

Mapping the Post-Innovation Research Landscape: A Global Bibliometric Review (2021–2025)

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Abstract

Post-innovation extends beyond the conventional pursuit of economic growth by emphasizing social impact, environmental sustainability, and the responsible management of contemporary technologies. It integrates digital transformation with environmental and societal responsibility to enhance the long-term value generated by innovation. This study maps the temporal, conceptual, and geographical development of the emerging post-innovation research field and identifies key knowledge gaps and future research directions. Bibliographic data were retrieved from the Scopus database on 14 May 2026. Following the PRISMA 2020 guidelines, the records were screened and analyzed using Microsoft Excel and VOSviewer. The analysis was restricted to English-language journal articles published between 2021 and 2025 in the fields of business, management, and accounting. The final sample comprised 212 eligible articles. The findings reveal a substantial increase in scholarly output, with publication activity reaching its highest levels in 2024 and 2025. The intellectual structure of the field is organized around three interconnected pathways: a technological pathway centered on artificial intelligence and digital transformation; a strategic pathway encompassing competitive advantage and open innovation; and an ethical-environmental pathway focused on sustainability and the circular economy. These findings establish a conceptual foundation for advancing innovation toward sustainable impact and maximizing its operational and societal value. The study also proposes a future research agenda that emphasizes emerging markets, artificial intelligence applications across the product lifecycle, comprehensive digital transformation models, and the development of intellectual property legislation responsive to rapidly evolving technological environments.

Keywords: artificial intelligence; bibliometric analysis; competitive advantage; digital transformation; innovation; open innovation; sustainable innovation

1. Introduction

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The concept of innovation has witnessed rapid historical and theoretical development since its early classical beginnings, formulated by Joseph Schumpeter around the concept of creative destruction. It then evolved from a closed, internal process focused on developing technological products to more flexible and open models based on external flows and strategic partnerships (Chesbrough, 2019). Innovation dominated management and economic literature as the primary driver of sustainable competitive advantage and economic growth. With the start of the current decade, a new intellectual and theoretical shift in the concept of innovation began to emerge, known today as the post-innovation era. This era calls for moving beyond the idea of innovation for purely economic growth to focus on social impact, maintenance, management, and improvement of existing technologies, rather than the continuous pursuit of uncontrolled radical change (Pansera & Fressoli, 2021). In light of this cognitive shift, a set of fundamental dimensions emerged that shaped global production during this period, such as the sustainability of innovation. In this context, measuring innovation efficiency is no longer limited to immediate financial returns but extends to include alignment with the requirements of sustainable development and the circular economy, where the focus has shifted to... Responsible innovation, which ensures reducing the environmental footprint and achieving social justice as part of the outputs of the innovation process (Geissdoerfer et al., 2020), and what is known as digital transformation, where this dimension focused on deep enabling and structural integration of next-generation technologies such as generative artificial intelligence, blockchains and digital twins as a flexible infrastructure within the continuity of adaptive innovation (Nambisan et al., 2017), in addition to some new innovative systems through the transition to digital and network ecosystems that cross borders, characterized by high dynamism and effective participation of all parties (governments, companies, universities, civil society), which contributed to building flexible value networks capable of withstanding successive global crises (Jacobids et al., 2018).

Global scientific output in the period (2021-2025) is undergoing a conceptual restructuring phase, moving away from the clamor of traditional innovation towards the depth of sustainable practices and comprehensive digital integration. Hence, the urgent need to conduct this bibliometric analysis to map the knowledge of these emerging trends and identify future research gaps.

Despite the increasing number of studies on the topic of innovation, research related to the follow-up to post-innovation remains scattered and unclear, especially with regard to research trends and future visions in the era of digital transformation, as well as the intellectual structure and the number of pioneering researchers in the field of post-innovation. This review aims to analyze the chronological development of the concept of post-innovation and identify the most influential authors in this field, in addition to analyzing keywords and exploring research gaps, by presenting a knowledge map of the field, highlighting modern trends, and proposing a future research agenda. This study addresses the following research questions using appropriate bibliometric methods.

- What is the timeline for the growth of global scientific output in the field of post-innovation during the period 2021-2025?
- Who are the most prominent authors in the world in the field of post-innovation?
- Which leading scientific journals drive publication in this discipline?
- How has scientific output developed geographically, and which countries are the leading nations in the field of post-innovation?
- What are the conceptual links and keywords that constitute the knowledge framework for the concept of post-innovation?

