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The state of "Innovation" and "Entrepreneurship" in India - A Post Pandemic Bibliometric Analysis

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Abstract

Indeed, "Innovation" has become the most sought-after term in the decade. "Entrepreneurship" is the second one to follow. Despite this, many organisations still struggle to define both of these phrases. Many authors have emphasised that innovation is a process and a mindset, not merely a concept [1]. The term "Entrepreneurship" was also misinterpreted at first. The researchers concentrated their efforts on finding persons in society who run successful businesses. However, scholars gradually shifted their emphasis to the intersection between innovative individuals and the possibilities they possessed, focusing on successful businessmen [2]. In the classical work of entrepreneurship, J. Cunningham mentioned that despite being the most interesting word, we still do not understand entrepreneurs [3]. During and after the covid-19 epidemic, the entire globe witnessed a total change in organizational procedures and operations. The necessity of the hour was to investigate how researchers and academics saw the covid-19 epidemic in terms of innovation and entrepreneurship. In the post-pandemic era, it was widely acknowledged and known that these disruptions would produce breakthroughs and lead to inventive enterprises. This paper is an attempt to bibliometrically analyze the state of entrepreneurship and innovation in the post-pandemic research artefacts. 78 research papers published in the year 2020 & 21 selected exclusively from Scopus Indexed Journals were considered in this study. The paper will analyze the co-authorship, co-occurrence, citation, bibliographic coupling and co-citation analysis of all these papers.

Keywords— Entrepreneurship; India; Innovation; COVID-19; Bibliometric Analysis; Pandemic

BACKGROUND

Introduction

According to some authors, the invention is a smooth, linear, and fairly predictable process. Authors such as Stephen Kline and Nathan Rosenberg, on the other hand, have suggested that invention is a difficult and ludicrous process [4]–[6]. It is also claimed that measuring innovation is a difficult task. To comprehend technological as well as financial elements of the market, innovation requires tight collaboration with outstanding judgement and awareness of the market [7]–[9].

Entrepreneurship, according to Cunningham, is a conglomeration of six schools of thought [3]. In the case of entrepreneurship, the media frequently portrays successful outstanding individuals [2].

MOTIVATION

The Covid-19 outbreak shifted everyone's perception of how businesses should run. The magnitude of this disaster highlighted the critical need for innovation and entrepreneurship. Post pandemic, organisations needed to make significant changes in their operations. In this pandemic, everything from what customers want to how long they had to wait was completely altered [2], [10], [11].

India has also changed as a result of the pandemic. It became necessary to reconsider how the study of innovation and entrepreneurship was conducted during and

after the epidemic. Businesses and academics might benefit from reviewing this literature and understanding the trends to foresee future events in these fields.

Objective

The major goal of this study was to determine the trends in Indian innovation and entrepreneurship in the post-pandemic era. Due to the pandemic's disruption, the words "innovation" and "entrepreneurship" became buzzwords throughout the world. The key area of interest was to better understand the trends and how scholars are approaching innovation and entrepreneurship in India and throughout the world.

The data for the bibliometric analysis of innovation and entrepreneurship came entirely from the Scopus databases. The terms innovation, entrepreneurship and India were searched in the keywords, title and abstract in the Scopus database. When screening the papers for this study, the years 2020, 2021, and 2022 were used.

RESULTS

All the datasets analysed in this study are depicted in Table 1. The sample included 78 documents written by 204 researchers and published in 78 journals from 27 countries. These publications came from 167 different institutions, and the 78 documents have been cited a total of 165 times.

Criteria	Quantity
Documents	78
Authors	204
Journals (Titles)	78
Counties	27
Institutions	167
Citations	165

Table 1 Summary of general results (Author created Diagram using VOSviewer)

Bibliometric Analysis

Number of Publications per Year

Table 2 shows the total number of publications in 2021, which were 48. In the year 2020, there were 28 publications, followed by 48 in the year 21. This is a healthy trend, and we may predict a higher number of publications in the year 2022.

