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Sustainable entrepreneurial intention: A research trends and agenda

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ABSTRACT

Interest in sustainable entrepreneurship has grown in both academic and business circles, with the aim of promoting the creation of environmentally and socially responsible enterprises. However, achieving true sustainability in entrepreneurship is fraught with complex challenges and dilemmas. The aim of this study is to examine research trends. The PRISMA-2020 methodology was used to analyse publications in the Scopus and Web of Science databases. The analysis included the examination of publications by year, main references, thematic evolution, keyword co-occurrence network, emerging and growing words. The results showed a remarkable growth of scientific literature in the years 2022 and 2023. The main research references include Wagner M. as well as journals such as Sustainability, and the influence of the United States, Pakistan, and Germany on scientific production. The thematic evolution showed a shift towards themes such as university support, sustainability, and environmental values. The main thematic clusters were characterised by the high conceptual affinity between terms such as Entrepreneurial Intention and Entrepreneurship. Emerging terms such as Circular Economy and Subjective Norms indicate a growing interest in specific aspects of sustainability. The text provides a strong basis for future research and the development of research agendas to address the identified gaps.

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1. Introduction

Sustainable entrepreneurship is a topic of increasing interest in both academic and business circles. It aims to promote the creation of businesses with an environmentally and socially responsible approach. This concept combines two essential elements: entrepreneurial intention, which refers to an individual's inclination to start a business, and sustainability, which involves seeking business practices that balance economic profitability with care for the environment and social well-being (Yi, 2021). In today's global context, characterised by environmental challenges and pressing social issues such as climate change and economic inequality, sustainability has become a primary goal for start-ups and entrepreneurs. It is important to develop innovative behaviours in firms to adapt to today's challenges (Işık et al., 2021).

The academic literature has examined sustainable entrepreneurial intentions from different perspectives, exploring the factors that influence the formation of these intentions and their translation into concrete entrepreneurial behaviours. Recent research has highlighted the crucial role of institutional and university support in transforming green entrepreneurial

intentions into sustainable business behaviours (Yi, 2021). Similarly, studies have analysed how specific factors, such as the COVID-19 crisis, can influence green entrepreneurial intentions, especially among university students (Alvarez-Risco et al., 2021).

Green entrepreneurial orientation and green market orientation are essential for achieving sustainable competitive advantage in an environmentally conscious business context (Pratono et al., 2019). Furthermore, values and future orientation have a significant impact on the formation of intentions within sustainable entrepreneurship, highlighting the importance of a long-term and collective well-being mindset (Thelken & de Jong, 2020). Studies show an increasing interest in integrating sustainability into the process of forming entrepreneurial intentions.

In specific contexts, such as among university students in specific regions, such as northeastern Colombia, researchers have deepened their understanding of the factors that influence sustainable entrepreneurial intentions. They have used established theoretical models, such as the theory of planned behaviour (Romero-Colmenares & Reyes-Rodríguez, 2022), to contribute to our knowledge of sustainable entrepreneurial intentions.

These efforts provide valuable perspectives for the design of policies and programmes that promote the creation and growth of firms committed to environmental and social sustainability.

Sustainable entrepreneurial intention is a topic of growing importance in the academic and business communities due to the need to address contemporary environmental and social challenges. In a world of increasing concern about sustainability, sustainable entrepreneurship is presented to create a positive impact on society and the environment. Recent research has examined various aspects of this phenomenon, including the motivational factors that drive entrepreneurial intention and the strategies and practices that support its long-term viability (Douglas et al., 2021).

The importance of sustainability in business initiatives within the industry is emphasised, highlighting the need to address environmental and social issues in innovative ways. The importance of collaboration between researchers, industry experts and policy makers to promote innovation in tourism and hospitality with a focus on sustainability is also highlighted (İşik et al., 2022). Businesses can achieve sustainable competitive advantage through eco-innovative practices and the combination of tradition and innovation. The importance of sustainability in small and medium-sized enterprises (SMEs) is also highlighted, mentioning that these organisations must have a combination of factors that give them a competitive advantage and help them achieve goals that lead to sustainable performance (Khan et al., 2023).

The intersection of sustainability and entrepreneurship has created a dynamic and multidisciplinary field of study that addresses the creation of new enterprises, as well as the innovation and transformation of existing business models towards more responsible and environmentally friendly practices. According to González-Serrano et al. (2020), a bibliometric approach has shown a significant increase in scientific production related to sustainable entrepreneurship, reflecting a greater interest in understanding and promoting this type of business initiative that seeks to balance economic, social and environmental considerations.

However, achieving sustainable entrepreneurship poses complex challenges and dilemmas. For example, some studies point to potential conflicts between sustainability and traditional entrepreneurial practices, raising concerns about their compatibility (Sung & Park, 2018). Similarly, the adoption of sustainable business practices requires a thorough understanding of the factors that facilitate or hinder it. This is evident in studies exploring the drivers of green entrepreneurship

in the circular economy (Mondal et al., 2023) and individual beliefs about climate change and environmentally responsible behaviour (Perera et al., 2022).

Although this topic has attracted considerable interest, there are still gaps in our understanding and analysis of the phenomenon. González-Serrano et al. (2020) note that although sustainable entrepreneurship has gained interest in different contexts, including sport, there is still a lack of comprehensive studies that systematically address this area of research. Al-Saleh and Mahroum (2015) argue that the relationship between policy instruments and business models in promoting sustainability in the built environment has received limited attention, suggesting the need for further research into this crucial intersection.

Similarly, Hestiningtyas et al. (2023) emphasise the need to investigate how entrepreneurship education influences students' entrepreneurial intentions. This highlights another area of research that requires further attention and exploration. These gaps in the literature justify conducting a bibliometric analysis on sustainable entrepreneurial intention to map the current state of research, identify areas for potential development, and contribute to the advancement of knowledge in this emerging field. The aim of this study is to examine research trends on sustainable entrepreneurial intention. The following questions are raised:

- (1) What are the years where the most interest has been presented regarding sustainable entrepreneurial intention?
- (2) What type of growth does the number of scientific articles on sustainable entrepreneurial intention present?
- (3) What are the main research references on sustainable entrepreneurial intention?
- (4) What is the thematic evolution derived from scientific production on sustainable entrepreneurial intention?
- (5) What are the main thematic clusters on sustainable entrepreneurial intention?
- (6) What are the growing and emerging keywords in the research field of sustainable entrepreneurial intention?
- (7) What themes are positioned as protagonists for the design of a research agenda on sustainable entrepreneurial intention?

The article discusses key areas for understanding sustainable entrepreneurship. The text begins with an introduction that provides context and outlines the objectives of the study. The methodology section describes the approach and tools used for the

research. The results section presents key findings on thematic development, key research references and emerging keywords. The discussion section analyses and interprets the findings, while the conclusions offer final reflections and possible implications for future research around sustainable entrepreneurial intention.

2. Methodology

In the present study, an exploratory review of the literature on sustainable entrepreneurship was carried out, using secondary research sources and following the parameters established in the PRISMA-2020 declaration (Page et al., 2021). The bibliometric analysis was carried out with the aim of examining and synthesising the existing academic production in this area, identifying trends, patterns and gaps in knowledge, which allowed a deeper understanding of the issues addressed by researchers, as well as evaluating the breadth and depth of the available literature on sustainable entrepreneurial intention. The results obtained contribute to the existing body of knowledge and provide a solid foundation for future research in this area.

2.1. Eligibility criteria

The inclusion criteria focus on titles and keywords as the main metadata to identify the relevance of the records. Different forms of references are considered, including combinations of 'sustainable entrepreneurship' and its equivalents, to capture the diversity of approaches and perspectives present in the academic literature on this topic. Recognising the complexity of the term and its many variants, it is important to include all relevant references.

To ensure the quality and coherence of the data analysed, three phases of exclusion criteria are implemented. The first phase excludes all records with incorrect or inaccurate indexing, ensuring that only relevant and correctly labelled documents are considered. The second phase excludes documents for which the full text is not available, but this restriction only applies to systematic literature reviews. Bibliometrics is based on the analysis of metadata and cannot evaluate the full content. Finally, in the third stage of exclusion, documents with incomplete indexing or insufficient information for proper classification are excluded. Priority is given to the inclusion of academic articles, relevant conferences and high-quality documents that contribute significantly to the study of sustainable entrepreneurship. Materials with little relevance or scientific value for bibliometric analysis are discarded.

2.2. Source of information

The Scopus and Web of Science databases were selected as the main sources of scientific and academic information. Singh et al. (2021) was consulted for this study. In 2021, a comparative analysis was conducted to evaluate the journal coverage of Web of Science, Scopus, and Dimensions. The study highlighted the broad coverage and exhaustiveness of these two databases, particularly Scopus and Web of Science, which offer a wide range of indexed journals in various fields of knowledge. This allows for an exhaustive and rigorous search of scientific literature. Additionally, both databases have advanced tools and functionalities that facilitate the recovery, organization, and analysis of bibliometric data, making them ideal options for carrying out in-depth research on sustainable entrepreneurial intention.

