Connecting Innovation Ecosystems and Co-Creation for Sustainable Development: A Bibliometric Exploration

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Abstract
Innovation ecosystems, co-creation, and sustainable development are increasingly recognized as key theoretical and practical frameworks for addressing complex societal and environmental challenges. These interrelated concepts share a common emphasis on collaboration, systems thinking, and value generation; however, the scientific literature often treats them in isolation. As a result, the lack of a unified analytical perspective limits theoretical development and practical impact. To address this gap, the paper presents a systematic bibliometric analysis of the intersection of these three domains. A dataset of 30 peer-reviewed articles was retrieved from the Web of Science Core Collection using a tailored Boolean search query. The study was conducted using the Bibliometrix R-package, applying descriptive statistics, source analysis, thematic mapping, co-authorship networks, and co-word analysis to examine the structure and evolution of the field. The results reveal a fragmented, emerging research landscape, with low author continuity and limited collaborative density across institutions. Nevertheless, conceptual trends point toward growing attention to digitally enabled governance, urban innovation, and performance-oriented sustainability models. Additionally, these developments suggest a shift from abstract theorization to more applied and practice-oriented approaches. Notably, the findings underline the role of digital transformation as a connector between ecosystem dynamics, participatory innovation, and sustainability outcomes. The co-presence of public, private, and civil society actors further reflects the field's multilevel and transdisciplinary nature. This study contributes by offering a structured overview of current knowledge, identifying persistent conceptual gaps, and laying the groundwork for future research to better integrate innovation ecosystems, co-creation processes, and sustainable development.

Keywords
bibliometric analysis; co-creation; innovation ecosystems; sustainable development; value co-creation.

Introduction

Innovation ecosystems are considered a critical mechanism for sustainable development, as dynamic environments where innovative ideas and entrepreneurship are stimulated and knowledge-based, shared local growth is promoted (Koch et al., 2025). Innovation ecosystems can also enable cities, governments, businesses, and communities to collaborate in value co-creation for sustainable development (Romanelli, 2018), while navigating complexities and generating mutually beneficial value for all stakeholders (Mattila et al., 2019).

In fact, recent research extends this concept by linking it to sustainable development and its dimensions - economic growth, environmental protection, and social inclusion to secure long-term prosperity - and to co-creation (Arena et al., 2022). In this perspective, the concept of sustainable development today means minimizing harm, creating value, and enabling systemic transformation through collaborative governance, digital platforms, and new business models.

However, significant gaps remain despite the growing attention to innovation ecosystems and co-creation to address sustainable challenges. Existing studies (e.g., Ketonen-Oksi & Valkokari, 2019; Yan et al., 2021; Sultana & Turkina, 2023; Yang, 2024) often address these topics separately, lacking

an integrated understanding of how their interactions drive systemic sustainability transitions. Moreover, there is limited evidence on which actor configurations, collaborative practices, and governance models are most effective at generating measurable, scalable impacts.

Thus, the research aim is to map, analyze, and integrate the conceptual and structural dynamics of innovation ecosystems and co-creation for sustainability, responding to the research questions:

RQ1: "How are innovation ecosystems, co-creation processes, and sustainability-oriented strategies interrelating?"

RQ2: "What conceptual frameworks and collaboration patterns emerge from the current literature?"

Literature review

To integrate the various definitions and synonyms existing in literature, Granstrad & Holgersson (2020) describe the innovation ecosystems as an "evolving set of actors, activities, and artifacts[1], and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors". Their multidimensionality allows the involvement of private sectors, academia and non-governmental organizations to work together to solve complex issues such as the so-called "wicked problems" (Arranz, 2024; Lönngren & Van Poeck, 2021) and, at the same time, giving a chance of participation and collective learning (Hämäläinen, 2015). These approaches enhance sustainability performance (Yin et al., 2020), especially in cities where resource diversity and actor proximity enable experimentation. Furthermore, recent research trend clusters reinforce the connection between innovation ecosystems and strategies for addressing sustainability challenges. Key focus areas include eco-innovation and resource recovery, circular business models within the bioeconomy, renewable energy sustainability, green innovation driven by entrepreneurship, and the integration of artificial intelligence in Industry 4.0 (Alka et al., 2024). Mission-oriented sustainability innovation ecosystems vary architecturally depending on their missions, with increasingly important roles for government in system-level transformations and greater civil society involvement (Jütting, 2020).

Innovation ecosystems naturally integrate co-creation and sustainable development and are seen as enablers of systemic change (Nylund et al., 2021; Arena et al., 2022). Co-creation is a collaborative process in which various actors actively participate in the joint design of solutions, knowledge, and value (Voorberg et al., 2015). This approach is particularly relevant to sustainable development, which requires integrating economic, social, and environmental goals through inclusive and participatory governance mechanisms (Kruger et al., 2018), as stated by the Brundtland Report (Mishra et al., 2023).

Co-creation becomes collective learning, shared responsibility, and solutions (Ansell et al., 2022). The collaborative dimension of co-creation adapts sustainability goals to local priorities (Kruger et al., 2018), bringing social acceptance and legitimacy (Keeys and Huemann, 2017).

Moreover, the value of co-creation lies in its ability to bridge knowledge systems and transform them into actionable strategies (Almeida et al., 2021). Co-creation can indeed bring innovation potential and capacity to generate shared value across actors (Torfing et al., 2021). This is particularly relevant in transitions and adaptations to sustainability, which often require transdisciplinary and multi-actor perspectives (Sultana & Turkina, 2023).

