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Exploring the evolution conceptual structure of research on dynamic capabilities and innovation : a bibliometric approach using co-word analysis.

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Abstract

Purpose – this bibliometric study aims to map the conceptual structure of research on "dynamic capabilities and innovation" to identify the central themes, that is to say the dominant, saturated, declining and emerging subjects.

Research methodology – this study used data from 5 557 Scopus papers published between 2014 and 2024. Data visualization and analysis for co-word and social network analysis are done with VOSviewer software.

Findings – with 243 documents, China is the country producing most documents. “Business models and dynamic capabilities” is the most frequently cited article, with 1554 citations. The journal “Sustainability (Switzerland)” is the most prolific with 58306 articles and the most frequently cited with 432 964 citations. The most prolific author is “Sheshadri Chatterjee” with 15 papers. The Universidade de São Paulo is the world's most prolific research institute, with 23 documents. The subject area most closely related to “dynamic capabilities and innovation” was that of "Business, Management and Accounting".

Research limitations – the main limitation concerns the use of the Scopus database alone. "Web of Science" could have provided different results. Furthermore, Scopus does not analyze full texts. Researchers might examine the industries that have been involved in these studies or their methodological differences and data collection.

Practical implications – this research paper systematically reviews the recent advancements of “Dynamic Capabilities and Innovation”, emphasizing the literature gaps and offering recommendations for upcoming studies.

Originality/Value – earlier studies illustrated a significant relationship between both dynamic capabilities and innovation. Additional studies could explore topics not already addressed, like “why some managers pursue innovative possibilities while others do not”.

Keywords : dynamic capabilities, innovation, bibliometric analysis, VOSviewer, Scopus database.

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List of abbreviations and acronyms

VOSviewer : Visualization of Similarities viewer

PRISMA : Preferred Reporting Items for Systematic reviews and Meta-Analyses

SNA : Social network analysis

SLR : Systematic literature review

TP : Total Publications

TC : Total Citations

MDPI : Multidisciplinary Digital Publishing Institute

H-index : Hirsch index

UK : United Kingdom

USA : United States of America

Oc : co-occurrence

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Introduction

In an increasingly turbulent and knowledge-intensive business environment, organizations are compelled to continuously adapt, reconfigure, and renew their resources in order to sustain competitive advantage. Within this context, dynamic capabilities have emerged as a central theoretical lens for explaining how firms sense opportunities, seize them, and transform their resource base to foster innovation (Valdez-Juárez & Castillo-Vergara, 2021). Over the past decades, the interaction between dynamic capabilities and innovation has attracted growing scholarly attention, resulting in a rapidly expanding and fragmented body of literature across multiple disciplines, including business and management, social sciences, and technology studies. Dynamic capabilities are based on the internal capacity of the company to build organizations that respond to change and use learning, integration and reconfiguration mechanism (Gupta & Gupta, 2019; Liu et al., 2020). Innovation is conceptualized as a cognitive and organizational process involving the stages of identifying a need or problem, generating new or modified ideas, developing an outcome based on these ideas, implementing a new or improved outcome, and adopting this outcome about producing a new or significantly improved product, service, process or procedure with added value (Morad et al., 2021).

Despite the richness of this research stream, the accelerated growth of publications has made it increasingly difficult to obtain a comprehensive understanding of the evolution, intellectual structure, and conceptual foundations of studies on dynamic capabilities and innovation (Mikalef et al., 2019). Existing reviews have primarily focused on narrative or systematic literature reviews, often emphasizing specific themes or empirical findings, while offering limited insights into the conceptual relationships, research fronts, and thematic evolution of the field. Consequently, there is a need for a more holistic and data-driven approach capable of mapping the knowledge structure and identifying dominant and emerging research themes.

To address this gap, this study aims to explore the evolution and conceptual structure of research on dynamic capabilities and innovation through a bibliometric approach. Specifically, the research seeks to (i) examine the growth and distribution of scientific publications over time, (ii) identify the most influential journals, authors, institutions, and countries, and (iii) uncover the main research themes, knowledge clusters, and emerging trends in the field. To achieve these objectives, the study employs co-word analysis and social network analysis, using VOSviewer as the main visualization tool, and follows the PRISMA framework to ensure transparency and rigor in the systematic selection of the literature. By analyzing publications indexed in the Scopus database over the period 2014–2024, this research provides a comprehensive overview of the intellectual landscape of dynamic capabilities and innovation research.

The remainder of this paper is structured as follows. Section 1 presents the research methodology, including the bibliometric design, data collection procedures, and analytical techniques. Section 2 reports and discusses the main bibliometric results, covering publication trends, influential

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contributors, geographic distribution, and keyword co-occurrence networks. Section 3 offers a discussion of the findings and highlights their theoretical and managerial implications. Finally, the study is concluded by summarizing key insights, outlining research limitations, and proposing directions for future research on dynamic capabilities and innovation.

1. Methodology

In 2014 to 2024, this document sought to systematically review the studies on "Dynamic capabilities and innovation". In this paper, data visualization and analysis are mainly performed using VOSviewer software for co-word analysis and social network analysis, in combination with the PRISMA framework employed for bibliometric study (Fernandes & Pires, 2021; Denisse et al., 2024).

1.1. Co-word analysis, Social network analysis and VOSviewer

1.1.1. Co-word analysis

This method was initially proposed by Callon et al. in 1986. Co-word analysis has been used by academic researchers to map the bibliometric structure of different disciplines, including environmental responsibility (Yang et al., 2021), innovation (Fernandes & Pires, 2021), intellectual capital (Bamel et al., 2022) and dynamic capabilities (Denisse et al., 2024).

Co-word analysis is considered as a useful tool for text mining and content analysis by many (Zupic & Cater, 2015). Its advantages included that it demonstrated the conceptual framework of a discipline without the need to read the entire text (Narong & Hallinger, 2023).

Co-word analysis was based on the premise that the co-occurrence of two or more keywords in a document indicated their correlation and that the higher their co-occurring frequency, the stronger their association (Ravikumar et al., 2015). Co-word analysis can be used to identify domains, sub-domains and hot topics (Dai et al., 2020) and predict future trends (Uyar et al., 2020).

1.1.2. Social network analysis (SNA)

SNA was first proposed by the famous sociologist Harrison White (Faraji et al., 2022) in the 1960s. Social networks, defined as a set of actors (nodes) and ties (edges) between the actors, are considered a network of relationships or interactions. According to Koseoglu et al. (2019), either actor or keyword operated as the main element of a social network. These relationships of these actors (or keywords) built links or connections, the total of which formed the graphical networks in SNA or conceptual map (Uyar et al., 2020).