2. Literary Reviews

Beyond the mere adoption of technologies, the post-innovation concept focuses on building

integrated ecosystems that ensure competitive advantage, Technological innovation positively impacts performance when digital transformation is coupled with organizational maturity (Pan & Ahmad, 2025), This requires varying knowledge management capabilities depending on the nature of the economy (Robertson et al., 2023), and extends to sensitive sectors through green finance (Vongurai, 2025), to build resilient manufacturing systems (Ghobakhloo et al., 2025), The success of this transformation also necessitates integrated and simultaneous maturity in operations management (Biernikowicz et al., 2025), along with the provision of a fourth-generation leadership model (Tsekouropoulos et al., 2025), the activation of big data analytics (Orero-Blat et al., 2025; Yordanova, 2023), and the deployment of blockchain technologies within a framework of effective governance and cybersecurity, Mature (Abu-Dabaseh et al., 2025; Saari et al., 2025), partnerships in this decade are increasingly moving towards open innovation strategies (Hervas-Oliver et al., 2021) where a company's position in the industrial network and its organizational functions play a crucial role in enhancing performance (Dąbrowska et al., 2024; Woods et al., 2019), However, the literature highlights potential risks, such as context- and data-dependent openness (Madanaguli et al., 2023; Priyadarshini et al., 2024). This necessitates that middle managers play a pivotal role in bridging knowledge gaps to ensure the effectiveness of dynamic capabilities (Crupi & Mortara, 2025; Stoeber & Kanbach, 2025), Furthermore, the emergence of convergent innovation, which supports sustainability and crisis management, and the move towards Industry 5.0, are imperative for effective management.

Contemporary crises (Lee & Trimi, 2021), coinciding with the trend towards digital sustainability (Lichtenthaler, 2021) and responsible innovation (Griffith & Alpert, 2022; Robinson et al., 2021), which has proven its economic viability in some sectors such as tourism (Chatzifotiet al., 2025), are also driving the 5G industry, which places human beings and their well-being at the heart of the production process (Bienkowska et al., 2025; Chin, 2021), bringing about profound structural and geopolitical transformations (Currie et al., 2024) , The benefits of artificial intelligence (Pokar, 2025) and big data (Temiz et al., 2022) remain contingent on readiness, comprehensive governance, and meeting consumer preferences for hybrid models (Dehnert & Schumann, 2022; Koblianska et al., 2023; Menezes & Macadar, 2025), with then eed to addressthe challenges of the global digital divide and understand the drivers of sustainable innovation (Göçoğlu et al., 2025; Lakemond et al., 2021; Morales et al., 2024; Wang et al., 2024).

3. Materials and Methods

In this bibliometric review, the resources and methods used were divided as follows:

3.1 Research Design

This research paper presents a bibliometric analysis built using Prisma 2020 (Page,MJ, et al.

2021), The primary objective of this bibliometric review is to identify research trends in post-innovation studies, trace the growth trajectory of scientific output in this field during the period 2021-2025, identify the most influential and contributing authors, pinpoint leading scientific journals driving publication activity in this discipline, identify the countries leading the way in post-innovation studies, and determine the conceptual links and keywords that constitute the knowledge framework of the post-innovation concept.

In conjunction with the PRISMA framework used in bibliometric analysis, this review extensively used Excel and Vosviewer to visualize and analyze data, to create and monitor bibliometric networks. VosViewer also helped us map and analyze complex search networks in the field of post-innovation, identify the most prominent journals, publications and authors, visualize trends and understand academic topics, which helped us identify the most important trends and patterns of research in the field of post-innovation. The program also contributed to the geographical organization of publications, which improved our understanding of the global impact of post-

innovation and research dynamics.

3.1.1. Identification

The definition includes how the database and search terms used in this bibliometric review were chosen, as follows:

•Database selection

This review was conducted on May 14, 2026 by the Scopus database, which provides extensive coverage of scientific articles, thanks to its accurate and high-quality data, which is easy to extract and analyze, and represents better coverage than competing databases, especially in the field of business management and innovation.

•Search Strings

To ensure we obtained the appropriate studies for this review, we used the following keywords: TITLE-ABS-KEY (Beyond Innovation) AND (LIMIT-TO (OA , "all")) , Furthermore, this bibliometric analysis was completed between 2021 and 2025, LIMIT-TO (PUBYEAR , "2021") OR LIMIT-TO (PUBYEAR , "2022") OR LIMIT-TO (PUBYEAR , "2023") OR LIMIT-TO (PUBYEAR , "2024") OR LIMIT-TO (PUBYEAR , "2025") , Within the field of Business Management and Accounting, LIMIT-TO (SUBJAREA , "BUSI") , We also used the English language in this bibliometric analysis, LIMIT-TO (LANGUAGE , "English") , Articles were also used in this review, LIMIT-TO (DOCTYPE , "ar") , Where more specific keywords were used such as, LIMIT-TO (EXACTKEYWORD , "Innovation") OR LIMIT-TO (EXACTKEYWORD , "Digital Transformation") OR LIMIT-TO (EXACTKEYWORD , "Open Innovation") OR LIMIT-TO (EXACTKEYWORD , "Sustainable Innovation") OR LIMIT-TO (EXACTKEYWORD , "Competitive Advantage") , included in the search. Table 1 shows the Inclusion and exclusion criteria.

Table 1. Inclusion and exclusion criteria.