2.3. Search strategy

To conduct the search in the two chosen databases, we created two specialized search equations that met the defined inclusion criteria and the search characteristics of each database. This approach optimized the retrieval of relevant information and minimized the inclusion of non-relevant records. The search equations were developed using specific terminology associated with sustainable entrepreneurial intention, as well as the indexing structure and search operators of Scopus and Web of Science. Synonyms and terms related to sustainable entrepreneurial intention were also taken into account, use the Boolean operators and filters available on each platform to refine the search and ensure the completeness and precision of the results obtained.

For the Scopus database: TITLE-ABS-KEY ('sustainable entrepreneur*' OR 'green entrepreneur*' OR 'eco-friendly entrepreneur*' OR 'environmentally entrepreneur*' OR 'entrepreneurship for sustainability' OR 'sustainable business venture*' OR 'green business venture*' OR 'eco-friendly business venture*' OR 'environmentally conscious business') AND TITLE (intention OR acceptance OR adoption)

For the Web of Science database: TS=(‘sustainable entrepreneur*’ OR ‘green entrepreneur*’ OR ‘eco-friendly entrepreneur*’ OR ‘environmentally entrepreneur*’ OR ‘entrepreneurship for sustainability’ OR ‘sustainable business venture*’ OR ‘green business venture*’ OR ‘eco-friendly business venture*’ OR ‘environmentally conscious business’) AND TS=(intention OR acceptance OR adoption)

2.4. Data management

During the bibliometric analysis, we utilized the Microsoft Excel® tool to extract, store, and process information from each database. This application provided an efficient platform to organize and analyze the collected data, allowing for the manipulation of large quantities of information in a systematic and structured manner. The VOSviewer® software was used to organize and analyze the collected data. This application provided an efficient platform for manipulating large amounts of information in a systematic and structured manner (Van Eck & Waltman, 2010), in conjunction with Microsoft Excel. To create graphs of various bibliometric indicators, VOSviewer® was used to visualize the co-authorship network, relationships between key terms, and other analyses of the structure and dynamics of literature on sustainable entrepreneurial intention. This contributed to a deeper and visually representative understanding of the obtained data. The combination of these tools facilitated the interpretation and presentation of bibliometric results in a clear and accessible manner for analysis and discussion.

2.5. Selection process

The PRISMA 2020 statement (Page et al., 2021) emphasizes the importance of disclosing the use of an internally derived automatic classifier to aid in the selection process, as well as conducting internal or external validation to evaluate the risk of missing studies or incorrect classifications. Utilizing an automatic classifier and validating its performance are crucial steps in ensuring the integrity and reliability of the bibliometric review. Automation tools were collaboratively developed by all participating researchers and implemented in Microsoft Excel® as an internal instrument for this study. Each researcher used the tool independently to apply the inclusion and exclusion criteria. This was done to mitigate the risk of missing studies or incorrect classifications through convergence of results. The convergence of results helped ensure the consistency and accuracy of the study selection process, thus strengthening the reliability and validity of the data collected for bibliometrics on sustainable entrepreneurship.

In addition, the use of an internally derived automatic classifier not only optimizes the selection process, but also makes it possible to manage large volumes of data more efficiently. This is particularly relevant in bibliometric studies, where the amount of literature is significant. The ability to automate part of the process reduces the time and resources needed to review each study manually. However, it is essential to complement

this automation with a manual review to ensure that the decisions made by the automatic classifier are accurate and consistent with the study criteria. In this sense, internal and external validation of the classifier acts as a quality control, ensuring that the risk of omissions or misclassifications is kept to a minimum. This combination of automatic tools and manual review reinforces the methodological robustness of the study, contributing to greater confidence in the results obtained. In this way, it ensures that the bibliometrics on sustainable entrepreneurship accurately and comprehensively reflect the current state of knowledge in this emerging field.

2.6. Data collection process

To ensure transparency and replicability, it is crucial to provide a detailed description of the data collection methods employed in the study. This includes the number of reviewers involved, whether they worked independently, the processes used to obtain and verify data from investigators, and any automation tools utilized (Page et al., 2021). The study on sustainable entrepreneurial intention utilized Microsoft Excel® as an automated tool to collect data from reports obtained from two selected databases. All authors of the study acted as reviewers, participating independently in the validation process. Additionally, a collaborative data confirmation process was carried out until absolute convergence was achieved in the results, ensuring the coherence and precision of the information collected for bibliometrics on sustainable entrepreneurial intention.

2.7. Data elements

For this research, we conducted searches for data that align with the study's objective. We searched for all relevant articles using specialized equations designed for each database, covering those that mention sustainable entrepreneurial intention. However, if we find missing or unclear information, we will apply an exclusion criterion based on the text's relevance to ensure coherence with the research's purpose and scope. This means that priority will be given to the inclusion of data that contributes to understanding the basis of knowledge on the topic. Texts that are not relevant or do not provide essential information for the study of sustainable entrepreneurial intention will be excluded.

2.8. Assessment of the risk of bias of the study

The process of assessing bias risk in the included studies was comprehensive and collaborative among all

authors. The risk of bias assessment was conducted using the same automated Microsoft tool for data collection. Excel, which ensures consistency and uniformity in the analysis, was used. All authors participated in the evaluation independently, allowing for an exhaustive review of each study included in the bibliometrics. This methodology ensures that the risk of bias evaluation process is carried out in a rigorous and systematic manner, contributing to the quality and integrity of the results obtained in research on sustainable entrepreneurial intention.

2.9. Measures of effect

The use of effect measures, such as risk ratio or mean difference, is prevalent in primary research, where statistical analysis is conducted to assess causal relationships or associations between variables. However, in the context of this bibliometric research based on secondary sources, different measures are employed for result synthesis and presentation. These measures include the number of publications. The analysis of data on the number of citations and the temporal use of each keyword involves the use of tools such as Microsoft Excel® for collecting and organizing information, as well as VOSviewer® for determining the thematic associations between existing nodes. These measures provide a broader and more detailed understanding of the literature on sustainable entrepreneurial intention, revealing patterns of publication, temporal trends, and relevant topic areas in the field.

2.10. Synthesis methods

To ensure eligibility for each synthesis, we conducted rigorous processes that involved tabulating the intervention characteristics of each study and comparing them with the planned groups. This allowed for a detailed assessment of the relevance of the studies. In each study, methods were used to prepare the data for presentation or synthesis. This included handling missing summary statistics and data conversions to ensure the integrity of the collected information. Appropriate methods were used to tabulate and visually display the results of the studies and individual syntheses, facilitating the understanding and analysis of the data. Bibliometric indicators of quantity, quality, and structure were also created (Durieux & Gevenois, 2010) and applied in an automated manner using Microsoft Excel. The symbol * was added to all documents that passed the three exclusion phases. This ensured consistency and objectivity in evaluating the studies and synthesizing bibliometric results for research on sustainable entrepreneurial intention.

2.11. Assessment of reporting bias

There is a risk of bias towards specific synonyms found in thesauri, such as the IEEE. This bias is reflected in the inclusion criteria, search strategy, and data collection. It may affect the identification and selection of relevant studies, as well as the interpretation of results. Additionally, the presence of documents with incomplete indexing, conference proceedings, and non-relevant documents can introduce further biases to the process, potentially omitting valuable information for the construction of knowledge on the topic of entrepreneurial intention. To ensure objectivity, it is crucial to recognize and address potential biases in evaluating literature and interpreting bibliometric findings.

2.12. Certainty evaluation

Certainty in the body of evidence is evaluated in a general and holistic manner, unlike primary studies that evaluate certainty individually. In this context, certainty is evaluated by considering the independent application of inclusion and exclusion criteria. The article reports on the definition of bibliometric indicators and possible biases in the methodological design. This contributes to understanding the robustness of the body of evidence. Additionally, the study's limitations are discussed, allowing for a critical and transparent evaluation of confidence in the results of research on sustainable entrepreneurial intention (see Figure 1).

An initial identification stage was conducted, which involved executing search strategies in each selected information source. Duplicate records were eliminated to ensure data integrity. Subsequently, three phases of exclusion based on predefined criteria were implemented to refine the selection of relevant studies. Finally, after an exhaustive review process, 199 articles that met the inclusion criteria established for the research were identified and selected. These articles will be analyzed in this bibliometric study.

