclusion and exclusion criteria modified from Sardarabady & Durst (2024) approach. The inclusion and exclusion criteria were designed to include studies that specifically examined the link between green entrepreneurship and economic sustainability and those published in reputable journals such as Scopus. The following inclusion and exclusion criteria were used in this study.

**Table 1**  
**Relevance Filtering Criteria**

Inclusion Criteria	Exclusion Criteria
Written in English	Written in other than English
Document type: Article, Conference Paper, Review	Document types are: Book and other types other than Article, Conference Paper, Review
Research focus on “green entrepreneurship”, “economic”, and “sustainability”	Research does not focuses on “green entrepreneurship”, “economic”, dan “sustainability”
Full text available online	Not Available

The 55 articles found in the initial stage were then screened for relevance using the criteria in Table 1. After screening 58 articles using the inclusion and exclusion criteria, we obtained 31 documents that will enter the final stage of relevance screening. In the final screening stage, we conducted a complete and thorough analysis through titles, keywords, and abstracts with reference to the main topics of research and research questions used in this study. The final screening process resulted in 19 articles that will be considered in the analysis.

The detailed relevance filtering process is shown in the following PRISMA diagram.

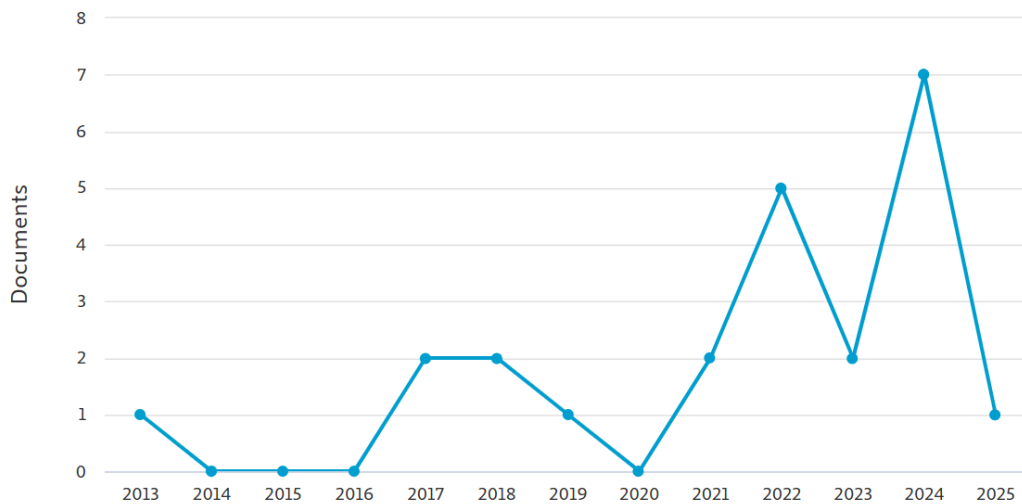


**Figure 1**  
**SLR-PRISMA Flow Chart**

## ANALYSIS AND DISCUSSION

### Year Wise Publication

Based on an annual analysis of publications, research on green entrepreneurship has shown a significant upward trend over the last decade. Between 2013 and 2021, the number of publications was relatively low, with only 1-2 documents published per year. There was even a period of stagnation from 2014 to 2016, during which no publications were made. A drastic increase was observed after 2020, with a significant surge in 2022, marked by five publications, and a peak in 2024, when the highest number of publications was reached, at seven documents.



Source: Scopus Database (2024)