As stated, ecosystems involve diverse actors interacting across organizational boundaries to produce value and jointly drive socio-technical transformation (Granstrand & Holgersson, 2020; Ritala &

[1] Artifacts include products and services, tangible and intangible resources, technological and non-technological resources, and other system inputs and outputs, including innovations (Granstrad & Holgersson, 2020).

Almpanopoulou, 2017). In this context, co-creation facilitates the alignment of different capabilities, interests, and knowledge bases to respond to sustainability challenges (Arena et al., 2022).

Technology-mediated interactions facilitate sustainable co-innovation via development and delivery across the ecosystem (Barile et al., 2020). Open innovation strategies and user communities are indeed some of the pillars of sustainable innovation ecosystems, with the shift from linear value chains to networks enhancing trust (Costa et al., 2021).

Co-creation enables new institutional arrangements (Jacobides et al., 2018). The systemic orientation of sustainability, particularly in complex environments, requires flexibility and collective actions (Yan et al., 2021).

Moreover, innovation ecosystems can accelerate sustainability by fostering experimentation and feedback loops (Koch et al., 2025). This configuration is effectively described in the model proposed by Arena et al. (2022), which illustrates the intersection between innovation ecosystems, sustainability orientation, and co-creation. As shown in Figure 1, these intertwined dimensions drive sustainability-oriented value creation. By embedding co-creation processes within ecosystem dynamics, actors can co-design solutions that are not only innovative but also socially legitimate and environmentally responsible (Lima et al., 2024). This integration supports the systemic translation of sustainable development goals into practical strategies, where innovation is a shared, transformative process, while co-creation is a strategic mechanism to drive long-term, impactful change.

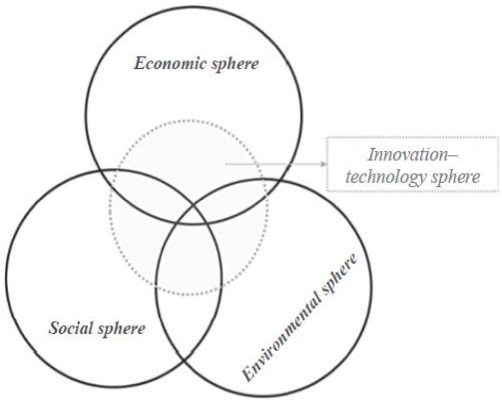

Figure 1: The four output spheres
Source: Arena et al., 2022

Methodology

To map the literature intersection between innovation ecosystems, co-creation, and sustainable development, this study uses a bibliometric analysis. This method is a replicable, quantitative approach for evaluating scientific output. It identifies dominant themes by finding structural patterns within academic discourse (Rousseau, 2012; Donthu et al., 2021; Mishra et al., 2023). The research was conducted using RStudio in combination with the Bibliometrix R package (Aria & Cuccurullo, 2017), which provides citation, co-citation, and co-word analysis, as well as thematic mapping and data visualization (Gaviria-Marin et al., 2019; Guleria & Kaur, 2021).

The dataset was retrieved from the Web of Science Core Collection. This choice was guided by its rigorous journal selection criteria and high level of metadata standardization and reliability, which are particularly relevant to reach consistency in citation and network analysis (van Eck & Waltman, 2017). While broader databases such as Scopus or Google Scholar may provide wider coverage, including additional conference proceedings and non-indexed sources, the present study prioritizes conceptual precision and methodological consistency over inclusiveness. Given the focused intersection under

investigation, WoS was considered appropriate for identifying a consolidated, peer-reviewed, relevant research core. This approach aligns with established practices in focused bibliometric reviews (Koseoglu, 2016; Donthu et al., 2021).

The search strategy, including Boolean operators and keywords, is shown in Figure 2, which also illustrates the screening process based on the PRISMA framework (Moher et al., 2010; Page et al., 2021). Following this protocol, duplicate, irrelevant, and non-academic entries were excluded. The final dataset has 30 peer-reviewed documents.

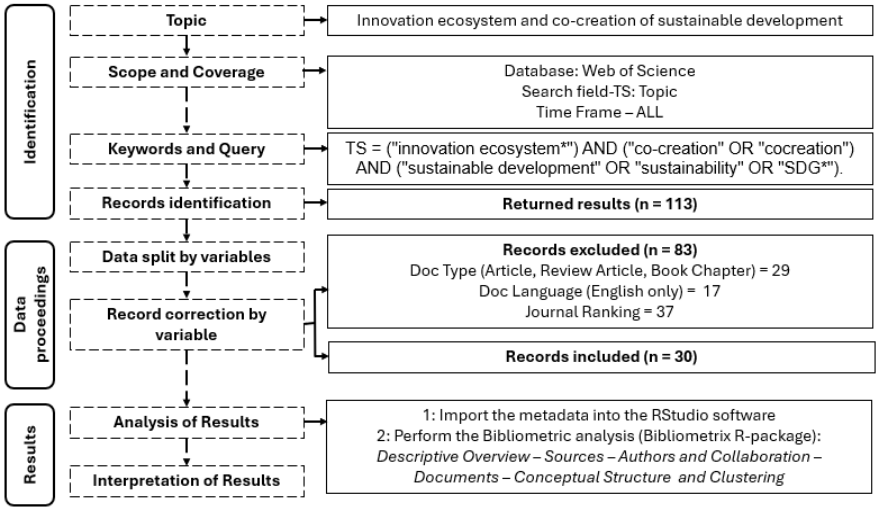

Figure 2: Flow diagram of the bibliometric review procedure developed
Source: Authors' own research contribution based on PRISMA guidelines

Each record was exported in BibTeX format with 29 metadata fields, including title, keywords, author affiliations, abstracts, and references. Data were processed and analyzed using Bibliometrix and the Biblioshiny interface. Metadata completeness was found to be high, as summarized in Table 1.

