

Review

Innovative Entrepreneurship and Sustainability: A Bibliometric Analysis in Emerging Countries

Jairo Dote-Pardo ^{1,2}, Vesnia Ortiz-Cea ^{3,*}, Verónica Peña-Acuña ⁴, Pedro Severino-González ⁵, José M. Contreras-Henríquez ^{1,2,*} and Reynier Israel Ramírez-Molina ⁶

¹ Department of Economic and Administrative Sciences, Faculty of Legal, Economic and Administrative Sciences, Catholic University of Temuco, Temuco 4780000, Chile; jairo.dote@uct.cl

² Center of Management and Applied Economics (CMAE), Catholic University of Temuco, Temuco 4780000, Chile

³ Department of Administration and Economics, Faculty of Legal and Business Sciences (FCJE), University of La Frontera, Temuco 4780000, Chile

⁴ Department of Business Management, Faculty of Business Sciences, University of Bío-Bío, Chillan 3780000, Chile; vpena@ubiobio.cl

⁵ Department of Economics and Administration, Faculty of Social and Economic Sciences, Catholic University of Maule, Talca 3460000, Chile; pseverino@ucm.cl

⁶ North Historic Center, University of the Coast, Barranquilla 080002, Colombia; rramirez13@cuc.edu.co

* Correspondence: vesnia.ortiz@ufrontera.cl (V.O.-C.); jmcontreras@uct.cl (J.M.C.-H.)

Abstract: Innovative entrepreneurship has increasingly been acknowledged as one of the most vital drivers of economic development, job creation at high value, wealth creation, and business growth. This study analyzes the current status and evolution of research on innovative entrepreneurship and sustainability in the context of emerging economies, based on a bibliometric analysis of 132 articles indexed in the Web of Science database. The search was guided by relevant keywords, such as “innovative entrepreneurship*” and “sustainab*”. Systemic barriers limit the scalability of innovative ventures, especially in developing countries. Frugal and green innovations, digital technologies, and rural enterprises show promise but face challenges like resource constraints, ethical concerns, and policy gaps. Collaborative, equity-focused approaches are essential to ensure entrepreneurship drives sustainable and inclusive development. Further studies should expand the data source, increase the pool of articles, and develop cross-country comparisons to enhance global understanding. This may lead to a better understanding of innovative entrepreneurship and sustainability that can be used to create actionable strategies for development in various economic contexts.



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1. Introduction

Over the past few decades, the recognition of entrepreneurship as a key driver of development has grown significantly. There is now broad consensus on the need to promote innovation and entrepreneurship as fundamental pillars for the growth and advancement of regions and countries [1,2]. The role of entrepreneurship as a tool for identifying and addressing societal challenges has become increasingly evident, with its importance expanding considerably in recent years [3–5]. The emergence of disruptive technologies, advances in science, new business models, and a focus on addressing people’s core needs have fueled a growing demand for innovative entrepreneurship [6–8].

Innovative entrepreneurship is widely recognized as a critical driver of economic development, especially in less developed economies [9]. However, entrepreneurs and companies face significant challenges in fostering innovation, as it requires the ability to adapt to the rapidly changing conditions and demands of their environment [10,11]. Despite the vital role of innovation today, micro and small enterprises often struggle to innovate due to their limited resources and operational constraints, which hampers their ability to contribute to broader regional development [12–15].

According to the Global Report 2022–2023 by the Global Entrepreneurship Monitor [16], worldwide, the top five countries for starting a business are the United Arab Emirates, Saudi Arabia, Taiwan, India, and the Netherlands. Meanwhile, the Global Innovation Index 2022 lists the five most innovative economies as Switzerland, the United States, Sweden, the United Kingdom, and the Netherlands—all predominantly developed countries with well-established markets [17,18]. In contrast, developing countries, characterized by emerging markets with high-growth potential [19], present a different landscape: nearly 30% of people aged 18 to 64 are engaged in early-stage entrepreneurial activities (e.g., idea development, business model prototyping, or initial sales). However, less than 5% manage to transition to established businesses [16]. This underscores the need for deeper understanding and research into innovative entrepreneurship in emerging countries [20].

A defining characteristic of innovative entrepreneurship is its capacity to address present and future challenges—one of the most pressing being climate change and environmental degradation [21]. The widespread depletion and overexploitation of natural resources necessitate that, as developing countries pursue greater entrepreneurial innovation, they also integrate sustainability into their core value propositions. This approach aims to achieve a triple bottom line that encompasses economic, social, and environmental outcomes [22,23].

While research on innovative entrepreneurship has employed a range of methodologies, from descriptive analyses to quantitative studies using empirical data and regression models to understand its determinants, there is a notable scarcity of bibliometric studies that focus specifically on innovative entrepreneurship and sustainability in the context of developing countries (IESEC). Currently, in all the literature, only one bibliometric study addresses this topic [24], but it emphasizes econometric analysis and overlooks other key aspects, such as leading authors, influential countries, organizations, and keywords that shape the current discourse and future research trends in this field.

This paper aims to address this gap by analyzing the current state and evolution of research in this field. Specifically, it seeks to answer the following questions: (1) How has research on this topic evolved? (2) Which journals, countries, and authors have been most relevant to date? (3) What is the current state of the art in IESEC? (4) What challenges can be proposed for future research?

The rest of this paper is organized as follows: Section 2 presents a literature review; Section 3 describes material and methods; Section 4 analyzes the results; Section 5 discusses the findings; and Section 6 concludes this paper.

2. Literature Review

2.1. Concept of Entrepreneurship

The formal concept of “entrepreneur” is often attributed to the economist Joseph Schumpeter (1934) [25], yet its origins can be traced back to the common French language of the twelfth century, where it referred to someone who undertakes a task. However, its application in academic contexts did not gain traction until the 1960s [26]. Schumpeter characterized the entrepreneur as a catalyst for societal change, someone who introduces new products, processes, and organizational forms—essentially, the initiator of innovation.

Similarly, Drucker (1985) [27] defined the entrepreneur as an individual who constantly seeks change, adeptly responds to it, and seizes opportunities, using innovation as a critical tool. This establishes a strong connection between entrepreneurship and innovation.

According to Hoppe [28], both entrepreneurship and innovation became buzzwords in managerial contexts during the 1980s, leading to their increased recognition as distinct areas of study within business administration. The Global Entrepreneurship Monitor (GEM) defines entrepreneurship as “any attempt to create a new business or new ventures, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business.” This definition aligns with Manyaka-Boshielo’s assertion that entrepreneurship begins with an individual capable of identifying an opportunity and, through innovative thinking—even in the face of limited resources—takes action to add value to existing economic and social conditions [29].

While entrepreneurship and innovation often go hand in hand, they represent distinct concepts that engage in a bidirectional relationship. Veeraraghavan [30] notes that innovation generates new ideas, which entrepreneurs implement; in turn, this entrepreneurial activity fosters a culture of independence, risk-taking, and greater trust, leading to further idea generation.

2.2. Innovative Entrepreneurship

While various definitions of “innovation” exist, there is broad consensus that it constitutes a creative process that enables the development and successful application of new or improved ideas to produce practical and valuable outcomes for society [31]. The relationship between innovation and entrepreneurship has long been recognized as a crucial factor in the economic development of countries, a notion significantly advanced by Schumpeter [32]. Some research distinguishes between innovative and “ordinary” entrepreneurship, noting that the former tends to create higher value-added jobs, foster wealth creation, and achieve greater business growth rates [33]. Consequently, the intersection of entrepreneurship and innovation leads to what is termed innovative entrepreneurship, which manifests as new companies founded on innovative ideas [34].

2.3. Innovative Entrepreneurship and Sustainability in Emerging Countries (IESEC)

The study of IESEC has its roots in the work of Gregorio et al. [35], who argue that the development of new solutions, such as electronic commerce, is propelled by growing entrepreneurial activity, thereby contributing to sustainability in both developed and developing nations. The integration of sustainability into this discourse is most notably addressed by Cahn [36], who emphasizes that cultural and social factors shape entrepreneurial styles in developing countries, putting sustainability at risk when these factors are strained. A more focused examination of innovative entrepreneurship and sustainability is provided by Lewis and Jordan [37], who advocate for a strategy centered on local entrepreneurship to address territory-specific challenges.

