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The Spectrum of Creativity in Scientific Research: A Scientometric Analysis of Incremental and Radical Creativity

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ABSTRACT

Creativity plays a significant role in the development of new products and provides sustainable solutions. It is also an essential component of a successful organization. Development in bibliometrics tools has paved the way to address interdisciplinary research questions. Recently, there has been a trend among researchers to attain research objectives through bibliometric or scientometric analyses. These methods have implications for research and product development. The primary research objectives of such a study are to investigate research trends, collaborations, research themes, impact, application, and knowledge advancement within a particular domain of incremental and radical creativity of such measurements in policy and management contexts. For this purpose, we used VOS viewer software for analysis and 2494 articles collected from 1999 to 2023, inclusive, from the Web of Science database, based on keywords. Our results indicated the English language as the main source of publication. The USA was a leading country in incremental and radical creativity research, followed by the People's Republic of China and England. The Journal of Product Innovation Management was most productive in incremental and radical creativity. The Polytechnic University of Milan and Xián Jiao Tong University were leading organizations. The keyword radical innovation appeared frequently, followed by innovation. Present research findings provide valuable information across diverse industries, mainly those involved in product development, innovation, and strategic planning, as well as business, management, and academia. It also offers critical insight that can significantly influence managerial decisions, particularly research and development (R&D) and organizational resource allocation. Moreover, it demonstrates the applicability to the changing demands of researchers and practitioners.

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Introduction

In addition to advancing scholarly knowledge of creativity, it adds something special to the body of knowledge and is useful for both present and future research as well. Distinctive and beneficial concepts establish the groundwork for creative goods. Creativity plays a vital role in generating products and introducing processes and services. Creativity is a cutting-edge process leading to valuable projects and outcomes (Paulus, 2000; Runco & Jaeger, 2012). To attain desirable and lasting solutions, models and algorithms might be adjusted to enhance creativity. Amabile and Pratt (2016) have argued that the continuum between performance and creativity depends on original heuristics and radical discoveries. Researchers in psychology and sociology have researched creativity; the former has looked at the personal traits of creative individuals, while the latter has examined the environmental elements that either support or obstruct (Nakano, 2007). In numerous studies, researchers have evaluated employee performance by asking supervisors to assess various aspects of their employees' work. These aspects include demonstrating originality, using new or existing methods and equipment, and generating revolutionary ideas within the field (Lucy L. Gilson & Nora Madjar, 2011). However, some of these studies identified a significant limitation: the conflation of novelty and usefulness in their criteria (Bauer et al., 2021). This approach fails to distinguish between highly and somewhat practical ideas and extremely valuable and suitable, but only moderately naive. The lack of differentiation between these two dimensions hampers a nuanced understanding of employee creativity and innovation (Stewart-Williams & Halsey, 2021).

Gilson et al. (2012) classified creativity into two groups: radical creativity, which involves ideas that significantly deviate from existing practices and alternatives, and incremental creativity, which involves minor adjustments to current practices and products. Research indicates differences between the antecedents of the two forms of creativity (Lucy L. Gilson & Nora Madjar, 2011). The same cognitive or thinking process influences both forms of creativity. Additionally, self-directed learning through experience gained through accumulation is the source of employee innovation (Tien et al., 2019). Radical creativity is widely recognized as essential to an organization's core competencies and long-term viability in the highly competitive market (Liu et al., 2021). Meanwhile, incremental creativity frequently makes flawed ones better. Although it may sound unusual or uncommon, organizations often require this in practice, mainly when issues are complex or have no known solutions (Shalley & Gilson, 2017). Furthermore, the only things that will help someone succeed and stay on top of things are radical ideas of work performance as the survival of the fittest. It is a well-known concept in the literature and practices of innovation, where it is crucial to surpass competition. Conversely, employees may find it unpleasant to pitch unconventional ideas to others and reinvent existing concepts (Norman & Verganti, 2014). People tend to favor unoriginal ideas over original ones because they find them more comfortable. This means that while pursuing other of value of novel solutions, people frequently have to fight or even become irrationally challenging (Petrou & Jongerling, 2022). A successful innovation approach frequently combines incremental creativity for study and ongoing development with radical creativity from game-changing breakthroughs (De Vaan et al., 2015).

Technology innovation is essential for advancing both processes and products. Product innovations concentrate on developing and introducing new goods that improve their usefulness. Furthermore, by offering fresh resources, techniques, and platforms that stimulate original thought and make it possible for it to be realized, innovation and technology have a big impact on creativity. They enable people and institutions to think beyond the box, encouraging both radical and incremental creativity that results in ground-breaking discoveries and ongoing development (Mariam et al., 2023).

Incremental creativity should be connected to work by enhancing or changing goods and services and producing without doing so at the expense of efficacy (Petrou & Jongerling, 2022; Shalley & Gilson, 2017). Not only should incremental improvement in performance, learning, and adjustment, but it should also improve employee well-being. In other words, gradual creativity is perhaps a better strategy to ensure a satisfactory result than a potentially disastrous ground-breaking solution. It has been discovered that methods to optimize work processes that enhance one's employment without incurring excessive risk or expense have a negative correlation with employee tiredness (Zhang et al., 2021). These small task adjustments have been shown to improve job and adaptable performance. Lessen employee tiredness and give workers the resources they lack or empower them while lowering their uncertainty (Petrou et al., 2018), using existing organizational resources, adapting activities, updating technologies, reviewing client connections, or changing one's perspective. All of these alterations and readjustments mesh nicely with the central concept of incremental creation (Delgado et al., 2020).

