


# Bibliometric Analysis of the Development of Innovative Entrepreneurship Literature Based on Sustainability Principles

Loso Judijanto<sup>1</sup>, Ardi Azhar Nampira<sup>2</sup>, Asmirin Noor<sup>3</sup>

<sup>1</sup>IPOSS Jakarta

<sup>2</sup>Institute Teknologi Sepuluh November (ITS)

<sup>3</sup>STIE Mahardika Surabaya

Article Info	ABSTRACT
<p><b>Article history:</b></p> <p>Received May, 2025 Revised May, 2025 Accepted May, 2025</p>	<p>This study presents a bibliometric analysis of the scholarly literature on innovative entrepreneurship with a specific focus on its integration with sustainability principles. Using data from the Scopus database covering publications from 2001 to 2025, the analysis employed VOSviewer to visualize co-authorship networks, citation patterns, and keyword co-occurrence maps. The results reveal a dynamic and interdisciplinary field shaped by influential contributors such as Audretsch, Acs, and Thurik, with collaborative hubs concentrated in the United States and Europe. The conceptual core of the literature revolves around economic development, innovation activity, and entrepreneurial behavior, while recent trends point to a growing emphasis on sustainability, education, and digital transformation. Overlay and heatmap visualizations demonstrate an evolving research agenda increasingly aligned with global sustainability goals. The study identifies gaps in geographical representation and calls for further exploration of impact-driven entrepreneurship, particularly in emerging economies. These findings offer valuable insights for scholars, policymakers, and practitioners aiming to advance sustainable innovation through entrepreneurship.</p>
<p><b>Keywords:</b></p> <p>Innovative Entrepreneurship Sustainable Development Bibliometric Analysis VOSviewer</p>	
	<p><i>This is an open access article under the <a href="#">CC BY-SA</a> license.</i></p>
	
<p><b>Corresponding Author:</b></p> <p>Name: Loso Judijanto Institution: IPOSS Jakarta e-mail: <a href="mailto:losojudijantobumn@gmail.com">losojudijantobumn@gmail.com</a></p>	

## 1. INTRODUCTION

In recent decades, the notion of entrepreneurship has undergone significant evolution, expanding beyond traditional economic paradigms to incorporate social, technological, and environmental dimensions. Among the emerging paradigms is innovative entrepreneurship, which emphasizes the creation of novel products, processes, and business models. Unlike conventional entrepreneurship, innovative

entrepreneurship does not merely focus on profit generation but also on delivering value through transformation and disruption in markets and industries [1], [2]. At the intersection of this evolution lies an increasing recognition of sustainability principles, reflecting a broader concern for the environment, social equity, and long-term viability. These principles are increasingly becoming embedded in entrepreneurial activities and frameworks, particularly in response to global challenges such as climate

change, resource depletion, and social inequality [3].

The confluence of innovation and sustainability within entrepreneurship has stimulated scholarly interest in what is now often referred to as sustainable innovative entrepreneurship. This concept draws from the triple bottom line framework [4], which posits that successful businesses must balance economic performance with environmental and social responsibilities. As such, innovative entrepreneurs are no longer viewed merely as economic agents but also as change makers addressing systemic issues through scalable, creative, and sustainable solutions [5]. In this light, entrepreneurship is not just an economic engine but also a critical lever in achieving sustainable development goals (SDGs), particularly those related to decent work, responsible consumption, innovation, and climate action [6].

Academic interest in sustainable entrepreneurship has grown rapidly, resulting in a diverse and expanding body of literature. Scholars have examined this topic from various perspectives: institutional [7], technological [8], ecological [9], and policy-related [10]. Despite the rising volume of research, the field remains fragmented, with studies often focusing on isolated cases or contexts, lacking a systematic mapping of how the literature has evolved over time and which areas remain underexplored. As the field matures, there is a pressing need to identify dominant research themes, collaborative networks, and knowledge gaps.

