

Review

Scientific Progress on Entrepreneurship in the Circular Economy: A Scientometric Analysis

Rosa M. Batista-Canino *, Silvia Sosa-Cabrera , Pino Medina-Brito  and Lidia Santana-Hernández 

University Institute of Tourism and Sustainable Economic Development, University of Las Palmas de Gran Canaria, 35017 Las Palmas de Gran Canaria, Spain; silvia.sosa@ulpgc.es (S.S.-C.); pino.medina@ulpgc.es (P.M.-B.); lidia.santana@ulpgc.es (L.S.-H.)

* Correspondence: rosa.batistacanino@ulpgc.es; Tel.: +34-9284-58647

Abstract: This paper adopts a scientometric approach to establish a research framework to guide the study of entrepreneurship in the circular economy (ECE) for the coming years. Two hundred papers published on ECE in journals indexed in WOS and Scopus show that this area of research is still in its embryonic stage and that it is geared towards two key axes: environmental and management aspects. In addition to framing the study of ECE based on the concept of conscious entrepreneurship, this paper shows that it is critical to focus efforts on understanding the challenges and obstacles facing the transition from a linear to a circular economy. Furthermore, it is essential to determine the enabling factors from both contextual and organizational perspectives, with a particular focus on examining the negative externalities of ECE. The role of researchers in this field is key to not only better understanding the phenomenon but also to prescribing and disseminating this philosophy on which to base economic growth in the remainder of the century.

Keywords: circular economy; entrepreneurship; scientometrics; thematic strategic mapping



Academic Editors: António Miguel Rosado da Cruz and Estrela Ferreira Cruz

Received: 15 November 2024

Revised: 2 January 2025

Accepted: 7 January 2025

Published: 20 January 2025

Citation: Batista-Canino, R.M.; Sosa-Cabrera, S.; Medina-Brito, P.; Santana-Hernández, L. Scientific Progress on Entrepreneurship in the Circular Economy: A Scientometric Analysis. *Sustainability* **2025**, *17*, 777. <https://doi.org/10.3390/su17020777>

Copyright: © 2025 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

Since the early years of this century, there has been a growing and almost unanimous concern about preserving the environment and the quality of life on our planet. This concern was consolidated with the adoption of the 17 Sustainable Development Goals (SDGs) in 2015, promoted by the United Nations. These goals have come to shape a large part of the world's political, social, and economic agendas. Undoubtedly, much of our economic and social development comes from the economic activity carried out by companies and institutions, which is in turn driven by the initiatives and entrepreneurship of individuals. Thus, the business activity that emerges from new and established firms is largely responsible for how limited resources are consumed in developing products and services to meet the needs of the population and other businesses, especially in the developed world.

In this way, sustainability thinking has gradually influenced practices and approaches, shaping how knowledge is explored and applied. With this new approach to production and consumption, which is now a necessity rather than a passing trend, the cradle-to-cradle philosophy has been attracting increased attention. Popularised by the architect William McDonough and the chemist Michael Braungart [1], design and science act in harmony to minimise, if not eliminate, the waste from any process, reconvert it into resources. This ultimate waste recovery approach is key in positioning the circular economy as a crucial component of sustainable business behaviour, albeit only a part of the broader and more ambiguous [2] concept of 'sustainability'. Consequently, the so-called circular economy

has emerged as a new paradigm and represents a significant challenge to address in the coming decades.

In this context, the Ellen McArthur Foundation's Butterfly Diagram [3] effectively illustrates the need to align biological and technological cycles to minimise waste and the negative externalities of any production or distribution process. Despite the increasing focus on a sustainable approach to production and consumption, there is limited knowledge about the progress in this field and the extent to which it has been implemented in contemporary companies' production processes and their design of new products. However, it is concerning that the gap between primary and secondary resources is increasing rather than decreasing, with the use of the latter having fallen by almost 21% in the last five years [4]. We analysed the research conducted to date to understand how entrepreneurship has progressed in the circular economy given that this topic remains underexplored [5].

To this end, this paper seeks to analyse the scientific progress on this subject matter and address the main concerns that other researchers have raised regarding entrepreneurship in the circular economy. With this objective in mind, three main sub-objectives are pursued: (1) addressing the scientific concerns regarding entrepreneurship in the context of the circular economy; (2) summarising the knowledge on this phenomenon from a business perspective; and (3) unveiling the morphology of this domain and exploring its key related themes. Data from the published papers were extracted to build a Thematic Strategic Map (TSM) based on bibliographic coupling that covers the third proposed sub-objective. This map allows us to visualise the key and emerging themes in this field. Based on an in-depth analysis of the TSM, it is possible to identify gaps in the existing literature and to propose a comprehensive framework to guide future research.

Based on the findings of this research, the present paper proposes a study framework and a roadmap on which to base a better understanding of how entrepreneurship develops in the context of this new economic paradigm, both on a quantitative level (i.e., the growing number of companies, processes, and products that align with this movement, as well as economic, political, and social plans, projects, and initiatives committed to the circular economy) and on a qualitative level (i.e., characteristics of the entrepreneurial, corporate, and ecosystem initiatives committed to the circular economy and how all of them face the challenges posed by this philosophy). Undoubtedly, it is a complex issue that requires improvements to increase efficiency. It also needs to be implemented more widely to minimise the potential adverse effects associated with this form of production and consumption. Knowledge from a limited number of research areas alone cannot address these challenges, as their development is systemic. Therefore, a collaborative effort from scientists across various disciplines is essential.

The current research analyses previous studies on entrepreneurship, which were conducted for a little more than a decade. To date, this area of research has mainly focused on environmental and management aspects. In the former, three topics attracted the researchers' attention: sustainability and circularity practices and policies applied in SMEs; factors and policies influencing the transition from a linear to a circular economy; and waste management in the agri-food industry. Meanwhile, the four key topics for researchers interested in business management are the challenges faced by SMEs in the transition from a linear to a circular economy in Europe; the leading examples of the circular economy today; the resources and capabilities companies need to implement circularity; and the analysis of inherently circular business models, both in established companies and those developed based on new business and management practices.

This framework aims to inspire scientific work in this area, targeting researchers as a primary audience while guiding public and organisational policy design. The research is structured as follows: the next section outlines the main conclusions drawn from pre-

vious review studies with similar purposes, followed by the methodology and results of the scientometric analysis. The final section concludes with a proposed framework for future research.

2. Key Findings from Previous Literature Reviews Relevant to This Scientometric Approach

To the best of our knowledge, this is the first scientometric study to analyse the synergies emerging in the academic literature between two pivotal themes: the circular economy and entrepreneurship. Appendix A provides a summary of the characteristics of the systematic literature reviews and bibliometric studies conducted to date, along with the key findings and challenges identified by researchers. These reviews have either taken a broader approach, focusing on the sustainable behaviour of companies, or have adopted a more specific focus, examining various aspects of how companies address the challenges of the circular economy.

The latter group includes studies such as those by Kondala et al. [6], which explore the challenges faced by SMEs in adopting the principles of the circular economy. Other examples are systematic reviews on business models based on circularity, such as those by Susur & Engwall [7] and Alcalde-Calonge et al. [8], as well as reviews by Ferreira Gregorio et al. [9], Kasmi et al. [10], Rosário et al. [11] or Sudusinghe & Seuring [12] on different related topics. While these studies show the growing importance of this subject, they do not focus exclusively on the connection of the issues we intend to address here.

These papers, along with others, explore the sustainable behaviour of entrepreneurial initiatives, focusing on a broader concept than circularity. They address research on entrepreneurial behaviour related to responsible production and sustainability, such as that of Ferreira & Ferreira [13] and Suchek & Franco [14]. Notably, these studies address the special issue of sustainable development and entrepreneurship led by Hall et al. [15] at the beginning of the last decade.

We can draw some valuable conclusions from these studies, providing a reference framework for this research. For example, many of the challenges identified by Hall et al. [15] for sustainable entrepreneurship also apply to circular economy ventures. Both circular economies and sustainability-based economies are closely linked [11], relying on policies and incentives that support the entrepreneur in adopting these practices. However, it is also important to better understand their real motivations for doing so. A recurring concern in the literature is whether new ventures are better positioned to embrace these practices or whether established firms can adapt more swiftly to meet their requirements. In line with the focus of Hall et al. [15], another critical aspect is understanding the opportunity cost faced by businesses that are inherently circular versus those that are not. This issue is significant, as it may explain why some companies choose not to apply these practices from the outset.

In this context, Alcalde-Calonge et al. [8] highlight that the development of business models based on circularity requires attention not only to internal organisational aspects, such as human capital and the development of dynamic capabilities, but also to external environmental aspects. These include regulatory, technological, economic or socio-cultural factors that enable the new practices to take root and internalise the principles of the circular economy across all companies. The environmental challenges to the development of sustainable business models based on circularity require further research, as pointed out by Ferreira & Ferreira [13]. They also emphasise the need to establish evaluation models that include metrics to measure the impact of these innovative frameworks on production, design, and resource reuse.

To consolidate the circular economy, there is a need for more robust scientific and empirical research on successful ventures in these areas, as opposed to solely conceptual or theoretical work [5,6]. This research should prioritise anticipating the potential negative externalities that these new systems may produce [9,15]. Advancing this field requires the coordination of multiple stakeholders and collaborative efforts across many countries [9,14]. Such coordination is particularly vital in the supply chain, as noted by Sudusinghe & Seuring [12], and can be developed through both physical and virtual innovation spaces. These collaborative environments promote experiential learning and help companies, territories, and regions transition towards sustainability- and circularity-based economies [10].

Let us now examine which of these topics have attracted the most attention from researchers in the emerging field of circular economy entrepreneurship and identify those that still require further exploration.

3. Method and Research Data

3.1. Thematic Strategic Mapping

This paper is a domain-based review [16] involving qualitative and quantitative analyses of the research front [17]. Its goal is to explain the underlying intellectual and morphological structure of a research field over time [18]. These aspects are identified through the bibliographic coupling of the sample analysed [19]. The intellectual structure is made visible through an in-depth analysis of the clustered papers, focusing on key issues such as authorship and publication sources, among others.

The morphological structure illustrates the development stage of the topic. To analyse this, Impact-Centrality Thematic Strategic Maps (TSMs) [20] are used, which also label keywords from the clustered papers. Centrality indicates how closely related topics are, while relevance is determined by the impact, measured by a global or local normalised citation index, as determined by the researchers. The TSMs are built on global or local citations. Global citations (GCs) refer to how many times a paper is cited across all scientific literature, while local citations (LCs) refer to citations within the specialised research field itself [21]. These maps were adapted to the centrality–density Strategic Maps made popular by Callon et al. [22–24] in the early 1990s [25].