Inclusion Criteria	Exclusion Criteria
Special research in the field of Beyond innovation	Research outside the specified subject areas
Publications from the years 2021 to 2025	Publications prior to 2021 and those from 2026
Articles published in English	Publications in other languages
Journal articles	Theses, conference papers, books, book chapters, blogs
Journals as the source type	All other sources

Source of Table 1: Author's own work

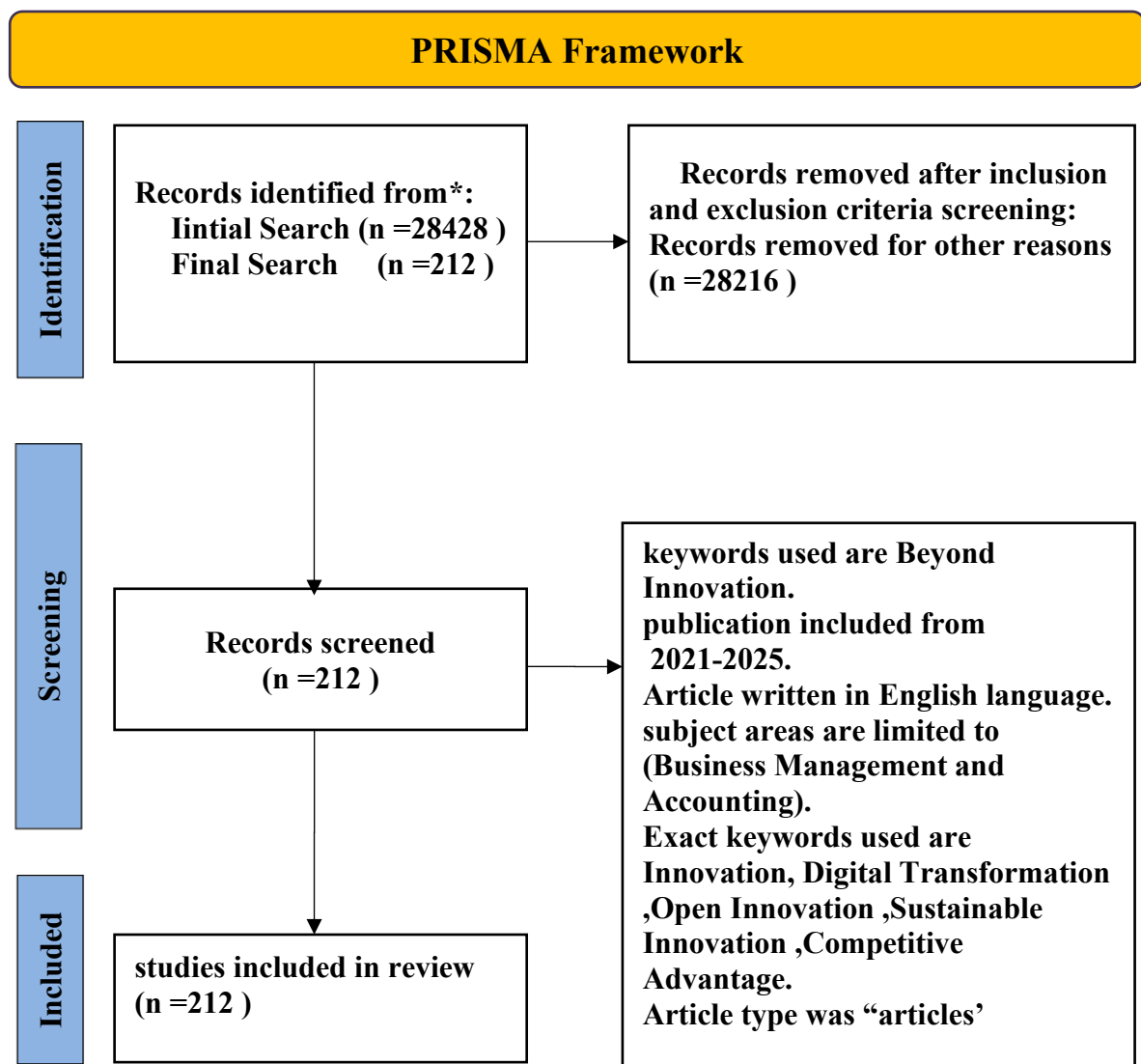
3.1.2. Screening and Selection

The initial search was conducted in the Scopus database using the main keyword "Beyond Innovation," resulting in the retrieval of 28,428 articles. Using the inclusion and exclusion criteria described in Table 1, the number of relevant articles decreased when using the main keywords in the search, as 28,216 research papers that did not meet the specified criteria were excluded, and 212 research papers that met the specified criteria were retained.

3.1.3. Inclusion and Reporting

The results of this bibliometric analysis are represented according to the PRISMA framework, as shown in Figure 1. The next section will begin by answering the research questions posed and presenting the results in a systematic and transparent manner.

Figure 1. Prisma Framework



Source of Figure 1: Prepared by the researchers with the assistance of Page, MJ, et al. (2021)