To address this, bibliometric analysis provides a powerful methodological tool. It enables scholars to quantitatively evaluate the structural and intellectual landscape of a research domain, identify prolific authors and institutions, and map the trajectory of scholarly attention [11]. Particularly when paired with co-word analysis, bibliometric techniques help illuminate conceptual structures by tracking the frequency and co-occurrence of keywords within the literature. This approach has been successfully applied in adjacent fields such as green entrepreneurship, circular economy, and social innovation. Yet, to date, no

comprehensive bibliometric study has been conducted that specifically targets the intersection of innovative entrepreneurship and sustainability.

Furthermore, the acceleration of global environmental concerns, the COVID-19 pandemic, and technological disruption have all contributed to a shifting landscape in entrepreneurship. These macro-level developments have prompted both scholars and practitioners to rethink the role of entrepreneurship in society. Particularly, there is a renewed emphasis on resilience, adaptability, and systemic innovation — all core attributes of sustainable and innovative ventures. Understanding how academic research has responded to these evolving trends is not only academically relevant but also crucial for guiding future research, informing policy design, and supporting practitioners in the entrepreneurial ecosystem.

Despite a significant uptick in scholarly output on innovative and sustainable entrepreneurship, there remains limited understanding of how this literature has developed structurally and thematically over time. Existing reviews tend to be qualitative, fragmented, or limited in scope. There is a lack of systematic, data-driven analysis that captures the dynamics of the field, including its most influential contributors, prevailing themes, and collaborative patterns. Without such a map, researchers and practitioners risk duplicating efforts, overlooking emergent subfields, or failing to align research with pressing global challenges. This study aims to conduct a comprehensive bibliometric and co-word analysis of the global literature on innovative entrepreneurship grounded in sustainability principles.

## 2. METHODS

This study employed a quantitative bibliometric analysis approach to systematically map and evaluate the academic literature on innovative entrepreneurship within the framework of sustainability principles. Bibliometric methods are particularly effective for

identifying research trends, influential contributions, and structural relationships in a given scientific field [12]. To achieve the study's objectives, a series of analytical steps were conducted using the software VOSviewer, a widely used tool for constructing and visualizing bibliometric networks such as co-authorship, citation, and co-occurrence of keywords [13].

### 2.1 Data Source and Search Strategy

The data for this study were retrieved from the Scopus database, chosen for its extensive coverage of peer-reviewed literature across disciplines. A comprehensive search query was formulated to capture relevant studies that simultaneously address *innovation*, *entrepreneurship*, and *sustainability*. The search string included combinations of keywords such as: "innovative entrepreneurship" OR "entrepreneurial innovation" AND "sustainability" OR "sustainable development". The search was conducted in April 2025 and was restricted to articles published between 2001 and 2025, ensuring a relevant and contemporary dataset. Only peer-reviewed journal articles were included to maintain a high level of scholarly rigor. Conference papers, book chapters, editorials, and grey literature were excluded.

### 2.2 Data Cleaning and Preparation

After downloading the results in CSV format, the raw dataset was examined to remove duplicate entries and irrelevant records. Manual screening of titles and abstracts was conducted to ensure alignment with the study's focus. The final dataset consisted of 980 articles (to be filled upon actual extraction), which were then imported into VOSviewer for network analysis.

### 2.3 Analytical Technique

The bibliometric analysis in this study encompassed three primary components to systematically examine the structure and development of the literature. First, co-authorship analysis was employed to explore collaboration patterns among authors and countries, enabling the identification of the most influential and interconnected contributors in the field. Second, citation analysis was conducted to determine the most

frequently cited articles and authors, thereby highlighting foundational works that have significantly influenced the evolution of research on innovative and sustainable entrepreneurship. Third, the study utilized keyword co-occurrence analysis (co-word mapping) to detect prevailing and emerging research themes by analyzing the frequency and co-occurrence of author keywords. This approach facilitated the formation of conceptual clusters that represent distinct thematic areas within the literature. The analysis applied a full counting method and set a minimum threshold, typically five occurrences for keyword inclusion to ensure analytical rigor while minimizing noise. VOSviewer's algorithm was used to generate visual network maps, with clusters automatically colored and labeled based on the strength of co-occurrence among terms.