Scientometrics, including social sciences and scientific domains, heavily intersect (Begum, 2022). Scientometrics is an interdisciplinary field and has implications for natural and social sciences. It focuses on evaluating and interpreting academic publications (Mingers & Leydesdorff, 2015). Researchers and policymakers use scientometric analysis to benchmark government and non-government organizations to accomplish research and policy objectives. The co-authorship network research study in academia is a popular instrument for evaluating collaboration trends and locating top scholars, publications, sources, associations, and organizations (Mustak et al., 2021). The primary goal of this study's scientometric analysis is to conduct an updated review that would enable an evaluation of the body of knowledge already acquired and offer a more comprehensive picture of the particular study field. This has made it possible for them to determine the current state of this research issue and to identify areas that still require investigation (Batista-Canino et al., 2023). Moreover, scientometric and bibliometric complement each other to describe research productivity, academic journals, and other parameters (Leydesdorff & Milojević, 2012). Two terminologies have a close affinity (Kastrin & Hristovski, 2021). Bibliometric analyses measure the influence of research publications and academic journals, comprehension of scientific citations, and visualization of the research status. Moreover, we can also identify key themes, i.e., product trends, business, and human resources management, etc. (Lim & Kumar, 2024). In the last decade, there has been a growing interest in innovative research in business management; therefore, several algorithms, models, and software are being used to write scientific literature reviews (Bhatia & Gangwani, 2021). It is a common practice to identify leading countries, organizations, authors, prolific journals, and research trends in bibliometric studies.

In Saudi Arabia's research, scholars conducted the scientometric analysis and added that existing literature has extensively explored general trends in management sciences but has largely overlooked the subfield of incremental and radical creativity and innovation. (Khan et al., 2021). Furthermore, while prior studies have predominantly focused on the USA and European countries with advanced methods, there is limited research utilizing advanced tools like *VOS* viewer to uncover nuanced patterns. By doing so, this study not only fills that gap but also extends the current understanding of incremental and radical creativity, but also provides actionable insights for scholars and practitioners, advancing the field of management sciences.

Present research findings provide valuable information across diverse industries, mainly those involved in product development, innovation, and strategic planning, as well as business, management, and academia. It also offers critical insight that can significantly influence managerial decisions, particularly research and development (R&D) and organizational resource allocation. The current study helps administrative practices, such as managers strategically balancing their seeding money to optimize product refinement and radical innovations. Finding

research trends, gaps, and collaborations that enlighten managers and policymakers is one of the useful recommendations made by such studies. For example, they can direct R&D strategies based on significant research themes, prioritize financing for new fields like sustainability or AI in management, and foster international collaborations by showcasing significant regions or authors.

Furthermore, such analysis can guide managers to identify the company's key stakeholders, enabling strategic alliances between top companies and bolstering their innovative objectives. The primary research objectives of such a study are to investigate research trends, collaborations, research themes, impact, application, and knowledge advancement within a particular domain of incremental and radical creativity research from 1999 to 2023, of such measurements in policy and management contexts. It also aims to identify gaps, emerging trends, and influential networks to inform future research and association. Additionally, by linking findings to real-world applications, these studies bridge theory and practice, supporting policymaking, organizational strategies, and innovation. Moreover, they offer insights into the evolution of management disciplines, guiding future research and promoting strategic growth in the domain by analyzing the field of evolution, trend, and collaboration. Meanwhile, enabling the field to address emerging challenges effectively.

Consequently, scholars aiming to conduct studies in this domain will gain insight into many criteria present. Crucially, classifying the topic of bibliometric and scientometric studies can produce actionable insights for researchers in both radical and incremental creativity by delineating the study path of bibliometric and scientometric analysis.

This study seeks to identify the prevalent keywords utilized by researchers in the area of incremental and radical creativity from 1999 to 2023, offering insights into evolving emphasis in this field. This research examines the main themes and their associated subfields, providing a thorough understanding of the fundamental areas of inquiry within this domain. This study analyzes the most cited sources, including influential journals, seminal publications, and significant contributions from highly cited authors, to underscore the foundational works that shape the field. The analysis identifies sensational documents, authors, and researchers' institutions exhibiting significant bibliographic coupling, revealing intellectual and shared research influences. Moreover, it examines co-citation patterns to identify frequently co-cited authors, papers, or publications, indicating shared academic recognition and influence in the literature. This research addresses interconnected objectives, providing a comprehensive overview of the intellectual landscape of incremental and radical creativity and offering insights into theoretical and practical development.

Materials and Methods

Data collection

We carried out this extensive analysis to determine the incremental and radical creativity research orientations and publications included in the Web of Science (WOS), Core Collection. All research archives from 2000 to July 2023 were retrieved. This is justified by the fact that i.e. Web of Sciences (WOS) covers a greater spectrum of scientific publications databases than other databases. Likewise, WOS indexes documents comparatively more quickly, increasing the likelihood that more recent articles will be retrieved (Machado et al., 2020). Compared to other databases (like Scopus and Google Scholar), this one is of greater quality, has more specialist data, and can accommodate citation analysis over an extended period. In the present study, we carried out a scientometric analysis of radical and incremental creativity. The data collection and schemes are described in Figure 1.

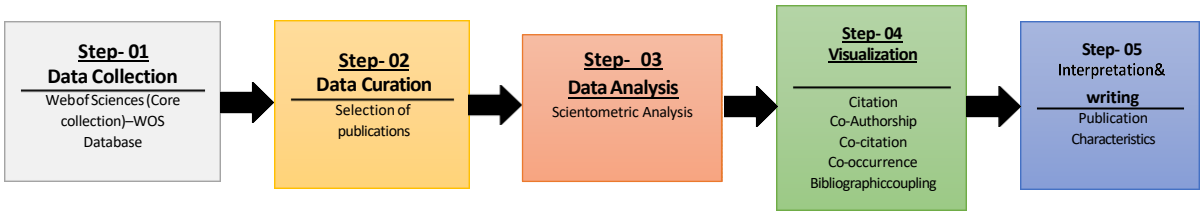

Figure 1: Workflow of data mining, analysis, interpretation, and writing

Data curation and analysis

Title, abstract, author keywords, and Key Words Plus in the Web of Science database were searched to find pertinent papers, and we removed others (Cantrell et al., 2022). Subject terms were also identified. We downloaded the search results. In the next step, data was filtered according to the time frame and refined to ascertain the time frame. We employed a *VOS* viewer in our research. *VOS* viewer is a handy software offering an excellent visualization platform. It provides various maps to help comprehend complex and big data in detail (Chen & Song, 2019; Darko et al., 2020). To determine the research directions and trends for the Analysis of Incremental and Radical Creativity, we conducted an extensive analysis of periodicals. The dataset period was 1999-2023.