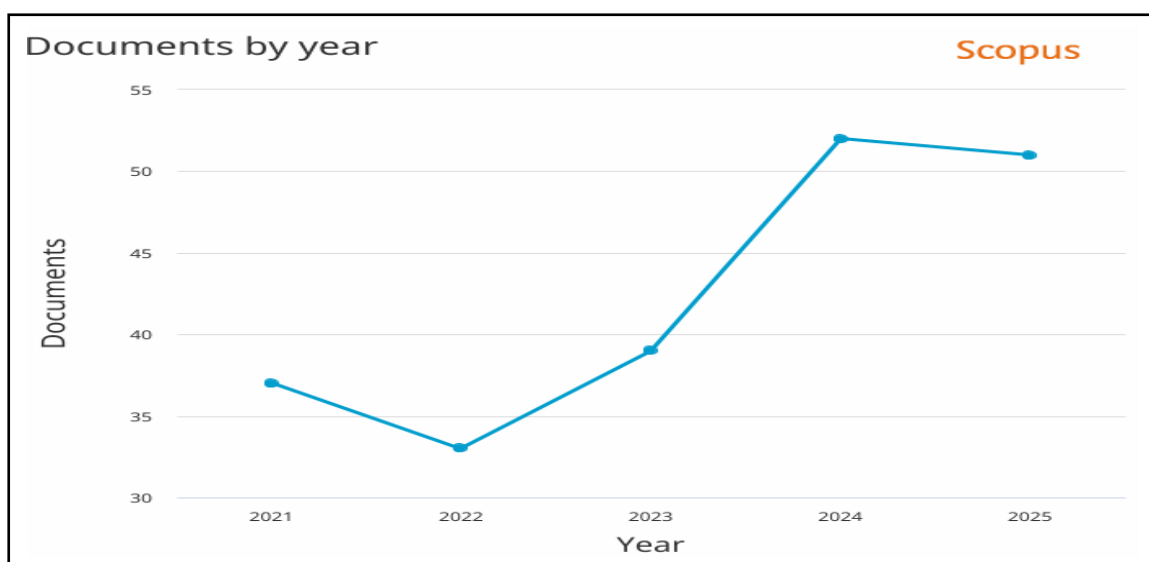
4. Results

This section addresses the findings of a bibliometric study in the field of post-innovation. Our study encompasses the chronological development of scientific output and offers valuable insights into various aspects of this constantly evolving discipline. It includes prominent thematic areas such as an analysis of authors' contributions and influence, the most frequently published scientific sources, the geographical distribution of scientific output, and key search terms. This analysis aims to clarify the evolution of the post-innovation field and identify the fundamental elements driving the development of scientific research in this area.

4.1. The Chronological Development of Scientific Production

Figure 2 illustrates a positive fluctuation in the number of publications, starting in 2021 with 37 papers, then declining slightly in 2022 to 33 papers, before rising again in 2023 to 39 papers, peaking in 2024 with 52 papers, and continuing until 2025 with 51 papers. This accelerated growth, particularly the significant leaps in 2022 and 2024, reflects the growing global interest in the post-innovation concept as a response to major digital and economic transformations. The stabilization of the number of papers above the 50-paper threshold in 2024-2025 indicates the maturity of the research field and its emergence as an attractive destination for researchers.

Figure 2. Document by year



source of Figure 2: Author's own work using the Scopus database

4.2. Analyzing the Authors' Contributions and Influence

The researcher Schaltegger, Stefan, topped the list in terms of influence with 235 citations, despite having the same number of research papers as the rest of the list. This is due to the concentration of influence among specific names, which indicates the existence of reference research, prepared by these authors, which forms the basic foundation for the concept of post-innovation, especially in aspects of strategic sustainability.

Table 2. Top10 most influential authors based on number of publications and citations

No	author	Number of PublishedPapers	citations
1	schaltegger, stefan	2	235
2	ritala, paavo	2	159
4	lichtenthaler, ulrich	2	149
5	kraus, sascha	2	67
6	holgersson, marcus	2	65
3	florek-paszkowska, anna	2	28
8	ujwary-gil, anna	2	28
7	castaldi, carolina	2	27
9	junnilla, seppo	2	14

Source of Table 2: Author's own work using MsExcel

4.3. The most widely published scientific sources

Table 3 shows that the journal Technological Forecasting and Social Change leads the scene with 20 articles and a share of 36.36%, followed by the journal Business Strategy and the Environment with 9 articles and a share of 16.36%. This indicates the concentration of publication in journals with a high impact factor and specializations that focus on technological forecasting and business strategy, because the post-innovation topic is closely related to future visions and competitive sustainability and not just a passing technological development

Table 3. Top 10 leading scientific journals in publishing post-innovation research

No	Source Title	No of articles	(%)	Total citations
1	technological forecasting andsocial change	20	36.36	935
2	business strategy andthe environment	9	16.36	427
4	technology in society	6	10.90	270
5	strategic management journal	4	7.27	175
6	long range planning	4	7.27	160
3	journalof businessresearch	3	5.45	330
8	ieee transactions onengineering management	3	5.45	131
7	journal of innovationmanagement	2	3.63	149
9	journalof familybusiness strategy	2	3.63	128
10	administrative sciences	2	3.63	114