## 3. RESULTS AND DISCUSSION

### 3.1 Co-Authorship Analysis

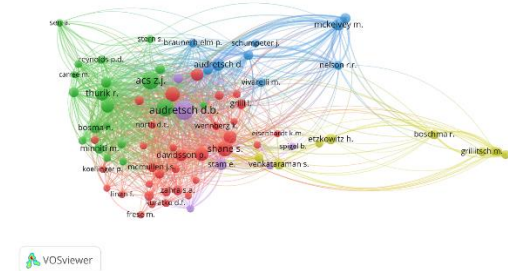


Figure 1. Author Visualization

Source: Data Analysis

The co-authorship network visualization generated by VOSviewer highlights the structural collaboration patterns among the most prolific and influential authors in the field of innovative entrepreneurship and sustainability. Each node represents an individual author, with the size of the node indicating the number of publications or citation impact, and the links between nodes representing co-authorship relationships. Several prominent clusters are visible, suggesting distinct but interconnected research communities. For example, the central position of Audretsch D.B. and Acs Z.J. (red and purple clusters) indicates their significant roles in bridging multiple subfields and facilitating extensive scholarly

collaboration. The green cluster, including authors like Thurik R., Minniti M., and Bosma N., appears to focus on entrepreneurial ecosystems and policy dimensions, while the blue cluster surrounding McKelvey M. and Schumpeter J. may reflect a more theoretical or innovation-based focus. Meanwhile, the yellow cluster led by Grillitsch M. and Boschma R. likely represents research on regional development and evolutionary economic geography. The dense interconnections across clusters suggest a high degree of interdisciplinary engagement, reflecting the integrated nature of innovative and sustainable entrepreneurship research.

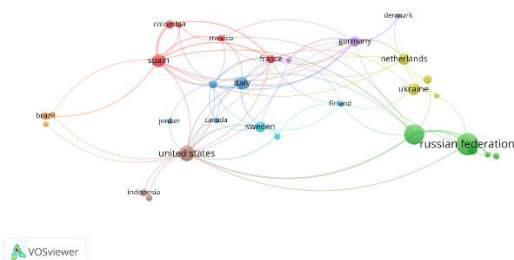


Figure 2. Country Visualization  
Source: Data analysis

The country collaboration network visualization illustrates international co-authorship patterns in the field of innovative entrepreneurship and sustainability research. Each node represents a country, with the node size indicating publication volume or citation influence, and the connecting lines signifying co-authorship links. The United States, Russia, and Spain emerge as dominant contributors, each serving as central hubs within their respective clusters. The United States exhibits broad international collaboration, especially with countries like Indonesia, Canada, and Jordan, reflecting its global research outreach. Russia forms a distinct green cluster with strong ties to Ukraine, Netherlands, and Finland, suggesting regional collaboration in Eastern and Northern Europe. Spain, meanwhile, anchors a vibrant red cluster connected to Colombia, Mexico, and Brazil, indicating active engagement with Latin America. European nations such as Germany, France, Italy, and Sweden also demonstrate moderate to strong interconnectivity, reflecting intra-European research cooperation. The

visualization highlights a geographically diverse but uneven global research landscape, with a few countries acting as central nodes that facilitate knowledge exchange across regions.

3.2 Cytation Analysis

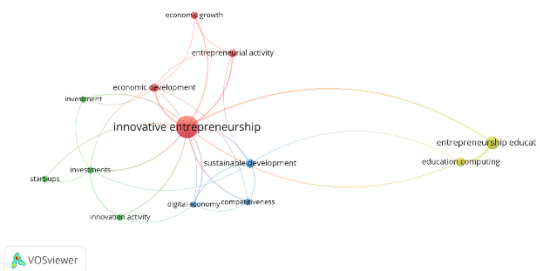
Table 1. Top Cited Literature

Citation	Author	Title
360	[14]	Trinity of change agency, regional development paths and opportunity spaces
281	[15]	Entrepreneurship research: mapping intellectual structures and research trends
262	[16]	The microtheory of innovative entrepreneurship
251	[17]	Entrepreneurship in a Modern network economy
222	[18]	The Schumpeterian entrepreneur: a review of the empirical evidence on the antecedents, behaviour and consequences of innovative entrepreneurship
175	[19]	Knowledge-intensive innovative entrepreneurship integrating Schumpeter, evolutionary economics, and innovation systems
164	[20]	New to the game and questioning the rules: The experiences and beliefs of founders who start imitative versus innovative firms