Data enclosure and segregation criteria

All relevant articles about the Analysis of Incremental and Radical Creativity were included. Our data contained all types of publications, but we focused on research articles among all of these. Additionally, publications published in other languages were incorporated. Scopus and other databases were excluded.

Data Analyses

Initially, data was searched by using the keyword "RADICAL CREATIVITY" and obtained 666 publications. Later, we added "INCREMENTAL CREATIVITY," "RADICAL INNOVATION," "INCREMENTAL INNOVATION," and "RADICAL AND INCREMENTAL. CREATIVITY "EMPLOYEE INNOVATION" as well and obtained 2707 published SCI manuscripts. The dataset was refined by selecting research articles as the main publication of a current study, due to which publication count was reduced to 2506. Moreover, this dataset was redefined based on a timeline (1999-2023), which led to a publication sum of 2494. This final dataset version was downloaded in Tab-delimited file format. VOS viewer version 1.6.20 (van Eck et al., 2010; Waltman et al., 2020) was used to analyze the data. All necessary aspects of bibliometrics and published research articles were studied. Additionally, we examined the popular themes and keywords.

Results

WOS Dataset

The record encompassed 2,494 documents published on WOS between 1999 and 2023. This database revealed that published material was in English (2427;97.31%), trailed by Spanish (17, 0.68%) as shown in Table 1. Ninety-seven (97) countries contributed to the scientific output in Incremental and Radical Creativity Research. The United States published most manuscripts (500; 24.048%), followed by the People's Republic of China

(491;19.687%) and England (280;11.227%). The five most thriving institutions are in Table 1. The University of London dominated the scientific fraternity with 33 publications (1.323%).

Table 1: Data Corpus in Incremental and Radical Creativity

S.no		Parameters	Sum	Percentage
1.	Research Institutes	University of London	33	1.323
		Polytechnic University of Milan	31	1.243
		University System of Ohio	28	1.123
		Erasmus University Rotterdam	26	1.043
		Xi an Jiao Tong University	25	1.002
2.	Language	English	2427	97.314
		Spanish	17	0.682
		Russian	16	0.642
		French	5	0.200
		Polish	5	0.200
3.	Country of origin	USA	500	20.048
		People's Republic of China	491	19.687
		England	280	11.227
		Germany	175	7.017
		Spain	164	6.576
4.	WOS Categories	Management	1184	47.474
		Business	807	32.358
		Engineering Industrial	285	11.427
		Operations Research Management Science	140	5.613
		Economics	136	5.453
5.	Publisher Houses	Elsevier	562	22.534
		Wiley	359	14.395
		Emerald Group Publishing	320	12.831
		Taylor & Francis	287	11.508
		Springer Nature	140	5.613
6.	Open Access	All Open Access	902	36.167
		Gold	304	12.189
		Gold-Hybrid	208	8.340
		Free to Read	67	2.686
		Green Published	362	14.515
7.	Research Areas	Business Economics	1571	62.991
		Engineering	416	16.680
		Psychology	175	7.017
		Environmental Sciences Ecology	168	6.736
		Science Technology Other Topics	165	6.616

Current research hotspots and keywords

Co-occurrence maps that incorporated both textual and numerical data presented the six research themes. The red cluster included terms like technological innovation, competitive advantage, practice, value, disruptive innovation, opportunity, source, and challenge, and the green cluster comprised creativity, radical creativity, breakthrough innovation, exploitation, influence, knowledge sharing, and exploration. The yellow cluster showed product innovation, company, market orientation, mediating effect, and empirical study. The light-blue cluster indicated employee innovation, organization, a moderate mediation model, and

time. The dark-blue cluster was associated with the framework, product, theory, application, process innovation, risk, barrier, and driver. The purple cluster highlighted complicated leadership, context, employee innovation, behavior, future, contribution, and new product development (Figure 2 a).

The co-occurrence of text maps in overlay visualization showed that incremental and radical creativity trends have recently been focused on radical creativity, leadership, breakthrough innovation, and a moderate mediate model, as mentioned in a yellow cluster (Figure 2 b). Keywords provided by authors were selected on an occurrence basis (minimum five times). Keywords, along with documents, were analyzed. Of the 6,592 keywords, 233 fulfilled the criteria. Keyword analysis revealed 233 keywords in 11 bunches. The keyword "radical innovation" (occurrence 388; total link strength 572) was frequent, trailed by "innovation" (occurrence 330; total link strength 471), "incremental innovation" (occurrence 161; total link strength 302), and "creativity" (occurrence 105; total link strength 105) (Figure 2 c, 2 d). Table 2 illustrates the ten most prevalent contributors offered important terms, determined by their co-occurrence and total link strength values.