Source of Table 3: Author's own work using MsExcel

4.4. Geographical distribution of scientific output

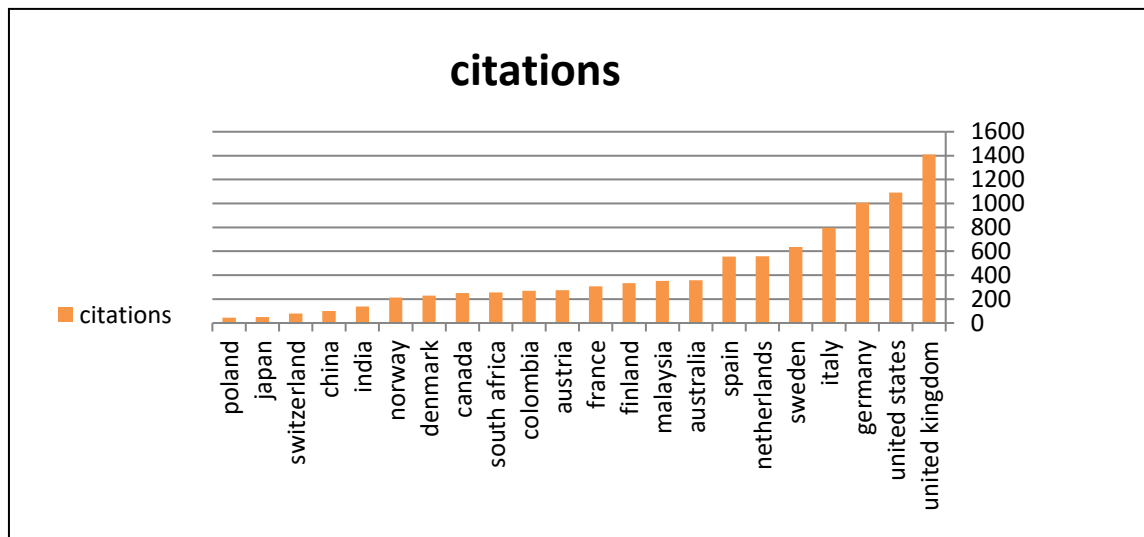
Table 4 and Figure 3 show the dominance of the United Kingdom in first place with 47 research papers and a share of 20.61%, leading the scene with 1400 citations, followed by the United States of America with 33 research papers with a share of 14.67% and 1100 citations, then Germany with 30 research papers with a share of 13.15% and 1000 citations. These data reflect the dominance of advanced countries with mature innovation systems in this research path, and the presenceofcountrieslikeFinlandandFranceonthelistreinforcesthe dominantEuropeancharacter of post-innovation research.

Table 4. Top 10 countries contributing to scientific research in the post-innovation field

No	country	Number of PublishedPapers	(%)
1	united kingdom	47	20.61
2	united states	33	14.47
4	germany	30	13.15
5	italy	25	10.96
6	netherlands	21	9.21
3	sweden	18	7.89
8	australia	15	6.57
7	spain	15	6.57
9	finland	13	5.70
10	france	11	4.82

Source of Table 4: Author's own work using MsExcel

Figure 3. Global ranking of the 10 most cited countries in the field of post-innovation



Source of Figure 3: Author's own work using MsExcel

4.5. Keyword analysis

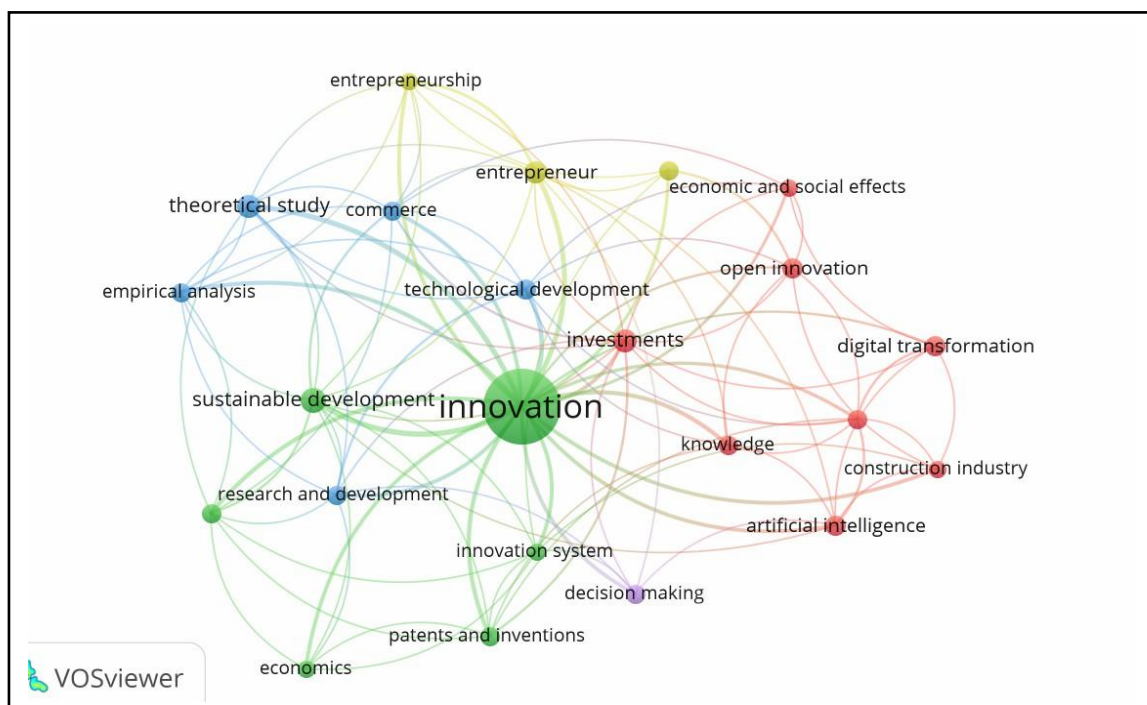
Table 5 shows that the word "innovation" comes first with a frequency of 171 and a correlation strength of 236, followed by "digital transformation" with a frequency of 21 and a correlation strength of 30, then "open innovation" with a frequency of 17 and a correlation strength of 31, then "artificial intelligence" with a frequency of 10 and a correlation strength of 29, then "sustainable innovation" with a frequency of 10 and a correlation strength of 11.