SNA has been increasingly employed by scholars in different domains, including auditing (Uyar et al., 2020), environmental responsibility (Yang et al., 2021), intangible capital (Bamel et al., 2022), dynamic capabilities (Filenta & Kydros, 2022) and innovation (Dahesh et al., 2020).

1.1.3. VOSviewer

VOSviewer software program has been used to simplify the construction and visualizing of bibliometric networks (Faraji et al., 2022). These networks are based on citations, co-citations,

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co-authors or bibliographic linkages. Soegoto et al. (2022) describe VOSviewer as an efficient tool for analysing and visualizing bibliometric data. VOSviewer also includes a text mining tool for constructing and visualizing co-occurrence networks for keywords from a body of scientific literature.

VOSviewer was a great assistance to us in mapping and analyzing the complex networks that constitute "dynamic capabilities and innovation" research. It led to understand the connections between various academic disciplines, identify the most influential journals, publications, and authors, as well as visualize trends and patterns in this area of study (Correggi et al., 2024).

1.2. Research design

The systematic literature review (SLR) of this study was performed using the method of bibliometric analysis. The research process described in this work is based on the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement template (Page et al., 2021b; Samsul et al., 2023). PRISMA is a systematic review process that consists of 3 steps : Identification, screening and inclusion. The specifics of this procedure are more detailed in Figure 1. The present review aimed to examine how dynamic capabilities affect innovation, analyze distribution of publications, leading countries, top academic institutions, top journals, most productive authors, most cited documents, the majority of trends and keywords in this field of study.

1.2.1. Identification

1.2.1.1. Database selection

Reviewed on January 27, 2025, the papers from which these were evaluated were located in Elsevier's Scopus database and VOSviewer software was applied to build the social networks (Aparicio-Martinez et al., 2019). Since Scopus database is one of the most famous and biggest databases for the analysis of scientific papers, it was chosen as the base of this study. We reported the years covering between 2014–2024 because we were only interested in the latest studies.

1.2.1.2. Search strings

The researchers used exact keywords, these keywords were “dynamic capabilities AND innovation”, for instance “TITLE-ABS-KEY (dynamic AND capabilities AND innovation)” in order to guarantee the retrieval of the chosen studies. Moreover, publications from 2014 to 2024 were selected, for instance “PUBYEAR > 2013 AND PUBYEAR < 2025”. The subject area was also limited to “Business, Management and Accounting”, “Computer Science”, “Social Sciences”, “Decision Sciences” and “Arts and Humanities”, for instance “LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "COMP") OR LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "DECI") OR LIMIT-TO (SUBJAREA, "ARTS"). This review selected publications in the English language, "LIMIT-TO (LANGUAGE, "English")". More specifically, exact search terms were used for instance “LIMIT-TO (EXACTKEYWORD, "Dynamic Capabilities") OR LIMIT-TO (EXACTKEYWORD, "Innovation") OR LIMIT-TO (EXACTKEYWORD,

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"Enterprise Resource Management") OR LIMIT-TO (EXACTKEYWORD, "Dynamics Capability") OR LIMIT-TO (EXACTKEYWORD, "Dynamic Capability") OR LIMIT-TO (EXACTKEYWORD, "Knowledge Management") OR LIMIT-TO (EXACTKEYWORD, "Innovation Capability)". Only "Articles" and "Conference papers" were among the publications "LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "cp"). This is using LIMIT-TO (SRCTYPE, "j") to limit journals as the only source of this review.

1.2.1.3. Inclusion and exclusion criteria

Table 1- *Inclusion and exclusion criteria*

Inclusion criteria	Exclusion criteria
"Dynamic capabilities and innovation research area"	"Any other subjects were excluded"
"2014-2024"	•"All publications before 2014 were excluded" •"2025 publications were excluded"
"English language"	"Any other languages were excluded"
"Articles and Conference papers"	"Thesis, Books, Book chapters, Blogs"
"Journals"	"Any other source were excluded"

Source: Own elaboration, 2025

1.2.2. Screening and selection

The SLR process for data selection was performed according to the PRISMA statement template as shown in Figure 1. Using the keywords "dynamic capabilities" and "innovation", the initial search generated 5 557 documents. Applying the inclusion and exclusion criteria shown in Table 1 yielded 5 557 papers, 4 089 of which were from other fields were eliminated. For example, "engineering", "finance", "economics", "energy" and "mathematics". The final search, with a statistical population of 1 468 records consisted of "business, management and accounting", "social sciences", "computer science", "decision sciences" and "arts and humanities". Of them, 2 were conference papers and 1 466 were articles.

1.2.3. Inclusion and reporting

Findings of this bibliometric analysis shall be reported according to the PRISMA Framework (Page et al., 2021a; shown in figure 1). The answer to the research question will be discussed in the next section.