**Figure 2**  
**Distribution of Publications Each Year**

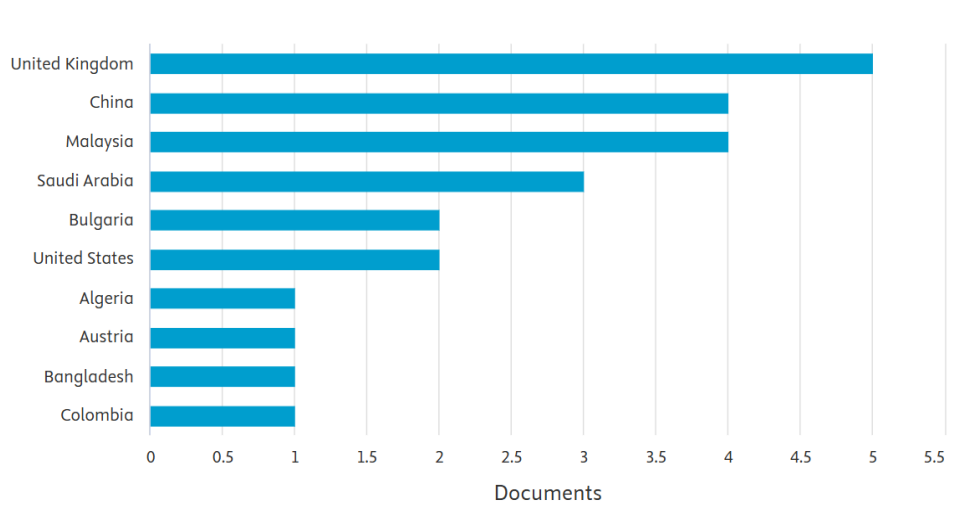
The trend of increasing publications on green entrepreneurship after 2020 shows that this topic is gaining attention in the academic world. In addition to the growing urgency of global sustainability issues, such as climate change, and international policies like the Paris Agreement and the Sustainable Development Goals (SDGs), strong momentum is also emerging from outside the academic community itself. Funding support from governments, non-governmental organizations (NGOs), and strategic policy programs has played a crucial role in directing research focus toward this field. Studies indicate that government incentives, subsidies, and infrastructure support, such as eco-friendly business incubators, have been the primary drivers of green entrepreneurship development across various countries (Wang & Zhang, 2024; Sharda et al., 2015; Mukonza, 2020). Furthermore, the increase in green entrepreneurship intentions among students and the younger generation has also been shown to be influenced by perceptions of support from the government, universities, and available funding programs (Ali et al., 2023). Therefore, the increase in academic publications on this topic is not solely driven by researchers' intellectual curiosity but is also spurred by a supportive policy and incentive ecosystem. This trend highlights that green entrepreneurship is becoming an increasingly strategic and relevant field for researchers, policymakers, and business practitioners in addressing future environmental and economic challenges.

### **Most Prolific Countries**

Based on the bibliometric data, the United Kingdom is the most prolific country in green entrepreneurship research, contributing five documents to the field. This is followed closely by China and Malaysia, each producing four documents demonstrating their active engagement in sustainability-oriented entrepreneurship studies. Additionally, Saudi Arabia, Bulgaria, and the United States have made notable

contributions, each publishing three documents on the subject. These findings indicate that countries with strong research institutions and policies supporting sustainable innovation are at the forefront of green entrepreneurship studies.

Furthermore, countries such as Algeria, Austria, Bangladesh, and Colombia have made more limited contributions, each with one document. While their engagement is relatively lower, their presence in the academic discourse signals an expanding global interest in green entrepreneurship.



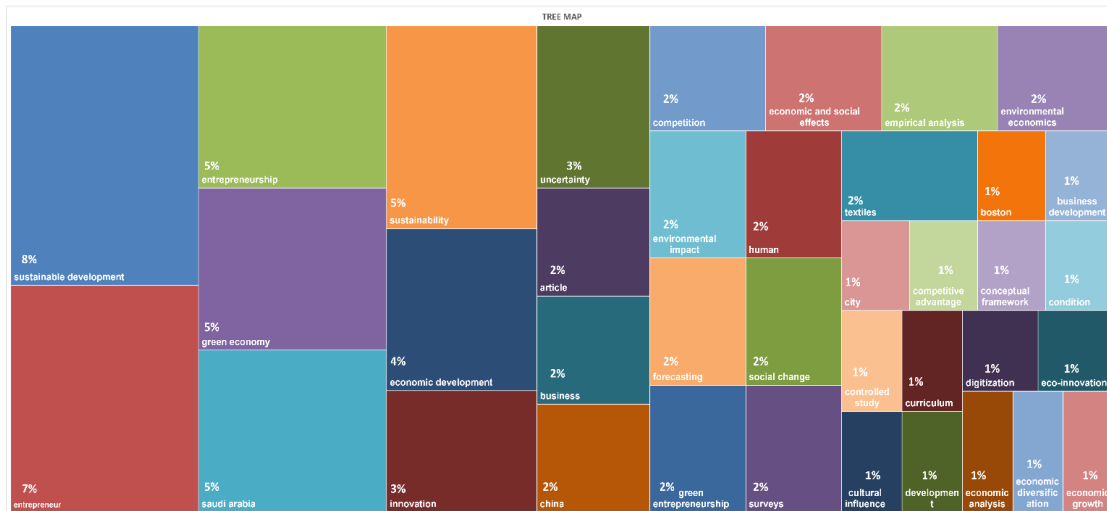
Source: Scopus Database (2024)