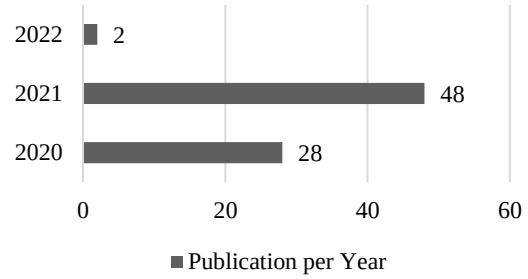

Figure 1 Total Number of Publication Post 2019 (Author created Diagram using VOSviewer)

Most Cited Documents

Five documents out of a total of 78 received double-digit citations, while 26 received single-digit citations. It should be noted that 47 papers received no citations. Table 3 reflects the top 6 most cited titles from the cohort.

Title	Citations
International new venture performance: Role of international entrepreneurial culture, ambidextrous innovation, and dynamic marketing capabilities	42
The Surprising Duality of Jugaad: Low Firm Growth and High Inclusive Growth	23
Technology adoption and entrepreneurial orientation for rural women: Evidence from India	13
Uncovering the scaling of innovations developed by grassroots entrepreneurs in low-income settings	12
Strengthening science, technology, and innovation-based incubators to help achieve Sustainable Development Goals: Lessons from India	11
Who coupled which stream(s)? Policy entrepreneurship and innovation in the energy-water nexus in Gujarat, India	9

Table 2 Top Six Most Cited Titles (Author created Diagram using VOSviewer)

Most Eminent Authors

It's worth noting that a total of 204 researchers contributed to the 78 research items. Only a few of the 78 research papers received two-digit citations. Buccieri D. et al. wrote the highest-

ranking document mentioned. The top four researchers in the field are depicted in Table 4.

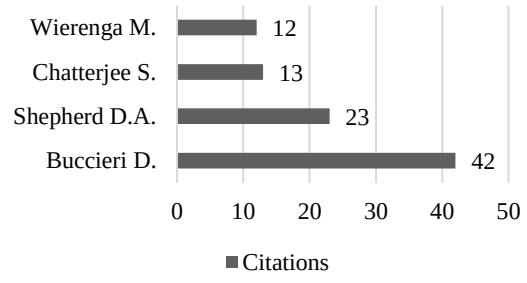

Figure 2 Top Authors by Citations (Author created Diagram using VOSviewer)

Most Influential Countries

Following India and the United States, nations such as the United Kingdom, Canada, Finland, the United Arab Emirates, Australia, Japan, the Netherlands, and others issued a slew of publications on entrepreneurship, innovation, and India.

Around the topics of entrepreneurship, innovation, and India, 27 countries participated and published. It's worth noting that, despite having just one article, Sweden received 23 citations, placing it fourth in the total citations index.

Country	Documents	Citations
India	54	58
United States	13	97
United Kingdom	5	6
Canada	3	9
Finland	3	37
United Arab Emirates	3	1
Australia	2	2
Japan	2	2
Netherlands	2	3
Russian Federation	2	0
Singapore	2	9
South Africa	2	3
Spain	2	2
Switzerland	2	1
Thailand	2	4
Bahrain	1	1
Bangladesh	1	0
France	1	4
Kazakhstan	1	0
Nepal	1	0
Nigeria	1	0
Norway	1	0
Oman	1	0
Poland	1	1
Puerto Rico	1	0
Qatar	1	2
Sweden	1	23

Table 3 Countries and their contribution (Author created Diagram using VOSviewer)

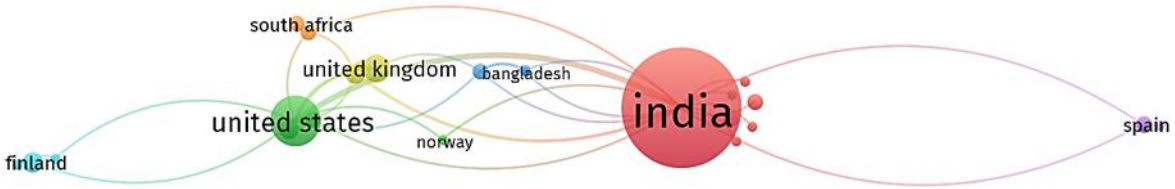

Diagram 3 Neteork of Co-authroship and Countires (Author created Diagram using VOSviewer)

Most Influential Organisations

Although the study focused on three keywords: innovation, entrepreneurship, and India, the top three most prominent organizations that received the most citations were all from the United States of America. The Deville School of Business at Walsh University in the United States, the Robert W. Plaster School of Business in the United States, and the School of Management at the University of Michigan in the United States each received 42 citations. Europe and America are represented in the top seven citations. Only five Indian institutions namely, Department of Economics, Maharaja Manindra Chandra College, Kolkata, West Bengal, India; Institute of Finance And International Management, Bangalore, India; Institute of Management Technology, Nagpur, Maharashtra, India; DST Center For Policy Research, Indian Institute of Technology Delhi, India; School of Public Policy, Indian Institute of Technology Delhi, India appeared in the study (Ref Table 4).