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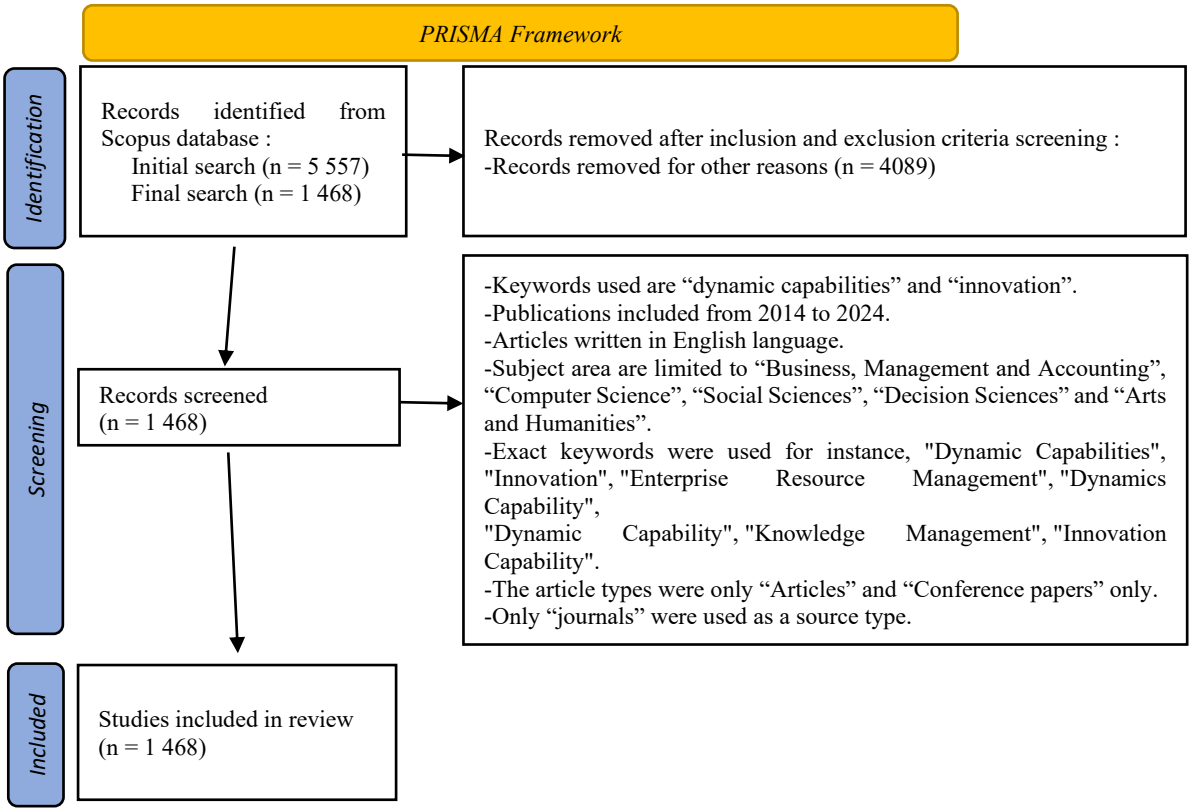
Figure 1- *PRISMA statement template*



Source: Own elaboration, 2025

1.3. Methodological approach, epistemological positioning and reasoning

This research adopts a positivist epistemological stance with a post-positivist orientation, as it seeks to examine the scientific literature on “dynamic capabilities and innovation” in an objective, systematic, and reproducible manner, using structured bibliographic data drawn from the Scopus database. The purpose is not to subjectively interpret authors’ arguments, but rather to identify recurring patterns, intellectual structures, and emerging trends across the field through the use of well-established quantitative methods (Bell et al., 2017).

From this perspective, the bibliometric approach -combining co-word analysis and SNA- is particularly appropriate, as it enables the mapping of conceptual relationships and knowledge dynamics based on measurable indicators such as frequencies, co-occurrences, linkages, and network centrality. The reasoning adopted in this study is primarily inductive, in that findings and theoretical configurations emerge from the empirical analysis of a large body of publications, without relying on strict a priori assumptions about the structure of the field (Lozano et al., 2019). However, this inductive process is guided by an existing theoretical framework, notably that of dynamic capabilities, which introduces an abductive dimension to the research by linking empirical exploration with conceptual grounding. Finally, the use of the PRISMA framework enhances methodological rigor and transparency in the study selection process, thereby ensuring the scientific validity and reliability of the results.

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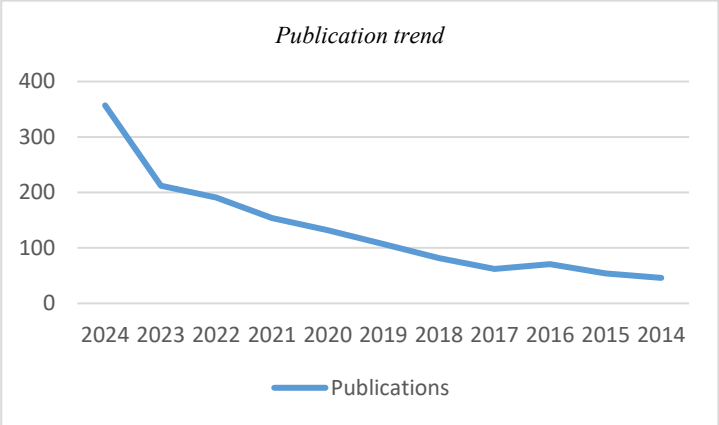
2. Results

The study aims to demonstrate, during the last eleven years, the profile regarding the studies, which have been carried out on "dynamic capabilities and innovation". The results of this study were discussed depending on seven questions of research.

2.1. Distribution of publications over 2014–2024

The first research question asks about the overall trend and the distribution of "dynamic capabilities and innovation" articles from 2014 to 2024. The results shown in Figure 2 presents that the number of papers generated in this eleven-year range increased. Out of 1468 papers, 46 covered this topic in 2014 and 357 were produced in 2024. The number of papers fell from 71 to 62 between 2016-2017, and then rose again from 2018 on, when "dynamic capabilities and innovation" got more academic attention.

Figure 2- *Distribution of publications*



Source: Own elaboration, 2025

2.2. Relevant journals and authors

Table 2- *Ten most frequently cited and highly productive journals*

Journal	*TP*	*TC*	*Citation Score 2024*	*Most cited article (Reference)*	*Times Cited*	*Publisher*
"Sustainability (Switzerland)"	58 306	432 964	7,4	"An empirical study on green innovation strategy and sustainable competitive advantages: Path and boundary"	101	"Multidisciplinary Digital Publishing Institute (MDPI)"
"Technological Forecasting and Social Change"	2 928	74 738	25,5	"Towards an effective framework for building smart cities: Lessons from Seoul and San Francisco"	660	"Elsevier"
"IEEE Transactions on Engineering Management"	1 792	16 899	9,4	"Green Process Innovation and Financial Performance in Emerging Economies: Moderating Effects of Absorptive Capacity and Green Subsidies"	217	"IEEE"
"Business Strategy and the Environment"	1 294	29 904	23,1	"Green Product Innovation in Manufacturing Firms: A Sustainability-Oriented Dynamic Capability Perspective"	510	"John Wiley & Sons"
"Journal of Business Research"	3 243	79 546	24,5	"Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective"	625	"Elsevier"

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"Technology Analysis and Strategic Management"	623	4 215	6,8	"Direct and configurational paths of open innovation and organizational agility to business model innovation in SMEs"	44	"Taylor & Francis"
"Technovation"	615	11 596	18,9	"Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm performance: The moderating role of entrepreneurial orientation"	31	"Elsevier"
"International Journal of Innovation Management"	315	1 020	3,2	"Innovation, firm performance, and appropriation: A meta-analysis"	78	"World Scientific"
"Journal of Cleaner Production"	18 950	386 083	20,4	"Sustainability as a dynamic organizational capability: a systematic review and a future agenda toward a sustainable transition"	404	"Elsevier"
"Management Decision"	600	4 578	7,6	"Intellectual capital, absorptive capacity and product innovation"	144	"Emerald Publishing"