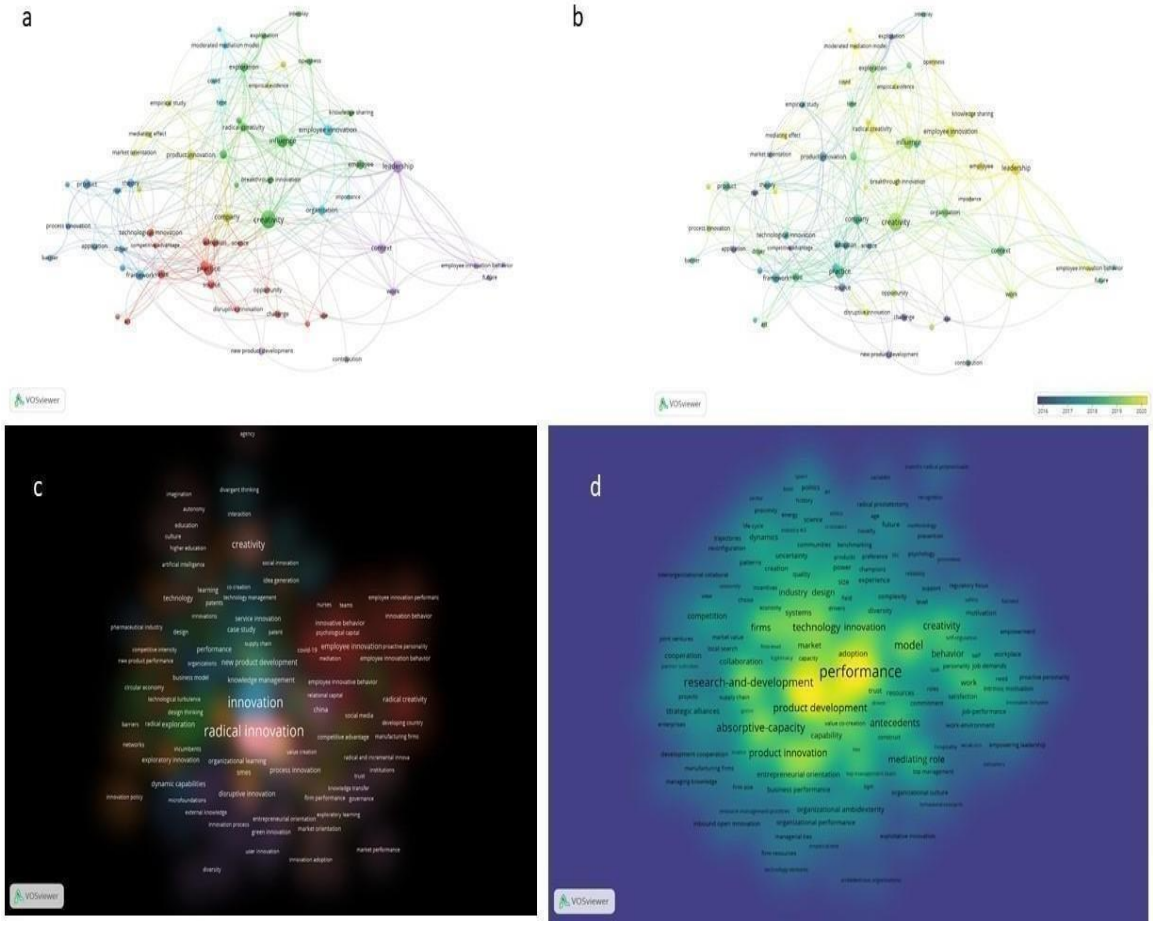

Figure. 2

Figure 2: Scientometric examination of the occurrence mapping of phrases connected to research themes utilized in titles. A) The network visualization of the study themes is predicated on the aggregate number of terms employed in the title field. B) In overlay visualization, the timeline of the prolific research themes is based on color distribution. C) cluster density of author-provided keywords analysis revealed the keywords in varicose clusters, and the size of clusters depends on the co-occurrence. D) Item density visualization depicts the keywords plus the networking of the prolific co-occurring keywords.

Table 2: Top 10 Author-Provided Keywords

S.no	Keywords	Occurrence	Total link strength
1.	Radical Innovation	388	572
2.	Innovation	330	471
3.	Incremental Innovation	161	302
4.	Creativity	105	105
5.	Open Innovation	68	134
6.	Absorptive capacity	60	125
7.	Innovation Performance	57	87
8.	New Product Development	42	75
9.	Employee Innovation	38	53
10.	Product innovation	37	71

Scientometric citation analysis

Nine hundred and ten journals have published articles about incremental and radical creativity in multiple ways. Five minimum numbers of publications were kept as a standard. Accordingly, 75 periodicals fulfilled the threshold. "Journal of Product Innovation Management" documented 94 publications with 7778 citations (Figure 3a).

In the article citation analysis, document citations were considered. There are two thousand four hundred and ninety-four research publications. The criteria of the threshold were selected; the minimum number of citations of documents was chosen to 5, and 1594 documents met the threshold. The article authored by Andriopoulos (2009) was cited 1186 times (Figure 3 b). Five thousand eight hundred and fifty-four (5854) authors contributed to Incremental and Radical creativity research, and just 44 met the standard. These 44 authors are in six clusters (Figure 3c). Ritala, Paavo, was a highly cited author with 1270 citations and a total link strength (59). Overall, 23,16 organizations contributed to the Incremental and Radical creativity. According to the software setting, 237 organizations reached the analysis standard (Figure 3d).