122	[21]	Factors influencing entrepreneurial intention of university students in china: Integrating the perceived university support and theory of planned behavior
119	[22]	The opportunity not taken: The occupational identity of entrepreneurs in contexts of poverty
108	[16]	The microtheory of innovative entrepreneurship

Source: Scopus, 2025

3.3 Keyword Co-Occurrence Analysis



VOSviewer

Figure 3. Network Visualization

Source: Data Analysis

The keyword co-occurrence network presented in the visualization reflects the conceptual structure of the literature on *innovative entrepreneurship* in relation to sustainability. At the core of the map is the dominant keyword “innovative entrepreneurship”, which acts as a central node connecting a diverse range of thematic clusters. The prominence of this term, indicated by its large node size and numerous links, suggests that it serves as a conceptual anchor in the field, intersecting with multiple subdomains such as sustainability, economic development, and education. The dense interlinkages imply that research on innovative entrepreneurship is multidisciplinary and often discussed alongside broader systemic concepts. One of the most significant clusters emerging from the central node is the economic development and growth theme, colored in red. Terms such

as “*economic growth*,” “*economic development*,” and “*entrepreneurial activity*” are closely linked, indicating that a substantial portion of the literature examines how innovative entrepreneurship contributes to national and regional economic outcomes. This reflects the traditional view of entrepreneurship as a driver of productivity, employment, and competitiveness, with innovation amplifying these effects through new business models and technological advancement.

Another visible thematic stream, represented by the green cluster, relates to investment and startup ecosystems. Keywords such as “*investment*,” “*investments*,” “*startups*,” and “*innovation activity*” suggest a focus on the financial and technological mechanisms that enable entrepreneurship to flourish. This cluster underscores the importance of access to capital, venture funding, and innovation infrastructure in nurturing entrepreneurial ventures. It also reflects policy concerns regarding the creation of conducive environments for startups and innovation-led enterprises, especially in the context of digital and global economies. A distinct yet interconnected blue cluster is centered on sustainable development, including terms like “*digital economy*” and “*competitiveness*”. This suggests a growing scholarly interest in how innovative entrepreneurship aligns with sustainability goals, digital transformation, and long-term economic resilience. These themes resonate with global challenges and the need for entrepreneurship to not only disrupt markets but also contribute to solving ecological and social problems. Finally, the yellow cluster focused on entrepreneurship education and “*computing*” reflects an educational and technological perspective, emphasizing the role of knowledge dissemination, digital skills, and pedagogical innovations in fostering sustainable and innovative entrepreneurial mindsets.