TP (Total Publications), TC (Total Citations)

Source: Own elaboration, 2025

The second study question identify the most pertinent journals and authors in "dynamic capabilities and innovation" research. Table 2 lists the ten most important papers by article count and by citation count. This list may help researchers identify the most relevant journals that publish "dynamic capabilities and innovation" studies. A total of 158 journals were active in that area. The most relevant journal on "dynamic capabilities and innovation" studies with 58 306 papers and 432 964 citations was "Sustainability (Switzerland)" published by Multidisciplinary Digital Publishing Institute (MDPI). Next to this journal the "Journal of Cleaner Production" published by Elsevier, with 18 950 publications and 386 083 citations. Also relevant was the "Journal of Business Research," with 3 243 papers and 79 546 citations. The lowest amount of publications came from the "International Journal of Innovation Management" journal with 315 publications. Thus it was the least mentioned with 1 020 citations. In comparison, the journal "Technological Forecasting and Social Change" had the highest impact for the theme of "dynamic capabilities and innovation", reported a cite score of 25,5; and "Journal of Business Research", 24,5.

Figure 3- *The pie chart showing most relevant journals according to total publications*

Source: Own elaboration, 2025

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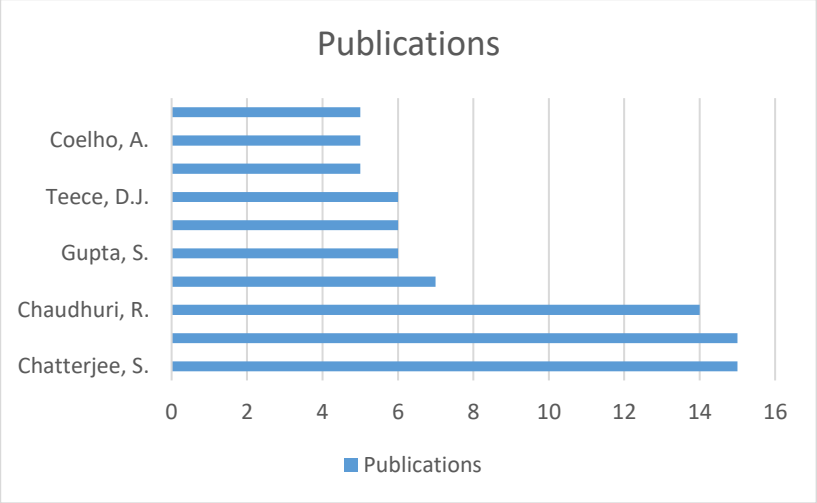
Based on total publications (TP), in Figure 3, we present the most relevant journals in regards to studies dealing with "dynamic capabilities and innovation". The top ten most frequently cited journals on this subject were then found using the Scopus database.

Figure 4- *The bar graph showing most productive authors according to total publication*



The y-axis represents name of author and x-axis represents number of total publication.

Source: Own elaboration, 2025

Based on Scopus database, research question two had revealed the most ten impactful writers in the studies on "dynamic capabilities and innovation", according to TP, as shown in Figure 4. The most prolific writer is "Chatterjee, Sheshadri" with fiften papers. The overview of authors is presented in Table 3.

Table 3- *Top ten productive authors*

Author	*Year of first publication*	*TP*	*h-index*	*TC*	*Current affiliation*	*Country*
Chatterjee, Sheshadri	2014	207	52	6 482	"Indian Institute of Technology Kharagpur"	India
Vrontis, Demetris	1998	464	59	12 976	"University of Nicosia"	Cyprus
Chaudhuri, Ranjan	2006	162	34	3 331	"Pôle Léonard De Vinci"	France
Scuotto, Veronica	2013	81	37	4 261	"Università degli Studi di Napoli Federico II"	Italy
Gupta, Shivam	2014	168	48	8 600	"NEOMA Business School"	France
Priyono, Anjar	2015	29	9	574	"Universitas Islam Indonesia"	Indonesia
Teece, David J.	1996	243	64	69 909	"University of California"	United States
Zamberi Bin Ahmad, Syed Zamberi	2008	132	28	2 529	"Abu Dhabi University"	United Arab Emirates
de Matos Coelho, Arnaldo Fernandes	2003	84	27	2 484	"Universidade de Coimbra, Faculdade de Economia"	Portugal
Giudice, Manlio Del	2005	166	53	10 608	"Sapienza Università di Roma"	Italy

Source: Own elaboration, 2025

Table 3 displays a list of the most prolific writers in "dynamic capabilities and innovation" studies. The first was "Chatterjee, Sheshadri" from the Indian Institute of Technology Kharagpur, India, whose work in this area started in 2014 and who had a total of 207 publications, 6 482 citations and an h-index of 52 at the time of investigation. The second most prolific author was "Vrontis Demetris" from Cyprus, with 464 publications, 12 976 TC, and an h-index of 59 ; next was "Chaudhuri, Ranjan" from France with 162 total publications, 3 331 TC and h-index of 34. Among

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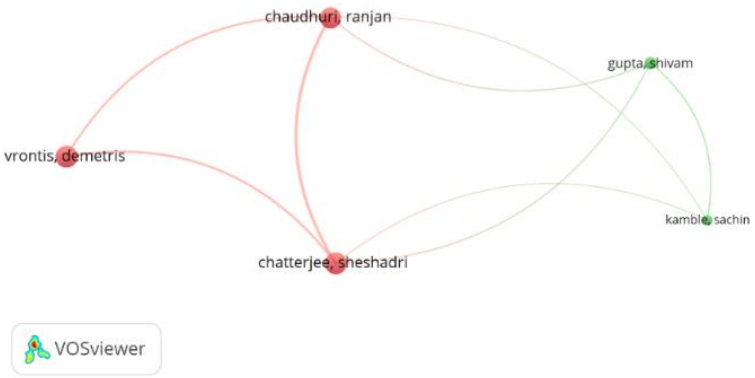
the top ten writers, by overall citation counts at 69 909 and TP at 243, from University of California, United States, is "Teece, **David J".**