Following this nomenclature, the map is divided into four quadrants (Q1–Q4). Q1, in the upper right, represents the motor themes (high centrality and high impact), those of great interest to the scientific community. Q2, in the top left, shows high centrality and low impact, highlighting the cross-cutting or foundational themes. Q4, in the lower left, indicates emerging or declining topics. Finally, Q3, in the lower right, denotes highly specialised and developed themes, often referred to as peripherals. The morphological structure is defined by the distribution of the clusters on the map (Figure 1), reflecting the developmental stage of the research field. A dominance of Q1–Q4 represents a structured field, while a dominance of Q2–Q3 denotes a field in transition (either emerging, evolving or disintegrating). A highly dynamic, complex, and unstructured research area shows clusters in all four quadrants.

This bibliometric technique is integrated within Bibliometrix, a library developed in the open-source Rstudio (v4.3.1). To perform the TSM, a minimum filter of 15 iterations was used, which identifies shared references between pairs of articles, measuring the impact through global citations.

3.2. Data Collection

To compile the collection, two search engines were used: Scopus and Web of Science (WOS), chosen for their continuous updates and strong academic reputation [26,27]. These platforms allow for combination using the `convert2df` code developed by RStudio, reducing

human error during manual merging and enabling the analysis of a larger number of articles [19]. To ensure replicability and enhance the transparency of this study [28], we used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) [29,30] and the PICOTT decision-making framework [31], which helped in assessing the eligibility of each document until the final collection was formed. Table 1 outlines the steps followed during the screening process, where the researchers spent considerable time discussing the papers to include or exclude based on the PICOTT framework. The standard PRISMA protocol [30] is also included in Appendix B.

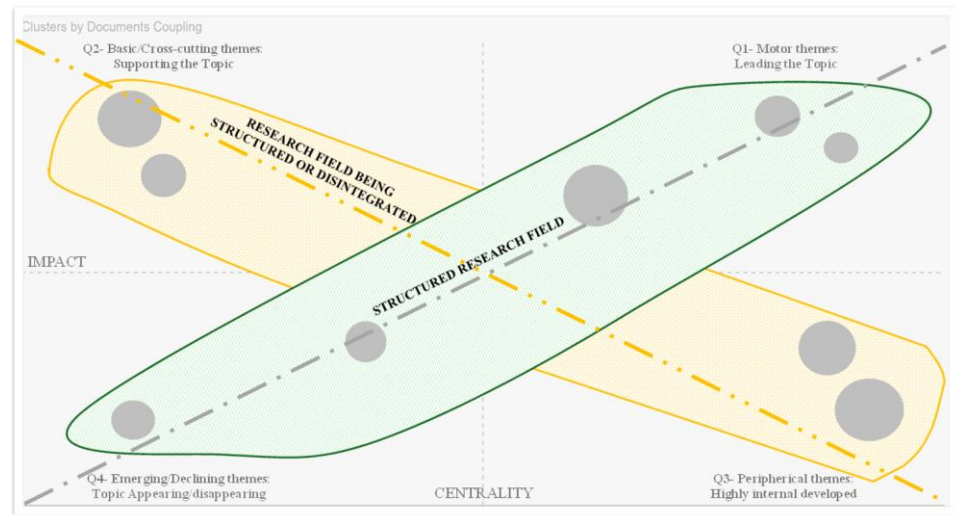


Figure 1. Key morphological structures.

Table 1. PRISMA and PICOTT frameworks applied in the review process.

Identification criteria and sources of data combination	Selected databases: Scopus and Web of Science General filter and search string "entrepr*" AND "circular economy" in TITLE, ABSTRACT and KEYWORDS Date of search: September 2023 Time span: Not restricted Subject category: Not restricted Language: English Document type: Peer-reviewed research articles Database combination using Rstudio Rstudio code to combine collections : setwd("D : /file/filename (uploadthecollection) WOS < -convert2df("savedrecs(458).bib", dbsource = "wos", format = "bibtex") SCOPUS < -convert2df("scopus(209).bib", dbsource = "scopus", format = "bibtex") Sample < -mergeDbSources(WOS, SCOPUS, remove.duplicated = T) write.xlsx (Sample, file = "combined.xlsx")	Set of documents: Scopus = 209 WOS = 458 Duplicated = 145 Total combined 522
Screening criteria	Documents eliminated: 20 literature reviews focused on business and sustainability, business, and circular economy	Set of documents: 502
PICOTT framework applied to this scientometry	<ul style="list-style-type: none"> Population under study: Businesses transitioning from a linear to circular economy (CE), circular economy entrepreneurs, circular economy business models, circular and/or sustainable entrepreneurship, born-circular businesses, ecosystem support to circular entrepreneurship Interventions: Concepts, resources, challenges, theories, and explanatory factors of ECE. Case studies, policies, and strategies related to CE; CE opportunity recognition, innovation, and/or CE ecosystems Comparison: Literature reviews on CE/ECE and sustainable entrepreneurship to date Outcome: Making ECE a visible emerging topic and summarising the accumulated knowledge in this research domain Type of question being asked and its importance: To discover the morphologic structure and evolution of ECE as a field of research. This review will support (potential) CE entrepreneurs, stakeholders in ECE, ECE researchers, and policy makers in addressing ODS applications. Type of study design: Scientometric approach (quantitative and qualitative) 	
Eligibility	Previous review: In-depth examination of article titles, abstracts, keywords, and when necessary, the full article, with a focus on identifying the population under study and interventions	Set of documents removed: 301
Inclusion Criteria	Final collection: Research articles focused on entrepreneurship in the circular economy excluding literature reviews.	Set of documents: 201

On the other hand, due to our focus on exploring the area of knowledge related to the circular economy from a business perspective, WOS was selected to categorise journals according to their areas of expertise, differentiating between those associated with the business field and those of an environmental nature. As far as category aggregation is concerned, this distinction is more straightforward in WOS than in Scopus.

The result of this research protocol was a study period spanning 12 years between 2012–2023. The first ECE article was identified in 2012. As a result, this research focuses on peer-reviewed theoretical and/or empirical articles published in journals indexed in the sources analysed, which are considered internationally recognised knowledge [23] due to the rigorous refereeing process each article undergoes.

4. Results and Discussion

The scientific production of the ECE topic, as shown in Figure 2, reveals two distinct phases: 2012–2017 and 2018–2023. The first phase, referred to in this paper as the gestation period, is characterised by a limited number of publications on this specific topic. Johansson et al. [32] pioneered this area with their positive vision of waste recycling as a generator of business opportunities and economic development. Interest in ECE was reignited by Iacondini et al. [33], who highlighted how the circular economy offers business opportunities, with the regulatory framework and stakeholder collaboration being essential to promoting a circular culture. Since 2018, there has been significant growth and consolidation in the field of ECE (see the dotted line), with 191 out of 201 publications in the collection coming from this period. The range of contributions during this phase highlights the evolution of the field, as we will demonstrate below.

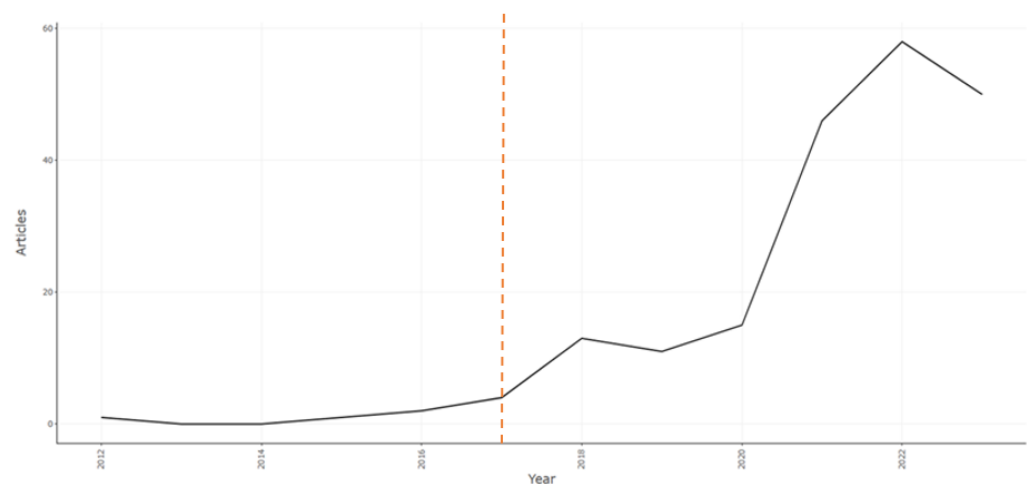


Figure 2. Annual ECE scientific production (2012–2023).

The 201 papers, which comprise more than 12,000 bibliographic references, are published across 103 journals. A total of 67.9% are indexed in JCR (WOS), primarily in the areas of environmental sciences and studies (52.2%), business and management (33.1%), and other fields such as finance, energy and development studies (14.7%). The development of the ECE field has been led mainly by researchers from European countries, accounting for 67.73% of authorships, while Asia and America contribute 14.70% and 12.46%, respectively.

Table 2 lists the most representative indexed journals in the collection, categorised by environmental and business/management areas, the number of articles published, and the journal citations from the collection bibliographies. It also highlights the globally and locally top-cited authors for each journal. Regarding local citations, the top three journals considering publication volume and bibliographies cited are Sustainability, Journal of Cleaner

Production, and Business Strategy and The Environment. The work of Henry et al. [34] is the most-cited paper in this period, with 17 local citations and 129 global citations.

Table 2. Journals' areas of knowledge, sources, and authors.

Journals' Areas of Knowledge (Web of Science, JCR 2022)	Sources	Articles in the Collection	Cited References	The Most Representative Papers (GC & LC Citations)
Environmental studies Environmental Sciences	Sustainability	27	470	Brown et al. [35] GC: 98; LC: 0
	Journal of Cleaner Production	23	1425	Henry et al. [34] GC:129; LC:17
	Management of Environmental Quality	3	16	Wilson et al. [36] GC:37 Pizzi et al. [37] LC:5
Business	Business Strategy and The Environment	11	377	Linder & Willander [38] GC:407; LC:14
	Management Decisions	10	63	Zhu et al. [39] GC:26 Le et al. [40] LC:5
	Journal of Business Research	5	139	Chaudhuri et al. [41] GC:33 Pereira et al. [42] LC:1
	California Management Review	1	47	Frishammar & Parida [43] GC:124; LC:7
	Journal of Business Economics and Management	1	6	Manea et al. [44] GC:15; LC:4

The Thematic Strategic Map based on bibliographic coupling identifies 7 clusters, which group 113 documents (clustering ratio: 56.2%), as shown in Figure 3. The non-clustered papers reflect diverse interests, sharing an intellectual base but showing limited overlap with the clustered papers on the map. The papers included in the clusters predominantly come from environmental knowledge journals (46%), compared to those from business and management (38%). According to the local to global citation ratio (4.3%), the field is not yet fully recognised as a distinct research domain.