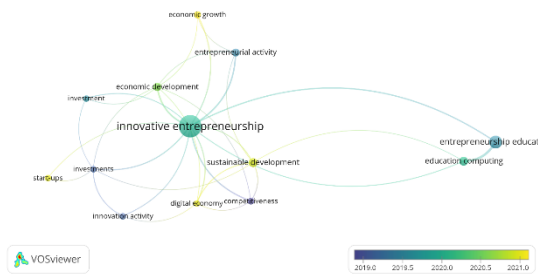


Figure 4. Overlay Visualization  
Source: Data Analysis

The overlay visualization of keyword co-occurrence, colored by the average publication year, provides insights into the temporal evolution of research themes within the field of *innovative entrepreneurship*. The core term “innovative entrepreneurship” remains centrally positioned and consistently researched throughout the examined period (2019–2021), suggesting its sustained relevance. However, the surrounding keywords vary in color, reflecting changes in scholarly focus over time. Terms such as “innovation activity,” “digital economy,” and “competitiveness” are shaded in darker blue tones, indicating their prominence in earlier publications, around 2019. These themes likely represent foundational topics or initial focal points in the field’s development, where innovation and digital transformation were heavily discussed. In contrast, terms like “start-ups,” “sustainable development,” and “economic growth” appear in yellowish hues, signifying a more recent surge in attention between 2020 and 2021. This shift suggests a growing interest in the role of innovative entrepreneurship in addressing sustainability challenges and stimulating post-pandemic economic recovery. The rise of keywords such as “start-ups” and “sustainable development” also reflects the increased recognition of entrepreneurship as a catalyst for achieving the Sustainable Development Goals (SDGs), especially in turbulent economic conditions. The growing intersection of sustainability with entrepreneurial practices underscores a broader shift in scholarly discourse toward impact-driven innovation. Additionally, keywords related to entrepreneurship education and computing, positioned toward the right of the map, are shown in moderate green-blue tones, suggesting ongoing

research relevance throughout the observed period. This indicates that educational aspects and digital tools remain key enablers in fostering innovative entrepreneurial mindsets.

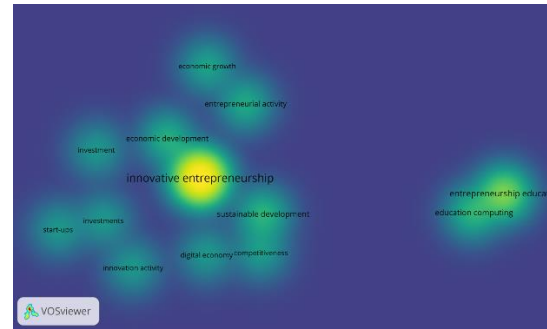


Figure 5. Density Visualization  
Source: Data Analysis

The heatmap visualization reveals the density and intensity of research focus within the field of *innovative entrepreneurship*. The brightest area—centered around the keyword “innovative entrepreneurship”—indicates that this term has the highest frequency of occurrence and co-occurrence, serving as the conceptual core of the literature. Closely clustered and moderately bright terms such as “economic development,” “investment,” “entrepreneurial activity,” and “sustainable development” suggest that these themes are heavily researched in relation to innovative entrepreneurship. Their proximity and relative intensity on the map indicate strong thematic interlinkages, forming the backbone of the field’s intellectual structure. In contrast, less intense but still active zones—such as the cluster around “entrepreneurship education” and “education computing” on the far right—indicate emerging or specialized niches. While these terms are not as central, their clear visibility and clustering suggest a growing academic interest, particularly in how education systems and digital tools foster innovative entrepreneurial capabilities. Similarly, terms like “start-ups,” “innovation activity,” and “digital economy competitiveness” show moderate density, signaling continued attention but with potential for deeper exploration.

## DISCUSSION

### Key Authors and Collaborative Networks

The co-authorship analysis clearly identified several influential scholars who

have shaped the theoretical and empirical development of the field. Notably, David B. Audretsch and Zoltan J. Acs emerged as central figures with strong connections to various clusters, indicating their foundational roles in building the scholarly discourse on entrepreneurship, innovation, and economic development. Their work has often bridged the gap between entrepreneurial ecosystems and policy frameworks, fostering cross-national dialogue and setting a precedent for research in innovation-based economic development [23]. Other prolific contributors such as Shane S., Thurik R., and McKelvey M. have also played key roles in advancing knowledge, especially on innovation processes, entrepreneurial behavior, and regional competitiveness.

The collaborative network map also reflects a relatively well-connected author community, where dense interlinkages among clusters suggest a high degree of intellectual integration. However, peripheral clusters and isolated nodes highlight the presence of fragmented research groups, potentially constrained by geographic or institutional boundaries. While these pockets of specialization contribute niche perspectives, their limited interaction with core scholars could hinder broader theoretical synthesis. Future research efforts should encourage transdisciplinary collaborations and international partnerships to promote inclusive and globally relevant innovations in entrepreneurship.