After 2015, research on IESEC has progressed significantly and with greater specificity. Authors like Gabriel and Kirkwood [38] and Manyaka-Boshielo [29] assert that innovative entrepreneurship can enhance sustainability levels, facilitating higher development outcomes. Furthermore, Qiu [39], Starchenko [40], and Kaciak and Welsh [41] emphasize the importance of supporting entrepreneurial startups through the cultivation of robust cultural ecosystems. This notion is reinforced by Štěrbová et al. [42], who highlight that the economic and institutional context can favor innovative entrepreneurship in emerging countries, even in traditional sectors like forestry.

The discussion surrounding how to bolster innovative entrepreneurship with a sustainable approach as a pathway to higher development levels has been extensively explored [43].

To realize this goal, it is crucial for policymakers to enhance their focus on science, technology, and innovation while also integrating the Sustainable Development Goals (SDGs) into their decision-making processes [44]. Technology, in particular, plays a vital role in accelerating transition processes in both developed and developing countries [45].

3. Materials and Methods

For this work, a bibliometric analysis was used. Bibliometric analysis is a quantitative method used to analyze a large volume of academic publications. By identifying patterns, trends, and networks in the literature, it provides insights into the development of a specific field of study [46,47]. This study employs bibliometric techniques to explore the relationship between innovative entrepreneurship and sustainability in emerging countries. The analysis focuses on identifying key authors, publications, and thematic clusters within the research domain.

3.1. Data

Data for this study were collected from the Web of Science (WoS), which has been globally recognized as the most authoritative and highly used database of research publications and citations. A choice based on comprehensiveness, strict indexing standards, and high impact on the academic community will ensure that any analysis is based on sound, peer-reviewed, highly recognized scientific evidence. Using WoS enhances the credibility and depth of this study by accessing a diversified array of high-quality publications that are very critical to a robust and well-substantiated research framework [48]. The period between 2007 and 2024 is considered for the analysis since it represents the time interval in which relevant publications are identified in the WoS database on the investigated topic. This delimitation guarantees that the results obtained are based on the scientific evidence available and updated within this time range. A search Equation (1) focused on the “topic” criterion was employed, enabling exploration within the titles, abstracts, and keywords of the articles. The following keywords were included in the search:

$$\begin{aligned} \text{WoS: } & ((\text{TS} = (\text{innovative entrepreneurship}^*)) \text{ AND } \text{TS} = (\text{sustainab}^*)) \\ & \text{AND } \text{TS} = (\text{developing countr}^* \text{ OR } \text{developing market}^* \text{ OR } \text{developing} \\ & \text{econom}^* \text{ OR } \text{emerging countr}^* \text{ OR } \text{emerging market}^* \text{ OR } \text{emerging econom}^*) \end{aligned} \quad (1)$$

3.2. Inclusion and Exclusion Criteria

The initial search process produced a total of 374 results: 233 original research articles, 107 proceeding papers, 22 review articles, and 12 book chapters. This was further refined by setting a publication date limit to 2024, bringing the number of relevant search results down to 233 publications. Further review of the 233 publications showed that 73 articles were focused on developed countries, hence making them less relevant for this study, which focuses on emerging countries. In addition, 25 of the articles were within the overall scope but did not contribute to innovative entrepreneurship explicitly in either their main objective or findings. These, therefore, were excluded from the review. PRISMA was followed for the purpose of transparency, reproducibility, and methodological rigor.

The PRISMA-structured approach was helpful in systematic evaluation, as it traced the process of article selection step by step, from the initial search to the final inclusion. This process helped the authors avoid biases and enhance consistency, thus making the results more reliable. In the end, such a careful selection process yielded a final set of 132 articles focusing on IESEC. This refined dataset then provided the foundation for the subsequent bibliometric analysis, which was thus capable of providing a much more focused insight

into the nexus of innovation and sustainable practices in emerging economies, as depicted in Figure 1.

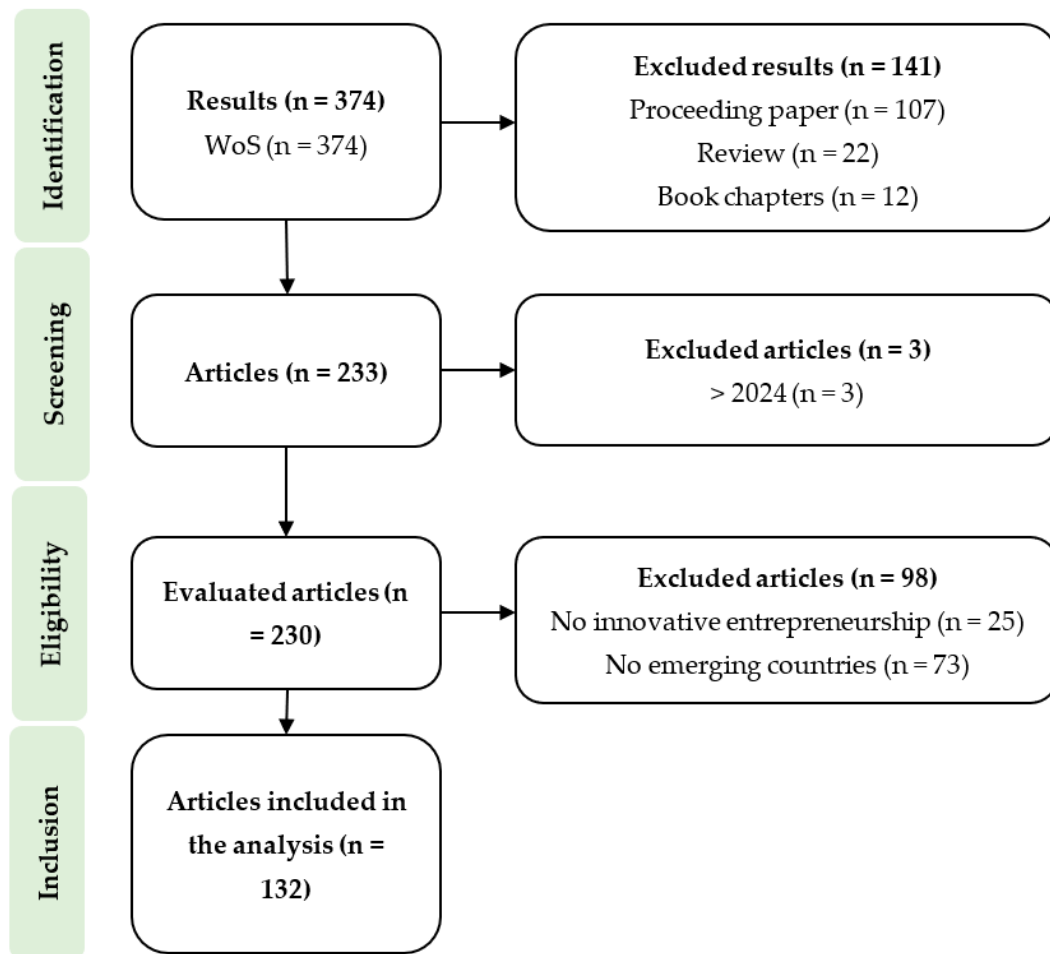


Figure 1. Inclusion and exclusion criteria of results using the PRISMA method.

3.3. Data Analysis

The publication data—including authors, publication counts by year, journal distribution, and research areas—were compiled into an Excel file and subsequently exported to a text file for analysis using VOSviewer software version 1.6.20. This software facilitates the creation of network maps, enabling a visual representation of relationships among authors, journals, and keywords. The use of VOSviewer supports the identification of patterns, clusters, and research dynamics through bibliometric mapping, providing a deeper understanding of the intellectual structure of the field [49]. Additionally, the data were exported in BibTeX format to utilize the Bibliometrix package [50] in R Studio version 4.4.0. This package allows for advanced bibliometric analysis, including calculating performance indicators such as publication counts, citation impact, and author productivity indices. These metrics provide valuable insights into the research productivity, citation influence, and institutional affiliations shaping the field [51].

The methodology followed the contributions of Ortiz-de-Urbina-Criado et al. [52], enabling a structured descriptive study to examine the evolution of research over time. Key bibliometric indicators were calculated, including the number of authors per article, articles published per journal, and the institutional affiliations of contributing authors. These indicators shed light on collaboration patterns, research concentration in specific journals, and institutional leadership in the field.

Further analysis was conducted on the most influential journals and authors, determined by citation counts. Examining citation metrics is crucial because it reflects the academic impact and research visibility of specific contributions. Collaboration networks among authors were also established, focusing on co-authorship patterns. Understanding these networks highlights the formation of research communities and identifies key opinion leaders driving innovation and knowledge dissemination.