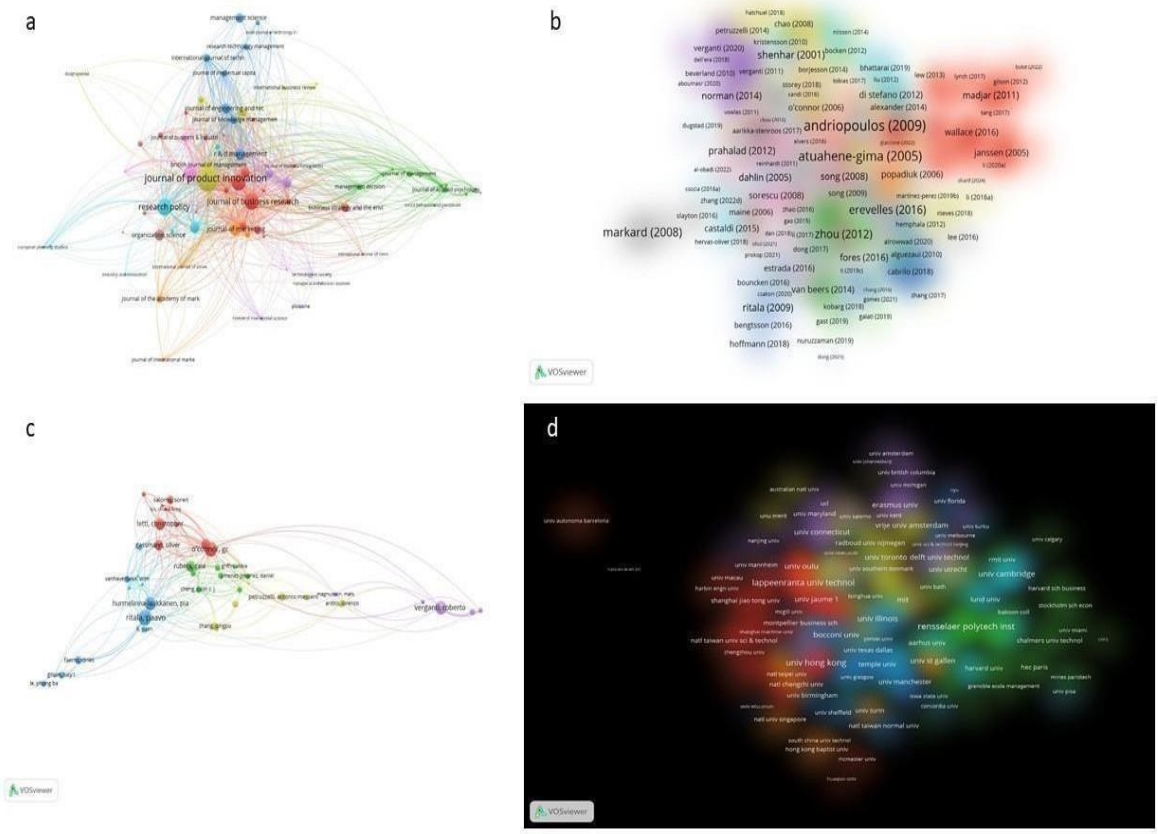

Figure. 3

Figure 3: Scientometric analysis of the citations. A) The network visualization of the most prominent journals on incremental and radical creativity. B) The cluster density of document citation analysis. The larger bubble size denoted the maximum number of citations and publications. C) The network visualization of citations based on authors. The node size reveals the number of sources cited by the writer. D) Cluster density visualization of research organizations contributing to the field of Radical Creativity.

The Polytechnic University of Milan topped, as evidenced by the greater link strength analysis (29 documents; 1364 citations). Country citation analysis showed that 60 countries met the analysis threshold out of 96 countries (Figure 4a). The USA was a significant contributing country to Incremental and radical creativity research. Nevertheless, China has emerged as a top contender and has significantly contributed in the past years. An apparent trend in nodes was noted. The overlay visualization depicted a clear variation in current research nodes. This trend was observed in China (Figure 4 b).

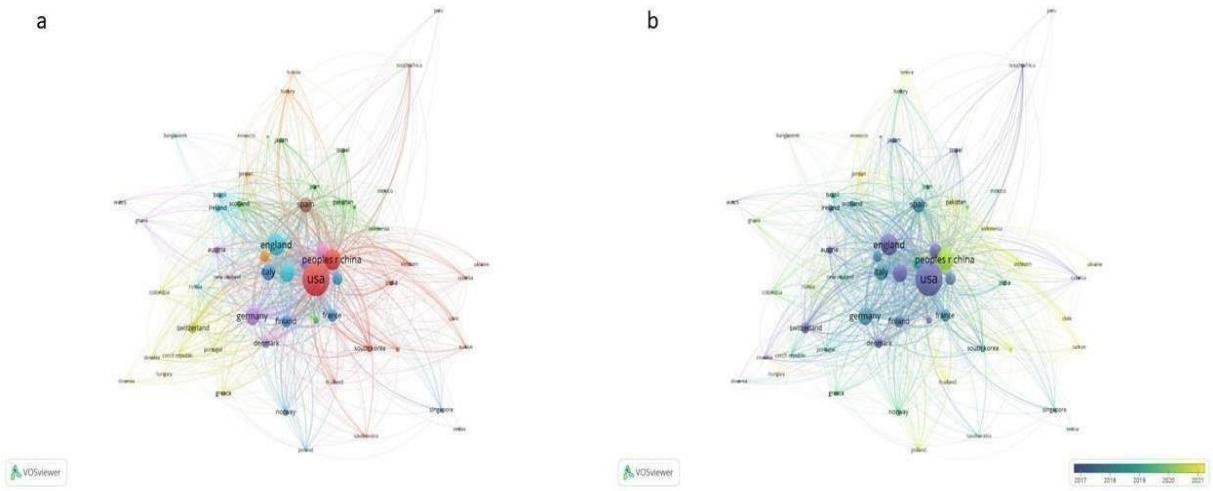

Figure. 4

Figure 4: The bibliometric overlay study of national citations. A) The country overlay analysis is predicated on the aggregate of total citations annually. B) The nation overlay analysis illustrates the color fluctuations that delineate the research contributions throughout time. The United States made greater contributions during the 2010s, while China assumed a prominent position in Radical Creativity research post-2010.