#### ***Geographical Distribution and Country Collaboration***

The country-level collaboration map underscores the dominant role of several high-income countries in producing and disseminating knowledge on innovative and sustainable entrepreneurship. The United States stands out as the most prominent contributor with extensive co-authorship ties to countries across continents, reflecting its historical leadership in entrepreneurship research and academic infrastructure. European countries such as Spain, Germany, the Netherlands, and Italy form tightly-knit regional clusters, indicating strong intra-European collaborations and shared policy

interests in innovation and sustainable development. Interestingly, Russia and Ukraine also appear prominently in the map, representing a growing body of literature from Eastern Europe, potentially driven by structural economic transitions and innovation policy reforms. The involvement of countries like Brazil, Colombia, Indonesia, and Jordan—though relatively limited—signals an expanding global engagement with sustainable innovation agendas. This finding highlights the importance of promoting South-South and North-South knowledge exchange, especially to enrich the field with diverse socio-economic, environmental, and institutional contexts.

#### ***Thematic Structures and Conceptual Development***

The keyword co-occurrence analysis revealed that the conceptual core of the literature centers on “innovative entrepreneurship,” with strong ties to *economic development*, *entrepreneurial activity*, and *investment*. These relationships reaffirm the conventional economic rationale behind entrepreneurship, positioning innovation as a catalyst for job creation, productivity enhancement, and competitiveness [24]–[26]. However, the integration of keywords such as “*sustainable development*”, “*digital economy*”, and “*competitiveness*” indicates a more contemporary and multidimensional framing of innovative entrepreneurship. Scholars are increasingly addressing how entrepreneurship contributes not only to economic value creation but also to environmental stewardship and social inclusion.

The emergence of clusters around startups, innovation activity, and digital economy suggests a growing interest in the mechanisms and contexts of innovation-driven ventures, especially in technologically dynamic sectors. These themes are particularly relevant in the post-COVID era, where resilience, adaptability, and digital competencies are crucial for entrepreneurial survival and growth [27]. The rise of research on entrepreneurship education and digital computing, as highlighted in both co-word and overlay visualizations, further indicates

that scholars are increasingly examining how knowledge systems and digital infrastructure support entrepreneurial capabilities, particularly in fostering sustainability-oriented mindsets among future entrepreneurs.

#### ***Temporal Trends and Emerging Research Directions***

The overlay visualization adds a temporal layer to the analysis, revealing an evolving research trajectory. Early work between 2018 and 2019 predominantly focused on innovation activity, digital economy, and competitiveness, reflecting initial concerns around globalization, technological advancement, and economic policy. By contrast, more recent literature (2020–2021) shows a discernible shift toward sustainability, with increasing emphasis on *sustainable development*, *start-ups*, and *economic growth* in the context of environmental and social challenges. This transition is likely influenced by global priorities such as the UN Sustainable Development Goals (SDGs) and the intensification of climate discourse in academic and policy circles. Furthermore, the heatmap analysis shows that while *innovative entrepreneurship* remains the most concentrated area of study, there are hotspots forming around sustainable development and entrepreneurship education. These findings suggest that future research is likely to delve deeper into the intersection of entrepreneurship with environmental science, educational technology, and social innovation. The growing density around *entrepreneurship education* also signals the rising importance of pedagogical interventions and curriculum reform in shaping the next generation of sustainable innovators.

#### ***Implications for Policy and Practice***

The bibliometric findings carry significant implications for policymakers, educators, and practitioners. First, the global and collaborative nature of research in this area highlights the potential for transnational policy learning, where countries can adapt successful models of sustainable innovation from different institutional contexts. Second, the emergence of education and digitalization

themes underscores the need for curriculum integration of sustainability and innovation principles in entrepreneurship training programs. This can help build a workforce equipped with the mindset and tools necessary for addressing grand societal challenges. For practitioners, particularly entrepreneurs and startup founders, the findings validate the importance of embedding sustainability into core business strategy—not merely as a compliance measure but as a source of long-term competitiveness and value creation. As scholarly attention moves toward impact-driven innovation, there is an opportunity for businesses to align with this research trajectory and benefit from emerging insights on responsible entrepreneurship.