Table 1: Completeness of the data

Metadata	*Description*	*Missing*	*Missing %*	*Status*
AU	Author	0	0,00	Excellent
DT	Document Type	0	0,00	Excellent
SO	Journal	0	0,00	Excellent
PY	Publication Year	0	0,00	Excellent
TI	Title	0	0,00	Excellent
TC	Total Citation	0	0,00	Excellent
CR	Cited References	0	0	Excellent
AB	Abstract	0	0	Excellent
C1	Affiliation	0	0	Excellent
RP	Corresponding Author	0	0	Excellent
LA	Language	0	0	Excellent
DI	DOI	1	3,30	Good
ID	Keywords Plus	2	6,67	Good
DE	Keywords	3	10,00	Good

Source: Authors' research results

The bibliometric analysis focused on the following key dimensions: (i) Descriptive overview (Donthu et al., 2021); (ii) Sources (Ding et al., 2000); (iii) Authors and collaboration (Glänzel & Schubert, 2004); (iv) Documents (Ding et al., 2001); and (v) Conceptual structure and Clustering (Cobo et al., 2011). These components were selected based on their alignment with the study's objectives and the

emerging nature of the topic. Broader techniques, such as historiographic mapping, were excluded due to the investigation's focused scope.

The research contains limitations. As mentioned before, the exclusive use of WoS may have excluded publications that exist only in other databases, such as Scopus or regional repositories. Also, the limited number of the final sample reflects the narrow search strategy, and, at the same time, it is a research niche that is the main contribution of the study. While this shows conceptual coherence, it limits the generalizability of the findings and may reduce the robustness of network indicators. Third, the use of bibliometric techniques does not assess the substantive theoretical depth or empirical quality of individual studies. So, the results should be interpreted as a structural mapping of the field rather than as a qualitative elaboration of contents.

Results and discussion

Based on a dataset spanning 2019 to 2025, the scientific documents were published across 24 different sources, reflecting a growing scholarly interest in the intersection of innovation ecosystems, sustainable development, and co-creation. According to the annual trend in scientific production, research output shows a fluctuating yet overall upward trajectory. Starting with 2 publications in 2019, the number rose to 5 in 2021, then declined in 2022, and recovered in the following years, peaking at 8 publications in 2025.

Figure 3 shows the three-field plot of the relationship among the most cited references (CR), leading authors (AU), and dominant research themes (DE) in the literature on the topic. On the left, highly influential works such as Adner (2010), de Vasconcelos Gomes (2018), Granstrand & Holgersson (2020), but also Chesbrough (2003) demonstrate the strong conceptual foundation on the topic of innovation ecosystems, open innovation, and sustainability. Key contributing authors such as Baruque-Ramos, Castro, and Asgari serve as intellectual bridges in the central field, connecting seminal theories with contemporary applications.

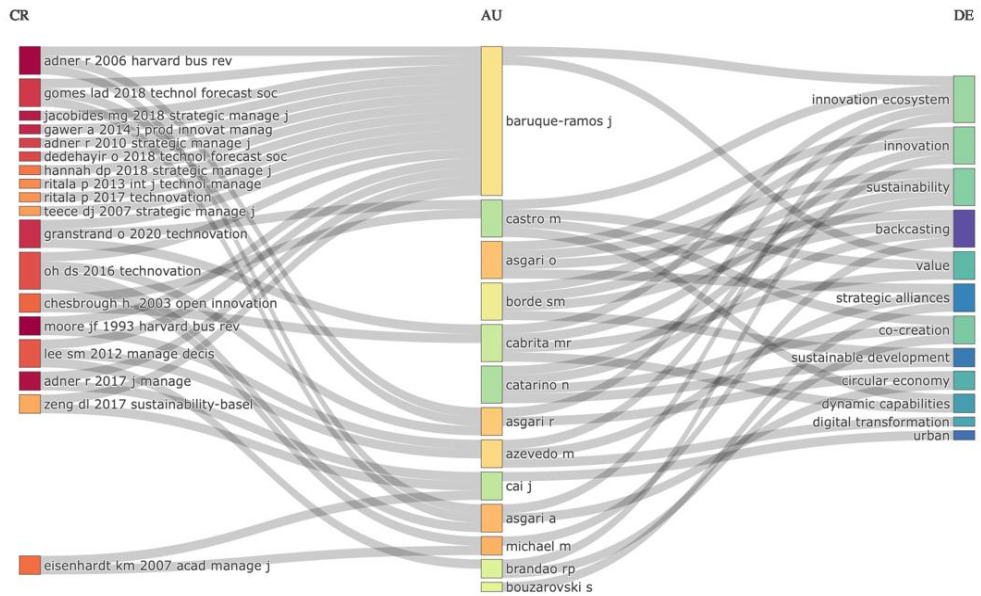

Figure 3: Three-field plot
Source: Authors' research results

The visualization highlights how the foundations of strategic management and innovation studies converge with sustainable business models, signaling a paradigm shift in business and management

research towards integrative frameworks combining innovation, environmental responsibility, and multi-actor collaboration.