3. Results

The results section presents the findings obtained from the analysis and interpretation of the data collected in the study. It provides a detailed and systematic view of the results, organized in a coherent manner to address the stated research objectives. The data is explored through graphs and statistical analysis to identify trends, patterns, and relationships. This allows for a deeper understanding of the phenomena studied. The results provide a solid basis for discussing the implications and

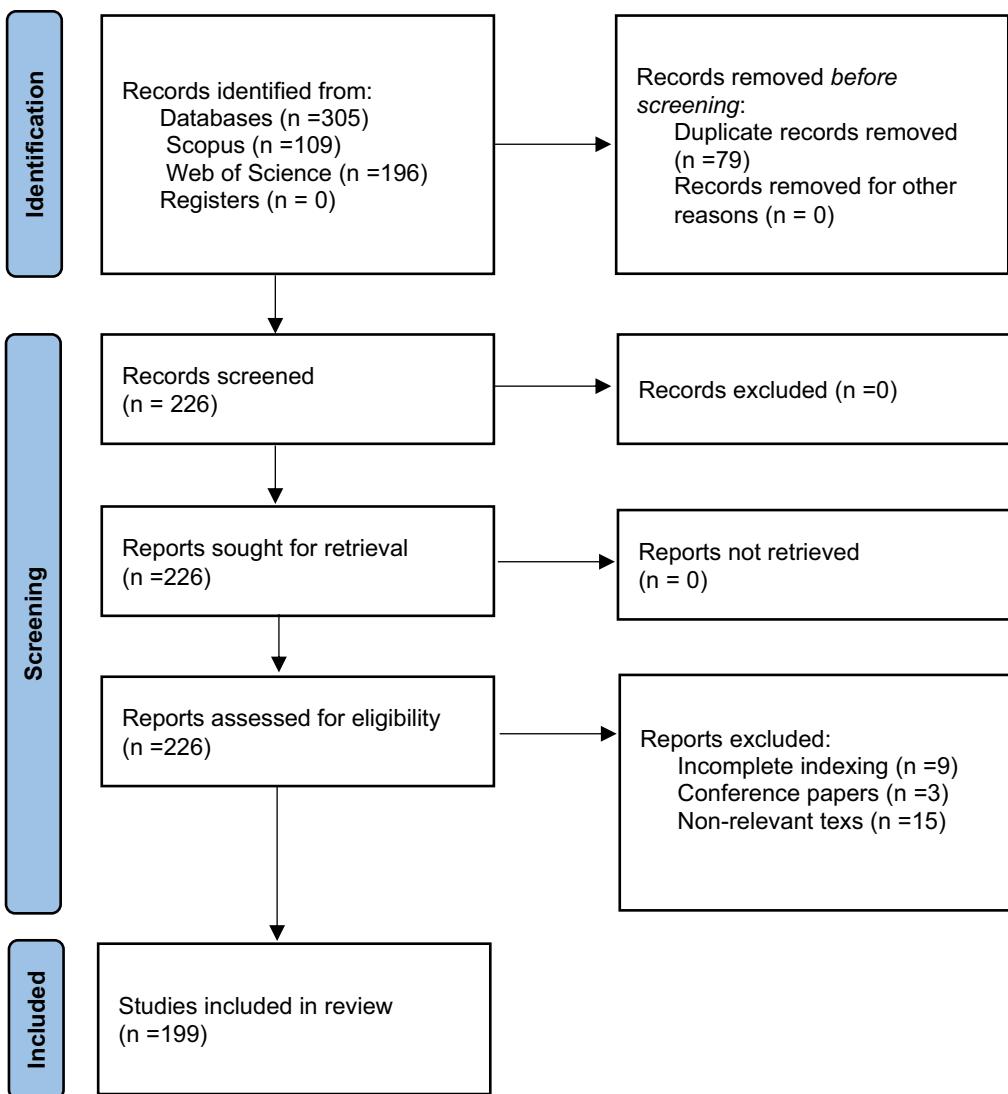


Figure 1. PRISMA flowchart. Own elaboration based on Scopus and web of science.

conclusions of the study, as well as generating new research questions and future areas of study.

The analysis of publications by year, as shown in Figure 2, reveals a quadratic polynomial growth pattern with an index of 98.01%, indicating a significant trend in the production of articles on the subject. The years 2023 are particularly highlighted. The number of publications has been consistently increasing in recent years, with 2021 and 2022 having the highest number of publications. This growth indicates a continuous and growing interest in research and discussion around sustainable entrepreneurial intention. This reflects the relevance and importance of this field of study in the academic and business communities.

Figure 3 shows two main groups of authors: the first group, represented by authors such as Wagner M and Kuckertz A, stands out for their impact on the scientific community despite having low scientific productivity in

terms of the number of publications. The second group is distinguished by their high scientific productivity. The field of sustainable entrepreneurial intention is led by authors such as Yasir N and Mehmood HS. Although their number of citations may be lower compared to the first group, these observations suggest the existence of different strategies and approaches among authors, which could influence their recognition and contribution to the existing body of knowledge.

Three main groups of journals were identified, as shown in Figure 4. First, among the journals that stand out in both productivity and impact, Sustainability is notable. On the other hand, the Journal of Business Venturing is positioned as a reference in terms of impact despite having low scientific productivity in terms of the number of publications. Finally, there is a group of journals, such as Frontiers in Psychology, that are distinguished by their high scientific

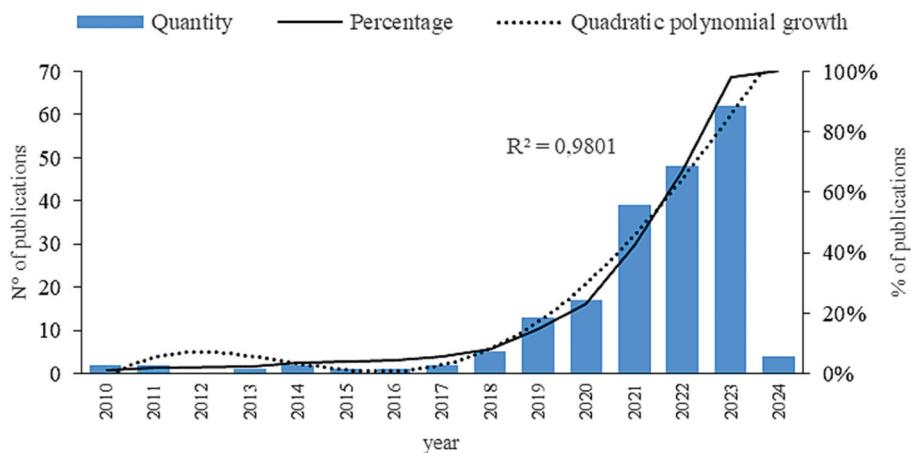


Figure 2. Publications by year. Own elaboration based on Scopus and web of science.

productivity, although their number of citations may be lower compared to the journals of the first group. The differences in characteristics and approaches between the journals in the field could influence their recognition and contribution to the advancement of knowledge in this area.

The analysis identified two main groups of countries, as shown in Figure 5. The first group includes countries that stand out in both productivity and scientific impact, such as the United States, Pakistan, and Germany. The second group includes countries, such as China, that are distinguished by their high scientific productivity. It is important to note that this analysis is objective and based solely on the data. Although their citation

count may be lower compared to the countries in the first group, these findings suggest varying levels of contribution and international recognition in the field of sustainable entrepreneurial intention. These levels can be influenced by factors such as investment in research, international collaboration, and policies supporting research and innovation.

The research presented in Figure 6 examines the thematic evolution of sustainable entrepreneurial intention literature from 2010 to 2024. The most used keyword in each year was analyzed, revealing that in 2010, concepts such as Sustainable Entrepreneurship emerged, marking a starting point in the field. As time progressed, topics such as University Support,

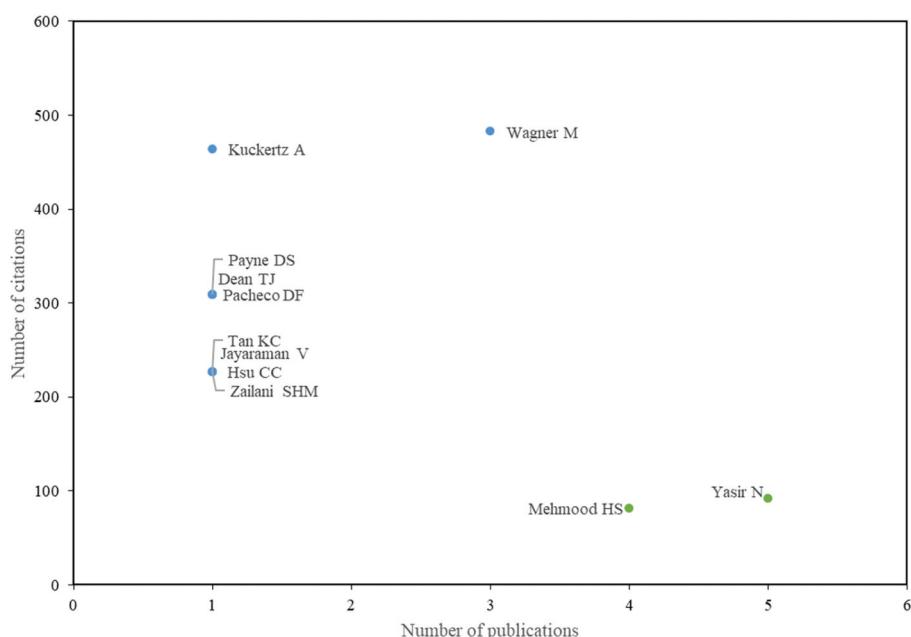


Figure 3. Main authors. Own elaboration based on Scopus and web of science.