#### ***Research Gaps and Future Agenda***

Despite the richness of the existing literature, this study also identifies several gaps that warrant further exploration. First, the dominance of studies from developed economies points to a need for more research focused on developing countries, particularly in regions such as Africa, Southeast Asia, and the Middle East. These regions face unique sustainability challenges and entrepreneurial constraints that require contextualized solutions. Second, while bibliometric data highlight structural patterns, there is limited integration with qualitative case studies that could explain how innovative entrepreneurs navigate systemic barriers or leverage opportunities in practice. Third, there is also a lack of longitudinal and empirical studies that track the actual impact of innovative entrepreneurship on sustainability indicators over time. Future research could explore how different types of innovation—technological, social, ecological—interact with various forms of capital (financial, human, institutional) to generate sustainable outcomes. Lastly, interdisciplinary research involving environmental science, public policy, and behavioral economics could enrich the theoretical foundation of this field and foster holistic models of entrepreneurial innovation.

#### 4. CONCLUSION

This bibliometric study has provided a comprehensive overview of the global research landscape on innovative entrepreneurship grounded in sustainability principles. Through co-authorship, citation, and co-word analyses using VOSviewer, the study revealed that the field is characterized by strong interdisciplinary collaborations, a steadily expanding scholarly network, and an evolving conceptual structure. Central figures like Audretsch and Acs have played foundational roles, while country-level analysis shows dominant contributions from the United States and European nations, with growing involvement from emerging economies. Thematic mapping shows that the

literature, initially focused on economic development and innovation activities, is gradually shifting toward topics such as sustainability, entrepreneurship education, and digital transformation. Temporal and density visualizations reinforce this transition, highlighting a responsive scholarly community adapting to global sustainability challenges and technological change. The findings highlight opportunities for further research in underrepresented regions, integration of qualitative insights, and deeper exploration of impact pathways. This study not only maps the intellectual territory of sustainable innovative entrepreneurship but also sets the foundation for strategic academic, policy, and practical advancements in the field.