Organization	Titles	Citations
Deville School of Business, Walsh University, USA	1	42
Robert W. Plaster School of Business, United States	1	42
School of Management, University of Michigan, USA	1	42
Hanken School of Economics, Finland	1	23
Luleå University of Technology, Sweden	1	23
The University of Vaasa, Finland	1	23
University of Notre Dame, United States	1	23
Department of Economics, Maharaja Manindra Chandra College, Kolkata, West Bengal, India	1	13
Institute of Finance And International Management, Bangalore, India	1	13
Institute of Management Technology, Nagpur, Maharashtra, India	1	13
Department of Management Studies, Aalto University School of Business, Finland	1	12
Center For Global Sustainability, School of Public Policy, United States	1	11
DST Centre For Policy Research, Indian Institute of Technology Delhi, India	1	11
Massachusetts Institute of Technology, Cambridge, Ma, United States	1	11
School of Public Policy, Indian Institute of Technology Delhi, India	1	11

Table 4 List of Most Influential Organisations (Author created Diagram using VOSviewer)

Top Publishing Journals

It is to be noted that despite authors being from American organizations and the keyword has been India, most of the articles appeared in the International Journal of Business And Globalization, International Journal of Entrepreneurial Behavior And Research and Sustainability (Switzerland) (Ref Table 5).

Journal	Publications	Citations
International Journal of Business And Globalisation	3	2
International Journal of Entrepreneurial Behaviour And Research	3	0
Sustainability (Switzerland)	3	4

Table 5 List of Top Publishing Journals (Author created Diagram using VOSviewer)

Most Cited Authors

The nine most acknowledged writers in the study's collection are listed below. Buccieri D. received the topmost citations of 42 for the publication in 2020. This was followed by Shepherd D. A. (2020) 23 citations and Chatterjee S. (2020) 13 citations (Ref Table 6).

It should also be emphasised that 60% of papers received no citations, whereas 27% received one to three citations.

Author	Citations
Buccieri D. (2020)	42
Shepherd D.A. (2020)	23
Chatterjee S. (2020)	13
Wierenga M. (2020)	12
Surana K. (2020)	11
Goyal N. (2020)	9
Goyal S. (2021)	7
Arun T. M. (2020)	5
Nigam N. (2021)	4

Table 6 List of Most Cited Authors (Author created Diagram using VOSviewer)