**Figure 3**  
**Most Prolific Countries**

Overall, these findings align with the study's core objective of assessing the role of green entrepreneurship in global economic sustainability. The distribution of research contributions indicates that green entrepreneurship is a globally relevant topic, with research intensity centered in countries with greater access to technological, financial, and institutional resources. This highlights the need for increased collaboration and knowledge sharing across nations to enhance sustainable economic practices worldwide.

**Keyword Analysis**

Keyword analysis in green entrepreneurship research is important in identifying dominant themes and emerging trends. By examining frequently occurring terms, we can understand the key areas of focus and their relevance to global economic sustainability. The keyword mapping in Figure 5 below highlights important concepts that shape the discourse on green entrepreneurship, providing insights into how sustainability-driven entrepreneurial activities contribute to economic transformation.



Source: Scopus Database (2024)

**Figure 4**  
**Keyword Frequency in Treemap**

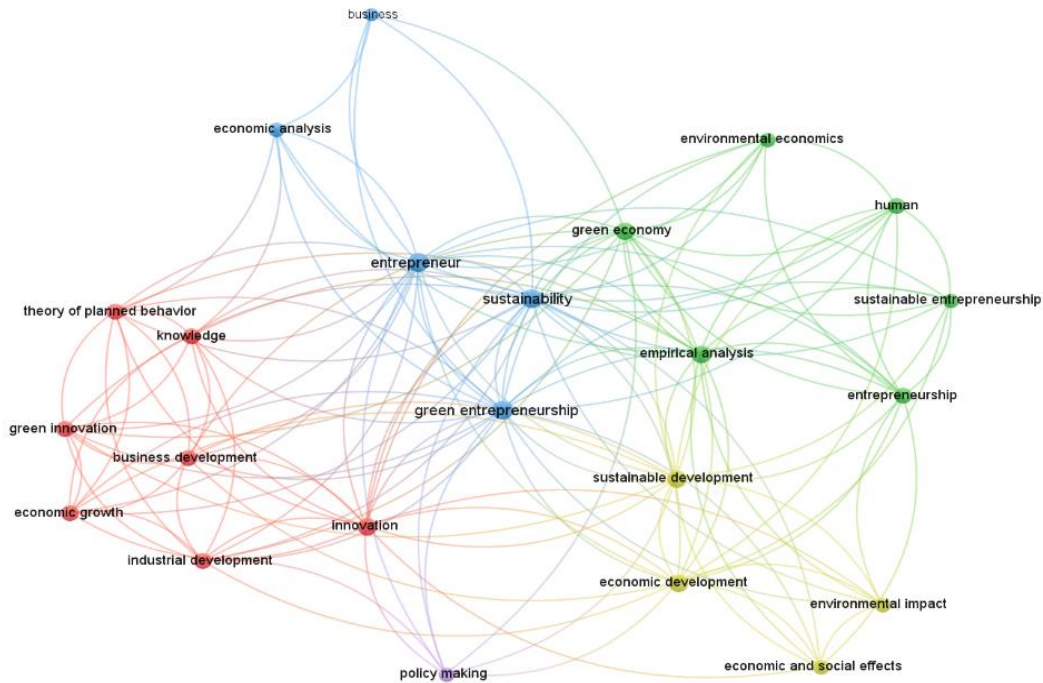
Based on the keyword analysis, “sustainable development” is the most frequently occurring term, representing 8% of the dataset. This suggests that green entrepreneurship is inherently linked to sustainability goals, reinforcing that economic growth must align with environmental preservation. Other frequently occurring keywords include “entrepreneur” (7%), “entrepreneurship” (5%), “green economy” (5%), and “sustainability” (5%), indicating that research on green entrepreneurship often explores the role of entrepreneurs in fostering a sustainable economy. The presence of country-specific keywords, such as Saudi Arabia, also implies that certain regions significantly advance this discourse. Additionally, terms like “innovation” (3%), “uncertainty” (3%), and “economic development” (4%) highlight the challenges and opportunities associated with sustainable entrepreneurship.