#### REFERENCES

- [1] S. Schaltegger and M. Wagner, "Sustainable entrepreneurship and sustainability innovation: categories and interactions," *Bus. Strateg. Environ.*, vol. 20, no. 4, pp. 222–237, 2011.
- [2] M. Urbaniec, "Sustainable entrepreneurship: Innovation-related activities in European enterprises," *Polish J. Environ. Stud.*, vol. 27, no. 4, pp. 1773–1779, 2018.
- [3] S. Halder, "Towards a conceptual understanding of sustainability-driven entrepreneurship," *Corp. Soc. Responsib. Environ. Manag.*, vol. 26, no. 6, pp. 1157–1170, 2019.
- [4] N. Dentchev *et al.*, "Embracing the variety of sustainable business models: social entrepreneurship, corporate intrapreneurship, creativity, innovation, and other approaches to sustainability challenges," *J. Clean. Prod.*, vol. 113, pp. 1–4, 2016.
- [5] M. Wagner, *Entrepreneurship, innovation and sustainability*. Routledge, 2017.
- [6] B. D. Parrish, "Sustainability-driven entrepreneurship: Principles of organization design," *J. Bus. Ventur.*, vol. 25, no. 5, pp. 510–523, 2010.
- [7] J. O. Olurin *et al.*, "Engineering Innovations And Sustainable Entrepreneurship: A Comprehensive Literature Review," *Mater. Corros. Eng. Manag.*, vol. 4, no. 2, pp. 62–71, 2023.
- [8] A. L. Larson, "Sustainable innovation through an entrepreneurship lens," *Bus. Strateg. Environ.*, vol. 9, no. 5, pp. 304–317, 2000.
- [9] D. Keskin, J. C. Diehl, and N. Molenaar, "Innovation process of new ventures driven by sustainability," *J. Clean. Prod.*, vol. 45, pp. 50–60, 2013.
- [10] L. DiVito and Z. Ingen-Housz, "From individual sustainability orientations to collective sustainability innovation and sustainable entrepreneurial ecosystems," *Small Bus. Econ.*, vol. 56, no. 3, pp. 1057–1072, 2021.
- [11] M. Aria and C. Cuccurullo, "A brief introduction to bibliometrix," *J. Informetr.*, vol. 11, no. 4, pp. 959–975, 2017.
- [12] N. Donthu, S. Kumar, D. Mukherjee, N. Pandey, and W. M. Lim, "How to conduct a bibliometric analysis: An overview and guidelines," *J. Bus. Res.*, vol. 133, pp. 285–296, 2021.
- [13] N. Van Eck and L. Waltman, "Software survey: VOSviewer, a computer program for bibliometric mapping," *Scientometrics*, vol. 84, no. 2, pp. 523–538, 2010.
- [14] M. Grillitsch and M. Sotarauta, "Trinity of change agency, regional development paths and opportunity spaces," *Prog. Hum. Geogr.*, vol. 44, no. 4, pp. 704–723, 2020.
- [15] J. J. M. Ferreira, C. I. Fernandes, and S. Kraus, "Entrepreneurship research: mapping intellectual structures and research trends," *Rev. Manag. Sci.*, vol. 13, no. 1, pp. 181–205, 2019.
- [16] W. J. Baumol, "The microtheory of innovative entrepreneurship," in *The Microtheory of Innovative Entrepreneurship*, Princeton University Press, 2010.
- [17] P. Nijkamp, "Entrepreneurship in a modern network economy," *Reg. Stud.*, vol. 37, no. 4, pp. 395–405, 2003.
- [18] J. H. Block, C. O. Fisch, and M. Van Praag, "The Schumpeterian entrepreneur: A review of the empirical evidence on the antecedents, behaviour and consequences of innovative entrepreneurship," *Ind. Innov.*, vol. 24, no. 1, pp. 61–95, 2017.
- [19] F. Malerba and M. McKelvey, "Knowledge-intensive innovative entrepreneurship integrating Schumpeter, evolutionary economics, and innovation systems," *Small Bus. Econ.*, vol. 54, no. 2, pp. 503–522, 2020.
- [20] J. E. Cliff, P. D. Jennings, and R. Greenwood, "New to the game and questioning the rules: The experiences and beliefs

- of founders who start imitative versus innovative firms," *J. Bus. Ventur.*, vol. 21, no. 5, pp. 633–663, 2006.
- [21] Y. Su *et al.*, "Factors influencing entrepreneurial intention of university students in China: integrating the perceived university support and theory of planned behavior," *Sustainability*, vol. 13, no. 8, p. 4519, 2021.
- [22] A. S. Shantz, G. Kistruck, and C. Zietsma, "The opportunity not taken: The occupational identity of entrepreneurs in contexts of poverty," *J. Bus. Ventur.*, vol. 33, no. 4, pp. 416–437, 2018.
- [23] O. Pricopoaia, A. Lupaş, and I. O. Mihai, "Implications of innovative strategies for sustainable entrepreneurship — solutions to combat climate change," *Sustainability*, vol. 16, no. 22, p. 9742, 2024.
- [24] F. M. Belz and J. K. Binder, "Sustainable entrepreneurship: A convergent process model," *Bus. Strateg. Environ.*, vol. 26, no. 1, pp. 1–17, 2017.
- [25] M. Kardos, "The relationship between entrepreneurship, innovation and sustainable development. Research on European Union countries," *Procedia Econ. Financ.*, vol. 3, pp. 1030–1035, 2012.
- [26] J. Dote-Pardo, V. Ortiz-Cea, V. Peña-Acuña, P. Severino-González, J. M. Contreras-Henríquez, and R. I. Ramírez-Molina, "Innovative Entrepreneurship and Sustainability: A Bibliometric Analysis in Emerging Countries," *Sustainability*, vol. 17, no. 2, p. 658, 2025.
- [27] M. P. Miles, L. S. Munilla, and J. Darroch, "Sustainable corporate entrepreneurship," *Int. Entrep. Manag. J.*, vol. 5, pp. 65–76, 2009.