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Scholarly Progressions: Indian Social Science And Humanities Research Through Bibliometric Lens (2014-2023)

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Abstract
The present study is an attempt to understand the research output generated in India in the domain of Social Science and Humanities (SSH) during the last decade i.e 2014-2023. The study reveals findings on different scientometric parameters like document wise distribution of publications, year wise distribution of publications, Annual Growth Rate, Relative Growth Rate, Doubling Time, most popular source of publication, authorship pattern and co-occurence pattern of keywords. The mean values for RGR is found to be 0.086 and that of doubling time is 2.32 years indicating that, on average, the number of documents doubles approximately every 2.32 years. The majority of papers (approximately 56.66%) have between 2 to 5 authors, indicating a prevalent trend towards collaborative research within Indian SSH disciplines. Top five dominant categories of publications include Environmental Sciences, Public Environmental Occupational Health, Green Sustainable Science Technology, Environmental Studies and Pscyhiatry. While the "Indian Journal of Psychiatry" emerges as a consistent leader in terms of maximum publications, "Sustainability" emerges out as the recent leader.

Keywords: Social Science & Humanities, Bibliometrics, Co-occurence pattern, Doubling Time

1. Introduction

In India, there is an increasing acknowledgment of the significance of social science research. Research conducted within the social sciences and humanities significantly contributes to the overall welfare and advancement of society. (Bastow et al., 2014) However, there remains a concern about the deteriorating standards and quality of such research. A study on doctoral research output in Social Sciences in India during 2010-14 found a steady decline in number of doctor degrees awarded from 2011 to 2014. Further, they found education, commerce and economics were the three leading subject disciplines in which maximum number of doctoral degrees were awarded. (Pandita & Singh, 2017) In another study evaluating recent research in India found that out of the chosen 22 subject areas, 7 subject areas including Arts and Humanities; Business, Management and Accounting; Health Professions; Neuroscience; Nursing; Psychology; and Social Sciences did not have any institution which can be counted at the level of size and excellence of research output globally. (Prathap, 2017) In the same study it has been found that the Indian research landscape predominantly emphasizes the Physical Sciences and Engineering, while comparatively allocating fewer resources to Biological Sciences, Medicine, Social Sciences, and Arts and Humanities, particularly in the context of achieving excellence at the highest level. (Prathap, 2017) In a study by Banshal et al. (2017), the research performances of the IITs have been compared with those of two top ranking engineering and technology institutions of the world (MIT-USA and NTU-Singapore) and most cited papers from these IITs have also been identified. The results further validate that research in technical domains is comparable

to global standards. Even with social sciences, IITs stand out as prominent institutions contributing to highly cited research. A study by Bhui and Sahu (2018) evaluates the citation count of article publications by faculty members in the Humanities and Social Science Departments of IIT Kharagpur, revealing an increasing trend. The most preferred journal for publication is Sage, with collaborative research receiving maximum citations. Despite the increasing trend and engagement of faculty members in various fields of research, it has been found that the impact is higher at the national level than at the international level.

Social science research in India has primarily been supported by state funding, from the Government of India and its affiliated agencies like the Indian Council of Social Science Research (ICSSR) and the University Grants Commission (UGC). (Gupta et al., 2013) The ICSSR has been a pivotal force in advancing social science research in India. By upholding high research standards and offering both academic and financial support, it has significantly encouraged and aided scholars.(Kaur & Nagaich, 2019) Due to the fact that most social science research in India focuses on regional and national social issues, its impact at the international level remains limited. Additionally, collaboration in social science research is notably less extensive compared to that in Science and Technology. Nevertheless, since 1969, the Indian Council of Social Science Research (ICSSR) has been actively promoting social science research across the country. The ICSSR provides support through funding, fellowships, and publications, among other resources (Verma & Pathak, 2021). Currently, the ICSSR funds 30 research institutes. Over the past five years, these institutes have contributed 1,452 research projects, 591 books, and 1,271 working papers. Additionally, 121 Ph.D.s have been awarded by ICSSR-funded research institutes during this period (ICSSR, 2021).