Sources

Figure 4 shows the journals that have published the most relevant contributions on the three interconnected topics. Among 30 publications, *Sustainability* is the most prolific.

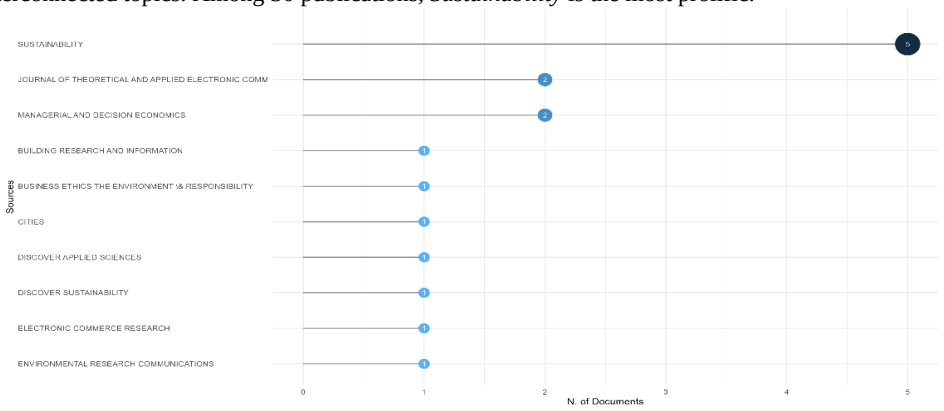

Figure 4: Most relevant sources
Source: Authors' research results

The *Journal of Theoretical and Applied Electronic Commerce Research* and *Managerial and Decision Economics* are examples of the growing interest in digital and strategic management. Additional outlets, *Building Research and Information*, *Business Ethics: The Environment & Responsibility, and Cities*, highlight the topic's reach across urban innovation, ethics, and applied sciences. Specialized journals, including *Discover Sustainability*, *Environmental Research Communications*, and *Frontiers in Sustainability*, reinforce the field's interdisciplinarity.

The publication pattern shows fragmentation: despite *Sustainability*'s dominance, research is dispersed. To assess journal concentration and influence, the dataset was analyzed using Bradford's Law[2] (Figure 5):

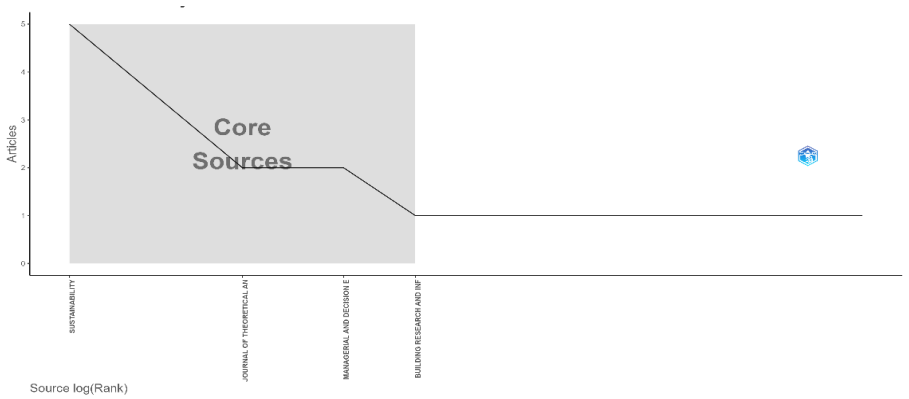

Figure 5: Core sources according to Bradford's Law
Source: Authors' research results

[2] The Bradford's Law classifies sources into productivity zones (Büyükkıdık, 2022).

- → Zone 1 (Core) includes *Sustainability*, *Building Research and Information*, *Managerial and Decision Economics*, and the *Journal of Theoretical and Applied Electronic Commerce Research*. These journals serve as central venues for systemic collaboration and sustainable innovation research.
- → Zone 2 comprises journals with moderate frequency, such as *Cities*, *Discover Sustainability*, and *Electronic Commerce Research*, reflecting sector-specific engagement.
- → Zone 3 includes single-article contributions from peripheral sources that enrich the field with novel or contextualized perspectives.

This structure is consistent with an emerging field: while some journals are becoming key hubs, the overall dispersion suggests that a dominant publishing nucleus has yet to solidify.

Beyond publication frequency, Figure 6 shows the Most Locally Cited Sources, which describes intellectual influence within the dataset. Sustainability, Journal of Cleaner Production, and Technological Forecasting and Social Change lead in citations.