Table 5. Top 10 Most Frequent and Strongest Associated Keywords in Post-Innovation

No	keyword	occurrences	total link strength
1	innovation	171	236
2	digital transformation	21	30
4	open innovation	17	31
5	artificial intelligence	10	29
6	sustainable innovation	10	11
3	technology	7	13
8	circular economy	6	14
7	competitive advantage	6	15
9	digitalization	5	12
10	innovation ecosystem	5	15

Source of Table 5: Author's own work using MsExcel

Figure 4 shows that the word "innovation" is the network's central theme, linked to clusters representing digital transformation, artificial intelligence, and sustainable development. Analysis of these connections reveals that the post-innovation concept is shaped by three main pathways: the technological pathway, represented by artificial intelligence; the strategic pathway, represented by competitive advantage and open innovation; and the ethical and environmental pathway, represented by sustainable development and the circular economy.

Figure 4. Conceptual Interrelationship Network

Source of Figure 4: VOSviewer

Looking at the results analysis section, a number of general conclusions emerge, most notably:

- Research has moved from the innovation exploration phase to the post-innovation phase, which focuses on how to sustain this impact and ensure a competitive advantage in the digital economy.
- The post-innovation phase cannot be separated from the tools of the Fourth Industrial Revolution, where artificial intelligence and digital transformation have emerged as key intervening variables in all conceptual networks.
- There is a clear concentration of scientific output in the Global North, which opens up opportunities for researchers in other regions to study the application of these concepts in different economic environments.

5. Discussion

The discussion of the results in this research paper aims to provide an in-depth interpretation of the structural effects and emerging trends of the post-innovation phase during the period (2021-2025), based on the outputs of the bibliometric analysis as follows:

5.1. Explaining the global production boom (2021-2025)

The peak in the number of publications in 2024 and 2025 indicates a fundamental shift in the global research agenda. This rise can be explained by the fact that the world no longer views innovation as a flexible technical process, but rather as a long-term survival strategy in a turbulent economic environment. These results reflect the transition from innovation fever to a post-innovation phase that focuses on operational sustainability and maximizing ongoing value instead of launching new products.

5.2. Leading strategic journals

The fact that the journal "Technological Forecasting and Social Change" accounts for more than a third (36.36%) of scientific output confirms that the post-innovation phase lies at the intersection of technological forecasting and social change. The journals' focus on business strategy and the environment indicates that current research is maturing towards developing flexible business models.

5.3. Concentration of research power and the global innovation gap

The dominance of the United Kingdom, the United States, and Germany over 48% of scientific output indicates the concentration of knowledge in advanced economies with mature innovation systems. This result also explains that the concept of post-innovation requires a strong institutional environment that allows for the transition from radical innovation to sustainable systemic innovation. From a critical perspective, this concentration calls for researchers in developing countries to adapt these concepts to their local contexts to bridge the digital and knowledge gap.

5.4. Keywords: Digital transformation and artificial intelligence as sovereign drivers

Keyword analysis reveals that digital transformation and artificial intelligence are not merely tools, but rather the backbone of the post-innovation phase. The conceptual network shows that innovation has become organically linked to sustainable development and the circular economy. This means that modern trends discuss the post-innovation phase to solve major problems such as climate change and resource scarcity, where technology is employed to achieve maximum efficiency and green outputs.

5.5. The role of pioneers and theoretical foundations

Despite the limited quantitative output of some authors, the high citation power of some authorssuchasSchalteggerandRitalaindicates that this field relies on solid theoretical frameworks rather than quantitative repetition, because these pioneers laid the basic rules for how to manage innovation after the launch phase, which explains the great reliance on their work in more recent studies.

The discussion concluded that post-innovation represents a redefinition of competitive advantage to be based on artificial intelligence and sustainability, opening up future prospects and promising research directions for researchers, as indicated in the Future Prospects section.

6. Future prospects and promising research directions

- Conduct comparative studies between emerging and developed markets to explore the differences in the application of post-innovation strategies globally.
- Future studies should focus on how generative AI contributes to post-innovation automation, not only in product creation but also in managing its lifecycle and ensuring its sustainable competitive advantage.
- Develop business models that rely entirely on digital recycling and zero industrial waste as part of the corporate innovation identity.
- Establish legislative frameworks to regulate the post-innovation phase, particularly concerning intellectual property rights in the age of artificial intelligence.

Conclusion

This study reveals that the post-innovation concept represents a radical and structural redefinition of competitive advantage in the modern era. Organizational success is no longer contingent on the haphazard launch of new products or the pursuit of uncontrolled, radical changes. Instead, it is based on sustainability, maximizing continuous value, and efficiently managing existing

technologies. This bibliometric analysis, based on the PRISMA framework and Scopus data for 212 articles, reveals a clear maturation and stabilization process within this research field, particularly with peak publication expected in 2024 and 2025.