These findings underscore the relevance of green entrepreneurship in shaping global economic sustainability. The prominence of sustainability, economic growth, and entrepreneurship keywords reflects an ongoing effort to integrate environmentally conscious business practices into mainstream economic activities. As research in this field continues to evolve, it is crucial to foster cross-border collaborations and policy interventions that support green entrepreneurship to achieve long-term economic and environmental balance.

**Network Visualization**

Based on the co-occurrence network mapping of the 19 documents analyzed, it can be seen that some of the main keywords such as “sustainability,” “green entrepreneurship,” “innovation,” and “economic development” are closely interconnected, forming the core of the topic of green entrepreneurship and economic sustainability. These keywords are interlinked through concepts such as “environmental economics,” “green economy,” and “policymaking,” indicating the

research focus on the role of policy and innovation in supporting the transition to a green economy. The linkages between “entrepreneur,” “green innovation,” and “economic growth” also illustrate how green entrepreneurship can fuel economic growth through green innovation.



Source: Scopus Database (2024)

**Figure 5**  
**Co-Occurrence Networking Mapping**

The keywords in this network map indicate that sustainability, innovation and policy are key elements in supporting green entrepreneurship as a strategy to strengthen the global economy's sustainability. The linkages between these topics reflect the importance of a holistic approach in understanding the role of green entrepreneurship, where industrial development, policy and economic growth interact to create positive environmental and social impacts. This confirms that green entrepreneurship is a key link between innovation and sustainable economic development.

**Findings of Recent Studies**

Based on Table 2, the five articles with the highest number of citations in research on green entrepreneurship show a diverse focus, ranging from the sharing economy and the role of formal institutions to technology-based innovations such as blockchain. The following are the results of the findings that have been obtained.

**Table 2**  
**Research Findings**

<b>Authors</b>	<b>Year</b>	<b>Methodology</b>	<b>Findings</b>
Sheppard & Mahdad	2021	Case Study	The important role of green entrepreneurship is reflected in its contribution to global economic sustainability through creating economic value in line with environmental value, driving circular business model innovation, and building an efficient, resilient and low-carbon business ecosystem.
Gu et al.	2022	Quantitative	By reducing environmental degradation through green technology innovation and strengthening social development, especially in times of economic policy uncertainty, green entrepreneurship contributes to long-term economic resilience and growth.
Alwakid et al.	2021	Quantitative	The existence of green entrepreneurship is crucial in supporting global economic sustainability, among others through the transformation of the industrial system to become more environmentally friendly and efficient, as well as strengthening long-term economic competitiveness and social-ecological stability.
Yasir et al.	2023	Quantitative	Green entrepreneurship reinforces environmental values in business practices and encourages businesses to consider social and ecological impacts in addition to economic returns.
Njoku et al.	2024	Quantitative	Green entrepreneurship's support for global economic sustainability is seen in its efforts to promote a circular economy through efficient waste management and recycling, green job creation, and sustainability-based social innovation.
Drăgoi et al.	2017	Quantitative	Through the development of agritourism, green entrepreneurship helps create sustainable economic development, stimulates local socio-economic innovation, and brings together economic, social, and environmental values as the basis for regional resilience.
Ge et al.	2018	Case Study	The economic transformation towards global sustainability is driven by the role of green entrepreneurship that utilizes renewable resources, spurs sustainable innovation, collaborates with public policies, and enhances social and environmental value.
Speckemeier & Tsvirikos	2022	Quantitative	In the context of sustainable economic transformation, green entrepreneurship contributes by improving resource efficiency and strengthening long-term economic resilience globally.
Grinevich et al.	2019	Qualitative	Green entrepreneurship acts as a catalyst for institutional legitimization, business model innovation, market differentiation, and strengthening sustainability in the digital economy.
Tekala et al.	2024	Quantitative	By integrating sustainability values, green entrepreneurship becomes a strategic resource for the long-term competitiveness of MSMEs, as well as driving operational efficiency and green innovation.
Sklavos et al.	2022	Bibliometrics	The contribution of green entrepreneurship to global economic sustainability includes reducing the environmental footprint, driving sustainable business model innovation, and increasing the efficiency and resilience of MSMEs.