After an in-depth analysis of the documents in each cluster, it became clear that the map highlights several research issues embedded in the ECE literature, revealing two main research areas expected to drive the field forward: (1) research closely linked to the management of circular companies or firms transitioning towards circularity (blue, grey and brown clusters into the orange line area), comprising 84 papers with 83 local citations (1462 global citations), and (2) research focusing on general policies or papers from SMEs to support the transition to a circular economy (red and orange clusters, into the green line area), with 17 papers (3 local citations and 131 global citations). A small group of papers in the green cluster (9 papers: 0 local citations and 397 global citations), with a peripheral position in the field, include empirical research showing practical applications, such as servitisation and intrapreneurship in start-ups and established firms actively engaged in circularity. While still somewhat uncertain about its future prominence as a central research area, the pink cluster focuses on the growing need to manage waste in the agri-food sector by redesigning organisations to apply ESG (Environmental, Social, and Governance) criteria and align with sustainable development goals, especially those referring to the first SDGs (3 papers: 0 local citations and 17 global citations).

Additionally, Figure 3 summarises the labels (i.e., the authors' keywords) that define the identity and focus for both clusters.

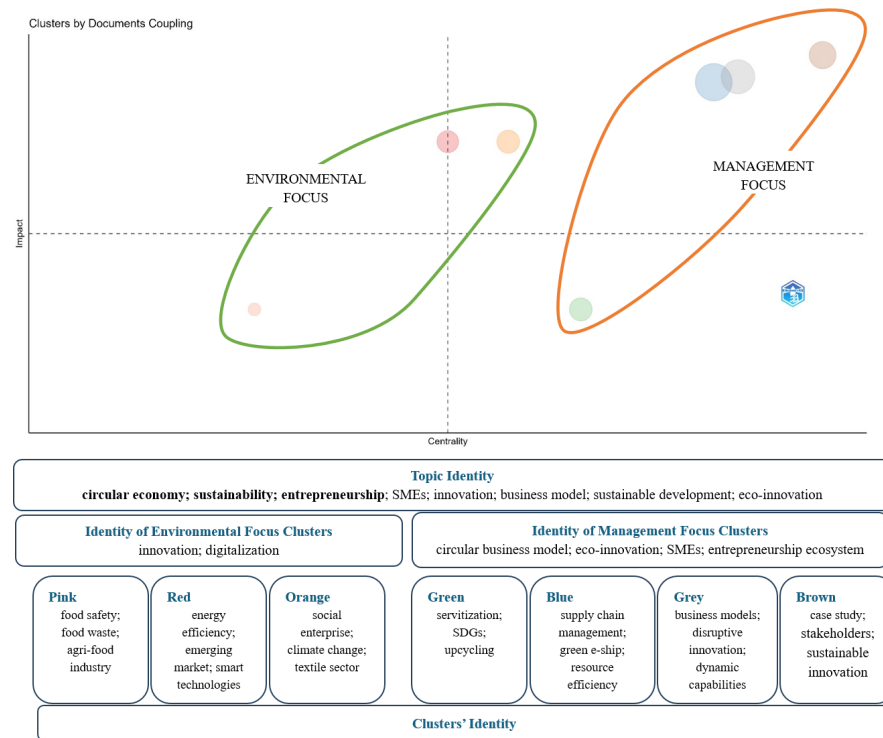


Figure 3. Strategic Thematic Map (2012–2023).

4.1. An Environmental Approach to Entrepreneurship in the Circular Economy

This approach to ECE research is supported by 20 papers, which have received 3 local references and 148 global citations to date. Ahmadova et al. [45] lead this focus in terms of global citations (25), while Staicu & Pop [46] lead in terms of local citations (2). The research papers grouped into the three clusters described below (Table 3) share two key characteristics: (1) most have been published in journals listed by WOS as environmental journals, and (2) their focus is on government policies aimed at regulating the impact of companies on the environment or promoting business opportunities for transitioning towards a circular economy, as well as how companies face the challenge of circularity in their operating environments.

Table 3. Description of clusters with an environmental focus.

	Red	Orange	Pink
Hot topic	Actions for implementing circularity practices in SMEs	Macro elements influencing the linear economy–circular economy transition	Importance of food waste management: costs, innovation, and organisational redesign to meet SDGs and ESG criteria
Top 3 relevant papers (GC, LC)	Ahmadova et al. [45]–(25, 0)	Staicu & Pop [46]–(18, 3)	Bux & Amicarelli [47]–(9, 0)
	Saura et al. [48]–(16, 0)	Crecente et al. [49]–(18, 0)	Cammarelle et al. [50]–(6, 0)
	Le et al. [40]–(14, 0)	Kostaki & Tsagarakis [51]–(7, 0)	Toscano et al., [52]–(2, 0)
Top Journals	Ecological Economics	Journal of Cleaner Production	Journal of Environmental Management
	Energies	Technological Forecasting & Social Change	Sustainability
	Sustainability	Frontiers in Environmental Science	
Publication period	2021–2023	2018–2023	2021–2022

To comply with environmental legislation and regulations, companies are proactively improving their internal processes through innovation and digitalisation by establishing collaborative networks and acquiring a necessary awareness of circularity. Institutional and geopolitical influences play a critical role in supporting these business actions, driving the transition from a linear to a circular economy. Consequently, active environmental monitoring and the growing awareness of circularity present new challenges for business initiatives. The key topics of interest in this area are explored below.

Actions for Implementing Circularity Practices in SMEs (red cluster): In recent years, sustainable entrepreneurship in SMEs in the context of the circular economy has garnered significant academic interest. This is evident in the red cluster, which includes eight documents published in the last three years, primarily in journals associated with the environmental field (62.5%). These studies focus on specific mechanisms for implementing circularity practices in SMEs, particularly in manufacturing sectors such as textiles, energy, wood, and food.

Using qualitative techniques, such as in-depth interviews with experts or case studies, researchers explore how SMEs adopt circular practices. The findings emphasise that dynamics like leadership and decision making, sustainable supply chain management, and digitalisation, among others, are the key organisational enablers for circularity. In this context, Prospective Theory can facilitate decision making, helping companies to identify technologies that best promote energy sustainability [53].

This cluster also highlights the role of entrepreneurship in enhancing the sustainable performance of SMEs within the food supply chain [40] and the importance of digitalising internal processes in circular companies [48]. Notably, Ahmadova et al. [45] present the most cited work in this cluster, proposing an inverted U-shaped relationship between digitalisation and a country's environmental performance. Their study, based on data from SMEs in ten sectors across 47 countries, underscores the significant influence of institutional frameworks on this relationship.

Macro Elements Influencing the Linear-to-Circular Economy Transition (orange cluster): The global economy is primarily composed of SMEs, which face unique challenges in transitioning to circularity. Addressing these challenges requires explicit support for sustainable entrepreneurship. In this sense, geopolitics and institutional support programmes are key in identifying opportunities for entrepreneurship and facilitating the transition to a circular economy.

The orange cluster encompasses nine documents, with a strong focus on macro-level factors influencing circularity in specific geographical areas (e.g., the EU) or sectors (e.g., textiles, clothing, agriculture, and food). These studies are predominantly published in environmental studies and general science journals (77.8% of the papers).

Key contributions in this cluster include those of Staicu & Pop [46] and Staicu [54], who emphasise the importance of fostering collaborative relationships within ecosystems to facilitate the linear-to-circular transition and cultivate a circular culture within the business sector. The work of Crecente et al. [49], a leading paper in this cluster, focuses on the business opportunities generated by climate change policies and their alignment with the SDGs, combining value creation and social orientation.

The findings suggest that promoting entrepreneurship [49], advancing digital transformation [55], fostering collaborations between entrepreneurs [46], providing training [56], and raising awareness [57] are critical for improving circularity rates. These efforts collectively drive progress towards a circular economy [51].

Importance of Food Waste Management: Costs, Innovation, and Organisational Redesign to Meet SDGs and ESG Criteria (pink cluster): This cluster, consisting of three publications linked to environmental science and studies, is positioned in the TSM as a potentially

emerging topic. The food industry generates significant waste, which must be reduced to align with the SDGs and meet international certifications (eg., ISO 37000) according to ESG criteria.

It should be noted that all the clustered papers focus on Italy and the agri-food sector. Bux & Amicarelli [47] highlight the economic impact of overlooking the costs and losses associated with food waste and the challenges faced by entrepreneurs in the Italian meat sector (beef, pork, and poultry). Toscano et al. [52] advocate for reconfiguring organisational design as a transformative approach to waste reduction, while Cammarelle et al. [50] emphasise investment in innovation with healthy and compostable packaging.

4.2. A Management Approach to Entrepreneurship in the Circular Economy

The management research approach to ECE is reflected in 93 papers, collectively drawing 83 specialised citations and 1859 citations from other research areas. The paper of Todeschini et al. [58] is the most globally cited work in this category (204 GC), while Henry et al. [34] lead in local citations (17 LC).

The clustered papers analysed (Table 4) share several key characteristics: (1) A majority have been published in journals listed by WOS under the business and management categories, and (2) these studies are focused on how companies address and manage the organisational challenges posed by circularity practices, including internal operations, product and service design, and the transformation of business models to align with circular economy principles.

Table 4. Description of clusters with a managerial focus.

	Blue	Grey	Brown	Green
Hot topic	European SMEs' challenges in the transition from a Linear-to-Circular Economy	Company resources and capabilities to Implement Circular Activities and Business Models	Business model characteristics: born-circular start-ups vs. established SMEs	Circular Business Models Based on Innovation. Intra-entrepreneurship, servitisation, and collaboration between social enterprises
Top 3 relevant papers (GC, LC)	Demirel & Danisman [59]–(121, 6)	Kanda et al. [60]–(38, 4)	Henry et al. [61]–(129, 19)	Todeschini et al. [56]–(204, 0)
	Dey et al. [62]–(120, 7)	Chaudhuri et al. [41]–(33, 0)	Veleva & Bodkin [63]–(123, 19)	Spring & Araujo [64]–(109, 0)
	Brown et al. [35]–(98, 0)	Wu et al. [65]–(32, 0)	Zamfir et al. [66]–(67, 0)	Han et al. [67]–(32, 0)
Key Journals	Business Strategic and the Environment	Business Strategic and the Environment	Journal of Cleaner Production	Business Horizon
	Journal of Business Research	Sustainability	Management of Environmental Quality	Industrial Marketing Management
	Journal of Cleaner Production	Sustainable Production and Consumption		
Publication period	2018–2023	2016–2023	2017–2023	2017–2022

The following four clusters encompass papers where business proactivity prevails in the creation and implementation of initiatives by both born-circular companies and established firms committed to circularity. Eco-innovation, business cooperation, and the development of robust entrepreneurial ecosystems are crucial drivers for fostering new

businesses within the circular economy, where prioritising the use and reuse of waste as input for production processes is key.

This commitment to circularity is reflected in the development of innovative business models and the integration of intrapreneurship, innovation, servitisation, and social impact as key elements of circular business management. However, challenges such as founder characteristics, financial constraints, resistance to change, and varying levels of motivation often serve as significant barriers to the success of circular entrepreneurship.

The key research topics explored within these clusters are outlined below.