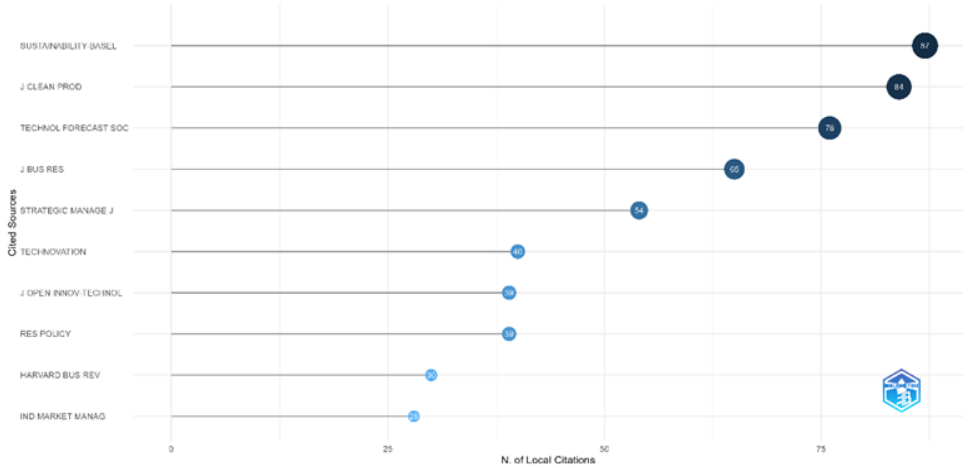

Figure 6: Most locally cited sources
Source: Authors' research results

Influential but less frequent journals include the *Journal of Business Research*, *Strategic Management Journal*, and *Technovation*, oriented to strategy, innovation systems, and technology management.

To better contextualize the field, sources were grouped into research domains based on journal scope (Table 2). The category most represented is Sustainability & Environment (12 publications), followed by Interdisciplinary & Sectoral Innovation. Other clusters include Economics & Management, Urban Innovation, and Governance & Ethics. This classification represents the research's policy-relevant nature and the centrality of environmental and innovation-oriented perspectives.

Table 2: Categorization of sources by research domain

Research domain	*N. of Sources*	*N. of Documents*	*Key Sources*
Sustainability & Environment	8	12	Sustainability, Discover Sustainability, Environmental Research Communications...
Interdisciplinary & Sectoral Innovation	5	5	Discover Applied Sciences, Innovation-the European Journal of Social Science Research…

Economics & Management	3	4	Electronic Commerce Research, Managerial and Decision Economics, …
Urban & Regional Innovation	3	3	Building Research and Information, Cities, Smart Cities.
Governance, Ethics & Policy	2	2	Business Ethics – The Environment & Responsibility, Technological Forecasting and Social Change

Source: Authors' research results, 2025

Authors and collaboration

The authorship landscape is highly fragmented. Among 146 contributing authors, only one has published more than one article, while the remaining 99.3% have authored a single document. This deviates from the distribution predicted by Lotka's Law, which typically suggests a small number of highly prolific authors and a long tail of less frequent contributors. This dispersion may imply that the field is still in its formative stage, with no dominant research centers or recognized leaders. Instead, contributions are scattered across individual or isolated efforts, limiting the development of cohesive research programs.

Additionally, the co-authorship network density (Figure 7) is similarly sparse, with weak collaboration density[3] and only a few localized clusters. These patterns indicate limited institutional or cross-country cooperation, highlighting an opportunity for future consolidation through cross-institutional research efforts.

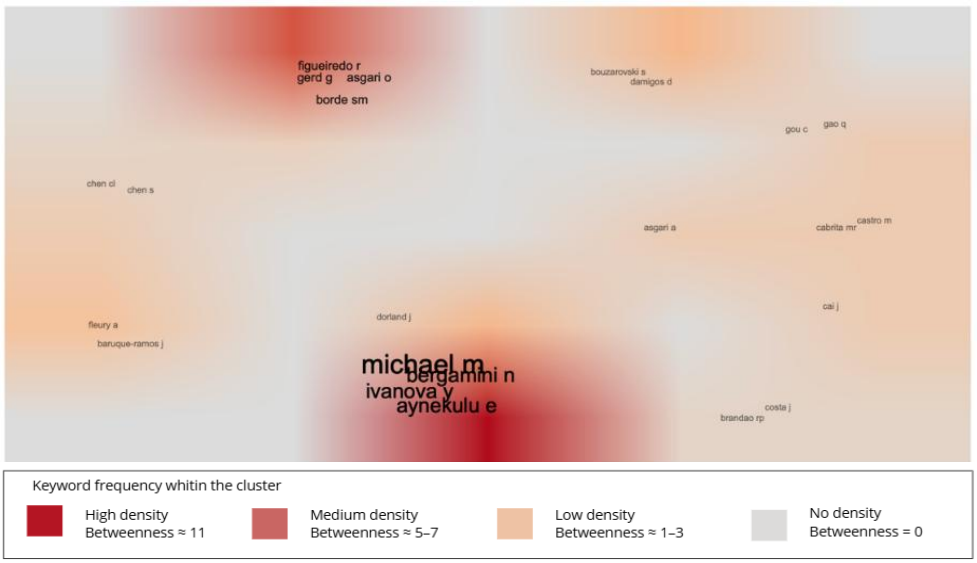

Figure 7: Co-authorship network density
Source: Authors' research results

Documents

[3] It is calculated through the betweenness centrality that represents the ability of an author to act as a bridge between different groups in the collaboration network. A high value indicates that the author frequently lies on the shortest paths connecting other authors, linking otherwise disconnected clusters.

Figure 8 presents the cumulative keyword trends from 2019 to 2025, showing the evolution of key concepts. Between 2019 and 2021, terms like “innovation ecosystem” and “sustainability” became field anchors. From 2022 onward, “open innovation” and “value creation” have become more closely integrated with “sustainability”. In 2023–2024, the increased presence of terms such as “digital transformation”, “digital platform”, and “dynamic capabilities” reflects the growing role of digital infrastructures in enabling collaboration.