Although there is a very scant literature focussing only on social science and humanities research output in India, some bibliometric studies have identified great potential in sustaining higher publication growth in social sciences in the coming years. In a study based on SCOPUS database by Gupta et al., 2013, it was found that the annual Indian output in social sciences grew from 1208 papers in 2001 to 4321 papers in 2010, witnessing an annual average growth rate of 17.66 %. The cumulative Indian publications output in Social sciences grew from 6538 papers during 2001-05 to 15133 papers during 2006-10, witnessing a growth rate of 131.46%. Another study based on WoS database by Tripathi et al., 2018 finds a 67% increase in publications in Social Science and Humanities (SSH) research over the 10 year period from 2005-2014. In this chapter, I attempt to update the findings on research output in SSH disciplines using the last decade i.e. 2014-2023 as the time frame.

2. Objectives:

- To identify the trend and distribution of publications in SSH disciplines across different document types.
- To test if the distribution of document type is consistent across the ten year period from 2014-2023.
- To calculate the relative growth rate and doubling time of each type of publication.
- To identify the trends in multiple authorship and it's impact on citations of research output.
- To list the prominent journals publishing SSH research output
- To analyse the keyword co-occurrence of the research publications.
- To analyse the co-authorship patterns across organisations and countries.

3. Data & Methods

The data for the study was extracted from the Web of Science Database. Since the study is limited to research in Social Science, studies indexed in SSCI & AHCI Web of Science Core collection have been used for the analysis. In the basic search web page on citation index portal of WoS, '2014-2023' was entered in 'year published' and further filter was applied for AHCI & SSCI under Web of Science Index. 18,06,105 studies were found after applying this filter. Further, the results were refined by country i.e. India. This led to the selection of 32,968 studies. These records were then downloaded in a batch of 1000 (it is the maximum number of studies one can download from WoS database at a time.) The WoS Core Collection consists of 26 different types of documents. The collection was further filters and documents included in this study are Article, Book Review, Review Paper and Proceedings Paper. This led to the final selection of 22, 916 studies. Further, MS-Excel, STATA 14.0 and VosViewer softwares have been used for the analysis in this paper. The data was collected in April 2024.

4. Results

4.1 Publication Trends & Document Type Distribution

The total number of publications in SSH has been steadily increasing over the years, with a notable rise from 2014 to 2021, peaking at 4196 publications in 2021. However, there is a slight decline in total publications in 2022 and 2023 compared to the previous years. (Figure 1) In terms of distribution, 87.08% of the total publications in SSH are in the form of articles followed by review papers (11.45%), proceeding papers (0.93%) and book reviews (0.53%) in that order. (Table 1). The share of articles have increased (78.01% to 87.08%) and that of book reviews (18.2% to 0.53%) have fallen in comparison to the last decade ie. 2005-2014. (Tripathi et al., 2018) The second most published document type was book reviews in 2005-2014 and is now replaced by review papers with a surge of almost 10% from 1.5% in 2005-2014 to 11.45 % in 2014-2023. (Tripathi et al., 2018) In another

studies conducted during the same decade, highest trend of publication is found in articles and book reviews 213(45.416%), and the second popular publication is editorial material 36(7.676%). (Naveed et al., 2021) (Parabhoi et al., 2022)The dominance of articles suggests a strong emphasis on original research and academic writing within the SSH discipline in India. Moreover, consistent presence of reviews indicates a sustained interest in critical evaluations and synthesis of existing literature within the academic community. Across years, 2021 stands out as the year with the highest number of publications across all document types, indicating a potential peak in scholarly activity or funding during that period. 2020 also shows a notable increase in publications compared to previous years, possibly influenced by global events such as outbreak of COIVD 19 pandemic leading to work from home situations creating space for more academic work time.

Table 1: Year Wise Publications across Document Type in SSH discipline in India from 2014-2023

	Document Type									
	Article		Book Review		Proceedings Paper		Review		Total	
Publication Year	No.	%	No.	%	No.	%	No.	%	No.	%
2014	936	4.69	13	10.66	8	3.74	78	2.97	**1035**	4.52
2015	1078	5.40	11	9.02	17	7.94	96	3.66	**1202**	5.25
2016	1206	6.04	14	11.48	22	10.28	117	4.46	**1359**	5.93
2017	1418	7.11	5	4.10	29	13.55	176	6.71	**1628**	7.10
2018	1771	8.87	8	6.56	54	25.23	214	8.16	**2047**	8.93
2019	2182	10.93	15	12.30	47	21.96	292	11.13	**2536**	11.07
2020	2807	14.07	5	4.10	21	9.81	391	14.90	**3224**	14.07
2021	3588	17.98	15	12.30	14	6.54	579	22.07	**4196**	18.31
2022	3018	15.12	18	14.75	1	0.47	396	15.09	**3433**	14.98
2023	1952	9.78	18	14.75	1	0.47	285	10.86	**2256**	9.84
Total	**19956**	**87.08**	**122**	**0.53**	**214**	**0.93**	**2624**	**11.45**	**22916**	**100.00**