Co-authorship Analysis

The measurements of authors' locations and other characteristics are used to build co-authorship network analyses. Figure 5 (a) shows that the top country by total link strength, number of citations, and number of publications is the United States of America, with 499. Publications showcasing incremental and radical creativity have been authored by 5,854 individuals in the scientific community. Just 44 out of 5,854 authors demonstrated a very good connection. A total of 14 articles co-authored by Roberto Verganti have garnered 1031 citations. (Figure 5 b).

Two hundred thirty-seven (237) organizations had published related manuscripts and depicted collaborative connectivity. The Polytechnic University of Milan published 29 documents with 1364 citations, followed by Xi'an Jiao Tong University (25 papers with 556 citations) (Figure 5 c).

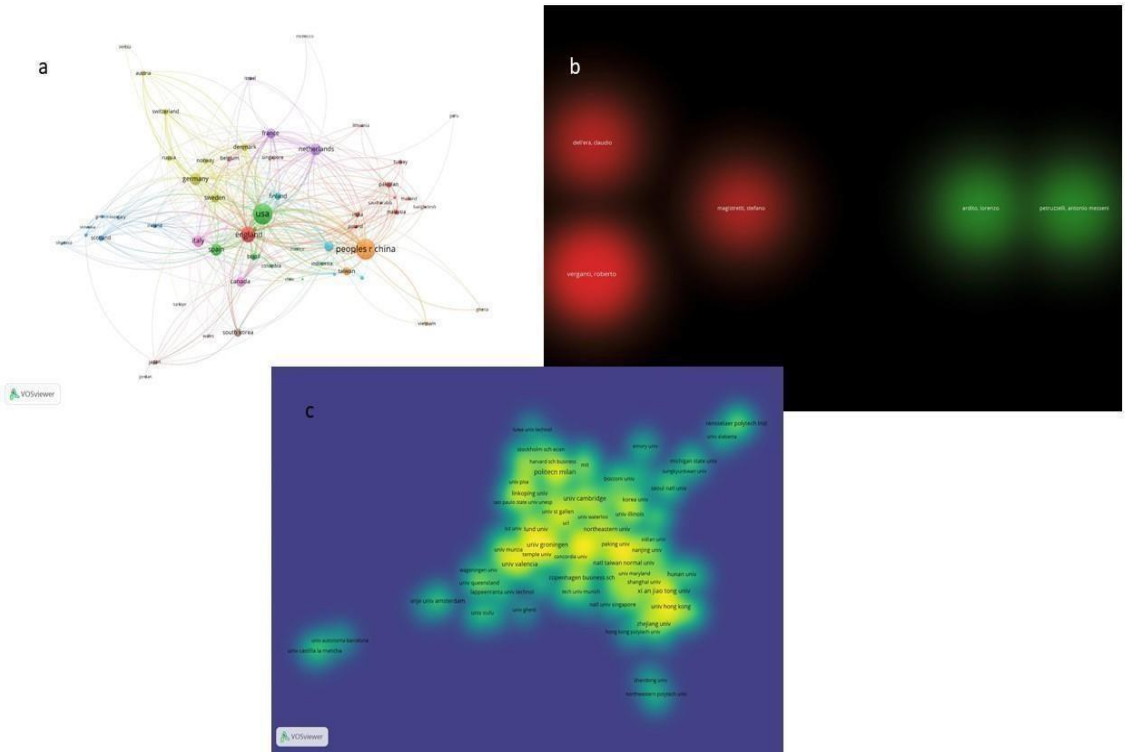

Figure. 5

Figure 5: Bibliometric investigation into co-authorship indicates that the thickness of linkages signifies the intensity of collaboration between nodes, while the size of the nodes reflects the centrality of items. A) The co-authorship network of partnering nations. Diverse colors denote distinct clusters, whereas the diameter of circles represents the number of publications. The line width indicates the strength of the connections between nations. B) The co-authorship map illustrates the authors collaborating in the domain of Radical Creativity. C) The cluster density network visualization of the co-authorship map of the organizations. The size of the bubble signifies the number of publications generated by organizations. The Polytechnic University of Milan has more publications and citations.

Bibliographic coupling and co-citation

For their bibliographies, many writers cite works by other authors. Meanwhile, co- citation detects pairs of cited works. Scientific literature suggests that co-citation is progressive. The bibliographic coupling results are depicted (Figure 6). Among 2494 documents, 1000 highly liked publications based on total link strength were analyzed. The main piece of writing appeared in the "Creativity and Innovation Management" by Cheng Shu et al. in 2021 (Figure 6 a).

Among 910 journals, "Journal of Product Innovation Management" seemed as a core journal due to 94 Incremental and Radical Creativity and 7778 citations with 110146 total link strength (Figure 6 b). Figure 6 c, shows Colin C.J. Cheng as the core author (11 documents; 265 citations; 5546 total link strength). Xián Jiao Tong University emerged as a central institute with 25 publications, 556 citations, and 58194 total link strength (Figure 6 d). Bibliographic coupling analysis of countries revealed the People's Republic of China (documents 491; citations 8786; total link strength 6,66228) appeared as a leading or core country (Figure 6 e).