In 2025, “circular economy” and “value” grow, indicating a shift to systemic, impact-oriented approaches. Thus, the data show a shift to applied, value-driven innovation models.

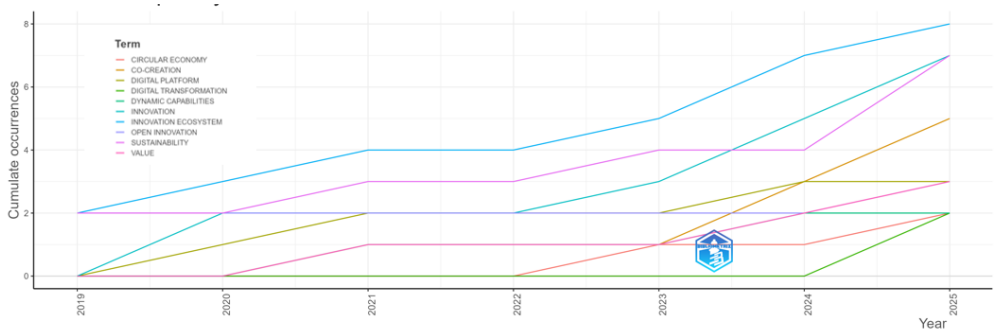

Figure 8: Word frequency over time
Source: Authors’ own research results

As shown in Figure 9, early studies (2019–2021) focused on foundational themes such as “ecosystem(s)”, “sustainability”, and “urban innovation”. Since 2022, there has been a shift toward applied topics, particularly the operationalization of ecosystem-based frameworks and co-innovation strategies. During 2023–2024, keywords such as “innovation”, “ecosystems”, “research”, and “development” dominate, showing attention to collaborative models and systemic transformation. In 2025, emergent terms like “circular economy”, “co-creation”, “core (business strategies)”, and “cities” are becoming prominent, suggesting more substantial alignment between sustainability goals and innovation-led business performance.

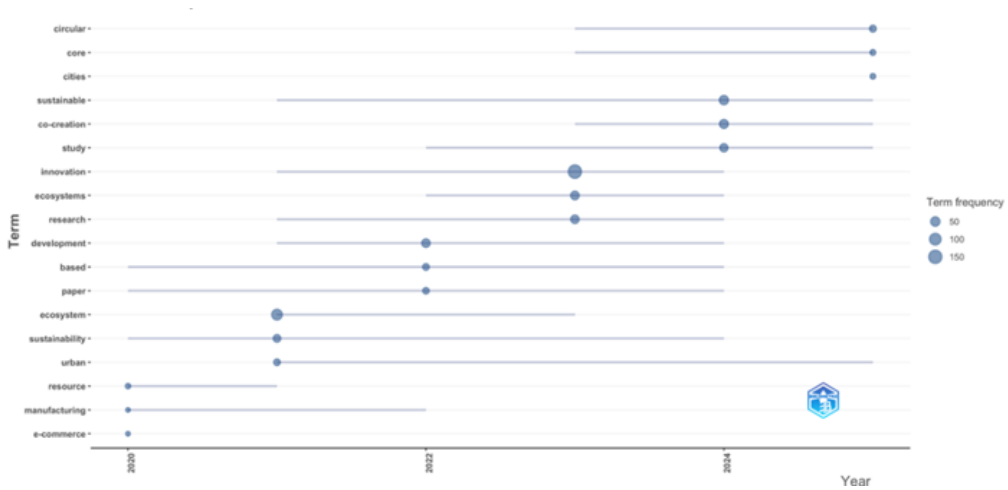

Figure 9: Trend topics
Source: Authors’ research results

The trends reveal an integrated, technology-driven, and impact-oriented approach to sustainable innovation, transitioning from conceptual grounding to practical application.

Conceptual structure and clustering

Figure 10[4] visualizes the co-occurrence network of author keywords, offering a conceptual overview of innovation ecosystems and co-creation for sustainability discourse.

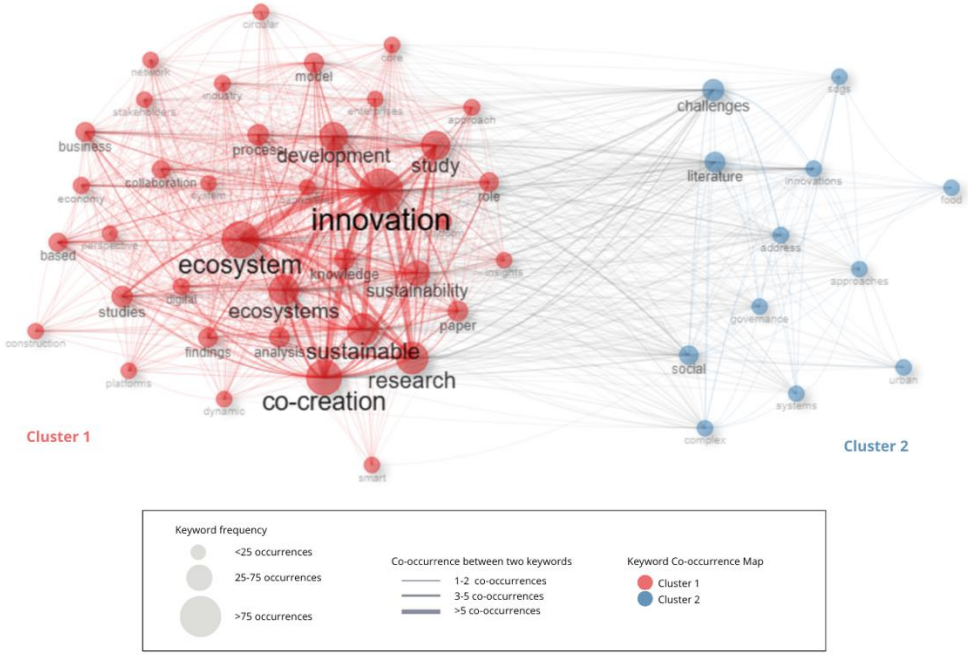

Figure 10. Visualizes the co-occurrence network
Source: Authors' research results