To uncover emerging publication trends and explore potential future research directions, an analysis of Keywords Plus was performed. Keywords Plus are terms extracted from the titles of cited references but not from the article titles themselves. This approach enhances the depth of the analysis by capturing underlying research themes that may not be explicitly mentioned in article titles. The use of Clarivate's specialized algorithm ensures that even implicit research themes are included, allowing a more comprehensive exploration of scientific discourse [53].

Since Keywords Plus has been available since 1991, it offers a valuable historical parameter for tracking the development of research trends. By examining the strongest keywords based on the frequency of occurrence within each cluster, this analysis highlights key topics of interest in the field [46]. VOSviewer was employed with a minimum word occurrence threshold of 2, enabling the creation of visually interpretable co-occurrence networks of keywords. This technique provides an intuitive understanding of thematic clusters, revealing core research areas and emerging trends that warrant further exploration [54]. These bibliometric techniques strengthen the analytical framework by integrating quantitative metrics with qualitative insights, facilitating a comprehensive evaluation of the scientific landscape in IESEC.

4. Results

4.1. Research Evolution on IESEC

Figure 2 depicts an upward trend of bibliometric indicators, such as authors, articles, and journals, for the period from 2007 to 2024, reflecting the growing academic focus on IESEC. The number of authors, depicted by the yellow area, grows the most, showing a steep increase peaking in 2024. It would therefore imply that research collaboration is expanding and that more scholars are engaging in this topic.

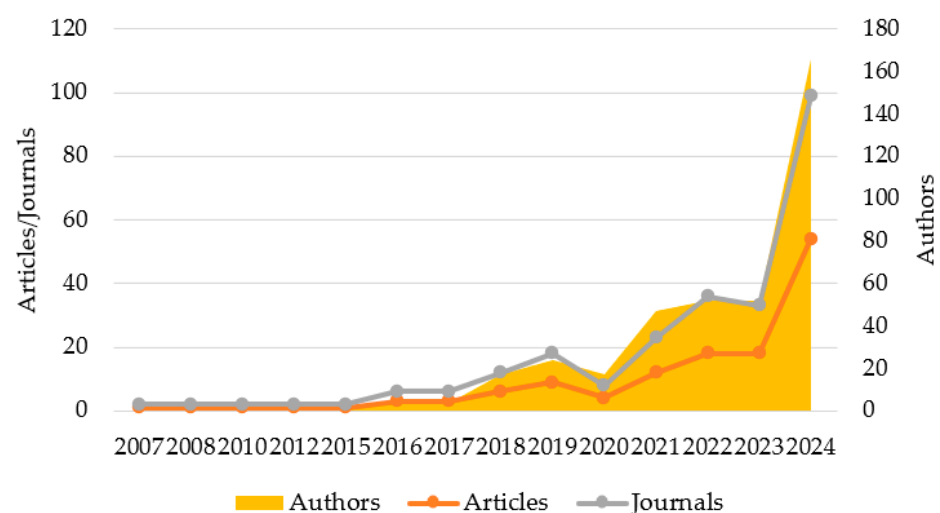


Figure 2. Evolution of research on IESEC: published articles, journals, and authors by year.

Therefore, the orange line, pointing toward the number of articles obtained, consistently demonstrates consistent growth starting around 2015, with marked acceleration at the end after 2020. This trend aligns closely with the significant global efforts and initiatives

undertaken during these years to promote sustainability, foster innovation, and address the Sustainable Development Goals (SDGs) effectively. Meanwhile, the gray one, standing for journals, shows a steady increase but is fairly gradual. Although the number of articles has surged, the relatively slower growth in journals suggests that research is concentrated in a limited number of outlets.

The period around 2020 seems to be a critical juncture that coincides with key world events, such as the COVID-19 pandemic, which might have raised awareness for sustainability and innovative business. This rapid growth in 2024 shows that the current relevance and timely need for this area of research may be driven by the presence of new policy frameworks or academia-driven initiatives on sustainability within emerging markets.

On the whole, data shows the fast development of this field with a growing share of interdisciplinary and international cooperation. Though the volume of research grew significantly, concentration in key journals may suggest that more diffusion channels should be considered. This trend shows how the centrality of emerging countries has been central to the global debate on innovative entrepreneurship and sustainability, whether as a topic of investigation or an active player.

Table 1 shows that the academic activity related to IESEC increased significantly between the periods 2007–2019 and 2020–2024, having jumped from 26 articles to 106, with corresponding increases in authors, journals, organizations, and countries contributing to this research. This expansion reflects growing global interest in the topic, especially during the latter period. This growth from 2.4 to 3.1 authors per article does indeed mark a trend toward greater collaboration. By the same token, the growth in organizations per country also rose from 2.2 to 3.1, underlining greater institutional involvement in this area.

Table 1. Bibliometric indicators in publications on IESEC.

Indicator	2007–2019	2020–2024	Total
Articles	26	106	132
Authors	62	333	395
Journals	25	78	103
Organizations	40	188	228
Countries	18	60	78
Citations	1728	517	2245
Authors/Article	2.4	3.1	3.0
Articles/Author	0.4	0.3	0.3
Articles/Journal	1.0	1.4	1.3
Articles/Organization	0.7	0.6	0.6
Articles/Country	1.4	1.8	1.7
Journals/Country	1.4	1.3	1.3
Authors/Organization	1.6	1.8	1.7
Authors/Country	3.4	5.6	5.1
Citations/Article	66.5	4.9	17.0

Table 1. *Cont.*

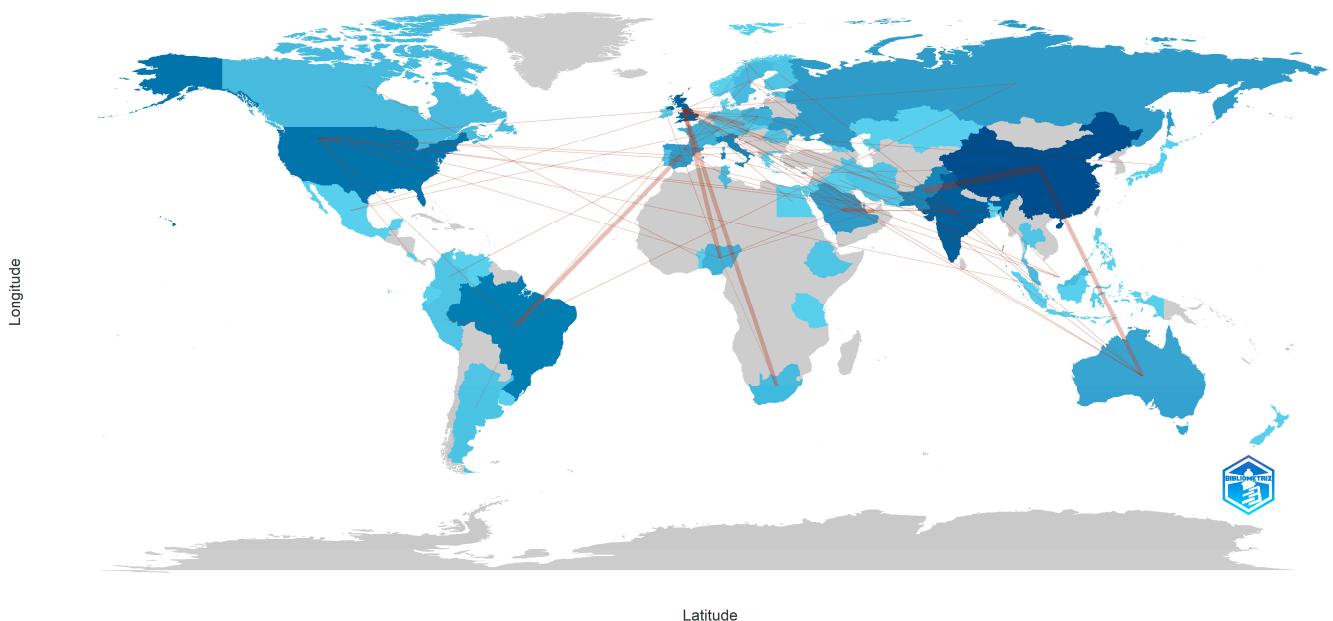
Indicator	2007–2019	2020–2024	Total
Organizations/Country	2.2	3.1	2.9
Citations/Author	27.9	1.6	5.7
Citations/Journal	69.1	6.6	21.8
Citations/Organization	43.2	2.8	9.8
Citations/Country	96.0	8.6	28.8

While the productivity metrics, such as articles per author and articles per organization, have remained relatively stable, the distribution of research across more countries and organizations does suggest a more diversified academic landscape. On the other hand, however, the impact measured by citations sets a different trend. The citations per article fell drastically from 66.5 to 4.9, reflecting the limited time newer publications have had to accumulate citations. This trend is also manifested in indicators such as citations per author, journal, organization, and country. Most of the citations, 1728 out of 2245, were concentrated in the earlier period, which indicates that older publications have had more time to influence the field.