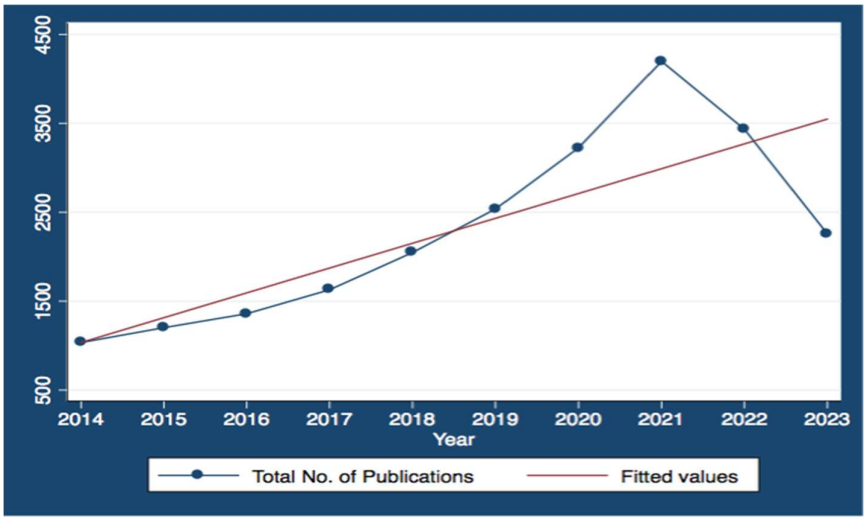

Figure 1: Year Wise Growth of Total No. Of Publications

Source: Author madeurthermore, it can also be seen from that the number of publications across document type varies significantly across the ten year period from 2014-2023. This is further verified using the $\chi 2$ test (Table 2).

Pearson $\chi 2$ and Likelihood Ratio, both show significant associations between the number of publications and document type across different years of publication. This suggests that the distribution of document types (articles, book reviews, proceedings papers, and reviews) is not independent of the year of publication. There may be underlying factors such as shifts in research priorities, changes in funding opportunities, evolving publication norms, or the emergence of new trends or methodologies that have influenced the choice of document type in different years. Researchers and policymakers can use this information to better understand the dynamics of scholarly communication within the SSH discipline in India. For instance, they can identify patterns in publication trends and tailor strategies to support and promote diverse forms of scholarly output.

Table 2: Association in number of publications across document type and year of publication

	Value	Degree of Freedom	Pr.
Pearson $\chi 2$	280.99	27	0.000
Likelihood Ratio	297.82	27	0.000
No. of valid cases	22,916		

4.2 Relative Growth Rate & Doubling Time

Relative Growth Rate (RGR) means the increase in a number of publications/Pages per unit of time (Mahapatra, 1985). The RGR can be used to determine doubling time for publications, which tells how long it will take for a value to double. The equation of RGR is:

$$R(P) = \frac{\log 2 - \log 1}{2 - 1}$$

where R (P) = RGR of articles over the specific period of time,
Log_e 1P = Log of Initial number of articles (W1),
Log_e 2P = Log of final number of articles (W2),
2T - 1T = The unit difference between the initial and the final times
Doubling time of literature is directly associated to Relative Growth Rate. It is mainly the required time for articles or citations to becoming double from the existing volume of articles (Mahapatra, 2000). The formula of doubling time is

$$Dt(p) = 0.693 / (p)$$

The RGR increases steadily until 2021, suggesting consistent growth in publications during this period. Doubling time indicates the number of years it takes for the number of documents to double. Smaller doubling times indicate faster growth rates. The values for Dt decrease over the years, indicating an acceleration in the rate of growth of publications. (Table 3) The negative RGR and doubling time values for 2022 and 2023 suggest a decline in the rate of growth during these years. This could be due to various factors such as changes in funding, shifts in research priorities, or external events impacting publications. The mean values for RGR is found to be 0.086 and that of doubling time is 2.32 years indicating that, on average, the number of documents doubles approximately every 2.32 years.