Authors	Year	Methodology	Findings
Wang & Ye	2024	Quantitative	Through the transformation of environmentally friendly business solutions and the strengthening of green innovation, green entrepreneurship plays an important role in driving global economic sustainability and connecting digital technology with sustainable rural economic development.
Li et al.	2023	Quantitative	Green entrepreneurship supports green job creation, low-emission product and process development, and green technology integration.
Burzyńska et al.	2018	Literature Study and Quantitative Survey	This research shows that in the textile sector, green entrepreneurship practices contribute to driving innovation, creating economic value, reducing environmental impact, and building collective awareness about the importance of industrial transformation towards a sustainable economy.
Sreenivasan & Suresh	2023	Bibliometrics	Green entrepreneurship plays a multidimensional role in advancing global economic sustainability, whether through green innovation, local economic development, or the transition to a circular economy.
Polas et al.	2022	Quantitative	Green entrepreneurship drives economic sustainability by increasing the adoption of green innovations based on renewable energy, encouraging the use of disruptive technology (blockchain), and building a sustainable mindset in SMEs that ultimately supports inclusive and environmentally friendly economic growth.
Neumann	2022	Quantitative	Green entrepreneurship promotes economic and social sustainability globally, although its environmental impact cannot be statistically ascertained in the short term.
Affolderbach & Krueger	2016	Case Study	The research underscores that ecopreneurs play an important role in supporting the sustainability of a global economy that is not only green, but also equitable by combining ethics, inclusiveness and resource efficiency.
Levinsohn	2013	Systematic Literature Review	Green entrepreneurship plays a strategic role in global economic sustainability through creating environmentally responsible market opportunities, driving sustainable innovation, internalizing ethical values in business practices, driving institutional change, and building business models relevant to global socio-ecological challenges.

Source: Results of analysis from the scopus database (2024)

Based on the research findings in Table 2 above, we specifically and provincially categorize 6 roles of green entrepreneurship in global economic sustainability, as follows.

### 1. Integration of Economic and Environmental Value in Business Models

Green entrepreneurship plays a strategic role in integrating economic and environmental values through innovative, sustainable business models that promote a balance between economic growth and environmental conservation. This practice aims not only to pursue financial gains but also to consider the ecological impact of each production process. The principles of circular economy, resource efficiency, and

product life cycle extension are key elements in implementing this strategy (Levinsohn, 2013; Sreenivasan & Suresh, 2023).

Initiatives such as the use of renewable energy and waste reduction are key pillars in shaping environmentally friendly businesses. As demonstrated by Polas et al. (2022), the adoption of blockchain technology by small and medium-sized enterprises (SMEs) in Peru is an example of how green technology can help improve production efficiency while enhancing economic sustainability. Another study by Neumann (2022) also reinforces that green entrepreneurial activities have a positive impact on macroeconomic growth and social welfare in various countries. Thus, green entrepreneurship not only shapes internal processes for SMEs and companies but also creates a business ecosystem that supports long-term economic and environmental stability.