In all, while these data underline rapid growth and broadening participation in research on the topic at hand, citation metrics for newer publications suggest that the full impact of recent contributions could take some time to crystallize. This shift in the publication trend indicates the fully increasing importance of IESEC and the changing academic dynamics on this issue.

4.2. Countries with the Most Publications on the Topic

Figure 3 shows a world map of the research activity on IESEC by country. Darker shades of blue show higher contribution, while lighter shades show lower levels of contribution. Red lines link countries to international collaboration networks at the institutional or author level.

**Figure 3.** Main countries with participation in publications on IESEC.

These clusters are dominant in regions such as Europe, Asia (especially China), and the Americas, which include North and South America. The participation of emerging countries in Latin America and Africa is also present but seems more limited compared to the major global hubs. The dense links between countries reflect the collaborative nature of research in this area, with significant cross-border partnerships.

This network visualization underlines the growing interest in sustainability and entrepreneurship from around the world, placing an important emphasis on collaborative research bridging diverse geographic regions. It also shows data on the further inclusion of under-represented regions, especially from Africa and parts of Asia and South America, for developing a more globally inclusive research landscape.

4.3. Journals with Most Publications on the Topic

Table 2 presents a profiled outlook of journals published under IESEC. It shows the categorization of journals, indexing, quartiles, impact factor score, and number of articles.

Table 2. Top journals that have published on IESEC.

Journal.	WoS Category	WoS Index	Quartile (Q)	Journal Impact Factor	Articles
<i>Sustainability</i>	Environmental Sciences	Science Citation Index Expanded (SCIE)	Q2	3.9	13
	Environmental Studies	Social Sciences Citation Index (SSCI)	Q2		
	Green and Sustainable Science and Technology	Science Citation Index Expanded (SCIE)	Q3		
	Green and Sustainable Science and Technology	Social Sciences Citation Index (SSCI)	Q3		
<i>Business Ethics The Environment and Responsibility</i>	Business	Social Sciences Citation Index (SSCI)	Q2	3.6	3
	Ethics	Social Sciences Citation Index (SSCI)	Q1		
<i>Financial and Credit Activity-Problems of Theory and Practice</i>	Business, Finance	Emerging Sources Citation Index (ESCI)	Q4	0.7	3
<i>Social Enterprise Journal</i>	Business	Emerging Sources Citation Index (ESCI)	Q2	2.8	3

Sustainability is the leading journal in volumes, with 13 articles within the field studied but featuring in several WoS categories: *Environmental Sciences*, *Environmental Studies*, and *Green and Sustainable Science and Technology*. Its quartiles are Q2 and Q3, and it has an

impact factor of 3.9, showing that it is moderately influential in most environmental and social sciences.

Business Ethics the Environment and Responsibility contributes three and is notable for its Q1 in the category of Ethics and Q2 in Business, with an impact factor of 3.6. This would suggest a focus on the ethical dimensions of sustainability in business contexts.

Financial and Credit Activity Problems of Theory and Practice is a journal indexed in the Emerging Sources Citation Index-ESCI, issuing three articles; it holds the ranking of Q4 for Business and Finance. With an impact factor as low as 0.7, this represents a niche but relevant platform for research that combines finance with sustainability.

From a social and environmental perspective, it addresses sustainability. The *Social Enterprise Journal*, indexed in ESCI, contributed three articles to this field and is in the ranking Q2 in the Business area with an impact factor of 2.8.

These journals reflect the categories and levels of impact, in fact, indicating the interdisciplinary nature of the research on sustainability and entrepreneurship. Journals like *Sustainability* are dominant within the publication landscape simply because of their broad thematic focus, but also specialized journals contribute to the niche aspects in this field. This diversity thus underlines opportunities for researchers to be targeted at general and specialized platforms based on their focus areas.

4.4. Co-Authorship Networks

Figure 4 maps the collaborative relationships of authors working on topics related to IESEC. Each node represents an individual author, and the connections between nodes represent the co-authorship ties. The thickness of lines reflects the strength of collaboration, which may be considered as a proxy for stronger or more frequent partnerships, with the more connected or denser regions of the network thus indicating stronger collaborations.

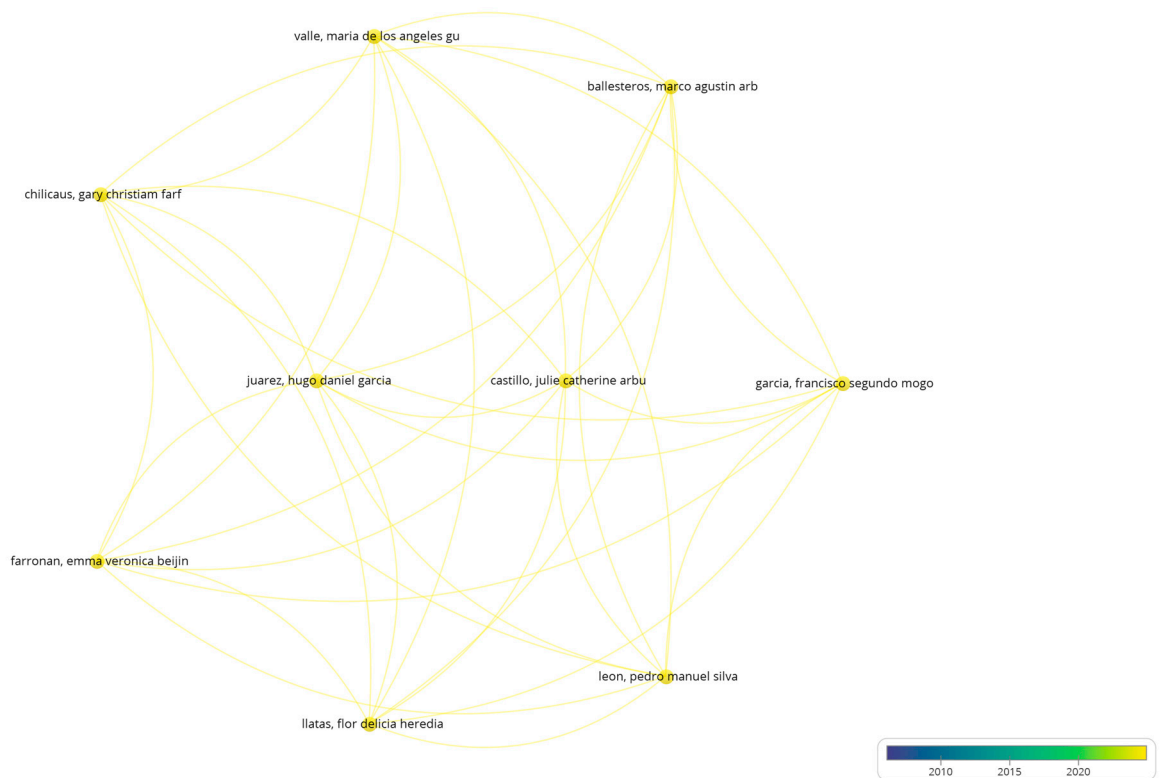


Figure 4. Collaboration between authors investigating IESEC.

Authors, such as Hugo Daniel Garcia Juarez, Julie Catherine Arbu Castillo, and Pedro Manuel Silva Leon, hold key positions in the network center, either because of their

high collaborative nature or because they are prolific writers in this research network. The network is connected moderately; different authors have connections with several colleagues, making the creation of a collaborative environment possible.

This visualization emphasizes the role of collaboration in enhancing research on innovative entrepreneurship and sustainability. It also points to opportunities for network expansion by forging connections with less-integrated researchers or groups that may lead to a more cohesive and impactful research community.

4.5. Keywords Plus and Future Research Agenda

Figure 5 presents the co-occurrence of Keywords Plus in the publications related to IESEC. The nodes represent keywords, and the links between the nodes indicate that these words appear together in the same publications. The size of the nodes depends on the frequency of keywords, and the thickness of the lines between the nodes indicates the strength of the association.