Table 3: Year wise Distribution, Growth and Doubling Time of the Publications in SSH

Year of Publication	No. of documents	Percentage	W1	W2	Relative Growth Rate (RGR)	Doubling Time Dt(P)
2014	**1035**	4.52	-	6.94	-	-
2015	**1202**	5.25	6.94	7.09	0.15	4.62
2016	**1359**	5.93	7.09	**7.21**	**0.12**	**5.77**
2017	**1628**	7.10	**7.21**	**7.39**	**0.18**	**3.85**
2018	**2047**	8.93	**7.39**	**7.62**	**0.23**	**3.01**
2019	**2536**	11.07	**7.62**	**7.83**	**0.21**	**3.30**
2020	**3224**	14.07	**7.83**	**8.07**	**0.24**	**2.88**

2021	**4196**	18.31	**8.07**	**8.34**	**0.27**	**2.56**
2022	**3433**	14.98	**8.34**	**8.14**	**-0.2**	**-3.46**
2023	**2256**	9.84	**8.14**	**7.72**	**-0.42**	**-1.65**
Total	**22916**	**100.00**	**--**	**--**	**Mean = 0.086**	**Mean = 2.32**

.3 Pattern of Authorship & Citation

Table 4 presents data on authorship patterns within Social Sciences and Humanities (SSH) disciplines in India. The majority of papers (approximately 56.66%) have between 2 to 5 authors, indicating a prevalent trend towards collaborative research within Indian SSH disciplines. Notably, papers with 2 or 3 authors represent the highest percentage, at 17.01% and 18.16%, respectively. In the last decade (2004-2013), about 45 % of the manuscripts were single authored (Tripathi et al.,2018) which has now dropped to 4.48% in 2014-2023. This increase in percentage of papers with multiple authors suggests that collaborative research is becoming a notable feature of research in Indian SSH disciplines, potentially also reflecting the focus on interdisciplinary nature and the necessity for diverse expertise. Other studies such as Jawwad et al. (2021) Sahu et al. (2018) Saroja (2021) which are specific to individual social science journals have also found significant increase in degree of collaboration. However, the gradual decrease in the number of papers as the number of authors exceeds 5 also points to diminishing levels of collaboration in larger authorship groups.

In the previous decades, the majority of contributions were single-authored, with a 0.43 degree of authorship collaboration as found in a study that examined the research productivity of social scientists at the Centre for Development Studies (CDS) in Thiruvananthapuram from 1999-2008. It further found that 599 research articles were published, with 38.23% being journal articles, 23.54% chapters in books, and 15.03% working papers. (Sudhier, 2011)

Further, Table 5 presents data on trends in multi-author papers. There is a fluctuating trend in the mean number of authors per paper over the years, with the highest value observed in 2016 (8.43) and the lowest in 2014 (6.44). Despite fluctuations, the mean number of authors per paper remains relatively high, indicating a consistent preference for collaborative research practices. (Figure 2) The variability in the standard deviation with higher standard deviation values, particularly in 2015, 2016, and 2020, indicate periods of greater variability in team sizes and collaboration structures.

Table 4: Authorship in SSH Disciplines in India

Number of Authors	Number of Paper	Percentage of Papers
1	1,026	4.48
2	3,897	17.01
3	4,162	18.16
4	3,348	14.61
5	2,489	10.86
6	1,997	8.71
7	1,301	5.68
8	967	4.22
9	655	2.86
10	513	2.24
11	351	1.53

12	296	1.29
13	266	1.16
14	182	0.79
15	136	0.59
More than 15	1330	5.80
Total	22,916	