While the apparent dominance of knowledge in the Global North (such as the UK, US, and Germany), necessitating action from researchers in developing countries to adapt the concept locally, the structure of this discipline remains based on the close integration of three inseparable strategic paths: a technological path driven by artificial intelligence and digital transformation, considered the cornerstone of this phase; a strategic path governed by open innovation and competitive advantage; and an eco-ethical approach that links innovation to the circular economy and sustainable development to address major challenges such as climate change and resource scarcity.

This knowledge integration paves the way for building flexible business systems capable of withstanding crises, and opens up broad prospects for the application of modern intellectual property legislation, and the development of production models that place human well-being and the environment at the heart of the production process.

Limitations

This research has limitations. Initially, only the Scopus database was used for data collection, and therefore it does not cover all academic journals. Consequently, journals from other databases, such as Web of Science, may not have been included in this analysis. Furthermore, the most recent publications in Scopus up to 2026 were excluded. However, these limitations are unlikely to affect the trends and patterns identified in this research. Also, the search term "post-innovation" was used only for data retrieval. Although using more specific search terms might result in a smaller dataset, all emerging technologies that can be used to achieve post-innovation were considered. Therefore, more specific search terms were used in this analysis (innovation, sustainable innovation, open innovation, digital transformation, competitive advantage), along with the concept of post-innovation.

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References

- 1- Pan, J., & Ahmad, N. H. (2025). Technological innovation and SME performance: Mediating roles of digital transformation & resource integration, moderating roles of strategic orientation & market dynamics. *International Journal of Management and Sustainability*, 14(4), 1203-1218.
- 2- Hervas-Oliver, J. L., Sempere-Ripoll, F., & Boronat-Moll, C. (2021). Technological innovation typologies and open innovation in SMEs: Beyond internal and external sources of knowledge. *Technological Forecasting and Social Change*, 162, 120338
- 3- Lee, S. M., & Trimi, S. (2021). Convergence innovation in the digital age and in the COVID-19 pandemic crisis. *Journal of business research*, 123, 14-22
- 4- Temiz, S., Holgersson, M., Björkdahl, J., & Wallin, M. W. (2022). Open data: Lost opportunity or unrealized potential?. *Technovation*, 114, 102535.
- 5- Madanaguli, A., Dhir, A., Talwar, S., Clauss, T., Kraus, S., & Kaur, P. (2023). Diving into the uncertainties of open innovation: A systematic review of risks to uncover pertinent typologies and unexplored horizons. *Technovation*, 119, 102582.
- 6- Göçöğlu, V., Demirkol, A., Düzsöz, E., & Göçöğlu, İ. D. (2025). Shifting digital priorities for the SDGs: A global analysis on economic and geographic scales. *Telecommunications Policy*, 103032.

- 7- Chin, S. T. S. (2021). Influence of emotional intelligence on the workforce for industry 5.0. *Journal of Human Resources Management Research*, 2021(2021), 882278.
- 8- Robertson, J., Caruana, A., & Ferreira, C. (2023). Innovation performance: The effect of knowledge-based dynamic capabilities in cross-country innovation ecosystems. *International Business Review*, 32(2), 101866.
- 9- Saari, A., Sinclair, S., Leshinsky, R., & Junnila, S. (2025). Best practices for blockchain-driven digital transformation in cross-industry settings. *Digital Business*, 5(2), 100127.
- 10- Abu-Dabseh, F., Khtatbeh, M. M., Al'Ararah, K., & Alassuli, A. (2025). Exploring the role of digital transformation in mitigating accounting fraud: a cybersecurity perspective. *International Review of Management and Marketing*, 15(3), 398.
- 11- Tsekouropoulos, G., Vasileiou, A., Hoxha, G., Theocharis, D., Theodoridou, E., & Grigoriadis, T. (2025). Leadership 4.0: navigating the challenges of the digital transformation in healthcare and beyond. *Administrative sciences*, 15(6), 194.
- 12- Biernikowicz, A., Gabryelczyk, R., & Ashraf, R. U. (2025). Investigating the nexus between business process management maturity and digital maturity: an empirical study of organizations in Poland. *Business Process Management Journal*, 31(5), 1663-1683.
- 13- Morales, P., Flikkema, M., Castaldi, C., & de Man, A. P. (2024). Why use or forgo formal and informal appropriation mechanisms? A qualitative study of sustainable innovations from small-and medium-sized enterprises. *Business Strategy and the Environment*, 33(3), 1937-1961.
- 14- Griffith, T. L., & Alpert, D. (2022). Creating Concrete Visions with Augmented Reality: Digital Transformation for Participative Innovation. *Research-Technology Management*, 65(5), 34-43.
- 15- Currie, W. L., Weerakkody, V., & Van Vliet, B. (2024). Digital transformation: The geopolitical-organizational nexus. *Journal of Information Technology*, 39(4), 618-629.
- 16- Dąbrowska, J., Keränen, J., & Mention, A. L. (2024). Beyond the Buzz: Unpacking the Forms and Practices of Dedicated Open Innovation Functions. *California Management Review*, 67(1), 114-137.
- 17- Lakemond, N., Holmberg, G., & Pettersson, A. (2021). Digital transformation in complex systems. *IEEE Transactions on Engineering Management*, 71, 192-204.
- 18- Menezes, É. M. L., & Macadar, M. A. (2025). Smart City Living Lab Governance Paths to Sustainability: Bibliometric and Content Analysis. *Revista de Administração Contemporânea*, 29(2), e240310.
- 19- Bienkowska, A., Tworek, K., Voropai, O., & Zimmer, J. (2025). Human-centric approach to creating sustainable innovation in the context of Industry 5.0. *Entrepreneurial Business and Economics Review (EBER)*, 13(3), 115-134.
- 20- Vongurai, R. (2025). Enhancing Sustainable Performance in Thai Banking: The Role of Fintech, Green Finance, and Digital Transformation. *Global Business & Finance Review*, 30(11), 78.
- 21- Pokar, J. (2025). Unlocking the potential of generative artificial intelligence: adoption drivers and organisational performance. *International Journal of Business Innovation and Research*, 38(9), 1-23.
- 22- Priyadarshini, A., Gao, Y., & O'Gorman, C. (2024). Firm specific determinants of open innovation in European SMEs. *Journal of Small Business & Entrepreneurship*, 36(1), 130-157.
- 23- Ghobakhloo, M., Foroughi, B., Fathi, M., Al-Emran, M., Al-Sharafi, M. A., & Mubarak, M. F. (2025). Building antifragile manufacturing systems through strategic technology integration. *Journal of Manufacturing Technology Management*, 36(9), 221-242.
- 24- Woods, J., Galbraith, B., & Hewitt-Dundas, N. (2019). Network centrality and open innovation: A social network analysis of an SME manufacturing cluster. *IEEE Transactions on Engineering Management*, 69(2), 351-364.