## **2. Industrial Transformation and Long-term Economic Competitiveness**

The transformation of industries towards efficiency and environmental friendliness is the main goal of green entrepreneurship. Through the adoption of technological innovations, increased energy efficiency, and reduced emissions, sectors such as textiles, manufacturing, and agriculture are undergoing significant changes in their production systems, which are driving the formation of more environmentally friendly and efficient industries (Burzyńska et al., 2018; Wang & Ye, 2024).

Burzyńska et al. (2018) explain that the textile sector in Poland has begun to implement environmental management systems and eco-innovation to enhance competitiveness and profitability while mitigating negative environmental impacts. Meanwhile, a study in China shows that digital economic transformation is also driving the development of green entrepreneurship, which in turn facilitates environmentally friendly innovation and rural revitalization (Wang & Ye, 2024). By strengthening their resilience to global market dynamics and economic policies, companies that adopt a green approach build competitive advantages and gain access to new markets that prioritize social and environmental responsibility.

## **3. Green Technology Innovation and Public Policy Collaboration**

The central role of green entrepreneurs lies in their ability to drive environmentally friendly technological innovation, such as the development of low-emission products, the use of renewable energy, and the integration of blockchain technology to create transparency in the supply chain (Polas et al., 2022). These innovations not only enhance efficiency and minimize ecological impact but also create new opportunities for sustainable products. To maximize their impact, collaboration between governments and businesses is essential, where government support through incentives, regulations, and financing can accelerate the adoption of green technologies and drive the transition toward a more sustainable economy.

Affolderbach & Krueger (2016) emphasize the need for "just ecopreneurship"

that not only promotes technological innovation but also instills values of social and environmental justice in business models. In the context of public policy, collaboration between green entrepreneurs and the government is crucial to expanding the impact of sustainability through incentives, funding, and transformative policies.

Another study by Li et al. (2023) found that entrepreneurship education, university support, and environmental commitment can enhance green entrepreneurial behavior, particularly among the younger generation. This suggests that integrated education and environmental policies can foster an ecosystem that supports the long-term growth of green entrepreneurship.

#### **4. Green Job Creation and Social Innovation**

One tangible contribution of green entrepreneurship to global sustainability is the creation of green jobs. These jobs span the renewable energy, sustainable agriculture, clean technology, and waste management sectors. In addition to generating income, green jobs also support environmental conservation, creating positive social and economic double effects (Tekala et al., 2024).

In addition to promoting green jobs, green entrepreneurship also encourages sustainability-based social innovation that focuses on improving the welfare of local communities. This is reflected in agrotourism practices that combine economic value with the preservation of local culture and the environment. Research by Drăgoi et al. (2017) on agritourism in Romania shows that green entrepreneurship can improve the socio-economic resilience of rural communities and serve as a model for regional development that is more resilient to global crises.

#### **5. Strengthening MSMEs and Sustainable Digitalization**

Green entrepreneurship plays a crucial role in enhancing the competitiveness and long-term resilience of MSMEs by incorporating sustainable values. The adoption of green practices brings benefits such as cost efficiency, improved brand image, and the ability to penetrate global markets that demand environmental responsibility (Tekala et al., 2024; Speckemeier & Tsivrikos, 2022).

On the other hand, sustainable digital transformation is also a major driver in expanding the impact of green entrepreneurship. The use of digital technology enables sustainability-based companies to reach new markets with environmentally friendly products and accelerate the adoption of low-carbon business practices (Grinevich et al., 2019; Sheppard & Mahdad, 2021). Research by Speckemeier & Tsivrikos (2022) indicates that the establishment of a digital ecosystem that promotes green values can foster the growth of green startups, particularly through enhanced connectivity, collaboration, and access to information.

## 6. Social Justice and Sustainable Business Ethics

In the context of inclusive global economic sustainability, green entrepreneurship brings social justice and business ethics to entrepreneurial practices. Ecopreneurs not only pursue economic profits but also prioritize resource efficiency, inclusivity, and social responsibility (Yasir et al., 2023; Gu et al., 2022).