European SMEs' Challenges in the Transition from a Linear to a Circular Economy (blue cluster): The growing interest in the circular economy presents new challenges for SMEs. Total sustainability is underpinned by the strategies, resources, and competencies SMEs deploy to implement circular practices [62]. The work of Demirel & Danisman [59], the most cited work in this cluster with 121 global citations (6 LCs), highlights the re-organisation of SME supply chains and operations through the adoption of circular eco-innovations, often financed by non-traditional channels such as business angels and venture capital. Brown et al. [35] argue that addressing the challenges of the circular economy requires collaborative eco-innovation activities among network members, fostering shared experiences, cultures, rewards, and risks. Entrepreneurial ecosystems and multi-stakeholder cooperation [68] generate added value for proactive circular companies [69], motivating them to participate in new circular economy ventures [70] through eco-innovations [68]. Moreover, the digitalisation of business models [44] and eco-entrepreneurship [71] enhance SME competitiveness in the transition to circularity.

This cluster, comprising 41 documents, highlights the growing significance of eco-innovations, eco-ventures, and collaborations with ecosystem agents as key solutions for SMEs. It features the significant presence of management and business research (56%) and contributions predominantly from European researchers (58%).

Companies' Resources and Capacity to Implement Circular Activities and Business Models (grey cluster): Advances in sustainable development require resources and the capacity to implement circular activities and business models. This cluster of 29 articles emphasises the importance of the institutional framework in promoting innovation and sustainable entrepreneurship, which are key to advancing the circular economy through waste usage, especially in plastics, textiles, and electronics.

Unlike earlier discussions on the circular economy focused on reducing impacts and energy consumption, this cluster highlights the use of waste as a critical input for circular processes. The competitive advantage for sustainable entrepreneurs comes from leveraging regulations that support sustainability in their region [72].

This approach, according to Wu et al. [65], is particularly relevant in industrialising countries with limited waste management resources. Here, an adaptable institutional governance framework is necessary, with strong coordination and trust among stakeholders [60,73]. In this context, the theory of institutional entrepreneurship links government policies with circular economy principles [74], positioning institutions as key drivers of the shift towards circularity [75].

To overcome resistance to change from the stakeholders involved in this process [72] and create value for customers, Chaudhuri et al. [41] suggest using circular economy resources, capabilities, and digital technologies to develop sustainable products. In this sense, SMEs are essential for achieving the SDGs [76] through waste reduction and recycling. Recent studies, like those of Klein et al. [77] and Han et al. [67], focus on companies that were born circular. Klein et al. emphasise value-based resource mobilisation, while Han et al. explore business strategies for scaling circular enterprises beyond just revenue generation.

Business Model Characteristics in Born Circular Start-ups vs. Business Models in Established SMEs (brown cluster): Circular business models have been widely studied, mainly focusing on established companies. This cluster brings together 14 papers that analyse the characteristics of business models in companies that were “born circular”. These papers mostly relate to the field of business and management.

Veleva & Bodkin [63], with 123 global citations (LCs: 19), highlight key strategies for innovative companies, including a commitment to sustainability, reusing waste and products, and collaborating with other companies and associations. The characteristics and motivations of founders in born-circular companies are guided by ESG criteria [61], which distinguishes them from companies that later adopt circular economy practices.

In this context, Henry et al. [34] propose a typology of circular start-ups, categorising them based on design, waste, platforms, services, and nature. This paper is the most cited in the cluster, referenced by 129 articles.

Circular Business Models Based on Innovation, Intra-entrepreneurship, Servitisation, and Collaboration Between Social Enterprises (green cluster): Companies are constantly seeking ways to thrive in competitive environments with innovative business models that respect society and care for the planet. This cluster, consisting of nine papers (55.6%), mainly focused on management and business and explores business models based on innovation, particularly those that incorporate intrapreneurship [78], servitisation [79], and collaboration with other social enterprises [80].

Sustainability is a key value proposition in circular business models despite the lack of a conceptual framework for implementing them [58]. This article, with 204 global citations (LCs: 0), which is the most in the cluster, is a major reference.

Spring & Araujo [64] argue that the circular economy emphasises the need to expand the product concept by integrating servitisation. This, in turn, leads to the reconfiguration of networks and creates new business opportunities.

4.3. Morphological Structure of Entrepreneurship in the ECE Research Field

The field of ECE presents motor, peripheral, and emerging themes, indicating that it remains an unstructured area of research. From a morphological perspective, the main challenges faced by SMEs in adopting ECE (blue), the resources and capacity needed by companies to implement circular practices (grey), and the unique business models of companies built on circularity (brown) are key themes shaping its development.

Government programmes supporting the transition toward circularity (red) and the sustainability practices implemented by SMEs (orange) are also central drivers in the intellectual structure of ECE. Currently, topics like servitisation and intrapreneurship in ECE (green) are more tangential but still relevant, while there is a growing interest in ECE’s contribution to the SDGs (pink).

This structure reflects the transition from a linear to a circular economy. The adoption of circularity, even as a response to regulatory and policy decisions (red and orange cluster), marks the beginning of raising awareness of this critical shift at both business and governmental levels. The process of analysing internal and external factors to overcome barriers is shown in the challenges and opportunities faced by SMEs (blue cluster), as well as the resources and capacities they need to adopt circular practices (grey cluster). The brown cluster is key to driving change, as it brings together companies born circular and those that have adapted their business models, thus serving as examples for businesses in transition. The pink cluster highlights sector-specific challenges, while the green cluster focuses on hyper-specialisation.

In short, the map illustrates the evolving nature of the research area. It has not yet matured into a fully developed field with a consistent pattern across quadrants 1 and 4.

5. Future Research Paths and Challenges for ECE Research

The analysis above shows how the study of ECE has primarily focused on two main research areas, namely environmental and management considerations. It seems reasonable to suggest that future research should reinforce both of these approaches. Based on these two dimensions, the direction of the research should evolve. There is no doubt that both approaches require similar reflections. (1) On the one hand, there is a need for a deeper exploration of the challenges posed by the adoption of the circular economy as a new paradigm of economic development, both in regions undergoing transformation and for businesses that must adapt to new operational rules; (2) on the other hand, it is essential to better understand the factors that, at both the contextual and business levels, will facilitate this paradigm shift.

These elements, stemming from both the external and internal environment of the company, find common ground and effective communication through necessary inter-organisational and intra-sectoral collaboration between entrepreneurs and businesses. However, this shared space must be sustained by a growing entrepreneurial spirit grounded in three key pillars of entrepreneurial activity: social, environmental, and economic factors [81,82]. The economic aspect serves as a means to achieve the other two, rather than an end in itself.

This approach is essential for making an effective contribution to the transition from market-centred corporate sustainability to sustainability-centred corporate sustainability [83]. In this transition, an economic growth philosophy based on the circular economy can play a significant important role. Figure 4 summarises these elements within a comprehensive framework to guide future research in this field. Below, we outline the most pressing challenges for future research in this area.

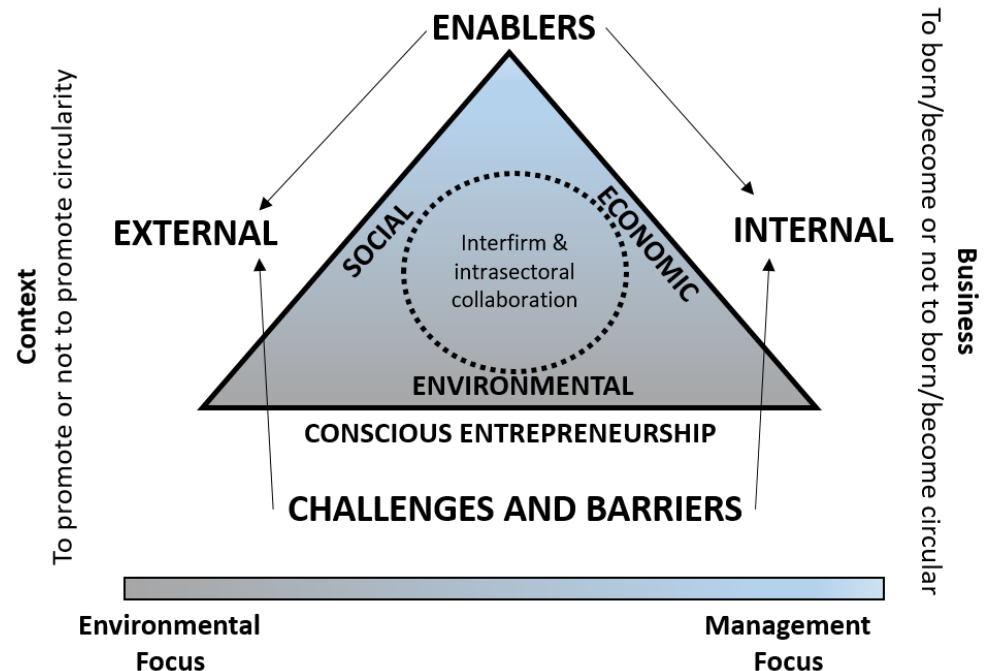


Figure 4. A framework to guide future research on ECE.

First and foremost, it is important to highlight that the role of conscious entrepreneurship should be central to research on this topic. It is crucial to distinguish between the adoption of circular practices as a mere ‘greenwashing’ tactic and genuine conscious entrepreneurship. The latter must be fully integrated into all organisational areas and extended into the broader community through awareness-building initiatives.

Additionally, inter-firm and inter-sectoral collaboration strategies will be key for ensuring that the circular economy philosophy extends beyond individual organisations. At the community level, what motivates the adoption of ECE? The specific challenges of each sector are particularly relevant and should be a focus for research. Questions to explore include the following: How can waste be managed efficiently, both economically and environmentally, within a business community? What impact does the sector have on the surrounding community? What new products can be created from collective waste? What is the sector's potential for generating new businesses and jobs? What coopetition strategies would be effective for the sector to compete in new markets?

A priority for researchers in the field will be to measure the extent to which conscious entrepreneurship is present within business communities and companies that are born circular or transition towards circularity. It is important to distinguish between circular entrepreneurship that is truly sustainable in the long term and those practices that may not be.

Linking this behaviour to various business management factors (such as talent retention and development, as well as the types of corporate financing used to improve circularity) will provide valuable insights into the enablers of ECE. Moreover, research should go beyond simply describing and understanding these phenomena; it must provide perspective insights. Understanding the dynamics of business collaboration, particularly within supply chains [12], is a key research area, as indicated by Ferreira Gregorio et al. [9]. Research in this area has the potential to play a mobilising role, promoting the broader adoption of circular economy practices.

As for the enablers, it is particularly important to understand the motivations behind an entrepreneur's decision to adopt these practices. In some cases, these practices arise out of the necessity of the economic sustainability of newly founded companies, especially as environmental regulations increase, thereby raising management costs. This pressure forces companies to innovate and diversify their operations to better utilise resources including waste.