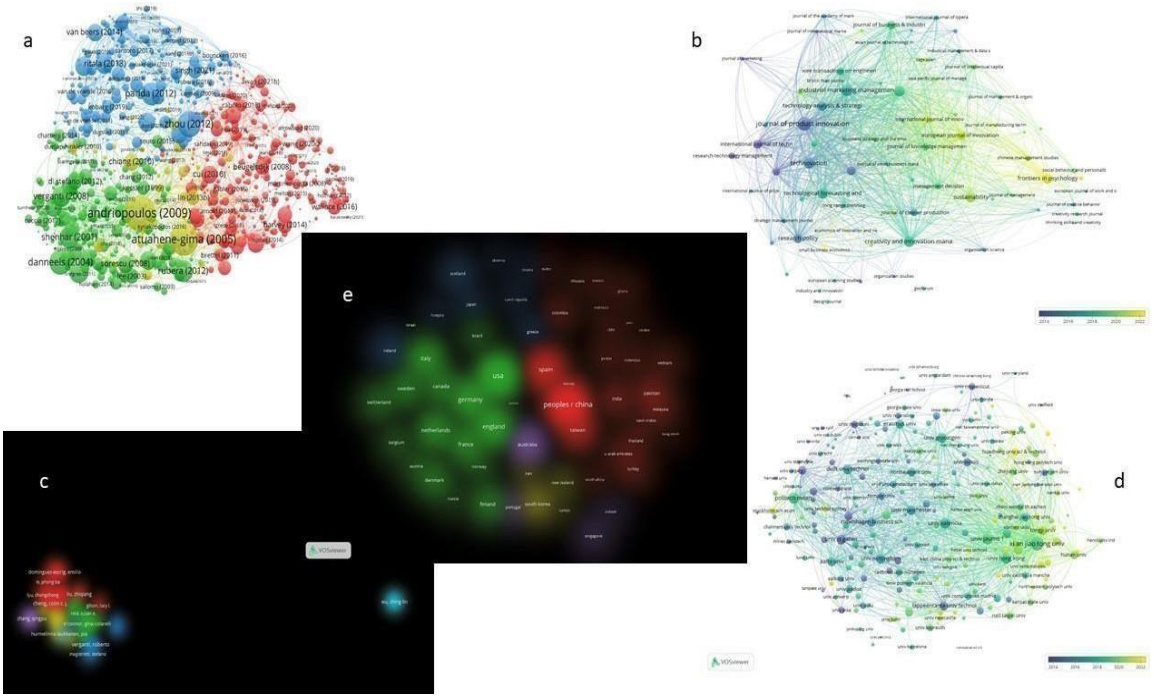

Figure. 6

Figure 6: Scientometric investigation into bibliographic coupling and co-citation in Radical Creativity research. A) Analysis of document network visualization through coupling; B) Overlay visualization mapping of bibliographic coupling based on sources/journals; C) Cluster density network analysis of authors; D) Overlay visualization network mapping of bibliometric coupling analysis for prominent research organizations; E) Cluster density network analysis of bibliographic coupling. Indicating leading countries in Radical Creativity research.

The bibliometric analysis of the total cited references generated 103397 out of 581 meets the threshold based on 20 as a minimum number of citations of cited references (Figure 7 a). The size of nodes signifies the aggregate number of co-citations, while the gap illustrates their interrelation. Authors 1000/1172 meet thresholds, revealing Teece, DJ (citation 592; total link strength 25308) as a prolific author in co-citation analysis of authors. (Figure 7 b). The distinctive journal must have at least 20 co-citation criteria: "Strategic Management Journal" with 6366 co-citations and 476641 total link strength, followed by "Journal of Product Innovation Management" with 5966 co-citations and 421827 total link strength (Figure 7 c).

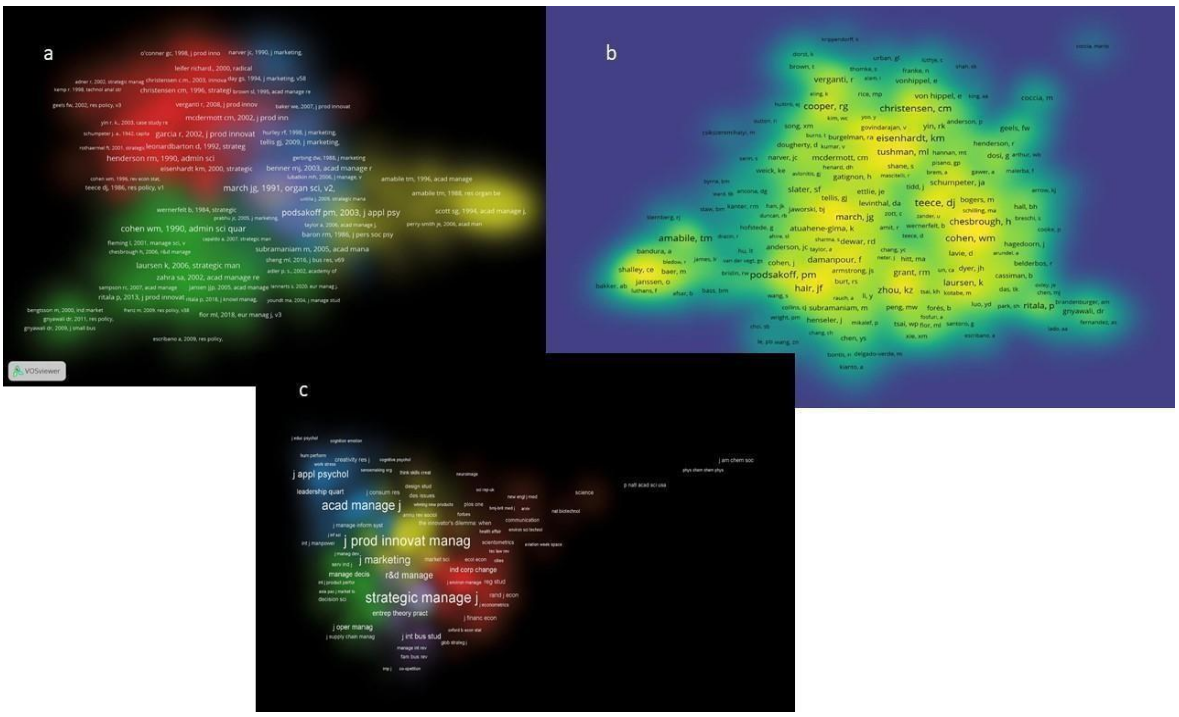

Figure. 7

Figure 7: Scientometric examination of bibliographic co-citation in Radical Creativity research. A) The visualization of cluster density for co-citation of referenced sources in network analysis. The cluster size represents the total number of co-citations. B) The visualization of item density networks for co-cited authors.