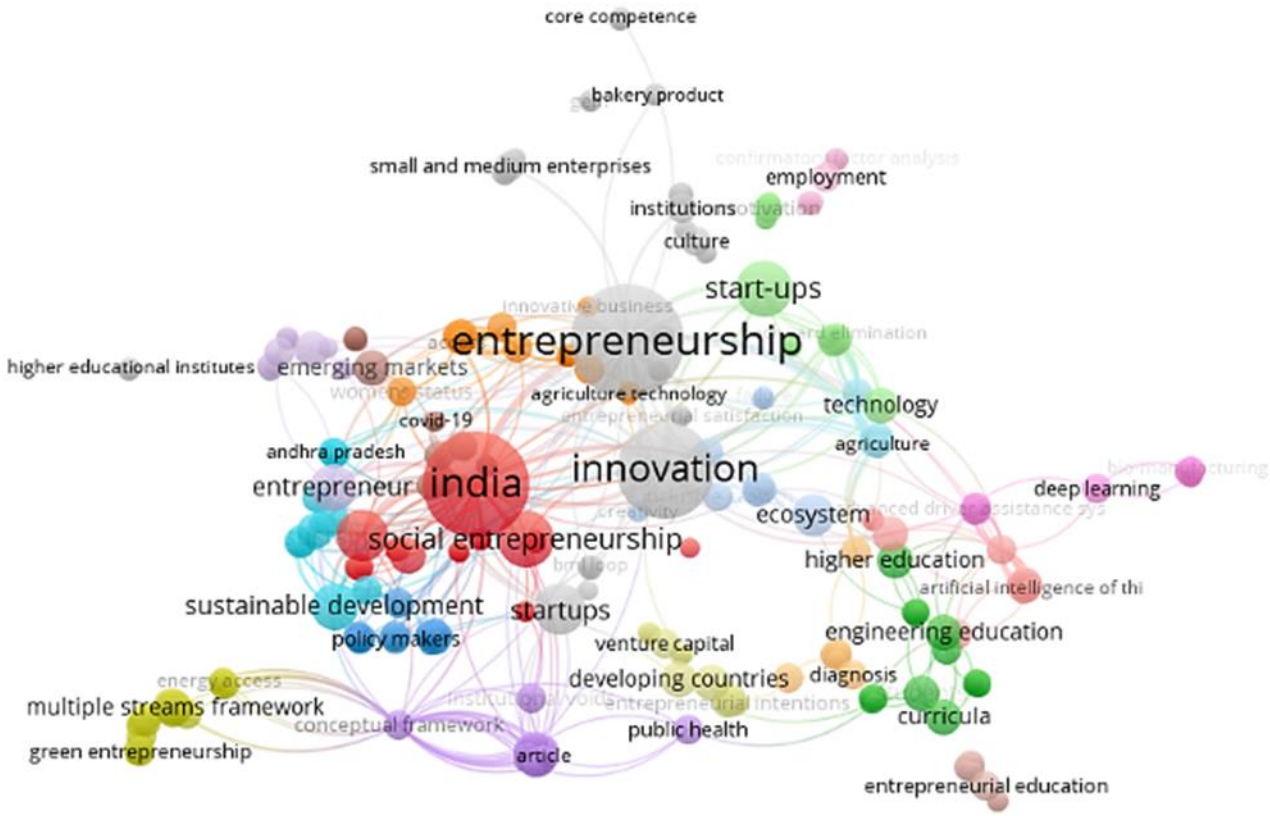

Diagram 2 Network of Co-occurrence of Keywords (Author created Diagram using VOSviewer)

Bibliometric Analysis

Bibliometric analysis is a frequent and thorough method for identifying and analysing large amounts of scientific material. It enables us to investigate the historical nuances of a discipline while also providing insight into the field's emerging regions. However, its application in business research is still in its infancy and, in many circumstances, insufficient [12].