This shift not only generates new business models but also fosters collaboration with other actors in the ecosystem or even the creation of new companies that address waste-related challenges within the sector. Therefore, government policies in this area, rather than hindering the circular economy, actively promote it, supporting the growth and survival of the most efficient companies in a sector.

Studying successful public policies that promote circularity can provide valuable insights into their effects. It can establish indicators to measure their impact on the sustainable economic development of a region or country and create a roadmap for future actions, opening up an interesting line of research. However, excessive pressure from such policies, if not carefully implemented, could harm the business sector instead of encouraging the development of more efficient companies. This issue warrants further study to understand and optimise the process of business transformation, thus preventing any negative effects on employment and innovation.

Therefore, studying the enablers of integrating circularity into business practices raises important questions that can inspire further research, including the following:

- External facilitators: it should be a priority for researchers to address questions such as the following. What public policies have been most effective in encouraging collaboration among businesses to promote circular business culture and practices? What social and economic factors contribute to the success of these policies? How do policies aimed at supporting born-circular businesses compare in effectiveness to those targeting established businesses? What programmes and support, if any, have helped to drive the progress of born-circular start-ups?

- **Internal facilitators:** it is crucial to address questions such as the following. In born-circular start-ups, what personal motivations drive entrepreneurs and their teams to establish companies committed to circularity? Are the organisational and human factors in these companies significantly different from those in established firms that do not focus on circularity? For established businesses adopting circularity strategies, do these changes emerge from within existing structures, or do they require deliberate intrapreneurship strategies?

The challenges and barriers to ECE are often not only found within the territorial framework, as the issue is closely linked to different contexts. Its application differs between developed and developing economies, as highlighted by the recurring Circularity Gap Report [4]. These challenges are also present within companies in which organisational dynamics and capacities can hinder the development of ECE [8].

Further analysis of specific cases involving start-ups or established companies transitioning to circularity through intrapreneurship practices is crucial, as successful examples can inspire others. In this regard, researchers play a fundamental role as observers and disseminators of knowledge. As a critical mass of start-ups and established business adopt ECE, research in this area can shift from descriptive to more prescriptive and causal approaches.

At the same time, examining cases that produce negative externalities will also be essential. Understanding these issues cannot only help solve the problems they generate but also inspire new entrepreneurial efforts to satisfy emerging needs. In addition, further investigation of these aspects across different industries will be an important research task, revealing how sector-specific approaches to ECE may vary.

The most urgent issues to address regarding the challenges and barriers to ECE could include the following.

- **External challenges and barriers:** What are the specific contexts in which political or collective initiatives toward a circular economy have not progressed favourably? What factors explain the failure of these initiatives? Did timing or prevailing socio-economic conditions in the environment affect their development negatively? Are there socio-cultural frameworks that are more conducive to the successful implementation of policies promoting circularity in business? Are there differences between countries in this regard? Do countries with a stronger entrepreneurial spirit tend to be more receptive to circular business practices?
- **Internal challenges and barriers:** What motivates or discourages ECE at the firm level? How does circular culture spread within a company, and what factors limit its progress? Is circularity integrated into the company's mission, or is it merely part of corporate social responsibility with a limited scope? What new projects emerge from the circular philosophy, and what barriers could potentially limit their future success?

All this work should be supported by inspirational and practical research to ensure a more efficient coverage of the terms used. It is critical to clearly define the boundaries of concepts that remain unclear and have multiple interpretations, such as sustainability, and to establish their relationship with the circular economy. This is particularly important for studying entrepreneurship in this field. In this context, research like this is made more difficult by the large number of synonyms used in the literature to connect entrepreneurship with the circular economy (e.g., sustainable entrepreneurship [84], environmental entrepreneurship [85], eco-entrepreneurship [81,86], and green entrepreneurship [87–89], among others).

In short, it is clear that research focusing on the environmental domain, as inspired by the first group of studies analysed in this paper, aims to explore everything that either facilitates or hinders the promotion of circularity in a given context, answering the question

of whether “To promote or not to promote circularity”. On the other hand, research focused on the management area, as seen in the second group of studies, will address a key concern for entrepreneurship in the 21st century: “To be born circular or not?” or “To become circular or not”.

6. Conclusions

This study reveals that research in ECE remains in the early stages, showing the characteristic morphology of a developing field. The area is evolving in tandem with the circular economy itself, shaped by the experiences of entrepreneurs and businesses, along with their respective strengths and weaknesses. Notably, the research highlights the significant role of public policies in raising awareness at both sectoral and regional levels. In response, whether reactively (prompted by public initiatives and environmental degradation) or proactively (driven by strong environmental awareness), companies are finding ways to generate more cost-effective resources throughout the supply chain and to create new products and services aligned with the ‘think circular’ philosophy.

This emerging development is undoubtedly the result of the recent introduction of this paradigm into the fields of economics, production, and business management, an approach that, ironically, reflects practices once common in traditional domestic economies. The challenges posed by this philosophy will impact not only entrepreneurs throughout the century but also researchers studying the phenomenon, who will witness its promises and its effects firsthand. In the meantime, entrepreneurship and start-ups will continue to be viewed as a panacea for many social and environmental problems [15], but does this optimism have its limits?

Author Contributions: Conceptualisation, R.M.B.-C. and P.M.-B.; methodology, S.S.-C. and L.S.-H.; software, L.S.-H.; validation, formal analysis, and data curation—research team; writing—research team; writing—review and editing, research team; project administration and funding acquisition, Batista-Canino. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by Fundación CajaCanarias and ‘La Caixa’ Foundation, grant number 2021ECO4. The APC was funded by Fundación CajaCanarias and ‘La Caixa’ Foundation.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data used in this research are from public databases. Any researcher interested in replicating this research can request the cleaned databases on which this work was developed.

Acknowledgments: The authors wish to acknowledge the financial support provided by Fundación CajaCanarias and ‘La Caixa’ Foundation for the development of the research project on which this study is based.

Conflicts of Interest: The authors declare no conflicts of interest. The funding organisation had no role in the design of the study; in the collection, analyses, or interpretation of data; in the writing of the manuscript; or in the decision to publish the results.

Appendix A

Systematic Literature Reviews related to entrepreneurship and sustainability/circular economy.

Articles	Citations	Software Tool & Analysis	Data Source & Key Issues of the Review	Main Conclusions	Future Research
Sustainability and the Circular Economy Business Development (Rosário, A., Lopes, P., & Rosário, F., 2024)	3	VOSviewer Bibliometric analysis: Keyword co-occurrences, bibliographic coupling on the document analysis	SCOPUS “sustainability” AND “circular economy” AND “business development” n = 97 papers Period: 2014–2024	“The conclusions indicate that CE and sustainability are interlinked, and companies must implement appropriate sustainability and CE strategies to increase their competitiveness and improve resource efficiency. These strategies can integrate innovative technologies, the use of sharing platforms, extending the useful life of products, recovering resources to minimise waste, and integrating sustainability concepts into business.” [p. 1]	“Future research on sustainability and business development in the circular economy should focus on the use of advanced technologies, innovation of business models, understanding consumer behaviour, and the development of robust metrics and policies.” [p. 18]
The challenges in adoption of circular economy in SMEs a research agenda and way forward (Kondala, M., 2023)	8	ATLAS.TI Bibliometric analysis: Descriptive and Narrative	SCOPUS “circular economy” AND (SME OR “small”) n = 79 papers Period: N/A	“This study identified four themes: technical know-how, resources and process optimisation, reverse practices and technology and innovation. Through discussion, this study developed an agenda for each theme and the way forward for the researchers in focusing on maximising the adoption of CE in SMEs.” [p. 19]	“Future research should concentrate on developing and testing frameworks for successful CE adoption and implementation. The themes identified in this study pave the way for future researchers to concentrate on these specific research questions to advance and contribute to the CE and sustainability domains. Researchers should focus more on longitudinal studies to explore the contextual adoption of CE across the supply network over time. Additionally, researchers can focus on aspects not covered in this study, such as consumer knowledge and preconceived judgment about sustainable products, green procurement, sustainable supplier selection and implementation of policies to encourage SMEs to adopt CE. Increasing the understanding of the opposite behaviors from the perspective of consumers, for instance, could help in identifying new avenues for extending a positive impact.” [p. 20]
A transitions framework for circular business models (Susur, E. & Engwall, M., 2023)	10	Manual clusters and Theory modelling	SCOPUS “circular,” “business model” and “innovation” n = 64 papers Period: 2014–2022	“First, a theoretical framing is proposed by adopting insights from transitions studies. Second, a systematic literature review is employed. The review synthesizes the selected literature tracing the proposed framing in the previously published research. Finally, a transitions framework for circular business models is proposed. This paper proposes a conceptual framework to illustrate how circular business models emerge through innovation mechanisms within transitions towards a circular economy. By doing so, it contributes a novel conceptual approach to the circular business model literature, as well as to transitions studies.” [p. 19]	“Future research should explore and apply the framework in different contexts to improve the proposed approach and perhaps suggest an alternative one. Finally, the paper also offers some management-oriented implications. Fundamentally, circular business model innovation can be deliberately facilitated by building on the proposed conceptualization. If the proposed framework is used as a prescriptive management tool, then related actors could govern the circular business model innovation by working on the seven innovation mechanisms. This governance would require careful consideration of the constantly changing technology and infrastructure, as well as of the established institutional structures. Consequently, using the framework as a managerial tool could enable actors to improve their decision-making processes for a further development, diffusion, and adoption of circular business models in specific contexts.” [p. 29]