The network is primarily divided into two major clusters:

- → Cluster 1 (Red) forms the core conceptual structure of the field. It includes central keywords such as "innovation ecosystem", "co-creation", "sustainable", and "development". These terms dominate the network in frequency and centrality, highlighting their foundational role. The high betweenness and PageRank values of nodes such as "innovation ecosystem" highlight their role as connectors between subtopics such as "collaboration", "digital platforms", and "business models".
- → Cluster 2 (Blue) reflects a more applied and systemic focus, with terms like "challenges", "social", and "governance". These less frequent keywords bridge theory and application (e.g., SDGs, urban governance). Notably, "challenges" display relatively high closeness centrality, indicating their role in linking conceptual and application-focused nodes.

[4] In this visualization, node size corresponds to term frequency, while edge thickness reflects the frequency of co-occurrence. Colors indicate clusters of keywords with higher internal co-occurrence density (Aria & Cuccurullo, 2017).

The network structure suggests a still-emerging but dynamic field. While a core cluster of systemic and innovation-related terms has consolidated, peripheral but meaningful clusters are forming around policy integration, governance practices, and societal impact.

This configuration suggests that the topic evolves from a conceptually dense nucleus toward more diversified and interdisciplinary applications, confirming previous findings on diversity of sources and domains.

Based on centrality[5] and density[6], Figure 11 outlines four thematic categories.

1) Motor themes (high centrality, high density): keywords like "business", "collaboration", and "performance" dominate this quadrant, indicating that research on collaborative innovation and business-driven sustainability strategies is well-developed and highly influential.
2) Basic Themes (high centrality, low density): concepts such as "innovation ecosystems", "value co-creation", and "frameworks" are widely adopted across studies but remain theoretically underdeveloped, suggesting deeper conceptual refinement and methodological integration.
3) Niche Themes (low centrality, high density): topics such as "sustainability" and "co-creation management" are specialized but less influential in the broader landscape.
4) Emerging or Declining Themes (low centrality, low density): themes such as "transition", "resilience", and "dynamics" receive relatively little research attention and development, suggesting a path towards potential opportunities for future exploration or areas losing relevance.

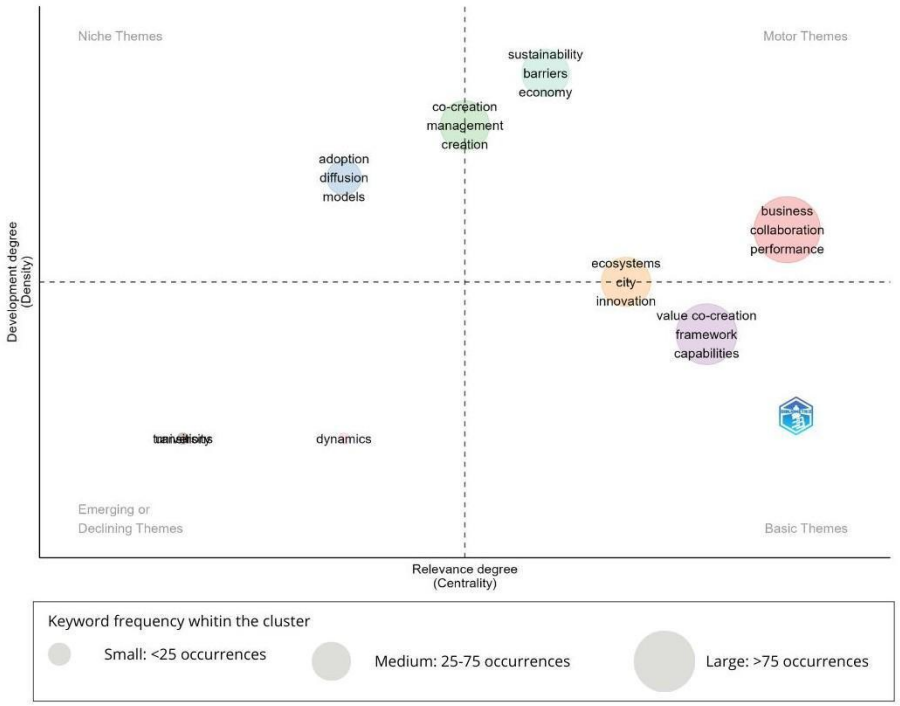

Figure 11: Thematic map
Source: Authors' research results

[5] relevance within the field.
[6] development maturity.