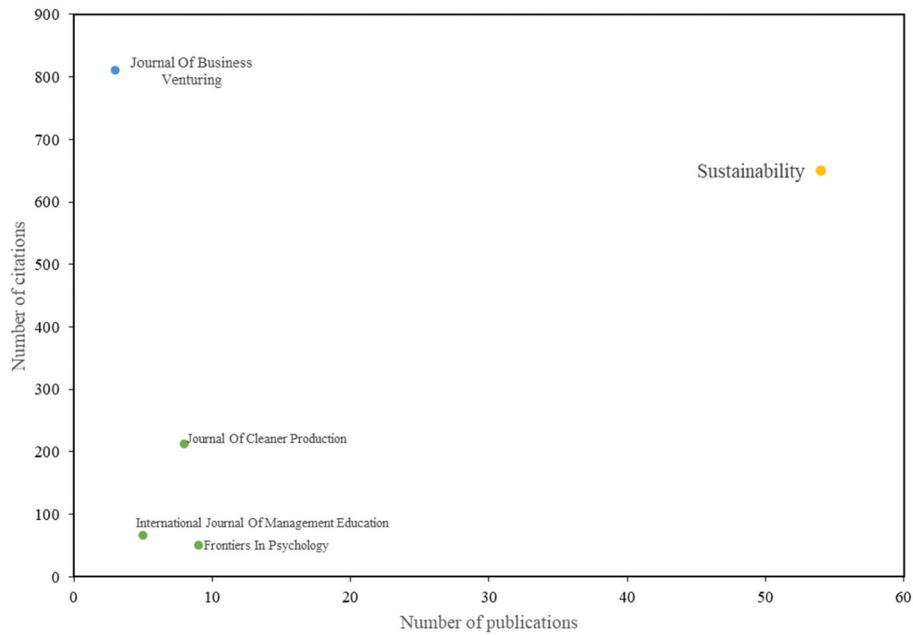


Figure 4. Main journals. Own elaboration based on Scopus and web of science.

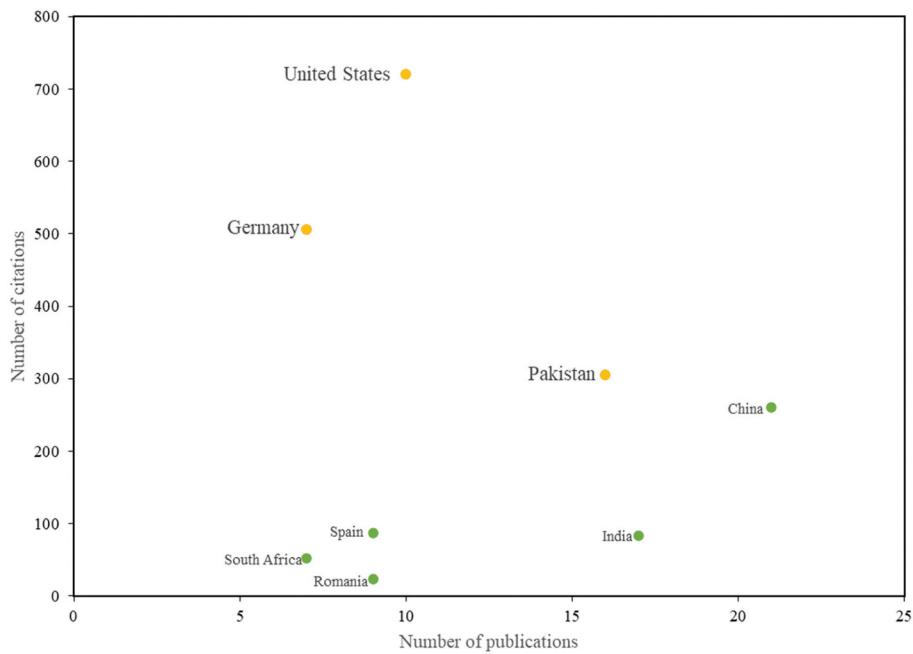


Figure 5. Main countries. Own elaboration based on Scopus and web of science.

Sustainability, Environmental Values, Covid-19, and Green Economy became prevalent, reflecting emerging trends and areas of interest in sustainable entrepreneurial intention research in recent years.

The co-occurrence network of main keywords is presented through 9 thematic clusters, as shown in Figure 7. The red cluster is the most prominent, consisting of terms such as Entrepreneurial intention, Entrepreneurship, Sustainable, Higher education,

Business, environment, and Student. It is followed by the purple cluster. The literature on sustainable entrepreneurial intention identifies clusters of keywords such as Green entrepreneurial intention, Environmental value, Perceived desirability, and Entrepreneurial passion. Additionally, other clusters of blue, purple, yellow, and green colors are identified, which show different elements of conceptual affinity between the analyzed keywords.

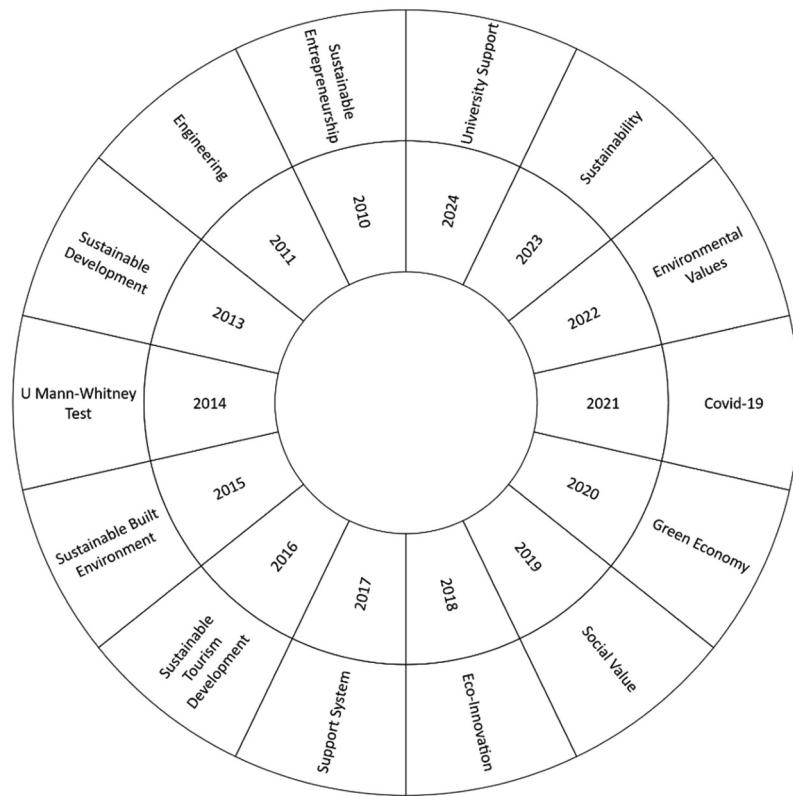


Figure 6. Thematic evolution. Own elaboration based on Scopus and web of science.

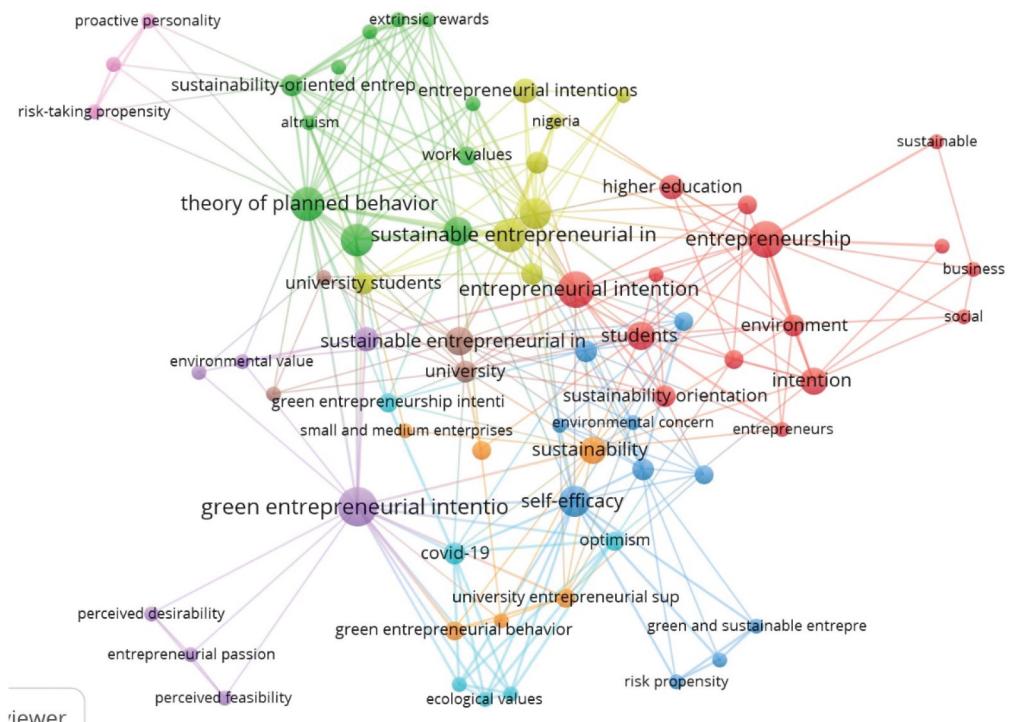


Figure 7. Keyword co-occurrence network. Own elaboration based on Scopus and Web of Science.