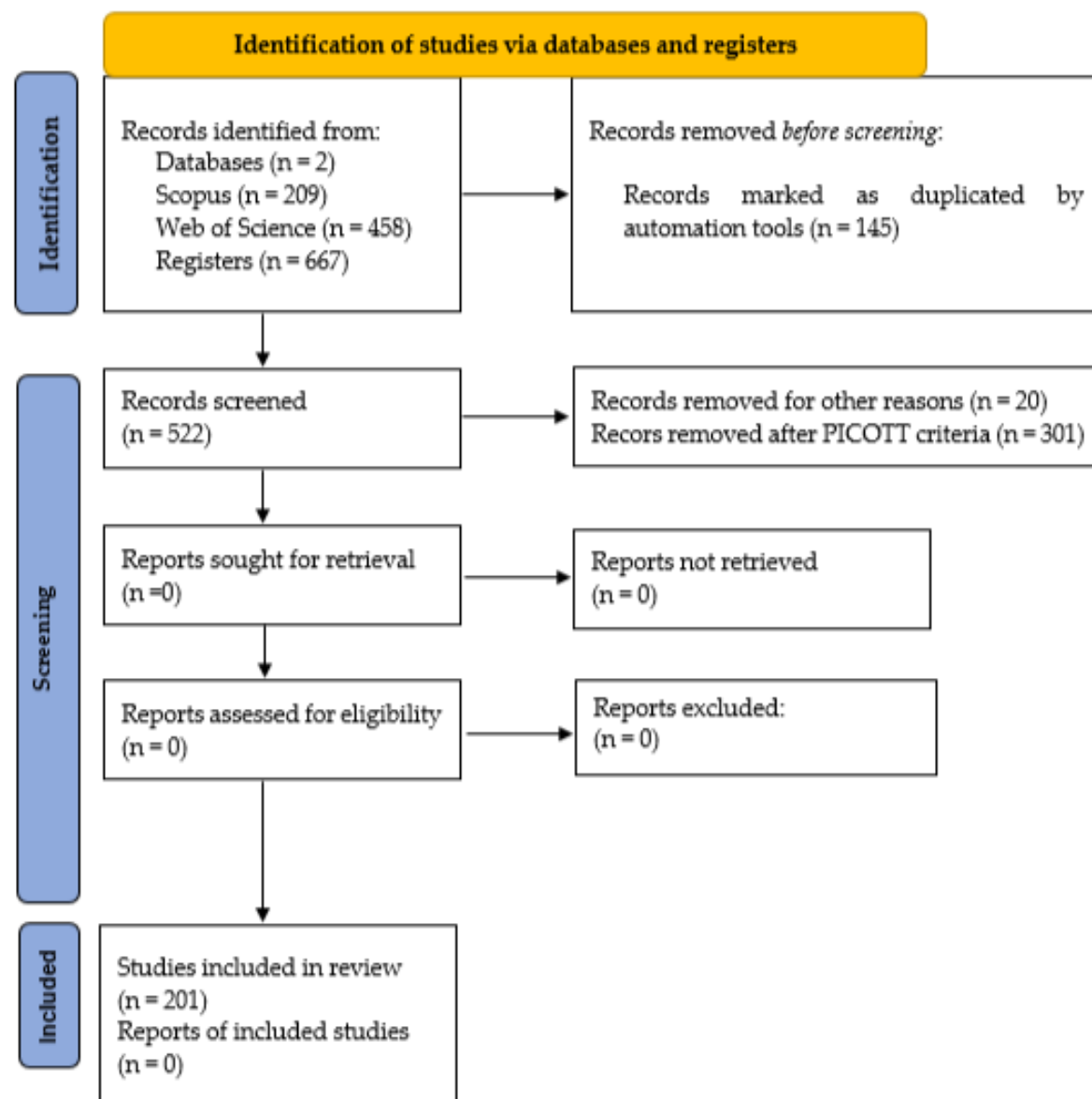
Articles	Citations	Software Tool & Analysis	Data Source & Key Issues of the Review	Main Conclusions	Future Research
Quo vadis sustainable entrepreneurship? A systematic literature review of related drivers and inhibitors in SMEs (Ferreira, N.C. & Ferreira, J.J.M., 2024)	2	VOSviewer, SciMAT and SimpleMind Pro Bibliometric analysis: co-citation and bibliographic coupling on the document analysis	SCOPUS "Sustainable Entrepreneurship" n = 206 papers Period: 1987–2022	"This study is the first to combine bibliographic coupling and co-citation to analyze academic articles on SE in SME contexts. The findings provide a deeper understanding of this field's theoretical structure. The dimensions that drive and/or inhibit sustainable entrepreneurship in SMEs are sustainable entrepreneurial orientation, organization, performance, networks, contexts, and sustainable practices." [p. 1]	"Future studies could further explore the relationship between authors/journals and the different methods applied. Studies should also concentrate on deepening the six areas of research identified by this SLR: sustainable entrepreneurial orientation, performance, innovation and networks, sustainable business models, commitment to sustainability, and green entrepreneurship and circular economy." [p. 16]
Inter-organisational cooperation oriented towards sustainability involving SMEs: A systematic literature review (Suchek, N. & Franco, M., 2023)	9	Descriptive and Content analysis	WOS "circular econom*" OR "sustainab*" AND "collab*" OR "cooperat*" OR "partner*" OR "alliance*" OR "network*" AND "SME*" OR "small and medium sized enterprise*" OR "small firm*" OR "small business" OR "small enterprise*" n = N/A Period: N/A	"A framework is presented with an overview of the evolution of the field, highlighting the main factors and outcomes related to inter-organisational cooperation involving SMEs for sustainability. As a result, the articles were organised into four groups, namely (1) cooperation for sustainability promoted by government initiatives, (2) effects of interorganisational cooperation for sustainability, (3) process of cooperation oriented towards sustainability, and (4) start of discussions on cooperation for the circular economy." [p. 1]	"Future research can combine the important factors and potential outcomes identified in this paper and develop quantitative studies with more comprehensive and representative samples. Furthermore, the circular economy has gained increasing attention from scholars and policy-makers as a way to operationalise sustainability, so future studies within the circular economy framework are also needed." [p. 17]
The circularity of the business model and the performance of bioeconomy firms an interactionist business environment model (Alcalde-Calonge, A., Ruiz-Palomino, P. & Sáez-Martínez, F.J., 2022)	11	Theory modelling	N/A "Circular Economy Business Model" (CEBM), "Social Capital" (SC), "Entrepreneurial Orientation" (EO), "Dynamic Capabilities" (DC) n = 55 papers Period: N/A	"The theoretical model and integrated literature review provides a framework that explains how firms may achieve a higher level of circularity in their BMs, not only focusing on the adoption of circular economy practices per se, but also looking into the factors that contribute to achieving a greater level of circularity. From a managerial perspective several implications arise from this research. First, as a result of the analysis of internal company factors that lead the company to increase its level of circularity, eco-industrial park managers must be aware that the development of external SC between companies in the park and with others outside the park needs to be promoted." [p. 20]	"Various lines may be defined for future research. First, the framework proposed is a call for scholars to test the role of environmental factors in augmenting or diminishing the (positive) influence of internal factors in both the adoption of EO and of a high-circularity BM. Second, future research could add further elements to our model to better comprehend how a high-circularity BM is easier to adopt. Third, future studies should test whether the adoption of a high-circularity BM is positive for the economic, social and environmental performance of SMEs, and for which of these performance dimensions, a high-circularity BM has a greater impact." [pp. 20–21]

Articles	Citations	Software Tool & Analysis	Data Source & Key Issues of the Review	Main Conclusions	Future Research
Innovation spaces as drivers of eco-innovations supporting the circular economy: a systematic literature review (Kasmi, F., Osorio, F., Dupont, L., Marche, B. & Camargo, M., 2022)	16	VOSviewer and Nvivo Bibliometric analysis: keywords co-occurrences	WOS & SCOPUS "Circular Economy" (CE), "Innovation Space" (IS). n = 863 papers Period: To 2019	"This study introduces a categorization of Innovation Spaces (IS) conducive to the Circular Economy (CE) and identifies the eco-innovations they may induce." [p. 203]	"The next step will consist in analyzing a set of concrete IS cases. A particular interest will be focused on IS linked to universities and their contribution to fostering CE in the territories while relying on sustainable development models such as the quintuple helix (Provenzano et al., 2018)." [p. 204]
Supply chain collaboration and sustainability performance in circular economy: A systematic literature review (Sudusinghe, J.I. & Seuring, S., 2022)	173	MaxQDA, MS Excel software and SPSS 27.0 software package Bibliometric analysis: Content analysis, Contingency analysis	WOS & SCOPUS Related to supply chain collaboration: 'collaboration', 'cooperation', 'coordination', 'integration', 'relationship', 'partnership', 'alliance'. Related to CE: 'circular economy', 'circular supply chain*', 'supply chain*', 'reverse supply chain*', 'closed-loop supply chain*', 'open-loop supply chain*' n = 82 papers Period: 2016–2020	"A conceptual framework is developed to identify appropriate collaboration practices to enhance symbiotic relationships internally and externally in CSCs to improve sustainability performance." [p. 1]	"An in-depth analysis of collaboration practices is needed to comprehensively understand different collaboration practices improving sustainability performance with the interrelations among supply chain partners in the CE." [p. 2]
A sistematic literature review of bio, green and circular economy trends in publications in the field of economics and business management (Ferreira Gregorio, V., Pié, L. & Terceño, A., 2018)	81	Descriptive analysis	WOS & SCOPUS: "Circular Economy" OR "Bioeconomy" OR "Bio-economy" OR "Green Economy" n = 449 papers Period: 1960–2017	"The results show that the existing literature is rich in analysing implemented policies and issues related to the strategies and organizational models of companies looking for a more sustainable path. An added value of this article is the categorization by themes, obtaining 17 categories. This analysis allows us to identify "Design or policy analysis" as the most prominent topic, represented by 24% of the publications and included within the three most important categories of each concept. In second place is the category "Sectoral application/cluster" with 14% of the publications. Next, is the category "Management Styles" represented by 11% of the publications, particularly on the CE and the GE." [p. 1]	"A future line of research is to look for different measures to help entrepreneurs to implement cleaner production, minimising emissions and simultaneously raising competitiveness. Moreover, another future line could be to better analyse the most appropriate indicators and to establish homogeneous database criteria to be applied in different situations and countries. This would allow for accurately evaluating the different strategies promoted. Another line of research could be to find the most appropriate way to disseminate this theoretical knowledge, to promote the exchange of information between companies and to describe experiences from different parts of the world and varied institutions to broaden knowledge and increase collaboration on the studied topics. [p. 19]

Articles	Citations	Software Tool & Analysis	Data Source & Key Issues of the Review	Main Conclusions	Future Research
Sustainable development and entrepreneurship: Past contributions and future directions (Hall, J., Daneke, G., & Lenox, M., 2010).	822	Narrative analysis	N/A Business Source Complete: "sustainable development" or "environmental management" and "entrepreneur/entrepreneurship" n = N/A Period: N/A	"This article discusses the emerging research concerned with sustainable development and entrepreneurship, which is the focus of this special issue of the Journal of Business Venturing. The majority of studies exploring the relationship between sustainable development and entrepreneurship have been published outside of the mainstream entrepreneurship journals." [p. 439]	"Remains open questions as to whether, and to what extent, entrepreneurs have the potential for creating sustainable economies: 1. under what conditions do we expect to see entrepreneurial ventures rather than incumbent firms provide sustainable products and services? 2. under what conditions do we expect to see entrepreneurs pursue sustainable ventures? To what extent are entrepreneurs incentivized to pursue sustainable ventures? Are there structural barriers to the capture of economic rents for sustainable ventures? Do sustainability-oriented entrepreneurs differ from traditional entrepreneurs? To what extent are they motivated by non-pecuniary incentives such as social norms or private values? Do they have different risk preferences or opportunity costs than traditional entrepreneurs? 3. under what conditions can entrepreneurship simultaneously create economic growth, while advancing social and environmental objectives? 4. under what conditions is entrepreneurship welfare-creating versus welfare-destroying, especially once all externalities are factored in? 5. under what conditions does public policy positively influence the incidence of sustainable entrepreneurship?" [pp. 445–6]

Appendix B

Standard PRISMA 2020 flow diagram. Source: Page et al. (2021).