Moreover, the analysis of the documents' coupling clusters' highlights the following research constellations:

1. Value co-creation and business collaboration (high impact, high centrality) is the dominant cluster, integrating studies on co-innovation strategies, multi-actor collaboration, and performance-driven sustainability models. It reflects an increasing focus on aligning innovation ecosystems with business competitiveness and shared value creation.
2. Urban innovation ecosystems and architecture (moderate impact, lower centrality) is a second, smaller cluster that connects research on city-level ecosystems, urban innovation strategies, and architectural frameworks for sustainable transformation. While promising, this area is still a "niche within a niche".

Thematic overview

While the bibliometric mapping explored above offers a structural representation of the niche field, the following content analysis aims to complement research. This integration addresses a recognized limitation of mere quantitative bibliometric approaches (Donthu et al., 2021), which is not capturing the depth of individual studies.

Several articles in the database contribute to the research focus on innovation ecosystems. Ketonen-Oksi and Valkokari (2019) conceptualize them as value co-creation structures, arguing that network-based logic replaces transactional exchange with shared knowledge production and access. Lima et al. (2024) operationalize this framework through a model of territorial ecosystem design oriented toward regional sustainability, in which innovation is a joint process among the public sector, civil society, and local actors. Jütting (2020) extends the concept by introducing a typology of mission-oriented ecosystems, suggesting that their configurations vary depending on the sustainability objectives and governance of the given context. Koch et al. (2025) imply that there is a link between ecosystems and public policy, demonstrating empirically how collaborative structures are and should be embedded in policies to amplify sustainability effort results.

A second group of studies emerges on co-creation as a practical mechanism for including diverse stakeholders in sustainability-oriented actions and the creation of value, such as Arena et al. (2022). Sultana and Turkina (2023) also empirically examine how intermediary organizations facilitate co-creation in the context of sustainability-oriented ecosystems by reducing transaction costs and enhancing trust among actors. Yang (2024) analyzes the relationship between knowledge and value co-creation, demonstrating that proximity among actors can accelerate innovation and improve performance. Nylund et al. (2021) reconfirm the result by studying multinational firms specifically. All these findings converge on the common implication that co-creation is most effective when institutionalized and distributed in terms of agency, accountability, and resource equity.

The third major cluster of topics revolves around the role of digitalization and technology in facilitating sustainability outcomes. Barile et al. (2020) and Yan et al. (2021) argue for technology-mediated co-creation of value in ecosystems, demonstrating that digital platforms transform passive resource exchange into adaptive co-innovation processes and yield better sustainability outcomes. Besides, Costa et al. (2021) examine user communities and open innovation as drivers of sustainability, exploring digital communities and their extension of the boundaries beyond organizational actors, integrating end-users as active contributors. Finally, Alka et al. (2024) identify emerging technologies, such as artificial intelligence, as accelerators of circularity within ecosystems and systemic resilience. This last topic demonstrates that technology is not a peripheral accessory but a structural condition for the ecosystem to "create" sustainability solutions.

Conclusions

The three research domains are no longer isolated, and they are often associated with value creation, digitalization, and systemic approaches to transformation. As Granstrand and Holgersson (2020) suggest, innovation ecosystems are evolving structures of actors and institutions that can shape complex innovation processes. Their integration with sustainability goals, as proposed by Arena et al.

(2022), makes them ideal platforms to face the so-called "wicked problems" (Lönngren & Van Poeck, 2021) through co-created context-sensitive solutions.

The study highlights three main insights: (i) innovation ecosystems act as enablers of systemic sustainability transition and adaptation; (ii) co-creation integrates participatory governance within these ecosystems; and (iii) digital transformation is tied to sustainability by connecting actors, resources, and solutions across levels.

The co-occurrence and thematic mapping highlight that co-creation for sustainability is increasingly embedded within innovation ecosystems, where platforms, capabilities, and performance strategies support adaptive and participatory governance. This reflects the shift from linear models to more actor-driven and dynamic frameworks (Torfing et al., 2021). Despite the relative conceptual coherence that is beginning to take shape, the field remains fragmented regarding research collaboration, institutional concentration, and cross-disciplinary studies. The scarcity of recurring authors and weak co-authorship networks suggests an early-stage research domain that lacks established schools of thought. This fragmentation may also reflect a generative openness favoring conceptual diversity and methodological pluralism.

Building on these insights, it becomes possible to draw broader implications. Theoretically, the findings contribute to the ongoing trend toward transdisciplinary frameworks (Ansell et al., 2022; Koch et al., 2025) that link innovation management studies to sustainability, thereby overcoming static, traditional governance models.

At the same time, practical implications emerge for policy and management, particularly in pursuing multi-stakeholder innovation processes aligned with long-term impact goals. Innovation ecosystems supported by co-creation mechanisms (Jacobides et al., 2018; Koch et al., 2025) can be a successful way to enable inclusive experimentation and support multi-level governance, innovating in local contexts and relying on the support of "nearby" different actors.

This study represents an initial step in mapping the niche of a conceptual space where innovation ecosystems and co-creation for sustainability intersect, which remains theoretically rich but empirically underexplored. Future research should expand its scope by incorporating additional databases and by complementing bibliometric methods with qualitative approaches to capture context-specific dynamics, actor perspectives, and governance practices. This is essential to move beyond descriptive mapping and toward a deeper understanding of how these complex systems evolve and interact.

As this domain is still at an early stage, there is significant potential for advancing theory and practice. Further studies can define the contours of a field connecting innovation ecosystems with co-created sustainability in more operational terms. The possibilities for development are multiple, going from cross-sectoral policy design to organizational strategy, territorial innovation, and inclusive transformation.

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