Network of Co-authored Documents

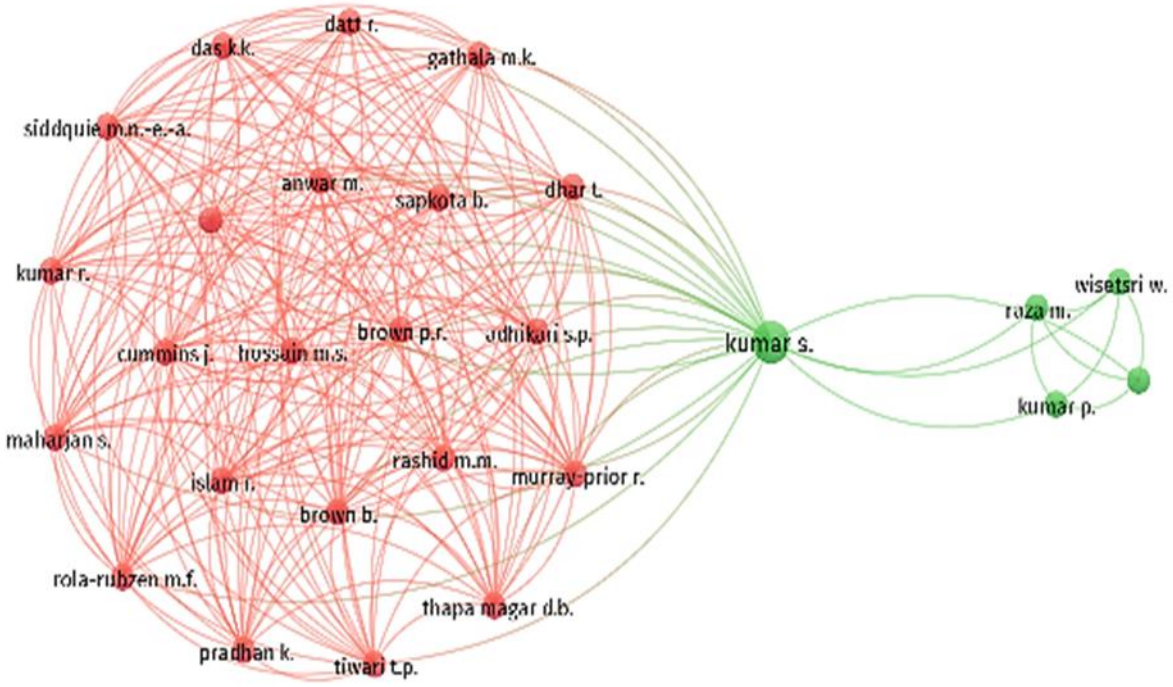

Diagram 1 Network of Co-authors (Author created Diagram using VOSviewer)

Academic collaboration has become a prevalent aspect of contemporary academic research. Scholars are no longer considered individuals, but rather members of groups that combine complimentary skills and methods to achieve common goals. Network analysis and co-authorship networks are increasingly being used to evaluate cooperation tendencies and anticipate renowned scientists and organisations. The research reveals the social structure of the networks by identifying individuals and their interactions [13].

Network of Co-cited Sources

Co-citation analysis is the process of tracing the relationship between publications that are mentioned jointly in the original articles. When many writers discuss the same pair of papers, clusters of research arise. The subject of these clusters of co-cited papers appears to be the same.

Network of Co-authorship and Countries

Co-authorship is a type of collaboration wherein two or more scholars report their findings on the same issue. As a result, co-authorship networks may be thought of as virtual communities containing scholars who collaborate. In co-authorship networks, scholars are denoted by nodes.

It was interesting to note that though India was the biggest contributor in the network, the United States and the United Kingdom followed very closely. Finland, South Africa, and Spain have all made significant contributions to the network, while Norway and Bangladesh have shown strong ties to India.

Network of Co-occurrence of Keywords

Co-occurrence is a term that relates to the existence, recurrence, and closeness of comparable terms in many publications. Keywords that are related to each other and focused on the same issue, but are not identical, are included in co-occurrence. The amount of literature in which both keywords appear in the title, abstract, or keyword list is the number of co-occurrences of two keywords.

The bibliometric network of keywords depicted in diagram number 2 showcases 25 different clusters. The most prominent keywords are Entrepreneurship, Innovation and India. The keywords like Social Entrepreneurship, Startups, Technology, Deep Learning, Multiple Stream Framework and Green Entrepreneurship have shown their prominence in the network. Keywords like Sustainable Development, Engineering Education, Higher Education, Developing Countries have also been listed in the network.

DISCUSSIONS

Entrepreneurship is the act of setting up a company or expanding an existing one. Entrepreneurs are at the heart of this exercise: creative, risk-taking personalities who aim to achieve change and new possibilities for themselves and the communities in which they work. Entrepreneurs play a critical role in the start-up, commerce, and wealth creation of many countries. Modern business success necessitates a consistent degree of innovation.

The purpose of this paper was to assess the situation of innovation and entrepreneurship research in and around India following the epidemic of Covid-19. This paper will assist researchers and scholars in analysing the flow of research and the trend toward which it is moving so that their research may be aligned.

CONCLUSIONS

This bibliometric analysis of the literature on Innovation and Entrepreneurship shows that this is a promising topic of study. In the years 2020 and 2021, there were a total of 76 publications, with 165 citations. This demonstrates the importance of the topics in the current study. It is suggested that the research Scholars conduct the additional study in this area. Researchers from the United States and the United Kingdom are equally interested in innovation and entrepreneurship in India, according to the bibliometric network of co-authorship and countries, indicating that scholars might seek additional collaborations in these countries. The analysis also revealed that institutions in the United States of America were the most prominent. Universities in the

United States and Europe have the largest number of citations, indicating that scholars in these fields should expect to collaborate.

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