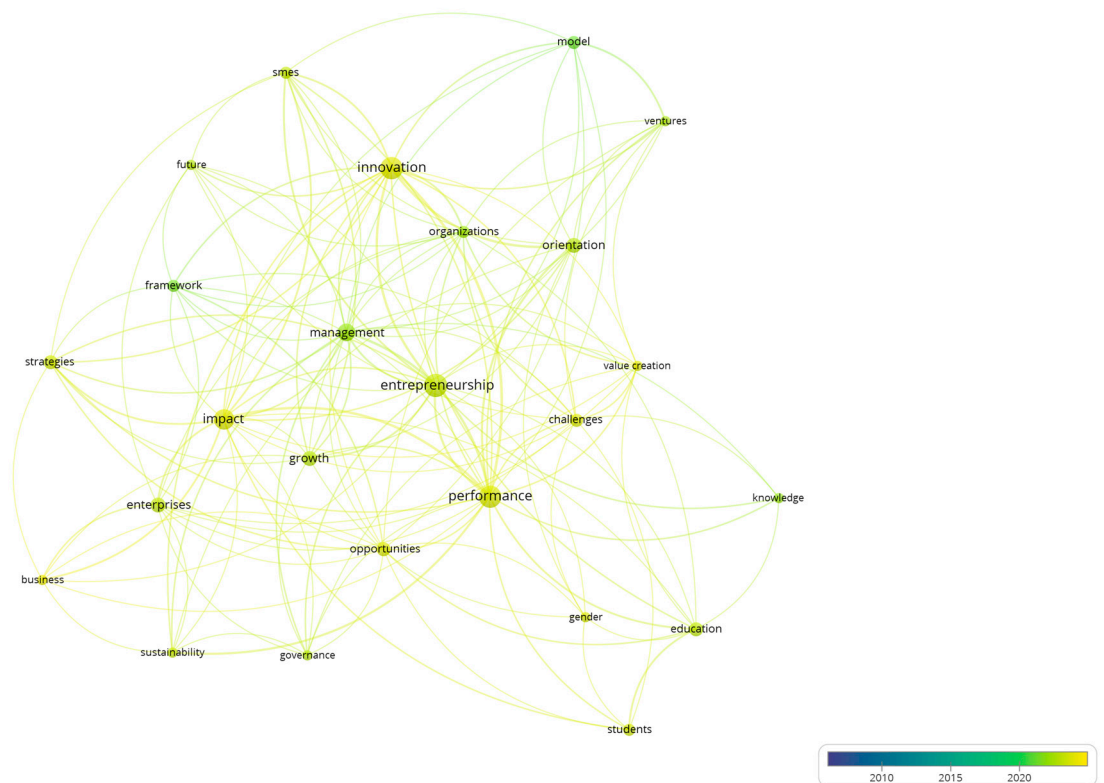


Figure 5. Keywords plus in articles on IESEC.

Centrally within the network, the words “entrepreneurship”, “innovation” and “performance” prevail as the most frequently used keywords and are therefore central within this research domain. “Management”, “impact”, “growth” and “sustainability” are part of a cluster of closely connected terms, which reflects strong attention to the study of outcomes and strategies with respect to innovative entrepreneurial activity aimed at achieving sustainable development.

The peripheral clusters include the themes “gender”, “education”, “governance” and “SMEs”, which underpin subfields investigated in specific contextual variables within this domain. Other keywords like “students” and “opportunities” suggest that entrepreneurship education is also studied in concert with emerging opportunities within sustainability.

This network underlines the interconnectedness of core themes and emerging subtopics, showing the multidimensionality of innovative entrepreneurship and sustain-

ability research. It indicates a well-balanced emphasis on the theoretical frameworks of “model” , “strategies” and practical applications such as “value creation” and “enterprises”. The following visualization provides a roadmap for researchers in which to spot key areas of focus, trends over time, and possible gaps in the literature.

Table 3 classifies the themes of research in IESEC by clustering related Keywords Plus in distinct groups, presenting an organized overview of key issues in the field. Cluster 1 focuses on Entrepreneurship, stressing the studies focused on the research of entrepreneurial activities in the context of strategies for the creation, development, and performance of firms. Keywords such as “entrepreneurship” (23 occurrences), “performance” (21), and “management” (13) underpin a strong focus on the analysis of factors causing the success of an entrepreneurial company, including strategy and growth dynamics.

Table 3. Categories and keywords.

Cluster	Category	Definition	Keywords	Occurrences
1	Entrepreneurship	Studies focusing on entrepreneurial activities, including strategies for business creation, growth, and performance.	Entrepreneurship	23
			Performance	21
			Management	13
			Growth	9
			Strategies	8
			SMEs	6
2	Business impact	Research on the impact of business practices on enterprises, governance, and sustainability.	Knowledge	5
			Impact	17
			Enterprises	9
			Business	5
			Governance	5
3	Organizational challenges	Exploration of challenges and frameworks for value creation and addressing future needs within organizations.	Sustainability	5
			Challenges	7
			Framework	6
			Organizations	6
			Future	5
4	Education and opportunities	Studies on educational opportunities, gender equity, and the development of skills for innovation and entrepreneurship.	Value creation	5
			Education	8
			Opportunities	8
			Students	6
5	Innovation and ventures	Research on innovative approaches, orientation, and models for entrepreneurial ventures in developing countries.	Gender	5
			Innovation	21
			Orientation	9
			Model	7
			Ventures	5

Cluster 2 is Business Impact, which considers the impact of business practices on enterprises, governance, and sustainability. Some keywords describing this cluster are “impact” with 17 occurrences, “enterprises” with 9, and “governance” with 5, which would mean attention to how businesses contribute to broader goals such as sustainability and effective governance structures.

Cluster 3 is about Organizational Challenges, researching challenges, and frameworks to be able, in the future, to respond to needs and create value. Keywords such as “challenges” (7 occurrences), “framework” (6), and “value creation” (5) would thus show a focus on overcoming barriers and building systems that will enable organizations to thrive in sustainable contexts.

Cluster 4 has the significant heading of Education and Opportunities, with a concentration of research on educational initiatives, gender equity, and skill-building activity. The dominant keywords are as follows: “education” (8 entries); “opportunities” (8 entries); and “gender” (5 entries), which further underlines its focus on capacity building and inclusivity with education providing the impetus toward enterprise.

Cluster 5 is on Innovation and Ventures and broadly covers the literature on innovative approaches, entrepreneurial orientation, and models of ventures, in particular for developing regions. This is also supported by unigrams such as “innovation” (21), “orientation” (9), and “ventures” (5), which confirm that novel approaches and frames are key to entrepreneurial success in developing economies.

Taken together, these clusters emphasize that the research in this domain ranges from practical entrepreneurial strategies to the greater societal and educational dimensions of innovation and sustainability. The categorization therefore provides useful insights into key areas of focus and serves as a roadmap in which to identify research opportunities or gaps in the literature.

Figure 6 shows the number of articles published for each thematic cluster: Entrepreneurship, Business Impact, Organizational Challenges, Education and Opportunities, and Innovation and Ventures. The articles were classified in each cluster based on the occurrence of the keywords that make up each of the clusters.

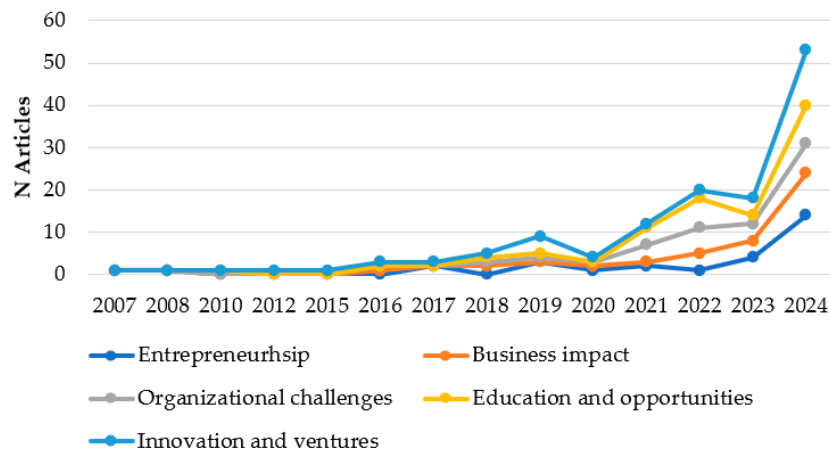


Figure 6. Keywords plus in articles per year.