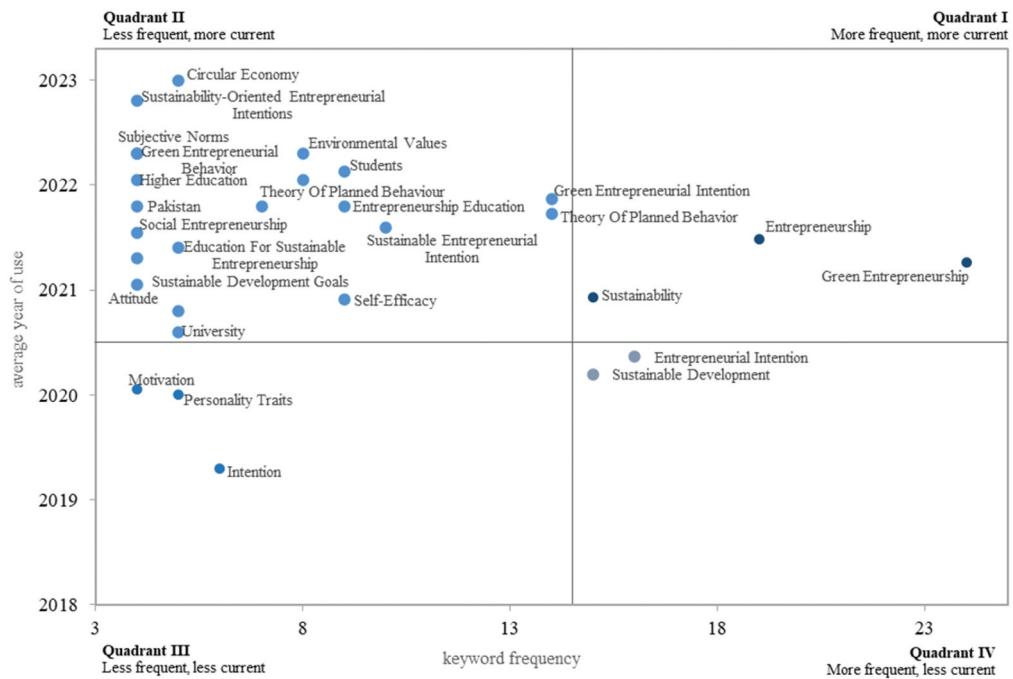


Figure 8. Validity and frequency of keywords. Own elaboration based on Scopus and web of Science.

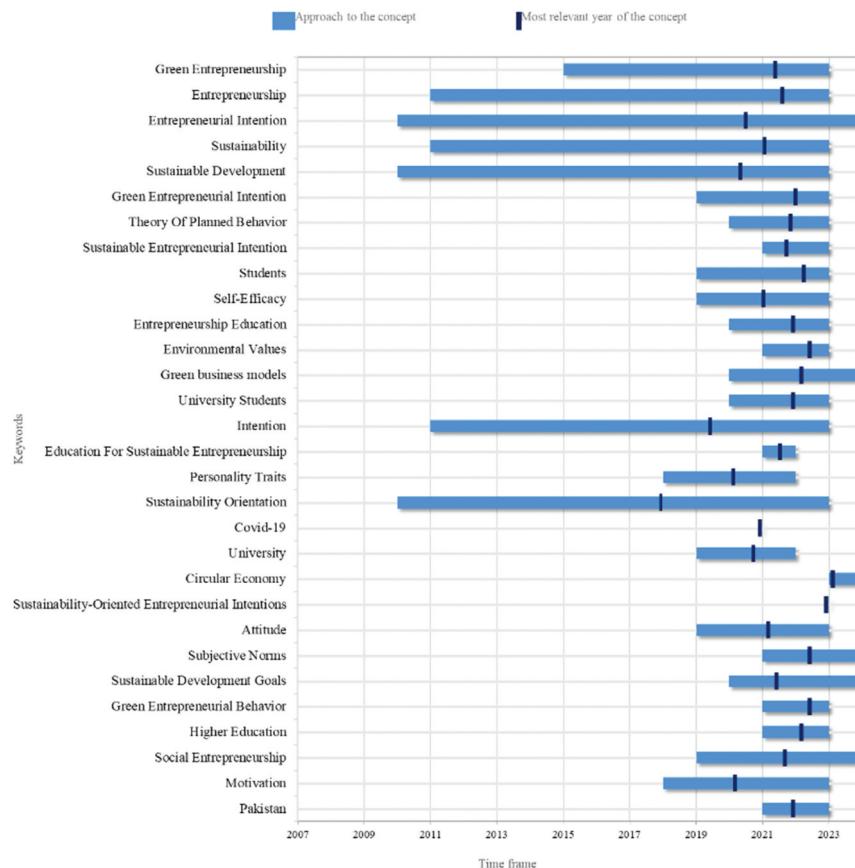


Figure 9. Research agenda. Own elaboration based on Scopus and web of Science.

The text proposes a Cartesian plane to measure the frequency of keywords in decreasing concepts. Quadrant 2 contains infrequent but highly current emerging words such as Circular Economy, Sustainability-Oriented Entrepreneurial Intentions, Subjective Norms, Students, and Higher Education as can see in Figure 8. Quadrant 1 contains established and growing concepts such as Entrepreneurship, Sustainability, and Green Entrepreneurship, indicating their continued relevance and impact on the literature on sustainable entrepreneurial intent. The text avoids biased or ornamental language and employs a formal register with precise word choice. The structure is clear and logical with causal connections between statements. The text adheres to style guides and maintains consistent formatting features. No changes in content were made.

4. Discussion

The discussion section is a crucial part of the research. It analyzes the obtained results in detail, explores the practical implications derived from these findings, and discusses the limitations of the study. Additionally, it classifies keywords according to their role in the research context, identifies the main gaps in the existing literature on the topic, and proposes a research agenda for future studies in the field of sustainable entrepreneurial intention.

4.1. Analysis of the growth of scientific literature on sustainable entrepreneurial intention

The results section highlights the significant growth of scientific production on sustainable entrepreneurial intention in recent years, with particular emphasis on the years 2023, 2022, and 2021. In Lopes et al. (2023) explored the antecedents of entrepreneurial intentions oriented towards sustainability among higher education students in Angola. The study provided valuable information to better understand this emerging phenomenon by offering an initial insight into the factors that drive sustainable entrepreneurial intentions in a specific context.

In Le Loarne Lemaire et al. (2022) developed an advanced model of green entrepreneurial cognition based on a practical approach. The research offers an innovative perspective on the process of becoming a green entrepreneur, highlighting the importance of entrepreneurial cognition in the context of sustainability. This study significantly contributes to the theoretical understanding of how entrepreneurs can integrate sustainability into their business practices.

In Hussain et al. (2021) explored the relationship between green and sustainable entrepreneurial intentions and the use of social networks. They examined the mediating role of self-efficacy and risk propensity. The research revealed how entrepreneurs use social networks as platforms to promote sustainability, highlighting the importance of psychological factors in the formation of sustainable entrepreneurial intentions. These findings offer useful perspectives for understanding the dynamics between entrepreneurial intentions and the digital environment in the contemporary era.

4.2. Analysis of research references on sustainable entrepreneurial intention

The results section shows that Wagner M and Kuckertz A had the highest academic impact, while Yasir N and Mehmood HS were the most productive authors. In the field of sustainable entrepreneurial intention, Wagner M has made significant contributions to research on the effects of innovation and long-term orientation on entrepreneurial intentions (Wagner, 2011). In this study, he examined how these factors influence the intentions of entrepreneurs, particularly among business and engineering students. His findings provide valuable insights into the determinants of entrepreneurial intentions in different educational contexts.

Kuckertz A has conducted research on the influence of sustainability orientation on entrepreneurial intentions, specifically exploring how entrepreneurial experience affects this relationship (Kuckertz & Wagner, 2010). The findings provide valuable insights into how sustainability orientation impacts entrepreneurial decisions, particularly for those with prior entrepreneurial experience.

Yasir N and Mehmood HS focused on the formation of sustainable entrepreneurial intentions in their recent study. They examined the impact of environmental and social values, as well as the consideration of future consequences, on the development of a sustainable entrepreneurial intention (Yasir et al., 2021). In a related article, Yasir, Mahmood, Mehmood, Babar, et al. (2021) investigated the integrated role of personal values and the theory of planned behavior in the formation of a sustainable entrepreneurial intention. The investigation highlights the importance of personal values and awareness of future consequences in promoting business sustainability.

Additionally, it was observed that the journals with the highest productivity and impact were Sustainability and Journal of Business Venturing, respectively. Frontiers in Psychology was also noted for its productivity. It is important to maintain a balanced and

objective tone when discussing these findings. The scientific journals *Sustainability* and *Journal of Business Venturing* have played a crucial role in advancing knowledge about sustainable entrepreneurial intention. In Alvarez-Risco et al. (2021) study, the authors explore the factors that influence green entrepreneurship intentions in university students of businesses during the COVID-19 pandemic in Ecuador. This study provides valuable insight into how changing contexts can affect attitudes towards sustainable entrepreneurship. Additionally, Yan et al. (2018) also contribute to the field by... In 2018, a study explored ways to promote sustainable entrepreneurship in China through innovation and entrepreneurship competitions. The study emphasized the significance of educational programs in fostering entrepreneurial attitudes and skills.