These ethical values are reflected in a commitment to the welfare of workers, local communities, and environmental conservation. Green companies are born as hybrid organizations capable of simultaneously creating economic, social, and environmental value (Sheppard & Mahdad, 2021). This approach demonstrates that green entrepreneurship is not only a response to the environmental crisis but also a mechanism to promote a more equitable, ethical, and crisis-resilient economic system (Ge et al., 2018; Gu et al., 2022).

### Future Research Recommendations

The research findings categorize the various research topics into five main groups, each highlighting an important aspect that needs further exploration. The main focus of the recommendations includes green innovation and economic growth, the role of sustainable entrepreneurship in the transition to a green economy, the contribution of entrepreneurs in global economic sustainability, the social and environmental impacts of green entrepreneurship, and effective policies to promote the growth of green entrepreneurship globally. Table 3 below analyzes the results for future research that future researchers can learn from.

**Table 3**  
**Future Research Recommendations**

No	Keywords	Cluster	Research Topic
1.	Green Innovation, Economic Growth	1	Research on how green innovation can drive economic growth across industries, with a focus on the impact of innovation on sustainable industrial development
2.	Sustainable Entrepreneurship, Green Economy	2	Examines the role of sustainable entrepreneurship in driving the transition to a green economy, and explores the challenges and opportunities of green entrepreneurship across different sectors of the economy
3.	Entrepreneur, Sustainability	3	An empirical study on the role of entrepreneurs in strengthening the sustainability of the global economy, with a focus on business development that prioritizes long-term sustainability
4.	Economic and Social Effects, Environmental Impact	4	Analyze the social and economic impacts of green entrepreneurship on society and the environment, and how it can reduce negative environmental impacts
5.	Policy Making	5	Research on the most effective policies to support the growth of green entrepreneurship at the global level, as well as the effect of policies on economic sustainability.

An analysis of future research recommendations shows that green innovation has a central role in promoting sustainable economic growth, especially in developing

more environmentally friendly industries. In addition, there is a need to understand the challenges and opportunities in implementing sustainable entrepreneurship across different sectors of the economy. Considering the recommendations of this study, it can be concluded that green entrepreneurship plays a very important role in achieving global economic sustainability. Focusing on innovation, supportive policies, and a deeper understanding of green entrepreneurship's social and environmental impacts will help create a sustainable business ecosystem. Therefore, future research should strengthen the framework that integrates economic, social, and environmental aspects to support environmentally friendly economic growth.

## **CONCLUSIONS, LIMITATIONS AND SUGGESTIONS**

This research specifically addresses three main aspects related to the role of green entrepreneurship in global economic sustainability. First, the annual publication trend shows a significant increase since 2017, with the highest spike in 2024. This indicates the increasing academic attention to sustainability and green entrepreneurship issues post-pandemic and in line with international policy pushes such as the Paris Agreement and SDGs. In terms of country contributions, the UK, China, and Malaysia take the lead, while keyword and network structure analysis show that topics such as "sustainable development", "innovation", and "policy" are central to this research, demonstrating the importance of a holistic approach that links entrepreneurship, policy, and innovation to drive sustainable economic growth.

Second, through a systematic review of recent findings, this study identifies six key roles of green entrepreneurship: integration of economic and environmental values in business models, industrial transformation and long-term competitiveness, green technology innovation and public policy collaboration, green job creation and social innovation, strengthening MSMEs and sustainable digitalization, and embedding business ethics and social justice. These roles confirm that green entrepreneurship creates economic value and strengthens social and environmental resilience in the face of global challenges while expanding a more inclusive and sustainable economic development model.

Despite its comprehensive contribution, this study has limitations in the number and scope of publications analyzed and in exploring the depth of green entrepreneurship practices in specific sectors. Therefore, future research is recommended to expand bibliometric data across disciplines and regions and delve deeper into the challenges of green entrepreneurship implementation in specific industry sectors, especially in developing countries. The focus on green innovation, supporting policies, and socio-environmental impacts will be crucial to strengthening the framework that integrates economic, social, and environmental aspects to create a sustainable business ecosystem.

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