In general, all clusters depict a rather low level of research activity until the year 2017, with only limited growth. Starting from around 2018, one can notice that there is a visible increase in the number of publications, while after 2020 it reaches a significantly higher upward trend. Most likely, this surge can be related to an increase in the awareness of entrepreneurship and sustainability as pressing issues, as well as current global challenges and policy measures like the SDGs.

The dominant cluster amongst them is Entrepreneurship, which increases very fast, starting from 2022 to reach its peak in 2024. This means that the academic contributions are highly concentrated on entrepreneurial activities and strategies to drive sustainable development.

Education and Opportunities, Innovation, and Ventures also exhibit considerable growth in this period, reflecting the increasing interest in the role of education in fostering entrepreneurship and innovative approaches as important to venture creation in sustainability. Business Impact and Organizational Challenges are more modest in their growth but still reflect increasing attention to governance, value creation, and the broader implications of entrepreneurial activities on businesses and organizations.

This figure in its entirety signifies the growing academic interest in these themes, with research activity accelerating in recent years. The multidimensionality of innovative entrepreneurship and sustainability is underlined, while there are substantial contributions from a number of interrelated areas.

4.5.1. Entrepreneurship

These papers underscore the role that can be played by entrepreneurship as a driving force toward sustainable development but for various dimensions of this issue, related to the areas of social and environmental impact and economic sustainability as well.

Entrepreneurship, as sustainable entrepreneurship, is discussed in this paper with respect to using it as one strategy to approach market imperfection issues and yield innovative business model responses. For example, Cohen and Winn (2007) [55] detail a model where these imperfections—information asymmetries and poorly functioning pricing mechanisms—offer the potential for the development of disruptive technologies that have the possibility not only to create entrepreneurial rents but also to enhance local and global social and environmental conditions. In that line of argument, Vig (2023) [56] analyzes how an entrepreneur in India transforms the problem of plastic waste into an opportunity for sustainable innovation, integrating economic, social, and environmental pillars of sustainable development. This approach emphasizes the promoting of entrepreneurship as a tool for equity and sustainable development [57,58].

Social entrepreneurship, therefore, is the most important area of focus, especially in addressing systemic issues in emerging economies [59]. Works such as Majeed et al. (2024) [60] in Iraq and Alam et al. (2019) [61] in Bangladesh discuss the contribution of social entrepreneurship to poverty alleviation and economic growth. For instance, Nascimento et al. (2024) [62] and Katzer and Sendlhofer (2023) [63] make more rapid conversions of social value into economic or environmental impact by creating a value cycle in social entrepreneurship through an added transformation stage, as well as creating new social enterprises. For his part, Khefacha et al. (2024) [64] highlight the need for countries to foster sustainable entrepreneurial activities that prioritize welfare and align with broader societal well-being. These papers have emphasized the importance of policy support, community empowerment, and innovative models toward achieving sustainable societal transformation.

Several of the papers also focus on innovative financial models and entrepreneurial ecosystems. Hagawe et al. (2023) [65] present a discussion on the use of Islamic finance to develop microfinance institutions, while Fiamohe et al. (2024) [66] explore financing schemes for microenterprises in Benin. Both studies underscore how innovative financing mechanisms can advance entrepreneurship while contributing to the broader goals of social and economic sustainability.

These are contributions emanating from different methodological positions, including case study qualitative approaches, quantitative survey methods, and conceptual framing. Methodologically, this really underlines the true interdisciplinary nature of research emanating from entrepreneurship and issues of sustainability. For instance, Shahraki (2022) [67] proposed a theoretical paradigm of rural prosperity in which the integration of critical

theory with a post-development perspective was utilized to explore entrepreneurship issues within rural contexts.

In general, these papers prove that entrepreneurship is an actor that plays a crucial role in achieving sustainability goals while emerging countries are a very fruitful context. They indicate a need for innovative solutions to be combined with inclusive practice and supportive policies in an effort to overcome systemic barriers and enhance the contribution that entrepreneurial activities make to the attainment of sustainable development. The integration of environmental, social, and economic dimensions in entrepreneurial strategy provides a common thread to the holistic nature of sustainability challenges and the potential of entrepreneurship in addressing them.

4.5.2. Business Impact

In these studies, the critical dimensions of institutional frameworks, financial mechanisms, environmental impacts, and socio-economic contributions are discussed. As stated by Ben Youssef et al. (2018) [68], for entrepreneurship to be sustained as an engine of economic growth in Africa, high levels of institutional quality and innovation are requisite. Correspondingly, Klochan et al. (2022) [69] and Syamsari et al. (2022) [70] explore how various institutional support systems, including regulatory frameworks and public–private partnerships, impact economic security and regional development in innovative enterprises.

Papers such as Dutta and Banerjee (2018) [71] critically evaluate the limitations of microfinance in enabling transformative entrepreneurship in rural Bangladesh, highlighting how small loan sizes and rapid repayment cycles constrain innovative and high-risk businesses. On the other hand, Castellani et al. (2022) [72] explore the potential of business initiatives for waste management in Uganda to contribute toward the SDGs and emphasize that priority needs to be given especially to circular strategies combined with inclusiveness.

Other interesting works are those on environmental business and circular economy practices. For instance, in discussing frugal business, Hossain and Sarkar (2023) [73] have developed a strategy that allows service provision for low-income markets by overcoming resource constraints through frugal innovations. For their part, Bennett and Grabs (2024) [74], Chavan et al. (2023) [75], and Farooq et al. (2020) [76] highlight the positive impact that CSR by entrepreneurs has on the sustainability of their businesses. Udemba et al. (2024) [77] discuss the role of green energy and environmental policies in mediating the relationship between entrepreneurial activities and environmental sustainability in Brazil, Russia, India, China, and South Africa (BRICS) economies. In a related vein, Rataj et al. (2024) [78] compare the mainstreaming of circular economy solutions in developed and emerging markets and stress the role of collective system-building activities. Likewise, for Dada et al. (2024) [79], policymakers should prioritize green innovation and encourage entrepreneurs to focus on sustainable, innovation-driven activities rather than necessity-driven ventures to balance economic growth with environmental preservation. This shows, as indicated by Rataj et al. (2024) [78], that entrepreneurs play a critical role in accelerating circular economy transitions by driving innovation and enabling the mainstreaming of solutions.

The integration of technology and smart solutions in entrepreneurship is growing. AlZayani et al. (2024) [80] explore the impact of smart technologies on the sustainability of small and medium enterprises, where profitability is considered a very important outcome. Hossain et al. (2024) [81] extend how textile SMEs of Bangladesh adopt smart manufacturing technologies to achieve sustainable performance by overcoming resource constraints and leadership challenges. In a similar line, Alshahrani et al. (2024) [82] point out that intellectual capital enhances SMEs' competitive advantages both directly and indirectly, with innovation capabilities serving as a key mediating factor. Additionally,

entrepreneurial orientation amplifies this relationship by strengthening the mediating role of innovation capabilities, further boosting SMEs' competitiveness.

Other major themes also account for economic recovery and resilience due to entrepreneurship. Garafonova et al. (2023) [83] evaluate the probable innovative financial means towards enterprise renewal in post-war Ukraine, which rests on the restitution of the industrial and infrastructural capacity. In this area, what was mentioned by Bayiley and Behaylu (2022) [84] shows that planning and strategic control significantly influence corporate entrepreneurship, while environmental scanning does not.

4.5.3. Organizational Challenges

Overall, these papers focus on the thematic area of organizational challenges to entrepreneurship, sustainability, innovation, and resilience in constrained-resource and dynamic environments [85–87]. For instance, Aquino et al. (2018) [88] developed a conceptual framework for tourism entrepreneurship in terms of the concepts for the empowerment of disadvantaged communities. Similarly, Prado et al. (2022) [89] explore how to create and scale social ventures in rural Latin America at the juncture of community-led strategies for change and innovative business model practices that can fight systems of poverty.

The second recurrent theme is that of digital transformation. For example, Nakpodia et al. (2024) [90] discuss the contribution of digital technologies to entrepreneurial resilience, with particular references to the COVID-19 pandemic. Similarly, Kamaludin et al. (2022) [91] narrate how social enterprises managed to adapt to the pandemic challenge through mission agility and innovative revenue strategy. In another instance, Awad and Martín-Rojas (2024) [92] merge the concept of digital transformation with CSR, revealing its positive impact on building SMEs' resilience and sustainability.