C) The network map depicting the cluster density of journal co-citations. Distinct colors signify varying clusters. The dimensions of the spheres represent the totals of co-citations, while the proximity between the two circles indicates their association.

Strengths of the study

It showcases various strengths, particularly the broad applicability of the bibliometrics methods. The scientometric tool facilitates a comprehensive understanding of both radical and incremental creativity. This study enables the researcher to identify themes and collaborations among authors, research institutions, and countries. Additionally, the specific timeline illustrates the long-term trend and provides an estimate for the particular domain.

Discussion

The present study described Incremental and Radical Creativity research dimensions through bibliometric analyses. We also presented the main research themes and trends, including the foremost countries, research institutes, and sources (journals) related to incremental and radical creativity. Researchers have argued the usage of bibliometrics tools in social sciences as bibliometric studies describe research productivity and the intellectual structure of any given field (Donthu et al., 2021; Hernández-Torrano & Ibrayeva, 2020). Given the *VOS* viewer's development and user-friendly interface, it is relatively easy to draw and identify clusters or address other bibliometrics parameters (Waltman et al., 2020). The

related study conducted in India, the author analyzed a post as a whole or its characteristics, including citation analysis, keyword analysis, documentation production, and author identification (Kumar & Agrawal, 2024). The citation analysis results produce details. It is believed that this study offers valuable guidance for those entering this area of research. Our motivation for this work was to trace out and compile creativity in scientific research through bibliometric approaches. Moreover, we highlighted the research productivity and addressed the bibliometric metrics implemented in creativity.

Current results showed English was the main or dominant language, showing its leading role as the main platform for sharing findings, enabling worldwide access and cooperation while, followed by Spanish. Previous results correspondingly highlighted similar coupling, and co-citation results placed the USA at the top of the list owing to a maximum number of publications and citations (Huo & Photchanachan, 2021; Peng et al., 2021). Present outcomes also align with previous researchers; they demonstrated USA is central or leading in the respective scientific contributions (Contreras-Barraza et al., 2021; Firmansyah et al., 2022; Mustak et al., 2021) it showed that it has a strong research base and seeks to move studies in this field into the future. Moreover, the USA is an essential hub for this academic and practical creation.

On the other hand, in terms of bibliometric coupling analysis of countries, we observed quite different findings because developing countries such as the People's Republic of China appear as a leading country, followed by the USA. This contrasts with the findings of Marchiori et al. (2020). Moreover, recent scientific literature over the past decade has identified China as a prospective hub for both incremental and radical creativity-based research, contributing to nations such as the USA, England, Germany, Italy, Finland, and France. These conclusions align with those of other academics who have identified China as the preeminent nation in scientific fields. (Bhatia & Gangwani, 2021).

This situation places a substantial obligation on Chinese researchers to study incremental and radical creativity aspects. Interestingly, the Journal of Product Innovation Management contributed significantly to incremental and radical creativity research domains. This trend was observed due to the count in publications and citations. Another plausible explanation is the specialist (specific topics-related journal). Some journals only publish specific topics. Such findings do not coincide with different bibliometric results (Mustak et al., 2021; Stiller et al., 2020).

Co-authorship analysis distinguishes between collaboration patterns. It sheds light on the connectivity in collaboration. Besides, it evaluates the author's contribution to the team. The current findings supported earlier research by showing that co-authorship relationships in network analysis increase the number of citations in a manuscript. (Biscaro & Giupponi, 2014; Perry-Smith, 2006). Bibliometrics indices such as citation, co-authorship, and co-citation analyses placed Polytechnic University of Milan as the most frequently referenced university. In contrast, in bibliographic coupling, Xián Jiao Tong University was substantial in the bibliographic co-authorship analysis. This differs from previous findings exposing the Hong Kong Polytechnic University's top ranking in the given field (Roumi et al., 2022).

The Web of Science database's "Management" category includes most of the articles under its thematic classification, demonstrating its importance as a key subject area. Moreover, publishing houses are equally essential to the spared of knowledge. "Elsevier"

is the top publisher, having published the maximum number of publications. This highlights how crucial reputable publishing houses are to determining the direction of research, and maintaining all scholarly work is widely seen.

Conclusions

This is, to our knowledge, the inaugural and innovative bibliometric investigation of the academic topic concerning incremental and radical creativity. The findings indicated that the United States was the foremost contributor to research on incremental and radical creativity. The Journal of Product Innovation Management excelled in research on incremental and radical creativity. The Polytechnic University of Milan and Xi'an Jiao Tong University were prominent institutions. Future research may use more databases, such as Scopus and various search engines, to elucidate extra dimensions of incremental and radical creativity for a thorough bibliometric analysis of the prospects.

Overall, the breadth and internationalization of the research in this field are reflected in the distribution of contributions among research institutions, countries, categories, and publications. It also emphasizes how significant collaboration and resource distribution are to sustaining the area's growth and creativity.

Limitations and Future Research

The primary disadvantage of this study is that it relies on a single database (Woos) for data collection. Future research could benefit from other alternative databases, such as SCOPUS and Google Scholar. The research can be expanded, reflecting both previous and contemporary trends that remain unexamined. Future research may involve expanding the variety of keywords and analysis techniques. Finally, all the analytical methods focused solely on the data related to radical and incremental creativity; hence, this form of study could be conducted in numerous research areas or fields.

Data Availability Statement:

Data was downloaded from the Web of Science. Readers may contact the Web of Science to obtain data

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