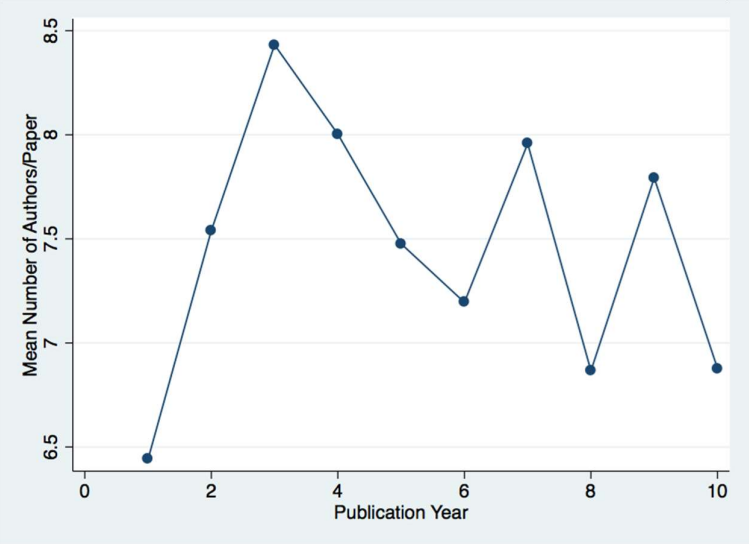

Fig 2: Trends in Number of Authors

Source: Author made

Table 5: Trends in Multi Author Papers in SSH Disciplines in India

Year	Mean Number of Authors	Number of Papers	Std. Deviation
2014	6.44	**1035**	18.50
2015	7.53	**1202**	39.52
2016	8.43	**1359**	41.03
2017	8.00	**1628**	35.90
2018	7.47	**2047**	17.35
2019	7.19	**2536**	18.97
2020	7.95	**3224**	41.10
2021	6.86	**4196**	15.11
2022	7.79	**3433**	23.12
2023	6.87	**2256**	12.99

o evaluate the relationship between the number of authors and the citation metrics of research papers, Table 6 presents the results on the number of authors, mean number citations, the number of papers, and the standard

deviation of citation counts. The mean number of times cited generally increases as the number of authors increases up to a certain point. Papers with a single author have a mean citation count of 14.5, which gradually increases to a peak of 36.22 for papers with 15 authors. The findings suggest a nonlinear relationship between the number of authors and citation impact. (Figure 3) While papers with a moderate number of authors (7 to 15) tend to have higher mean citation counts, there are exceptions, particularly for papers with more than 15 authors, where the mean citation count decreases. This could indicate diminishing returns to collaboration beyond a certain threshold.

Table 6: Number of citations of research papers controlled by number of authors Number of Authors	Mean number of times cited (all databases)	Number of Paper	Std. Deviation
1	14.5	1,026	29.11
2	20.77	3,897	43.92
3	20.45	4,162	35.73
4	20.00	3,348	35.53
5	19.75	2,489	45.35
6	18.45	1,997	39.12
7	22.25	1,301	65.87
8	21.88	967	64.01
9	24.09	655	81.57
10	21.38	513	52.44
11	23.49	351	51.88
12	34.57	296	104.66
13	32.89	266	113.98
14	32.99	182	66.00
15	36.22	136	152.79
More than 15	104.46	1330	361.45

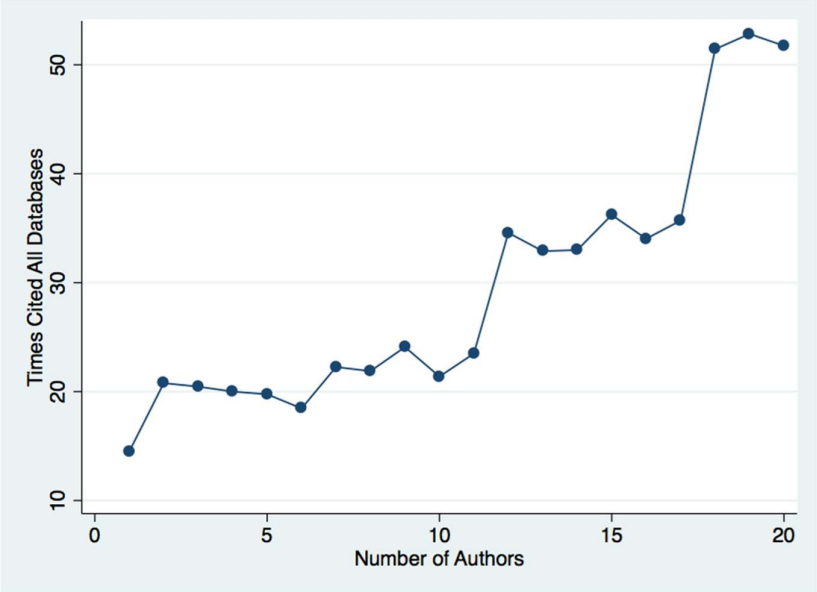

Fig 3: Average citations vis-a-vis number of authors

Source: Author madeFurther, Table 7 illustrates the data on the citation counts of research papers. It can be seen that a substantial proportion of papers receive low citation counts. Specifically, nearly 8.97% of papers have not been cited, while 7.13% have been cited only once and 6.41% twice. There is a gradual decline in the percentage of papers as the citation counts increase, indicating a skewed distribution with a long tail of highly cited papers. However, there are notable peaks in the distribution, particularly for papers cited between 11 to 20 times (18.06% of papers) and between 21 to 30 times (9.04% of papers). On the other hand, a small percentage of papers (1.39%) have been cited more than 200 times, suggesting the presence of highly influential works within SSH disciplines. These papers likely represent seminal contributions that have had a significant impact on their respective fields. The concentration of papers in certain citation ranges, particularly between 11 to 30 times cited, suggests the existence of citation thresholds or tipping points beyond which papers gain increased visibility and recognition. The findings reflect the diverse citation patterns within SSH disciplines, ranging from papers with minimal impact to highly influential works.