A core concern is the transition towards sustainable economic models, in particular the transition from linear to circular economies. The institutional and infrastructural impediments to the adoption of models of circular economics within developing countries have been raised by Beheshti et al. (2024) [93], who called for focused policies and stakeholder engagement. Nunes et al. (2022) [94] present an analysis related to the barriers that startups have to face in implementing business models with sustainability and address the need for public policies and systemic support.

Other studies have looked into the resilience strategies of small and medium-sized enterprises, and Sánchez et al. (2024) [95] identify collaboration among businesses, universities, and local authorities as the crucial key in post-pandemic recovery in Santo Domingo, Ecuador. Suriyankietkaew (2023) [96] identifies leadership factors like innovation-oriented teamwork and shared vision as vital drivers of sustainability in SMEs in Thailand. These factors are particularly relevant in addressing organizational challenges, as fostering a shared vision and collaborative innovation can help overcome resistance to change, align sustainability goals across teams, and ensure cohesive action toward long-term sustainable practices. In this regard, the studies on Serbia by Zivojinovic et al. (2019) [97] and those on India by Varshney et al. (2024) [98] provide further insights into why it is important to overcome institutional voids and develop leverages of cultural and familial ties for sustainable entrepreneurship.

Among the various challenges, the institutional ones stand out, especially in areas where governance or infrastructure may be weak. Wang (2022) [99] explores how government-organized non-governmental organizations (GONGOs) in China navigate political and institutional challenges to establish sustainable social enterprises. Similarly, Mazunina et al. (2021) [100] provide a risk-oriented approach towards quality management in an innovative project and present certain challenges faced in strategic development within a digital economy.

The role of innovative business models is critically examined herein, with a focus on how they can help organizations address challenges such as adapting to sustainability demands, overcoming resistance to change, and integrating sustainable practices into core operations. Büscher (2023) [101] critiques biogas-based sanitation business models in Mozambique, showing the contested politics and exclusionary practices that make it difficult to upscale such business models. In Brazil, Siqueira et al. (2023) [102] investigate the readiness of entrepreneurial ecosystems to enable knowledge-intensive sustainable entrepreneurship. This study highlights how the varying maturity levels of these ecosystems across domains such as health, education, and green technologies create organizational challenges for firms attempting to integrate sustainability. These challenges include accessing necessary resources, fostering innovation, and navigating underdeveloped support systems within less mature domains.

These studies all indicate that a need exists for tailored, context-specific approaches to overcoming challenges within entrepreneurship. The integration of principles of sustainability, digital transformation, and social innovation provides promising pathways to become resilient as well as adaptive. Thus, enabling an institutional framework with collaborative policy and stakeholder engagement becomes critically instrumental in overcoming systemic barriers toward scaling sustainable entrepreneurial practice across diverse economic and cultural contexts.

4.5.4. Education and Opportunities

The selected papers discuss the themes of innovative entrepreneurship, education, and sustainable development in relation to how education and opportunities create an enabling environment for entrepreneurial ecosystems to blossom and empower individuals and communities [103–105].

The other main theme is the intent of education to develop an entrepreneurial attitude. Su et al. (2021) [106] discuss how perceived university support and entrepreneurial education influence Chinese college students to focus on the intentions of entrepreneurship. Support significantly influences the students in developing a positive attitude towards entrepreneurship; hence, structured courses in a class of entrepreneurship are essential. Again, on an exploratory note, the findings of Aboobaker et al. (2023) [107] investigated the impact of the desire to learn, innovativeness of personality traits, and technological self-esteem influencing entrepreneur intentions among Indian college students by showing yet once again the need to effectively imbed technological training during higher-education business curricula.

Different studies stress the role that entrepreneurial education could play in sustainable development. Teixeira et al. (2022) [108] present an online course focused on the development of entrepreneurial thinking for students at Brazilian universities, proposing methodologies such as Design Thinking and Lean Startup. On his part, Bulhoes (2022) [109] proposes that the universities of Brazil be transformed into entrepreneurial universities that would give students the competence to face innovative challenges.

Works such as Qian et al. (2018) [110] focus on academic entrepreneurship and the transfer of technology, proposing a process model for sustainable innovation via university spinoffs. Ramos-Eclevia and Eclevia (2024) [111] extend this to intrapreneurship in Philippine academic libraries and demonstrate entrepreneurial initiatives within higher education. Bianchini et al. (2024) [112] explain how circular design and education enable the transition toward a circular economy for SMEs, underlining multisectoral partnerships. Güngör (2024) [113] makes some suggestions on how to improve laurel harvesting in Turkey and bring the forest-based bioeconomy in line with sustainable management.

Finally, new methods are suggested that further enhance entrepreneurship education. Wei et al. (2024) [114] propose a combined Artificial Bee Colony and Back Propagation model to enhance training effectiveness in innovation and entrepreneurship among students in China, while Soam et al. (2023) [115] assess Indian students in agriculture for entrepreneurial interest and pinpoint digital agriculture and advisory services as prime areas of engagement.

These studies, put together, strongly suggest that education, empowerment, innovation, and sustainability are necessary ingredients to develop entrepreneurship. It is an indication that all-inclusive policies, training, and collaboration frameworks are much needed for supporting entrepreneurial ecosystems towards global economic and social development.

4.5.5. Innovation and Ventures

The selected papers investigate different aspects of innovation and entrepreneurship, with an emphasis on sustainable development, inclusive growth, and the integration of innovative practices in various sectors [116–122].

Srivastava and Srivastava (2015) [123] present a study on service innovation within Indian healthcare through an exploration of the use of Information and Communication Technology-enabled models, which work toward closing the service gap in the most underserved rural areas. The role of orchestrating knowledge, technology, and institutional resources for establishing sustainable health care delivery is emphasized. Equally valuable, Bärnreuther (2023) [124] reviews the status of entrepreneurial health financing within India through the lens of combining social entrepreneurship and public–private partnership mechanisms toward expanding access to affordable primary care; the author does, however, raise some doubts over such models in terms of their equity and associated risks.

In the field of renewable energy, the paper by Jolly et al. (2012) [125] investigates business model experiments concerning off-grid PV solar energy in India. They proffer a typology for upscaling dimensions and discuss some challenges ranging from institutional barriers to limited outreach to the poorest population. As an extension, Chaudhary (2024) [126] discusses frugal and sustainable enterprising for inclusive development, reflecting on how resource-constrained innovations address societal challenges.

Medina et al. (2023) [127] discussed agricultural bio-inputs in the Argentinean context, while Savastano et al. (2024) [128] studied green entrepreneurship within the agriculture sector in Pakistan. In both these studies, the role of technology and institutional support in promoting sustainable practices within agribusiness investments was underlined.

The studies also repeatedly discuss issues of technological development. Xiao and Su (2022) [129] assess the mediating role organizational innovation plays in the influence of technological innovation on social and environmental sustainability. Secundo et al. (2024) [130] advance an AI-based innovation ecosystem characterized by collaboration and value creation beyond economic gains. Sánchez-García et al. (2024) [131] analyze the trends of research in digital entrepreneurship, shedding light on the democratization of innovation and inclusive development from digital platforms.

The other critical focus is on the innovation in the business model. Angeli and Jaiswal (2016) [132] provide a framework for the delivery of healthcare at the base of the pyramid, co-creation, community engagement, and strategic partnerships. Hossain et al. (2024) [133] explore frugal enterprises in emerging markets and demonstrate exactly how such firms convert constraints into opportunities through innovative business models.

Several papers are devoted to a detailed analysis of the role of green and environmental entrepreneurship. Kant (2017) [134] identifies barriers to CO₂ utilization technologies commercialization, while Ragmoun (2024) [119] presented a theoretical model development

for environmental entrepreneurship in the Saudi Arabian context. All of them stress the crucial role of supportive institutional framework conditions with respect to stimulating green innovations.

Steinerowska-Streb et al. (2024) [135] and Scaffidi (2022) [136] locate their work in rural and regional contexts of innovation, with a respective focus on determinants of rural enterprise and regional implications of food greentech companies. These works underpin interactions within both local and global drivers for rural and regional development.

The last but not least important thing is the novelty of these studies in the methods of developing entrepreneurial spirit. Yan (2018) [137] suggests a model of a simulation-based decision support system with an aim to enhance knowledge and strategic plans among entrepreneurs; Shahzad and Xu (2024) [138] provide research on how coming technologies and global outlook mediate the relationship of international entrepreneurship and SDGs.