On the other hand, the *Journal of Business Venturing* has been a crucial platform for research, such as the study conducted by Kuckertz and Wagner (2010). This study analyzed the impact of sustainability orientation on entrepreneurial intentions, shedding light on how entrepreneurial experiences can shape attitudes towards sustainability. Similarly, *Frontiers in Psychology* has explored the transition from entrepreneurial intention to green entrepreneurial intention due to the COVID-19 pandemic. This study examined psychological factors such as self-efficacy, motivation, and social responsibility (Wang et al., 2021). These contributions highlight the importance of the aforementioned journals in promoting research on sustainable entrepreneurial intention and its relevance in changing global contexts.

The leading countries in scientific production on sustainable entrepreneurial intention are the United States, Pakistan, Germany, and China. Research from the United States, such as Pacheco et al. (2010), has made significant contributions by exploring the role of entrepreneurship in creating opportunities for sustainable development. This highlights the importance of business innovation in promoting more sustainable practices. Similarly, studies from Pakistan, such as Qazi et al. (2020), have focused on investigating the impact of personality traits and university support on students' green entrepreneurial intentions. This highlights the influence of environmental values in business decisions.

Germany has been a leading country in sustainable entrepreneurship research. Kuckertz and Wagner (2010) conducted a study analyzing the influence of sustainability orientation on entrepreneurial intentions. The study highlighted the importance of business experience in forming attitudes towards sustainability. Additionally, China has become a significant

contributor to sustainable entrepreneurship, as evidenced by Yi's (2021) study. The research examined the shift from green entrepreneurial intentions to green entrepreneurial behaviors and emphasized the importance of supportive universities and institutions in promoting sustainable business practices. These nations have played crucial roles in generating knowledge and promoting entrepreneurial practices that integrate sustainability principles.

4.3. Analysis of the thematic evolution on sustainable entrepreneurial intention

The concept of sustainable entrepreneurship played a fundamental role in the initial years of our research. This line of inquiry enabled us to establish the theoretical and practical foundations for comprehending how a focus on sustainability impacts entrepreneurial intentions (Kuckertz & Wagner, 2010). We specifically investigated the role of entrepreneurial experience in shaping these intentions, which significantly contributed to our understanding of sustainable entrepreneurship. The focus on Sustainable Entrepreneurship initially laid the foundation for subsequent literature development on the topic. This provided a solid conceptual framework that was later expanded to address other crucial aspects, such as university support, environmental values, and the green economy. This reflects the evolution of the field towards a more holistic understanding of sustainable entrepreneurial intent.

The concept of University Support has gained prominence in recent literature on sustainable entrepreneurial intention. This line of research examines how university support influences sustainable entrepreneurial intentions, using the theoretical framework from the theory of planned behavior. The approach reflects a growing interest in understanding how educational institutions can encourage and support entrepreneurial initiatives that take sustainability into account as a central element. The study by Sharma et al. (2024) is evidence of this trend.

The literature on sustainable entrepreneurial intention extensively discusses the concept of sustainability. Lamperti et al. (2023) explored the transfer of knowledge from incubators to sustainable startups and emphasized the significance of specific support programs to promote business sustainability. This reflects the growing awareness of the need to integrate sustainable practices into business activity and the importance of support programs to promote this goal.

The study by Nitu-Antonie et al. (2022) emphasizes the significance of environmental values in shaping sustainable entrepreneurial intentions. The authors employ

a serial-parallel mediation model to investigate how environmental values impact the entrepreneurial intentions of young individuals with higher education in Romania. The study underscores the importance of taking into account personal and environmental values when promoting business sustainability.

In 2021, the most studied concept was Covid-19. This is evidenced in a study by Tajvidi and Tajvidi (2021), which examines the growth of cyberentrepreneurship in the food industry during the pandemic. The study highlights the importance of virtual community participation during times of crisis and reflects the need for adaptation and change in sustainable entrepreneurship in the face of global challenges such as the pandemic.

In 2020, the most studied concept was the Green Economy, as evidenced by the research conducted by Soomro et al. (2020). The study analyzed the inclination towards green entrepreneurship among the younger generation as a path towards a green economy. The research highlights the importance of fostering an entrepreneurial spirit that takes into account environmental sustainability and promotes responsible business practices.

4.4. Analysis of the thematic clusters on sustainable entrepreneurial intention

The bibliometric analysis of the main keyword co-occurrence network revealed the existence of several thematic clusters that represent areas of conceptual affinity. One of the most prominent clusters is the red cluster, which includes terms such as Entrepreneurial intention, Entrepreneurship, Sustainable, Higher education, Business, environment, and Student. This cluster reflects the interconnection between sustainable entrepreneurial intention, higher education, the business environment, and environmental sustainability. Martínez-González et al. (2019), Qazi et al. (2020), Alshebami et al. (2023), and Dieguez et al. (2023) have significantly contributed to the analysis and understanding of the antecedents, factors, and consequences of sustainable entrepreneurial intention in educational and business contexts.

The second most important cluster, identified with the color purple, includes terms such as 'Green entrepreneurial intent', 'Environmental value', 'Perceived desirability', and 'Entrepreneurial passion'. This cluster focuses on the connection between sustainable entrepreneurial intention and environmental values, perceived desirability, and entrepreneurial passion. Some studies explore how university partnerships and collaborative relationships impact students' sustainable entrepreneurship intentions, offering valuable insights into the role of educational

institutions in fostering entrepreneurship. The role of educational institutions in fostering sustainable entrepreneurship has been studied by Nițu-Antonie et al. (2022) and Tehseen and Haider (2021).

4.5. Analysis of the frequency and conceptual validity around sustainable entrepreneurial intention

The analysis of the Cartesian plane shows a decrease in the use of certain concepts in quadrant 4 when it comes to sustainable entrepreneurial intention in recent years. The terms 'Entrepreneurial Intention' and 'Sustainable Development' stand out as key words. The decrease in frequency of their use suggests a shift in research focus in this field.

The concept of 'Entrepreneurial Intention' has been extensively studied as a crucial predictor of sustainable entrepreneurial behavior (Vuorio et al., 2018). Previous research has explored its influence on business decision-making, with a focus on sustainability and corporate social responsibility. Similarly, 'Sustainable Development' has been a central term in the literature on sustainable development and entrepreneurship. However, its decreasing presence in recent years could indicate a shift in focus towards other aspects of business sustainability (Sargani et al. 2021). These findings suggest the need to explore new areas of research and emerging concepts in the field of sustainable entrepreneurial intention.

The analysis of the Cartesian plane revealed the presence of emerging concepts in quadrant 2, indicating areas of growing interest in research on sustainable entrepreneurial intention. Among these concepts, the 'Circular Economy' and 'Subjective Norms' stand out as relevant topics in current literature. The term 'Circular Economy' refers to an economic approach that aims to minimize waste and promote the reuse of resources. This approach aligns with the principles of business sustainability and environmental responsibility (Mondal et al., 2023). The growing interest in business models that promote resource efficiency and the reduction of negative environmental impacts is reflected in the increasing use of this term as a keyword.

On the other hand, 'Subjective Norms' refer to individual perceptions about expectations and social pressure to adopt certain behaviors or attitudes. In the context of sustainable entrepreneurial intention, subjective norms can influence business decisions related to the adoption of sustainable and responsible practices (Hussain, Nazir, Hashmi, DiVaio, et al., 2021). The increased attention towards this concept suggests

a recognition of the importance of social and psychological factors in the formation of entrepreneurial intentions aligned with sustainability. This highlights the need for further research into these emerging concepts and their implications in the sustainable business context.

Quadrant 1 of the analysis shows the presence of established and prominent concepts in the field of sustainable entrepreneurial intention. The key words identified include 'Entrepreneurship', 'Sustainability', and 'Green Entrepreneurship', which are fundamental pillars in contemporary business research and practice. 'Entrepreneurship' drives innovation and change in the economy, while 'Sustainability' emphasizes the importance of environmental and social responsibility in business activities (Pacheco et al., 2010; Spence et al., 2011). 'Green Entrepreneurship' focuses on developing companies and business models that minimize environmental impact and actively contribute to conservation (Alvarez-Risco et al., 2021).

These concepts reflect the increasing awareness and commitment to sustainable and responsible business practices in the global context. The constant presence of these terms in scientific literature suggests their continued relevance and central role in the evolution of entrepreneurship towards a more ethical, ecological, and socially responsible approach. Their prominence in quadrant 1 indicates that these themes will continue to be areas of interest and focus in future research on sustainable entrepreneurial intention.

4.6. Classification of keywords on sustainable entrepreneurial intention according to their function

Table 1 presents a comprehensive classification of emerging and growing keywords related to sustainable entrepreneurial intention, organized by function. This table facilitates the identification of the main characteristics and applications of each categorized function, enabling researchers to better comprehend the dynamics and

evolution of key concepts in the field of sustainable entrepreneurial intention.