Figure 5- *Co-authorship network*

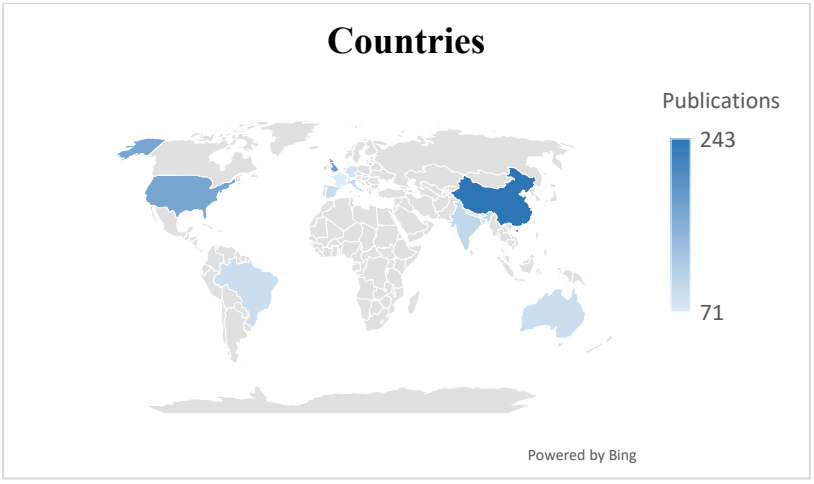


Source: Own elaboration, 2025

The co-authorship network is visualized in Figure 5. Network analysis of co-authorship has aided the understanding of a certain study domain organization (Santos & Santos, 2016). In the area of "dynamic and innovation capabilities", there were a total of 4,005 authors, and Figure 5 only revealed those individuals who had published a minimum of five documents. Sixteen writers made it this threshold. Several of the network's 16 writers do not connect to one another. The largest group of connected authors had five writers. Overall, there were 5 connected authors and 8 links. Its total link strength was also 76. Network authors have research partners. For example, "Chatterjee, Sheshadri" collaborated across multiple research projects with "Vrontis, Demetris", "Chaudhuri, Ranjan", "Kamble, Sachin" and "Gupta, Shivam".

2.3. Important countries

Figure 6- *Most significant countries according to total publications*



Source: Own elaboration, 2025

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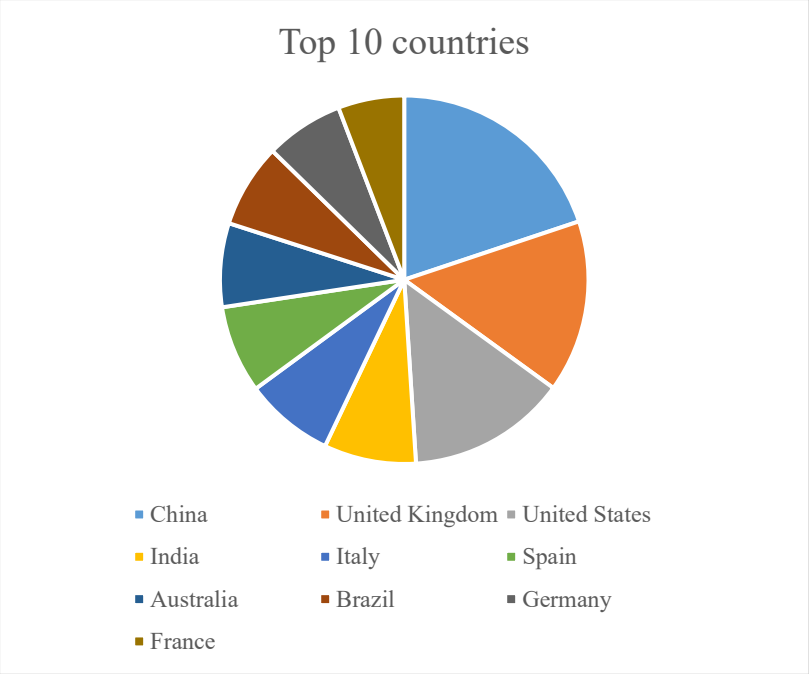
The third study question aimed to find the countries that were most prominent in the number of studies on “dynamic capabilities and innovation”. The most important countries in this regard in terms of TP drew the visualization map in Figure 6 based on the Scopus database.

Figure 7- *The pie chart showing number of publications produced according to country*



Source: Own elaboration, 2025

The next thing the study did was count how many each nation produced, which is represented using a pie chart to give a clearer picture. China was the biggest contributor (see Figure 7), followed by the United Kingdom, United States and India. Brazil is rated eighth.

Table 4 - *Most significant countries*

Rank	*Country*	*TP*	*Most significant academic institution*
1	China	243	Capital University of Economics and Business
2	United Kingdom	185	Edinburgh Napier University
3	United States	171	University of California
4	India	99	Indian Institute of Technology
5	Italy	96	G. Marconi University of Rome
6	Spain	94	Universidad de Sevilla
7	Australia	90	University of Technology Sydney
8	Brazil	90	UNESP – Sao Paulo State Univ
9	Germany	84	Otto Beisheim School of Management
10	France	71	ESCP Europe, Paris

Source: Own elaboration, 2025

According to the Table 4, the most prominent country in the research field of "dynamic capabilities and innovation" is China, with 243 publications, and the most important research institution in this research field is “Capital University of Economics and Business”. 185 publications from the

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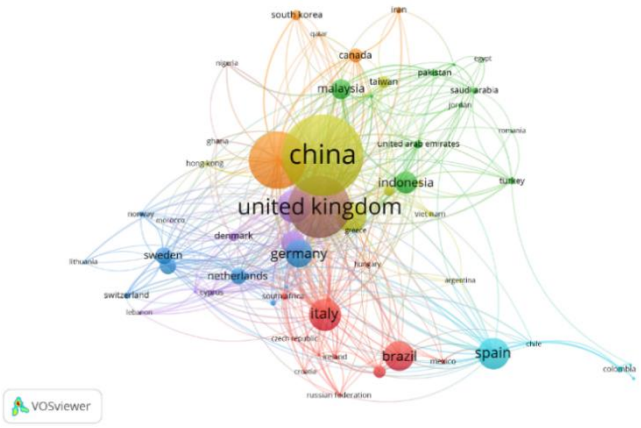
United Kingdom (the main university is the Edinburgh Napier University). The United States, with 171 articles overall, was third overall; University of California was its leading institution in this area. In terms of publications, the difference between the three nations as compared to the subsequent ones is remarkable.