Collectively, they point out the transformative and potent role of innovation and entrepreneurship across sectors and space. They all emphasize technology, inclusive business models, institutional support, and concern for sustainable practices in relation to economic growth that is environmentally sustainable and socially inclusive.

5. Discussion

Research on IESEC is an emerging area of study that has yielded increasingly concrete results over the years, as noted by Abdelnaeim and El-Bassiouny [139], Zhou et al. [140], and Tišma et al. [141]. There is mounting evidence that innovative entrepreneurship plays a crucial role in promoting sustainability and enhancing the development levels of territories [120,142,143], particularly those that are still developing, as highlighted by Wu et al. [144].

The incorporation of innovation in entrepreneurship not only distinguishes it from conventional approaches but also facilitates the creation and enhancement of products, services, and processes across both new and traditional industries. This has been demonstrated by various studies [35,38,42,45,145–148].

The significance of studying IESEC is underscored by its substantial economic and environmental impact, as noted by Kaciak and Welsh [41] and Madariaga [149]. Despite the importance of this topic in emerging contexts, the existing literature emphasizes the need to establish adequate political [98,150–152], technological [2,44,153], institutional [154], economic [155,156], and socio-cultural frameworks [39,157] to promote the growth of innovative ventures. These ventures must be capable of addressing current and future challenges while aligning with the SDGs, as argued by Dubou et al. [158].

The different literature outlines the role of institutional frameworks, among other factors, in creating an enabling environment for innovation and entrepreneurship to thrive within developing nations. For instance, Kant (2017) [134] and Xiao and Su (2022) [129]. More research in this perspective is needed to mitigate institutional inefficiencies that deter open entrepreneurship ecosystems. Comparative studies from different socio-economic and political contexts are made to have an idea about the shaping role of the government's policies and public–private partnerships toward sustainable entrepreneurship. Further, studies on enhancing institutional frameworks for supporting green entrepreneurship, such as Ragmoun (2024) [119] and Medina et al. (2023) [127], explain how entrepreneurial strategies are integrated into climate action policies.

With increased awareness of cost-effectiveness and efficiency in resource use, frugal innovation has held tremendous promise for the development of underserved communities—see, for example, Chaudhary (2024) [126] and Hossain et al. (2024) [133]. Therein, the next avenues for research lie in observing their scalability and adaptability in more variegated socio-economic settings. It will also be relevant to see long-term sustain-

ability related to how frugal innovations move on from short-term success to sustained impacts. Another important area is to explore those principles of social entrepreneurship that could combine into the frugal innovation frames in an attempt to solve some of the crucial difficulties, such as inequality or unemployment.

Digital technologies and artificial intelligence are gradually transforming entrepreneurial ecosystems [131,132]. However, most of the literature still has blind spots with respect to ethical implications, governance challenges, and digital literacy gaps. Future research should consider how digital entrepreneurship can contribute to combating inequities in either rural or underserved regions, such as Steinerowska-Streb et al. (2024) [135]. Longitudinal studies on the impact of digital platforms and AI on well-being from a societal and economic perspective might provide a sounder empirical basis for digital transformation strategies.

Another emergent common theme in the extant literature is the innovation of business models that effectively balance economic, environmental, and social objectives. Most research to date has focused on single cases or small-scales; future studies need to investigate the challenges of scaling hybrid business models in-depth. In particular, further consideration is needed regarding stakeholder mobilization, co-creation, and collaborative networking, which are critical constituents that can help in the wider replicability of sustainable business models across industries like healthcare, agriculture, and energy. Additionally, there is a need for studies that will investigate the alignment of these models with global sustainability frameworks, such as the SDGs.

Rural enterprises are highly instrumental in promoting regional innovation. On the other hand, rural enterprises face particular obstacles, such as deficiencies in finance and infrastructure. As Steinerowska-Streb et al. (2024) [135] and Scaffidi (2022) [136] noted, future studies need to be directed at understanding such challenges and the identification of best practices in fostering rural innovation. Comparing regions might be an effective method for understanding how local contexts influence innovation outcomes. Further, a study on in what ways rural enterprises, while retaining local relevance, can become part of global value chains may be useful and insightful.

Green entrepreneurship has put forth very attractive solutions for the challenges caused by climate change. In this regard, Pricopoaia et al. (2024) [121] and Kant (2017) [134] are promising solutions to climate change challenges through green entrepreneurship. Future studies should investigate further the intersection of green entrepreneurship with emerging technologies, like renewable energy, carbon capture, and sustainable agriculture. Research focusing on how green entrepreneurship can support circular economies and low-carbon industrial strategies is critical for furthering global sustainability initiatives.

Most of the studies conducted so far are cross-sectional or sector-specific, which limits their ability to capture dynamic changes and trends over time. Longitudinal studies on the lifecycle of entrepreneurial ventures—from inception to scaling and potential decline—could give richer insights into the factors influencing success and failure. Cross-sectoral analyses exploring the interplay between different types of innovation, such as social, technological, and business model innovations, may provide a fuller understanding of systemic innovation dynamics.

AI and big data are ever-core in decision-making processes among innovation ecosystems. This indeed calls for future research that addresses the ethical and social considerations of AI adoption in contributing to exacerbating problems of inequality. Therefore, another important area to investigate is the potency of AI in democratizing access to entrepreneurialism, especially in the development of a high-growth economy.

Several studies have pointed out the intersection of innovation and the SDGs, including Pricopoaia et al. (2024) [121] and Shahzad and Xu (2024) [138]. Future research should

be targeted at the design of an innovative entrepreneurship ecosystem to cater to the needs of a specific sustainable development goal, for instance, poverty alleviation, gender equality, as well as climate action. Investigation into synergies as well as trade-offs of various SDGs in context with innovation and entrepreneurship could render useful insights for actionable policy and practices by policymakers and practitioners too.

By addressing these research agendas, future studies will immensely enrich the knowledge of the interaction between innovation, entrepreneurship, and sustainability. These indeed are worth acquiring not only for scholars but also for other groups like policymakers, entrepreneurs, and several other interested parties for the fulfillment of the quest toward inclusive, sustainable development.

6. Conclusions

The role and potential of innovative entrepreneurship for sustainable and inclusive development in emerging countries have immense positive prospects in contributing to the fight against systemic inequities and further advancement of global economic and social well-being. Innovation, ranging from business models through technologies to social ventures, is among the significant drivers of economic growth and social transformation, as well as environmental sustainability. Entrepreneurial initiatives created in different contexts—from rural enterprises to green and digital ecosystems—can generate substantial value while trying to contribute positively to solving the major challenges facing humanity. Yet, the findings also bring to light some critical limitations that call for further inquiry and practical refinement.

In any case, what helps more with enabling entrepreneurial ecosystems, especially in developing countries, is strong institutional frameworks. However, bureaucratic inefficiencies, lack of policy support, and resource constraints continue to hold back the scalability of many innovative ventures.

Frugal innovations are effective in responding to resource constraints and increasing access for underserved populations. However, the long-term sustainability and potential for systemic change of frugal innovation remain open questions, which require supportive ecosystems and strategic partnerships.

Artificial Intelligence among other digital technology innovations and applications, has given a serious push to digital entrepreneurship, remolding business models and social patterns. Yet, acute ethical challenges, the digital divide, and disparity in technological penetration have called for intentional action of strategies meant for effective involvement aimed at equitable benefits.

Green entrepreneurship shows promising avenues to respond to climate change and resource challenges. Yet, how environmental objectives align with economic viability remains intricate, with a need for innovative business modeling and value chain integrations.

Rural and region-specific enterprises have special challenges and opportunities. Local knowledge has to be used to its full potential, connecting with global markets for sustainable growth. Lack of infrastructure and access to finance is a limitation to their scalability and impact.

However, most of the time, there are gaps in the implementation and a lack of international harmonization of policies, which undermine the potential for entrepreneurial ventures.

Therefore, the immense promise of innovative entrepreneurship in driving sustainable development would have to be availed of with systemic barriers being addressed and supplanted by collaborative approaches. This shortcoming in the identified literature bolsters the need for an even more comprehensive and integrated agenda, which puts center equity, scalability, and long-term impact. Bridging these gaps is a way of assuring

those future efforts would be taken to ensure innovations bring not only economic benefit but also a fairer, greener world.

This study provides valuable insights into the intersection of IESEC through a bibliometric analysis. However, the analysis is restricted to articles indexed in the WoS database, which may exclude relevant studies published in other databases or non-indexed journals, potentially limiting the comprehensiveness of the findings. Addressing this limitation in future research could provide a more holistic view of the field.

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