- 25- Lichtenthaler, U. (2021). Digitainability: The combined effects of the megatrends digitalization and sustainability. *Journal of Innovation Management*, 9(2), 64-80.
- 26- Koblianska, I., Varakin, D., Pihul, O., Somushkin, V., & Glukh, V. (2023). Review of scientific literature on BPM concept in social sciences. *Problems and Perspectives in Management*, 21(3), 84.
- 27- Robinson, D. K., Simone, A., & Mazzonetto, M. (2021). RRI legacies: co-creation for responsible, equitable and fair innovation in Horizon Europe. *Journal of Responsible Innovation*, 8(2), 209-216.
- 28- Wang, S., Cheah, J. H., Lim, W. M., & Chang, J. Y. S. (2024). Management and organizational research in Asia Pacific: insights from a 40th anniversary review of the Asia Pacific Journal of Management. *Asia Pacific Journal of Management*, 41(4), 1773-1796.
- 29- Crupi, A., & Mortara, L. (2025). Building middle managers' managerial dynamic capabilities through collaborations: exploring the microfoundations in a university–industry consortium. *The Journal of Technology Transfer*, 1-31.
- 30- Stoeber, T., & Kanbach, D. K. (2025). Innovating beyond boundaries: enhancing firms' dynamic capabilities through open innovation. *Management Review Quarterly*, 1-22.
- 31- Orero-Blat, M., Palacios-Marqués, D., Leal-Rodriguez, A. L., & Ferraris, A. (2025). Beyond digital transformation: a multi-mixed methods study on big data analytics capabilities and innovation in enhancing organizational performance: M. Orero-Blat et al. *Review of Managerial Science*, 19(2), 649-685.
- 32- Dehnert, M., & Schumann, J. (2022). Uncovering the digitalization impact on consumer decision-making for checking accounts in banking: Consumer decision-making for checking accounts. *Electronic Markets*, 32(3), 1503-1528.
- 33- Yordanova, Z. (2023). Big Data as a Stakeholder of the Firm's Innovation Process. *TEM Journal*, 12(2), 1038-1047.
- 34- Chatzifoti, N., Alexandropoulou, A., Foustieris, A. E., Karvounidi, M. D., & Chountalas, P. T. (2025). Techno-Economic Evaluation of Sustainability Innovations in a Tourism SME: A Process-Tracing Study. *Tourism and Hospitality*, 6(4), 209.
- 35- Chesbrough, H. (2019). *Open innovation results: Going beyond the hype and getting down to business*. Oxford University Press.
- 36- Geissdoerfer, M., Pieroni, M. P., Pigosso, D. C., & Soufani, K. (2020). Circular business models: A review. *Journal of cleaner production*, 277, 123741.
- 37- Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. *Strategic management journal*, 39(8), 2255-2276.
- 38- Nambisan, S., Lyytinen, K., Majchrzak, A., & Song, M. (2017). Digital innovation management: Reinventing innovation management research in a digital world. *MIS quarterly*, 41(1), 223-238.
- 39- Pansera, M., & Fressoli, M. (2021). Innovation without growth: Frameworks for understanding technological change in a post-growth era. *Organization*, 28(3), 380-404.
- 40- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *bmj*, 372.