This classification enables researchers and academics to gain a better understanding of the scope and depth of research on sustainable entrepreneurial intent. It also helps identify potential areas for future research and policy development. Table 1 serves as a valuable tool for synthesizing and comprehending the growing amount of knowledge in this constantly evolving field.

The table lists functions that represent various aspects of sustainable entrepreneurial intention, including motivation, influencing factors, business models, and public policies. By analyzing these emerging and growing keywords according to their function, researchers can identify trends and areas of interest that are gaining importance in the scientific literature.

4.7. Theoretical implications

The study involved a thorough and systematic review of academic literature in the field. The analysis of publication frequency per year revealed significant theoretical implications. This temporal analysis provides insights into emerging trends and the scientific community's continued interest in sustainable entrepreneurial intent, as well as periods of greatest research activity.

Likewise, by identifying the main theoretical references in the field, bibliometrics sheds light on the conceptual bases and frameworks that support research in sustainable entrepreneurial intention, allowing us to understand how certain theoretical perspectives have been developed and consolidated over time, as well as the influence of authors and currents of thought in the construction of knowledge in this area.

Examining the evolution of themes in sustainable entrepreneurial intention literature reveals changes and shifts in research approaches over time. This analysis offers a panoramic view of how various themes and subthemes have emerged and evolved within the field, reflecting the dynamics and complexity of research in this area.

Table 1. Classification of keywords according to their function. Own elaboration based on Scopus and web of science

Keyword	Associated Tools	Applications	Characteristics
Circular Economy	Resource reuse	Waste reduction	Environmental sustainability
Sustainability-Oriented Entrepreneurial Int.	Sustainable development	Creation of sustainable business models	Orientation towards environmental impact
Subjective Norms	Perception of the social environment	Influence on entrepreneurial decisions	Sociocultural aspects
Higher Education	Academic training	Promotion of business skills	Promotion of innovation
Entrepreneurship	Entrepreneurship	Creation of new businesses	Economic boost
Sustainability	Sustainable development	Integration of environmental practices in business	Social and environmental responsibility
Green Entrepreneurship	Green entrepreneurship	Promotion of sustainable solutions	Focus on environmental conservation

Similarly, analyzing the co-occurrence of keywords and identifying emerging and growing keywords can reveal patterns of association and conceptual development in the literature on sustainable entrepreneurial intention. These tools expose interrelationships and emerging trends in academic vocabulary, providing valuable information on the most active and promising areas of research.

The identification of research gaps is a crucial aspect of bibliometrics as it highlights underdeveloped or insufficiently explored areas in the existing literature. These gaps represent opportunities for future research and theoretical contributions in the study of sustainable entrepreneurial intention. The theoretical implications reflect the value and importance of bibliometrics as a fundamental tool to understand and advance knowledge in this multidisciplinary and constantly evolving field.

The present study implies important theoretical contributions to the field of sustainable entrepreneurial intention, especially considering that only one similar study has been found in the literature. This fact highlights the originality and relevance of the work, providing a unique basis for future research. The identification of the main theoretical references and thematic developments not only consolidates the current understanding, but also opens new perspectives for the development of more robust theories.

4.8. Practical implications

Conducting this research has significant practical implications for various actors involved in promoting sustainable entrepreneurship and making strategic decisions. The evolution of themes has shifted from a focus on Sustainable Entrepreneurship to include University Support, Sustainability, Environmental Values, Covid-19, and Green Economy. This suggests the need to adapt support policies and programs for entrepreneurship to address emerging challenges and opportunities in this field.

The identification of the main thematic cluster, which includes terms such as Entrepreneurial intention, Entrepreneurship, Sustainable, Higher education, Business, environment, and Student, provides valuable insights for formulating strategies and programs to promote sustainable entrepreneurship. These findings indicate the significance of incorporating entrepreneurial education and environmental awareness into academic and training programs. Additionally, promoting collaboration between educational institutions, companies, and government agencies can encourage entrepreneurial initiatives that address socio-environmental challenges.

The analysis of keyword frequency and validity reveals trends in sustainable entrepreneurial intention literature. Identifying decreasing, emerging, and growing concepts guides resource allocation and strategic planning for research and development. This analysis helps researchers and policymakers identify opportunities for generating new knowledge and formulating policies that promote sustainable entrepreneurship in a changing and dynamic context.

Various practical implications can influence policies, strategies, and practices related to the promotion of sustainable entrepreneurship. In addition to identifying thematic trends and providing guidance for policy formulation, studies of this type can also impact other dimensions and contexts.

For example, they can inform the formulation of educational and training strategies. Bibliometrics can provide valuable information on the most relevant thematic areas and competencies to promote sustainable entrepreneurial intention among students and professionals. This information can guide the design of educational and continuous training programs that promote entrepreneurial skills with a focus on sustainability. This, in turn, contributes to the preparation of a more aware workforce committed to innovation and sustainable development.

The results of this study can be valuable for entrepreneurs, investors, and corporate decision-makers seeking to identify trends and business opportunities in sectors related to environmental, social, and economic sustainability. The study provides support for business and investment decision-making by offering information on opportunity areas and emerging market niches in the field of sustainable entrepreneurship.

In a context of uncertainty, such as climate policy, geopolitical conflicts, pandemics such as COVID-19 and fluctuating monetary conditions, it is crucial to develop adaptive and forward-looking strategies for sustainable entrepreneurship. A clear recommendation for future implementation is the establishment of a dynamic policy framework that responds to the evolving global landscape. This implies the creation of flexible support mechanisms that can pivot quickly in response to new challenges and opportunities (Işık et al., 2023).

Moreover, in times of uncertainty, it is essential to foster strong international partnerships and networks. Building partnerships between countries, universities, research institutions and companies can facilitate the exchange of knowledge, resources, and good practices. This collaborative approach can improve the ability to address complex global challenges such as climate change and economic instability. Future implementations should focus on creating platforms for regular dialogue and cooperation,

enabling a coordinated and cohesive response to uncertainties. These efforts can lead to the development of innovative solutions that not only mitigate risks, but also seize new opportunities for sustainable growth. With an emphasis on international collaboration and a proactive policy framework, we can better equip the sustainable entrepreneurship ecosystem to thrive amidst uncertainty.

4.9. Limitations

However, it is important to recognize some limitations in the methodological efforts made in this bibliometric analysis that could affect the interpretation and generalization of the results obtained. One limitation of this type of study is its dependence on databases such as Scopus and Web of Science. These databases may not provide exhaustive coverage and may exclude relevant sources of scientific literature on the topic. This could introduce biases in the selection of publications included in the analysis, limiting the representativeness of the bibliometric panorama obtained.

It is important to consider the possibility of linguistic and geographical biases in the selection of information sources. The search was mainly conducted in English-speaking databases, which may result in underrepresentation of publications in other languages or from specific regions. This could potentially affect the perception of trends and thematic evolution, as well as the identification of main references and emerging concepts in the field of sustainable entrepreneurial intention.

4.10. Investigative gaps

Table 2 presents the main research gaps identified in the context of sustainable entrepreneurial intention that need to be addressed in future research to advance knowledge and understanding of the topic. These gaps may cover a variety of aspects, such as underexplored areas, underused methodologies, insufficiently understood concepts, or unaddressed practical aspects.

This table presents a structured overview of the identified research gaps, along with justifications and questions for future researchers.

To advance the field of sustainable entrepreneurship, future studies need to be more systematic and specific, promoting sustainability at global, national, and regional levels. Globally, research should examine cross-cultural differences and the impact of international policies and frameworks on sustainable entrepreneurship practices. Nationally, it is essential to analyses how country-specific regulations, economic conditions and cultural factors influence sustainable entrepreneurship. At the regional level, studies could focus on local ecosystems, community initiatives and the impact of regional policies to identify tailored strategies to promote sustainable entrepreneurial intentions. By conducting comprehensive, multi-level research, we can better understand and promote sustainable entrepreneurship in different contexts, contributing to a more sustainable global economy.

Table 2. Research gaps. Own elaboration based on Scopus and web of science

Category	Investigative Gaps	Justification	Questions for Future Researchers
Thematic Gaps	<ul style="list-style-type: none"> - Relationship between sustainable entrepreneurial intention and local economic development. - Impact of sustainable entrepreneurial intention on the creation of green jobs. - Influence on technological innovation and business competitiveness. 	These areas represent critical points where current literature may be limited, and addressing them would help expand understanding of the role of sustainable entrepreneurship in different contexts.	<p>How to measure the impact of sustainable entrepreneurial intention on local economic development?</p> <p>What is the role of sustainable entrepreneurial intention in generating green employment?</p> <p>How does it affect technological innovation?</p>
Geographic Gaps	<ul style="list-style-type: none"> - Little representation in developing regions. - Cultural and contextual differences. 	The lack of studies in certain regions and lack of understanding of cultural differences limits the global applicability of the findings.	<p>What are the cultural and contextual factors that influence sustainable entrepreneurial intention in different regions?</p> <p>How to adapt strategies to specific contexts?</p>
Interdisciplinary Gaps	<ul style="list-style-type: none"> - Integration with disciplines such as environmental economics and sociology - Application of interdisciplinary approaches 	The integration of multiple disciplines enriches the understanding of sustainable entrepreneurial intent.	<p>How to combine approaches from different disciplines to comprehensively analyze sustainable entrepreneurial intention?</p> <p>What is the role of interdisciplinarity?</p>
Temporal Gaps	<ul style="list-style-type: none"> - Longitudinal evolution studies - Influence of historical and socioeconomic events. 	Longitudinal studies provide a comprehensive view of the evolution of sustainable entrepreneurial intention.	<p>How has sustainable entrepreneurial intent evolved over time?</p> <p>What historical events have impacted your perception and practice?</p>

4.11. Research agenda

In the context of sustainable entrepreneurship, it is important to understand the significance of the term ‘Entrepreneurial Intention’. Therefore, it is crucial to investigate the determinants that influence the formation and manifestation of this intention. Future research can explore how individual characteristics, such as personal traits and perception of the environment, impact sustainable entrepreneurial intention. Longitudinal studies can be conducted to follow the evolution of entrepreneurial intention over time, allowing a better understanding of how it develops and manifests itself in different stages of life and changing contexts.