Figure 8- *Map of the co-authorship network with countries*



Source: Own elaboration, 2025

Figure 8 showed the relationship between co-authors and countries related to "dynamic capabilities and innovation" research, using VOSviewer software. While only 63 countries reached the lowest threshold of at least five papers, 108 nations participated in the making and publication of works implied by the authors' institutional membership. Some however cannot be connected with others amongst the 63 nations in the network. The greatest block of linked states consists of sixty-two. Overall, the network consists of 62 countries, with a total connection strength of 2 236. Number of co-authorship and country link strength in the UK was the highest overall (n = 52, across 185 papers; total link strength n = 251). The second most linked nation, as seen in Figure 8, was the USA with 38 links to other countries, 171 papers and 157 total link strength. The map as well reveals the co-authorship connections of other countries. The size of the circles shows the amount of publications each country published owing to an overseas cooperation. The bigger the circle, the more involved in international research the nation. The lines connecting the two countries indicate their respective degree of cooperation, with thicker lines representing a closer relationship and broader cooperation. China for example, has large research collaborations with several nations including "Australia, Brazil, Canada, Indonesia, Italy, Malaysia, Russia, South Korea, UK, United States, …".

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2.4. Significant affiliation

Table 5- *Top educational institutions*

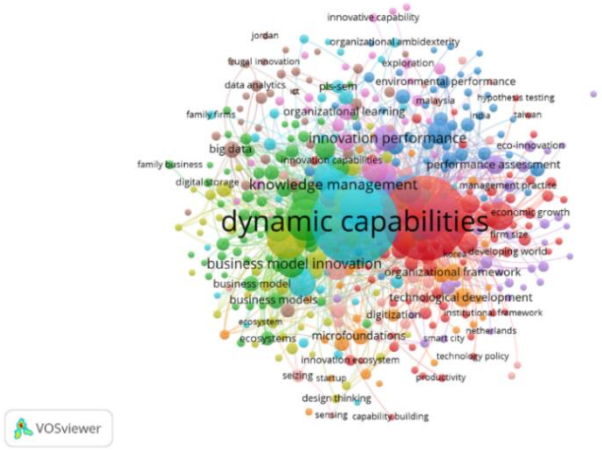
Educational institutions	*TP*	*Country*
"Universidade de São Paulo"	23	Brazil
"Vaasan Yliopisto"	18	Finland
"University of Nicosia"	18	Cyprus
"Indian Institute of Technology Kharagpur"	17	India
"Queensland University of Technology"	16	Australia
"Pôle Léonard De Vinci"	15	France
"Universidade Federal do Rio Grande do Sul"	14	Brazil
"Iscte – Instituto Universitário de Lisboa"	14	Portugal
"University of Technology Sydney"	13	Australia
"Università degli Studi di Torino"	12	Italy

Source: Own elaboration, 2025

Top ten colleges in terms of article count are shown in Table 5. The list may help interested readers, to find relevant universities engaged in research on "dynamic capabilities and innovation" looking for opportunity of potential partnership in research. The finding evidenced that 160 research institutions published research papers related to this topic, being the "Universidade de São Paulo" the world's leading research institute regarding the count of 23 research articles released. In this field of study, Brazil and Australia are the leading countries, with two of the educational institutions in these nations in the top 10.

2.5. Primary research keywords

Figure 9- *A map based on the relationship of co-occurrence with all keywords*



Source: Own elaboration, 2025

The fifth study question concerned the most often used research keywords in the "dynamic capabilities and innovation" literature. Co-occurrence is to the proximity and number of related keywords appearing in papers, which may reflect hot study areas.

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Figure 9 is a map of all the Scopus database keywords determined by their co-occurrence correlations. For documents dating from 2014 to 2024, a total of 5 534 keywords were used. Based on previous research, a threshold for keyword frequency of 5 was established. Thus, for all the time frame, 440 keywords satisfied the needed threshold. The most co-occurrence (Oc) (753) and link strength (424) were recorded under "Dynamic capabilities," followed by "Innovation" (Oc = 717). Other high co-occurring keywords included “Dynamic capability” (Oc = 178), “Enterprise resource management” (Oc = 175) and “Dynamics capability” (Oc = 167).

Figure 9 displays the “co-occurrence network”. This network comprised 440 keywords, 10 groups and 13,730 links with the total strength of links of 27 141. In the same cluster were keywords with similar content. “Innovation” represents group 1 “red”, which was the largest, with 73 keywords. “Enterprise resource management” represents group 2 “green”, with 62 keywords. “Business performance” represents group 3 “blue”, with 46 keywords. “Dynamic capabilities” represents group 4 “yellow”, with 44 keywords. “Resource-based vision” represents group 5 “purple”, with 43 keywords. “Innovation capabilities” represents group 6 “turquoise”, with 39 keywords. Group 7 “orange” had 37 keywords and was represented by “Vision based on dynamic capabilities”. “Innovation strategy” represents group 8 “brown”, with 36 keywords. Group 9 “mauve” had 33 keywords and was represented by “Competitive advantage”. Group 10 “peach” had 27 keywords and was represented by “Creativity”. The circles can also size in correlation to the keywords frequency in the published articles, while the line width shows the degree of co-occurrence of keywords in both the internal groupings and across the different groupings. As the figure shows, all groups were linked, and all 10 groups were closely connected. This indicates the significant interconnection amongst the various research areas in the fields of “dynamic capabilities and innovation”. Table 6 shows the 10 most frequent keywords for this period.

Table 6- *Keyword frequency*

Keyword	Occurrences
Dynamic capabilities	753
Innovation	717
Dynamic capability	178
Enterprise resource management	175
Dynamics capability	167
Sustainability	112
Innovation capability	108
Knowledge management	101
China	86
Business model innovation	86

Source: Own elaboration, 2025

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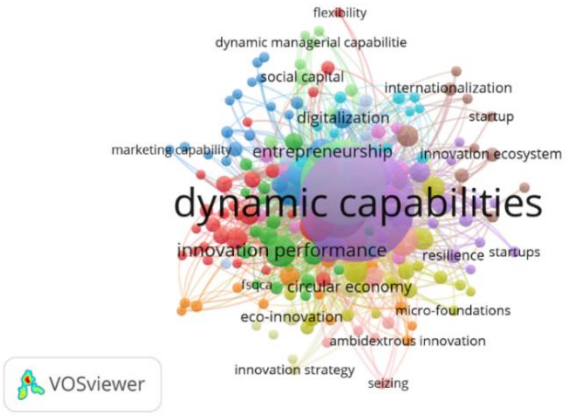
Figure 10- *A map based on the relationship of co-occurrence with author keywords*