References

1. Braungart, M.; McDonough, W. *Cradle to Cradle: Remaking the Way We Make Things*; North Point Press: New York, NY, USA, 2002; pp. 1–193.
2. Yamada, S.; Kanoi, L.; Koh, V.; Lim, A.; Dove, M. Sustainability as a Moral Discourse: Its Shifting Meanings, Exclusions, and Anxieties. *Sustainability* **2022**, *14*, 3095. [CrossRef]
3. Ellen McArthur Foundation. *Towards A Circular Economy Vol 1: Economic and Business Rationale for an Accelerated Transition*; Ellen McArthur Foundation: Oxford, UK, 2013; pp. 1–99. Available online: https://www.werktrends.nl/app/uploads/2015/06/Rapport_McKinsey-Towards_A_Circular_Economy.pdf (accessed on 2 November 2024).
4. Fraser, M.; Conde, A.; Haigh, L. *The Circularity Gap Report 2024*; Circle Economy Foundation: Amsterdam, The Netherlands, 2024; pp. 1–44. Available online: <https://circulareconomy.europa.eu/platform/en/knowledge/circularity-gap-report-2024> (accessed on 2 November 2024).
5. Korhonen, J.; Honkasalo, A.; Seppälä, J. Circular Economy: The Concept and its Limitations. *Ecol. Econ.* **2018**, *143*, 37–46. [CrossRef]
6. Kondala, M.; Nudurupati, S.; Pappu, R. The challenges in adoption of circular economy in SMEs—A research agenda and way forward. *Benchmarking Int. J.* **2024**, *31*, 1667–1699. [CrossRef]

7. Susur, E.; Engwall, M. A transitions framework for circular business models. *J. Ind. Ecol.* **2023**, *27*, 19–32. [[CrossRef](#)]
8. Alcalde-Calonge, A.; Ruiz-Palomino, P.; Sáez-Martínez, F. The circularity of the business model and the performance of bioeconomy firms: An interactionist business-environment model. *Cogent Bus. Manag.* **2022**, *9*, 2140745. [[CrossRef](#)]
9. Ferreira Gregorio, V.; Pié, L.; Terceño, A. A Systematic Literature Review of Bio, Green and Circular Economy Trends in Publications in the Field of Economics and Business Management. *Sustainability* **2018**, *10*, 4232. [[CrossRef](#)]
10. Kasmí, F.; Osorio, F.; Dupont, L.; Marche, B.; Camargo, M. Innovation Spaces as Drivers of Eco-innovations Supporting the Circular Economy: A Systematic Literature Review. *J. Innov. Econ. Manag.* **2022**, *39*, 173–214. [[CrossRef](#)]
11. Rosário, A.; Lopes, P.; Rosário, F. Sustainability and the Circular Economy Business Development. *Sustainability* **2024**, *16*, 6092. [[CrossRef](#)]
12. Sudusinghe, J.; Seuring, S. Supply chain collaboration and sustainability performance in circular economy: A systematic literature review. *Int. J. Prod. Econ.* **2022**, *245*, 108402. [[CrossRef](#)]
13. Ferreira, N.; Ferreira, J. Quo Vadis Sustainable Entrepreneurship? A Systematic Literature Review of Related Drivers and Inhibitors in SMEs. *IEEE Trans. Eng. Manag.* **2024**, *71*, 9644–9660. [[CrossRef](#)]
14. Suchek, N.; Franco, M. Inter-organisational Cooperation Oriented Towards Sustainability Involving SMEs: A Systematic Literature Review. *J. Knowl. Econ.* **2024**, *15*, 1952–1972. [[CrossRef](#)]
15. Hall, J.; Daneke, G.; Lenox, M. Sustainable development and entrepreneurship: Past contributions and future directions. *J. Bus. Ventur.* **2010**, *25*, 439–448. [[CrossRef](#)]
16. Paul, J.; Criado, A. The art of writing literature review: What do we know and what do we need to know? *Int. Bus. Rev.* **2020**, *29*, 101717. [[CrossRef](#)]
17. Zupic, I.; Čater, T. Bibliometric Methods in Management and Organization. *Organ. Res. Methods* **2015**, *18*, 429–472. [[CrossRef](#)]
18. Boyack, K.; Klavans, R. Creation of a Highly Detailed, Dynamic, Global Model and Map of Science. *J. Assoc. Inf. Sci. Technol.* **2014**, *65*, 670–685. [[CrossRef](#)]
19. Lim, W.; Kumar, S.; Donthu, N. How to combine and clean bibliometric data and use bibliometric tools synergistically: Guidelines using metaverse research. *J. Bus. Res.* **2024**, *182*, 114760. [[CrossRef](#)]
20. Aria, M.; Cuccurullo, C. bibliometrix: An R-tool for comprehensive science mapping analysis. *J. Informetr.* **2017**, *11*, 959–975. [[CrossRef](#)]
21. Batista-Canino, R.; Santana-Hernández, L.; Medina-Brito, P. A scientometric analysis on entrepreneurial intention literature: Delving deeper into local citation. *Heliyon* **2023**, *9*, e13046. [[CrossRef](#)] [[PubMed](#)]
22. Callon, M.; Courtial, J.; Laville, F. Co-word analysis as a tool for describing the network of interactions between basic and technological research: The case of polymer chemistry. *Scientometrics* **1991**, *22*, 155–205. [[CrossRef](#)]
23. Callon, M.; Courtial, J.; Penan, H. *La Scientométrie*; Presses Universitaires de France: Paris, France, 1993.
24. Callon, M.; Law, J.; Rip, A. Qualitative Scientometrics. In *Mapping the Dynamics of Science and Technology: Sociology of Science in the Real World*; Palgrave Macmillan: London, UK, 1986; pp. 103–123. [[CrossRef](#)]
25. Batista-Canino, R.; Santana-Hernández, L.; Medina-Brito, P. A holistic literature review on entrepreneurial intention: A scientometric approach. *J. Bus. Res.* **2024**, *174*, 114480. [[CrossRef](#)]
26. Moya-Anegón, F.; Vargas-Quesada, B.; Herrero-Solana, V.; Chinchilla-Rodríguez, Z.; Corera-Álvarez, E.; Muñoz-Fernández, F. A new technique for building maps of large scientific domains based on the cocitation of classes and categories. *Scientometrics* **2004**, *61*, 129–145. [[CrossRef](#)]
27. Reis, A.; Fleury, A.; Carvalho, M. Consolidating core entrepreneurial competences: Toward a meta-competence framework. *Int. J. Entrep. Behav. Res.* **2021**, *27*, 179–204. [[CrossRef](#)]
28. Kraus, S.; Breier, M.; Dasi-Rodríguez, S. The art of crafting a systematic literature review in entrepreneurship research. *Int. Entrep. Manag. J.* **2020**, *16*, 1023–1042. [[CrossRef](#)]
29. Liberati, A.; Altman, D.G.; Tetzlaff, J.; Mulrow, C.; Gøtzsche, P.C.; Ioannidis, J.P.; Clarke, M.; Devereaux, P.J.; Kleijnen, J.; Moher, D. The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration. *Ann. Intern. Med.* **2009**, *62*, e1000100.
30. Page, M.J.; McKenzie, J.E.; Bossuyt, P.M.; Boutron, I.; Hoffmann, T.C.; Mulrow, C.D.; Shamseer, L.; Tetzlaff, J.M.; Akl, E.A.; Brennan, S.E.; et al. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ* **2021**, *372*, n71. [[CrossRef](#)]
31. Schardt, C.; Adams, M.; Owens, T.; Keitz, S.; Fontelo, P. Utilization of the PICO framework to improve searching PubMed for clinical questions. *BMC Med. Inform. Decis. Mak.* **2007**, *7*, 16. [[CrossRef](#)] [[PubMed](#)]
32. Johansson, N.; Krook, J.; Eklund, M. Transforming dumps into gold mines. Experiences from Swedish case studies. *Environ. Innov. Soc. Transit.* **2012**, *5*, 33–48. [[CrossRef](#)]
33. Iacondini, A.; Mencherini, U.; Passarini, F.; Vassura, I.; Fanelli, A.; Cibotti, P. Feasibility of Industrial Symbiosis in Italy as an Opportunity for Economic Development: Critical Success Factor Analysis, Impact and Constraints of the Specific Italian Regulations. *Waste Biomass Valorization* **2015**, *6*, 865–874. [[CrossRef](#)]