Likewise, it is essential to examine the strategies and policies that can encourage or inhibit sustainable entrepreneurial intention. Future research should explore educational interventions and training programs designed to promote an entrepreneurial mindset oriented towards sustainability. Additionally, the influences can be analyzed. These studies could help identify the optimal conditions for the development of sustainable entrepreneurial intention and guide the formulation of effective policies and programs in this area. Contextual factors, such as the political and economic environment, and their impact on sustainable entrepreneurial intention should be considered.

The Theory of Planned Behavior has become a fundamental theoretical framework in the study of sustainable entrepreneurial intention. This psychological approach provides a deep understanding of how attitudes, social norms, and the perception of control affect a person’s intention to undertake a sustainable business. Future research could examine how the Theory of Planned Behavior factors relate to sustainable entrepreneurial intention in different cultural and socio-economic contexts. Additionally, exploring how interventions or training programs can modify the components of this theory would be valuable to promote sustainable entrepreneurial intention.

The term ‘Circular Economy’ has gained prominence in the field of sustainable entrepreneurship. This approach seeks to promote efficiency in resource use by minimizing waste and maximizing reuse and recycling. Future research could investigate how business practices based on the circular economy affect sustainable entrepreneurial intention. It could explore how companies can adopt circular business models and how these strategies influence entrepreneurs’ intention to create more sustainable businesses. Furthermore, it is relevant to investigate the effects of government policies and business initiatives in promoting the circular economy to encourage sustainable entrepreneurial intention.

Subjective norms are a crucial aspect of the Theory of Planned Behavior and have become a prominent term in the field of sustainable entrepreneurial intention. These norms reflect an individual’s perception of social expectations and perceived support from others regarding their sustainable entrepreneurial intention. Future research should investigate how subjective norms influence entrepreneurs’ intention to adopt sustainable business practices. One could investigate how entrepreneurs interpret and respond to social expectations regarding sustainability and how these perceptions impact their business decisions. Additionally, it would be beneficial to explore how communication strategies and support networks can influence the formation of subjective norms and, consequently, sustainable entrepreneurial intentions.

The concept of Green Entrepreneurship has gained significant relevance in the field of sustainable entrepreneurial intention. It refers to the creation and management of companies that seek to generate a positive impact on the environment while being financially profitable. New studies could deepen understanding of the motivations, barriers, and strategies that drive entrepreneurs to adopt sustainable business practices. Research analyzing the role of innovation, technology, and government policies in promoting green entrepreneurship could contribute to revitalizing interest in this concept and its relevance today.

Entrepreneurship remains a central theme in research on sustainable entrepreneurial intention. This concept encompasses the creation, development, and management of new businesses, including those with a focus on sustainability and social responsibility. Future studies could explore how traditional business models can integrate sustainability principles and how entrepreneurs can balance economic, social, and environmental considerations in their business activities. Additionally, it would be pertinent to investigate how government policies and institutional support can foster an environment conducive to sustainable entrepreneurship, revitalizing the importance of entrepreneurship as a fundamental concept in sustainable entrepreneurial intention.

Sustainability is a crucial aspect of entrepreneurial intention, as it involves meeting present needs without jeopardizing resources and opportunities for future generations. Its significance lies in addressing environmental, social, and economic challenges in a balanced and integrated manner. For future research, it would be relevant to explore how companies can incorporate sustainable practices in their operations. Additionally, it is important to understand the long-term impacts of these actions on

society and the environment. It would also be valuable to explore entrepreneurs' perceptions and attitudes towards sustainability, as well as the factors that influence the adoption of sustainable business practices.

Sustainable development refers to the pursuit of a balance between economic growth, social equity, and environmental protection. In the context of sustainable entrepreneurial intention, this concept emphasizes the importance of creating companies and business models that not only generate economic benefits but also contribute to the well-being of people and the planet. Future research could explore how entrepreneurs can design strategies that promote sustainable development in different sectors and contexts. Additionally, it would be relevant to analyze how government policies and civil society initiatives can support sustainable entrepreneurship and encourage the creation of companies that effectively address social and environmental challenges.

Green entrepreneurial intention is a crucial aspect in promoting sustainability and environmental innovation in entrepreneurship. It refers to the desire and predisposition of individuals to start businesses that incorporate environmentally responsible practices and values. Its importance lies in promoting the creation and growth of companies that contribute positively to the environment and society. Future research should focus on this area. To improve green entrepreneurial intention, it is essential to explore the determinants, including individual, contextual, and social factors that influence entrepreneurs' decision-making regarding environmental sustainability. Additionally, examining strategies and policies that encourage and support the development of green entrepreneurship, as well as the long-term impacts of these initiatives on the economy and the environment, would be beneficial.

Students are a crucial population in the study of sustainable entrepreneurial intent. Understanding how students perceive and engage with sustainable entrepreneurship is critical to fostering an entrepreneurial culture that incorporates sustainability principles from the early stages of training. Future research could explore how education, access to resources, and practical experiences influence students' entrepreneurial attitudes and behaviors towards sustainability. Likewise, it is relevant to examine how educational institutions can adapt their programs and curricula to promote awareness and skills related to sustainable entrepreneurship among students of different disciplines and educational levels. Understanding the role of students in promoting sustainable entrepreneurial intention could generate new strategies to promote innovation and change towards a more sustainable future (see Figure 9).

4.12. Comparative with other studies

In relation to other studies identified in the literature that focus on analyzing scientific production in relation to entrepreneurial intention and sustainability, the study by Brandão Paiva et al. (2023) is identified, indicating a growing interest in this intersection. However, both studies differ in their methodological approaches and the scope of their analyses, while the present study uses a systematic review and meta-analysis approach based on the PRISMA methodology, which involves a comprehensive search strategy and selection process, resulting in the identification and analysis of 199 relevant articles. In contrast, Brandão Paiva et al. (2023) adopt a bibliometric approach, using bibliometric laws and content analysis to examine 76 papers.

Furthermore, although both studies identify emerging themes such as entrepreneurship education, sustainable practices, and innovation, they differ in their emphasis on research gaps and depth of analysis. The current study highlights the evolution of topics and the emergence of new keywords, such as circular economy and subjective norms, indicating a broadening of research horizons and the need for further exploration. On the other hand, Brandão Paiva et al. (2023) focus on the gaps in the literature regarding the combination of entrepreneurial intention and sustainability, highlighting the nascent nature of scientific knowledge in this area.

This suggests that while both studies offer valuable contributions from their approaches, the current study provides a broader view of the development of the field and emerging trends. It presents additional analyses to those found in the literature, including thematic development, the validity and frequency of keywords and their classification by function, and a detailed research agenda.

5. Conclusions

Based on the results, it can be concluded that there was a significant increase in interest in the topic between 2023 and 2022, suggesting a sustained growth in research in this area. In addition, there was an exponential growth in the number of academic articles, indicating a significant increase in academic attention and commitment to sustainable entrepreneurship.

Key research references in this area include authors such as Wagner M, prominent journals such as Sustainability, and leading countries such as the United States, Pakistan and Germany. These actors play a fundamental role in shaping and promoting

knowledge on sustainable entrepreneurship at a global level.

The evolution of the theme shows a shift in focus from sustainable entrepreneurship to more specific topics such as university support, sustainability, environmental values, COVID-19 and green economy. This reflects the adaptation of research to current needs and challenges in the field of sustainable entrepreneurship. The thematic clusters identified, particularly those consisting of keywords such as 'entrepreneurial intention', 'entrepreneurship', 'sustainable', 'higher education', 'business', 'environment' and 'students', reflect the inherent interconnectedness and interdisciplinarity of sustainable entrepreneurship.

Finally, the emergence of new keywords such as 'circular economy' and 'subjective norms' indicates the direction in which research horizons are expanding in this area. These trends point to the need to continue exploring and delving into the different dimensions and aspects of sustainable entrepreneurship to address the complexities inherent in this constantly evolving phenomenon.

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Data availability statement

The data that support the findings of this study are available from the corresponding author, upon reasonable request.

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