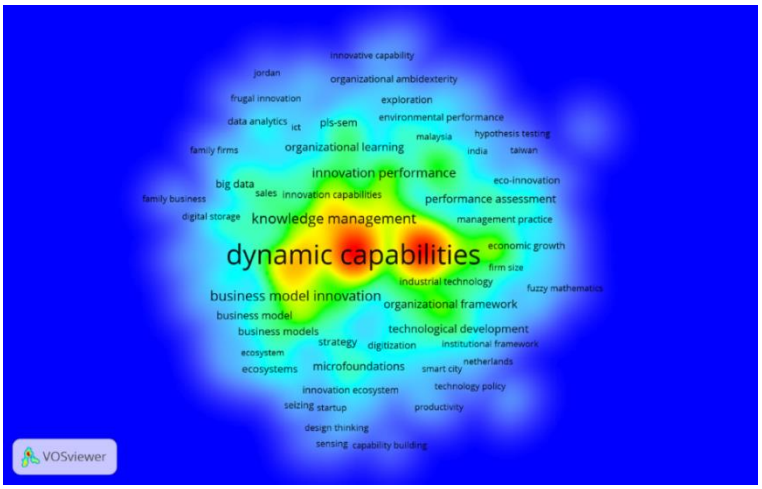


The line linking each keyword represents the relationship between their co-occurrence with other author keywords. The size of the circle shows number of occurrence.

Source: Own elaboration, 2025

The study of the co-occurrence of author keyword is shown in Figure 10. With 182 total connections with other keywords and a global linking force of 1317, the most common term was "Dynamic capabilities" (occurrences =694), followed by "Innovation" (Oc = 381). "Dynamic capability" (Oc = 174), "Innovation capability" (Oc = 75), "Digital transformation" (Oc = 73), and "Business model innovation" (Oc = 70) are other keywords in the map.

Figure 11- *Keyword density map (2014−2024)*



Source: Own elaboration, 2025

A keyword density map might also help. The density map, presented above, gives us a picture of how the nearer a keyword is approaching the red zones, the more frequent it is. Figure 11 shows that keywords such as "Dynamic capabilities", "Innovation", "Enterprise resource management", "Sustainability", "Innovation capability", "Knowledge management", "Business model innovation", "Sustainable development" and "Digital transformation" have attracted considerable scholars' attention in recent years and had become almost saturated. Although, terms such as "innovation orientation", "flexibility" and "networking" have generated little interest. This result might guide academic scholars to the greatest productive fields to focus on.

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2.6. Frequently cited articles

Table 7- *Ten most frequently cited documents*

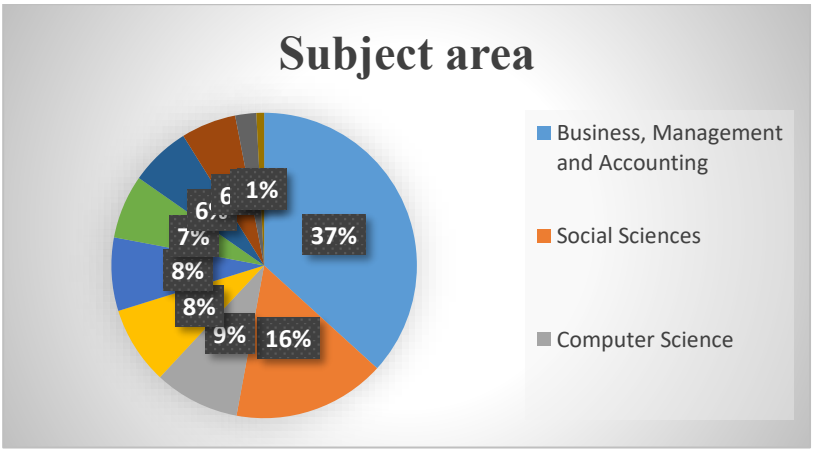
Title	*Author(s)*	*Publication Year*	*Journal*	*Total Citations*	*Publisher*
"Business models and dynamic capabilities"	"Teece, David J."	2018	"Long Range Planning"	1 554	Elsevier
"Building dynamic capabilities for digital transformation: An ongoing process of strategic renewal"	"Warner & Wäger"	2019	"Long Range Planning"	1 495	Elsevier
"Towards an effective framework for building smart cities: Lessons from Seoul and San Francisco"	"Lee et al."	2014	"Technological Forecasting and Social Change"	658	Elsevier
"Digitalization and its influence on business model innovation"	"Rachinger et al."	2019	"Journal of Manufacturing Technology Management"	648	Emerald Publishing
"Dynamic and integrative capabilities for profiting from innovation in digital platform-based ecosystems"	"Helfat & Raubitschek"	2018	"Research Policy"	634	Elsevier
"A Bibliometric Review of Open Innovation: Setting a Research Agenda"	"Randhawa et al."	2016	"Journal of Product Innovation Management"	614	John Wiley & Sons
"Digital transformation and customer value creation in Made in Italy SMEs: A dynamic capabilities perspective"	"Matarazzo et al."	2021	"Journal of Business Research"	611	Elsevier
"The role of dynamic capabilities in responding to digital disruption: A factor-based study of the newspaper industry"	"Karimi & Walter"	2015	"Journal of Management Information Systems"	591	Taylor & Francis
"Green Product Innovation in Manufacturing Firms: A Sustainability-Oriented Dynamic Capability Perspective"	"Dangelico et al."	2017	"Business Strategy and the Environment"	508	John Wiley & Sons
"Dynamic capabilities, creativity and innovation capability and their impact on competitive advantage and firm performance: The moderating role of entrepreneurial orientation"	"Ferreira et al."	2020	"Technovation"	461	Elsevier

Source: Own elaboration, 2025

Table 7 displays the list of ten most cited papers. "Business models and dynamic capabilities" is the most cited paper in the field of "dynamic capabilities" with a total of 1 554 citations. This data may assist readers and scholars discover the greatest pertinent studies.

2.7. Important subject area

Figure 12- *The pie chart showing number of publications produced according to the subject area*



Source: Own elaboration, 2025

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For the seven research question focusing on “dynamic capabilities and innovation” the data were examined by field of study to identify the subject area most closely related to the previously identified concepts. The greatest percentage seen in Figure 12 was in the "Business, Management and Accounting" field (37% or 1122 of the papers published). Thus, it appears to be the significant topic area of “dynamic capabilities and innovation”. This was followed by social sciences area papers (493 [16%]). The field with the least number of papers was Mathematics (n=25). The rest of the data from the subject area on "dynamic capabilities and innovation" from several papers are shown in Figure 12.