34. Henry, M.; Bauwens, T.; Hekkert, M.; Kirchherr, J. A typology of circular start-ups: An Analysis of 128 circular business models. *J. Clean. Prod.* **2020**, *245*, 118528. [[CrossRef](#)]
35. Brown, P.; Bocken, N.; Balkenende, R. Why Do Companies Pursue Collaborative Circular Oriented Innovation? *Sustainability* **2019**, *11*, 635. [[CrossRef](#)]
36. Wilson, M.; Paschen, J.; Pitt, L. The circular economy meets artificial intelligence (AI): Understanding the opportunities of AI for reverse logistics. *Manag. Environ. Qual. Int. J.* **2022**, *33*, 9–25. [[CrossRef](#)]
37. Pizzi, S.; Leopizzi, R.; Caputo, A. The enablers in the relationship between entrepreneurial ecosystems and the circular economy: The case of circularity. *com. Manag. Environ. Qual. Int. J.* **2022**, *33*, 26–43. [[CrossRef](#)]
38. Linder, M.; Williander, M. Circular Business Model Innovation: Inherent Uncertainties. *Bus. Strategy Environ.* **2017**, *26*, 182–196. [[CrossRef](#)]
39. Zhu, Q.; Jia, R.; Lin, X. Building sustainable circular agriculture in China: Economic viability and entrepreneurship. *Manag. Decis.* **2019**, *57*, 1108–1122. [[CrossRef](#)]
40. Le, T.; Behl, A.; Pereira, V. Establishing linkages between circular economy practices and sustainable performance: The moderating role of circular economy entrepreneurship. *Manag. Decis.* **2024**, *62*, 2340–2363. [[CrossRef](#)]
41. Chaudhuri, A.; Subramanian, N.; Dora, M. Circular economy and digital capabilities of SMEs for providing value to customers: Combined resource-based view and ambidexterity perspective. *J. Bus. Res.* **2022**, *142*, 32–44. [[CrossRef](#)]
42. Pereira, V.; Nandakumar, M.K.; Sahasranamam, S.; Bamel, U.; Malik, A.; Temouri, Y. An exploratory study into emerging market SMEs' involvement in the circular Economy: Evidence from India's indigenous Ayurveda industry. *J. Bus. Res.* **2022**, *142*, 188–199. [[CrossRef](#)]
43. Frishammar, J.; Parida, V. Circular Business Model Transformation: A Roadmap for Incumbent Firms. *Calif. Manag. Rev.* **2019**, *61*, 5–29. [[CrossRef](#)]
44. Manea, D.; Istudor, N.; Dinu, V.; Paraschiv, D. Circular Economy and Innovative Entrepreneurship, Prerequisites for Social Progress. *J. Bus. Econ. Manag.* **2021**, *22*, 1342–1359. [[CrossRef](#)]
45. Ahmadova, G.; Delgado-Márquez, B.; Pedauga, L.; Leyva-de La Hiz, D. Too good to be true: The inverted U-shaped relationship between home-country digitalization and environmental performance. *Ecol. Econ.* **2022**, *196*, 107393. [[CrossRef](#)]
46. Staicu, D.; Pop, O. Mapping the interactions between the stakeholders of the circular economy ecosystem applied to the textile and apparel sector in Romania. *Manag. Mark. Chall. Knowl. Soc.* **2018**, *13*, 1190–1209. [[CrossRef](#)]
47. Bux, C.; Amicarelli, V. Material flow cost accounting (MFCA) to enhance environmental entrepreneurship in the meat sector: Challenges and opportunities. *J. Environ. Manag.* **2022**, *313*, 115001. [[CrossRef](#)] [[PubMed](#)]
48. Saura, J.; Ribeiro-Soriano, D.; Palacios-Marqués, D. Adopting digital reservation systems to enable circular economy in entrepreneurship. *Manag. Decis.* **2024**, *62*, 2388–2408. [[CrossRef](#)]
49. Crecente, F.; Sarabia, M.; Teresa Del Val, M. Climate change policy and entrepreneurial opportunities. *Technol. Forecast. Soc. Change* **2021**, *163*, 120446. [[CrossRef](#)]
50. Cammarelle, A.; Lombardi, M.; Viscecchia, R. Packaging Innovations to Reduce Food Loss and Waste: Are Italian Manufacturers Willing to Invest? *Sustainability* **2021**, *13*, 1963. [[CrossRef](#)]
51. Kostakis, I.; Tsagarakis, K. The role of entrepreneurship, innovation and socioeconomic development on circularity rate: Empirical evidence from selected European countries. *J. Clean. Prod.* **2022**, *348*, 131267. [[CrossRef](#)]
52. Toscano, A.; Balzarotti, M.; Re, I. Sustainability Practices and Greenwashing Risk in the Italian Poultry Sector: A Grounded Theory Study. *Sustainability* **2022**, *14*, 14088. [[CrossRef](#)]
53. Kluczek, A.; Żegleń, P.; Matušíková, D. The Use of Prospect Theory for Energy Sustainable Industry 4.0. *Energies* **2021**, *14*, 7694. [[CrossRef](#)]
54. Staicu, D. Characteristics of textile and clothing sector social entrepreneurs in the transition to the circular economy. *Ind. Textila* **2021**, *72*, 81–88. [[CrossRef](#)]
55. Fernandes, C.; Veiga, P.; Ramadani, V. Entrepreneurship as a transition to the circular economy. *Environ. Dev. Sustain.* **2023**, *25*. Available online: <https://link.springer.com/10.1007/s10668-023-03513-5> (accessed on 2 November 2024). [[CrossRef](#)]
56. Zahrani, A. Promoting sustainable entrepreneurship in training and education: The role of entrepreneurial culture. *Front. Environ. Sci.* **2022**, *10*, 963549. [[CrossRef](#)]
57. Krajnc, D.; Kovačič, D.; Žunec, E.; Brglez, K.; Kovačič Lukman, R. Youth Awareness and Attitudes towards a Circular Economy to Achieve the Green Deal Goals. *Sustainability* **2022**, *14*, 12050. [[CrossRef](#)]
58. Todeschini, B.; Cortimiglia, M.; Callegaro-de-Menezes, D.; Ghezzi, A. Innovative and sustainable business models in the fashion industry: Entrepreneurial drivers, opportunities, and challenges. *Bus. Horiz.* **2017**, *60*, 759–770. [[CrossRef](#)]
59. Demirel, P.; Danisman, G. Eco-innovation and firm growth in the circular economy: Evidence from European small- and medium-sized enterprises. *Bus. Strategy Environ.* **2019**, *28*, 1608–1618. [[CrossRef](#)]
60. Kanda, W.; Geissdoerfer, M.; Hjelm, O. From circular business models to circular business ecosystems. *Bus. Strategy Environ.* **2021**, *30*, 2814–2829. [[CrossRef](#)]

61. Henry, M.; Hoogenstrijd, T.; Kirchherr, J. Motivations and identities of “grassroots” circular entrepreneurs: An initial exploration. *Bus. Strategy Environ.* **2023**, *32*, 1122–1141. [[CrossRef](#)]
62. Dey, P.; Malesios, C.; De, D.; Budhwar, P.; Chowdhury, S.; Cheffi, W. Circular economy to enhance sustainability of small and medium-sized enterprises. *Bus. Strategy Environ.* **2020**, *29*, 2145–2169. [[CrossRef](#)]
63. Veleva, V.; Bodkin, G. Corporate-entrepreneur collaborations to advance a circular economy. *J. Clean. Prod.* **2018**, *188*, 20–37. [[CrossRef](#)]
64. Spring, M.; Araujo, L. Product biographies in servitization and the circular economy. *Ind. Mark. Manag.* **2017**, *60*, 126–137. [[CrossRef](#)]
65. Wu, C.; Hu, M.; Ni, F. Supporting a circular economy: Insights from Taiwan’s plastic waste sector and lessons for developing countries. *Sustain. Prod. Consum.* **2021**, *26*, 228–238. [[CrossRef](#)]
66. Zamfir, A.; Mocanu, C.; Grigorescu, A. Circular Economy and Decision Models among European SMEs. *Sustainability* **2017**, *9*, 1507. [[CrossRef](#)]
67. Han, D.; Konietzko, J.; Dijk, M.; Bocken, N. How do circular start-ups achieve scale? *Sustain. Prod. Consum.* **2023**, *40*, 363–375. [[CrossRef](#)]
68. Yoshino, M.; Sadlek, B.; Yarime, M.; Ali, A. Knowledge absorption pathways for eco-innovation: An empirical analysis of small and medium-sized enterprises in the European Union. *Eur. J. Innov. Manag.* **2023**. [[CrossRef](#)]
69. Berghuis, E.; Loorbach, D.; Van Vulpen, A.; Verkuijl, M.; Van Orden, C.; Greer, R. Coming together for transition? Entrepreneurial ecosystems for a circular economy. *Int. Rev. Appl. Econ.* **2023**, *37*, 372–388. [[CrossRef](#)]
70. Hull, C.; Millette, S.; Williams, E. Challenges and opportunities in building circular-economy incubators: Stakeholder perspectives in Trinidad and Tobago. *J. Clean. Prod.* **2021**, *296*, 126412. [[CrossRef](#)]
71. Moon, S.; Lee, H. Shaping a Circular Economy in the Digital TV Industry: Focusing on Ecopreneurship through the Lens of Dynamic Capability. *Sustainability* **2021**, *13*, 4865. [[CrossRef](#)]
72. Kahupi, I.; Hull, C.; Okorie, O.; Millette, S. Building competitive advantage with sustainable products—A case study perspective of stakeholders. *J. Clean. Prod.* **2021**, *289*, 125699. [[CrossRef](#)]
73. Razminienė, K.; Vinogradova-Zinkevič, I.; Tvaronavičienė, M. Tracing Relationship between Cluster’s Performance and Transition to the Circular Economy. *Sustainability* **2021**, *13*, 13933. [[CrossRef](#)]
74. Arranz, C.; Sena, V.; Kwong, C. Institutional pressures as drivers of circular economy in firms: A machine learning approach. *J. Clean. Prod.* **2022**, *355*, 131738. [[CrossRef](#)]
75. Alonso-Almeida, M.; Rodriguez-Anton, J.; Bagur-Femenías, L.; Perramon, J. Institutional entrepreneurship enablers to promote circular economy in the European Union: Impacts on transition towards a more circular economy. *J. Clean. Prod.* **2021**, *281*, 124841. [[CrossRef](#)]
76. Šebestová, J.; Sroka, W. Sustainable development goals and SMEs decisions: Czech Republic vs. Poland. *J. East. Eur. Cent. Asian Res.* **2020**, *7*, 39–50. [[CrossRef](#)]
77. Klein, S.; Liszt-Rohlf, V.; Spieth, P. Value-based bricolage: Resource mobilization in the circular economy. *J. Ind. Ecol.* **2023**, *27*, 1476–1487. [[CrossRef](#)]
78. Mochalova, L.; Sokolova, O.; Ereemeeva, O. Circular business models as management innovations in subsoil use. *Upravlenets* **2021**, *12*, 2–12. [[CrossRef](#)]
79. Karadayi-Usta, S. A novel neutrosophic set based hierarchical challenge analysis approach for servicing business models: A case study of car share service network. *Comput. Ind. Eng.* **2022**, *163*, 107795. [[CrossRef](#)]
80. Real, M.; Lizarralde, I.; Tyl, B. Exploring Local Business Model Development for Regional Circular Textile Transition in France. *Fash. Pract.* **2020**, *12*, 6–33. [[CrossRef](#)]
81. Haldar, S. Towards a conceptual understanding of sustainability-driven entrepreneurship. *Corp. Soc. Responsib. Environ. Manag.* **2019**, *26*, 1157–1170. [[CrossRef](#)]
82. Parris, D.; McInnis-Bowers, C. Business Not as Usual: Developing Socially Conscious Entrepreneurs and Intrapreneurs. *J. Manag. Educ.* **2017**, *41*, 687–726. [[CrossRef](#)]
83. Schneider, A. Reflexivity in Sustainability Accounting and Management: Transcending the Economic Focus of Corporate Sustainability. *J. Bus. Ethics* **2015**, *127*, 525–536. [[CrossRef](#)]
84. Dean, T.; McMullen, J. Toward a theory of sustainable entrepreneurship: Reducing environmental degradation through entrepreneurial action. *J. Bus. Ventur.* **2007**, *22*, 50–76. [[CrossRef](#)]
85. Keogh, P.; Polonsky, M. Environmental commitment: A basis for environmental entrepreneurship? *J. Organ. Change Manag.* **1998**, *11*, 38–49. [[CrossRef](#)]
86. Schaper, M. Introduction: The Essence of Ecopreneurship. *Greener Manag. Int.* **2002**, *2002*, 26–30. [[CrossRef](#)]
87. Berle, G. *The Greener Entrepreneur: Business Opportunities That Can Save the Earth and Make You Money*; Liberty Hall Press: Lawrence, KS, USA, 1991; pp. 1–242. Available online: <https://books.google.es/books?id=zgkKAQAAMAAJ> (accessed on 22 April 2024).

88. Bennet, S. *Ecopreneuring: The Complete Guide to Small Business Opportunities from the Environmental Revolution*; John Wiley & Sons Inc.: New York, NY, USA, 1991; pp. 1–308.
89. Blue, R. *Ecopreneuring: Managing for Results*; Scott Foresman Trade: Kutztown, PA, USA, 1991; pp. 1–209. Available online: https://books.google.es/books?id=_Q3_PQAACAAJ (accessed on 14 May 2024).

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.