3. Discussion

This paper presents a bibliometric study that offers a global perspective of the "dynamic field of innovation". The results revealed the evolution and growth of an academic discipline with rising researcher attentiveness and diverse contributions from different countries and institutions.

3.1. Trends in publication and geographic distribution

Based on Scopus database, the last eleven years (2014-2024) can be analyzed by looking at the number of publications on "dynamic capabilities and innovation" as on date it shows an upward trend. Teece et al. (1997); Eisenhardt & Martin (2017) and Zollo & Winter (2002) stressed the importance of an organization dynamic capacities of its capital of "human or material resources" to configure effectively and efficiently innovations.

Moreover, the findings in the research revealed that the top influential country regarding "dynamic capacities and innovation" research was China, with the most publications. The top University in China was Capital University of Economics and Business. A Chinese study finds two distinct kinds of dynamic capabilities critical to organizational change. “Dynamic adaptive capabilities” linked to exploitation and implementation processes of resource that are underpinned by such processes as the acquisition, internalization and the dissemination of existing information, and the reconfiguration, divestment and the integration of resources. “Dynamic innovation capabilities” are associated with the creation of entirely new capabilities through processes of discovery and pathway construction, supported by the research, experimentation and risk-taking, and also the selection, financing and execution of projects (Dixon et al., 2014). A second is one on how dynamic capabilities impact acceptance of management innovations (Lin and al., 2016). A third study explores the role of innovation as a mediator between dynamic capabilities and organizational performance (Zhou and al., 2019).

3.2. Influential journals and prolific authors

The bibliometric study indicates that the greatest pertinent journals were published by Elsevier in “dynamic capacities and innovation”. The paper most commonly cited explored the effect of green innovation strategies on sustainable competitive advantages, with an emphasis on the mediating role of “dynamic capabilities”. This study has significant value for companies wishing to

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implement “green innovation projects”, by integrating “strategic management theory” and “green management theory”.

The most prolific author of this study is “Sheshadri Chatterjee” from the Indian Institute of Technology Kharagpur who has written a paper investigating the impact of “innovation and technological competence” focused on big data of SMEs on the “supply chain systems” of these firms.

3.3. Educational institutions and research keywords

From behalf of the 160 "universities and research institutes" working on producing research papers in the field of "Dynamic Capabilities and Innovation", the "Universidade de São Paulo" was the leading research institute worldwide that produced 23 research papers. “Brazil and Australia” are the top nations in this field of research, with two educational institutions from these countries in the top 10.

In addition, the results showed "Dynamic capabilities" and "Innovation" are the keywords most often used to represent the “dynamic capabilities and innovation” research domains. All other keywords also displayed high co-occurrence with both of these terms.

3.4. Subject areas and their implications

“Business, Management and Accounting” were found to be the most important subject area. We merge it with other social science disciplines to examine and understand the theoretical and practical phenomena related to “dynamic capabilities and innovation”.

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Conclusion

This study was a bibliometric review of 1468 papers on the topic of "dynamic capabilities and innovation" between 2014 and 2024. The majority among the relevant publications belonged to Elsevier, which has significantly advanced the field “dynamic capabilities and innovation”. Furthermore, the most productive author is "Chatterjee, Sheshadri", currently affiliated to Indian Institute of Technology Kharagpur, India, who has 6482 citations since his first publication in this field in 2014. Moreover, the analysis showed that China, with 243 publications, is the eminent country of this research, and its most highly prolific institution is Capital University of Economics and Industry. “United States” showed the highest overall connection strength of co-authorship. The “University of São Paulo” is the leading productive research organization worldwide, with 23 articles. In the majority of the papers analyzed in this study the keywords “dynamic capabilities” and “innovation” were frequently used. The most cited article is “Business models and dynamic capabilities”, with 1 554 citations. This topic is particularly relevant in "Business, Management and Accounting" and "Social Sciences". Also included were many more fields, such as "Computer Science", "Engineering", "Environmental Science" and "Decision Sciences".

This study formulated a range of policies, practices and implications about the future evolution of the domain of study on "dynamic capabilities and innovation". This work provides new ideas for the conceptual framework of “dynamic capabilities and innovation” research, through the identification of global co-occurrence and SNA using Scopus database.

Although this article gives a state-of-knowledge update on “dynamic capabilities and innovation”, our findings could pave the way toward future research by highlighting gaps in the field and guiding future studies. This study’s findings are valuable to organizations of all sorts and size.

One should underline the limitations of this work. The main limitation concerns limited information accessibility, since it used only the Scopus database to identify publications for bibliometric analysis. Although Scopus is a exhaustive database, it does not include every study related to "dynamic capabilities and innovation". Different databases, such as "Web of Science", "IEEE Xplore Digital Library" and "Springer Link", could have provided different information and results. Readers should therefore exercise caution when generalizing results.

The keywords used were “dynamic capabilities” and “innovation”. Using other keywords connected to "dynamic capabilities and innovation" would have helped to deepen the study as well, such as "Dynamic managerial capabilities", "Managerial innovation", "Innovation capacity", "Innovation performance", and many others.

Furthermore, Scopus does not analyze full texts but restrict itself only to the terms in articles' title, abstract and keywords as bibliometric studies have shown. As a result, further studies may dive deeper into “dynamic capabilities and innovation”. Researchers might, for example, examine the industries that have already been involved in these studies or their methodological differences (quantitative, qualitative or hybrid), key variables used and data collection. Future research might

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investigate which theories underpin studies on "dynamic capabilities and innovation," therefore showing the most dominant theoretical viewpoints.

Earlier studies have shown the importance of “dynamic capabilities” in the innovation process organizations carry out to change their operations. In this view, our study indicates academics focusing on innovation processes and, more broadly, business strategies that they can use the revived framework of “dynamic capabilities” to understand the various routes followed by businesses as they move toward innovation.

Generally, research illustrates a significant relationship between both dynamic capabilities and management innovation throughout the use of the process and suggestive of improved capacity to innovate through dynamic capabilities of the company; this especially holds true in the case of radical management innovation (Jia et al., 2023). Additional studies could explore topics not already addressed, like “how dynamic capabilities impact the management innovation generation process itself”, “why some managers pursue innovative possibilities while others do not” or “the influence of the company's resources that promote these capabilities on the formation of dynamic capabilities and managerial innovation”. All of these future tendencies in leveraging "dynamic capabilities and management innovation" are likely to become more pronounced and dominant over time.

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