Table 7: Citation of research in SSH disciplines

No. of Times Cited, All Databases	Number of Papers.	Percent
0	2055	8.97
1	1635	7.13
2	1468	6.41
3	1278	5.58
4	1222	5.33
5	1081	4.72
6	952	4.15
7	762	3.33
8	778	3.40
9	642	2.80

10	602	2.63
-20	4140	18.06
21-30	2072	9.04
31-40	1144	4.99
41-50	759	3.31
51-100	1409	6.14
101-200	599	2.61
More than 200	319	1.39

4.4 Top Journals

Table 8 provides insights into the publication patterns of research papers by Indian researchers in Social Sciences and Humanities (SSH) disciplines. The table lists journals that have published over 100 research papers during the specified period, along with the number of papers published and their respective percentages. These journals cover various fields, including public health, environmental science, psychiatry, and production research, among others. Sustainability, Indian Journal of Psychiatry, and Indian Journal of Public Health emerge as the top three journals publishing the highest number of papers by Indian researchers, each contributing significantly to the overall publication output. It seems that Journals catering to specific fields, such as psychiatry (Indian Journal of Psychiatry) and public health (Frontiers in Public Health), play a crucial role in advancing knowledge and addressing relevant issues within these domains. Further, top 3 journals were identified year-wise from 2014 to 2023. The Indian Journal of Psychiatry emerges as a consistent leader in terms of the number of papers published by Indian researchers, occupying the top position in most years. PLOS ONE also maintains a strong presence, frequently appearing among the top 3 journals across the years. “Sustainability” emerges as a prominent journal in the later years (from 2019 onwards), showcasing its growing significance for research dissemination by Indian researchers, especially in the context of sustainability-related topics. Within SSH, the top five dominant categories of publications
include Environmental Sciences, Public Environmental Occupational Health, Green Sustainable Science Technology, Environmental Studies and Pscyhiatry.(Figure 4) These categories are in lines with the themes of the top journals found in the previous section.

Fig 4: Top 25 WoS categories published by Indian researchers from 2014-23

Source: Author made

Table 8: List of Journals which published over 100 research papers of Indian researchers in SSH Disciplines from 2014-2023

Journal Title	Number of papers published	Percent
Bmc Public Health	171	2.20
Bmj Global Health	257	3.30
Bmj Open	199	2.56
Current Science	167	2.15
Energy Policy	166	2.13
Environment Development And Sustainability	144	1.85
Environmental Science And Pollution Research	128	1.65
Frontiers In Public Health	458	5.89
Global Health Action	118	1.52
Health Policy And Planning	106	1.36
Healthcare	165	2.12
Indian Journal Of Psychiatry	930	11.95
Indian Journal Of Public Health	462	5.94
International Journal Of Environmental Research And Public Health	462	5.94
International Journal Of Production Research	113	1.45
Journal Of Cleaner Production	314	4.04
Journal Of Clinical Psychiatry	117	1.50
Journal Of Global Health	118	1.52
Lancet Global Health	174	2.24
Plos One	450	5.78
Psychiatry Research	102	1.31
Renewable & Sustainable Energy Reviews	122	1.57
Reproductive Health	119	1.53
Scientific Reports	113	1.45
Scientometrics	112	1.44
Social Science & Medicine	105	1.35
Sustainability	1888	24.27
Total	7780	100.00

Table 9: Top 3 Journals year wise

Year	Journal Title	Number of papers published
2014	Indian Journal of Pscychiatry	59
	Plos One	43
	Global Health Action	25
2015	Indian Journal of Pscychiatry	77
	Plos One	51
	Reproductive Health	19
2016	Indian Journal of Pscychiatry	79
	Plos One	45
	Current Science	21
	Renewable & Sustainable Energy Reviews	21
2017	Indian Journal of Pscychiatry	62
	Plos one	31
	Current Science	30
	Renewable & Sustainable Energy Reviews	30
2018	Indian Journal of Pscychiatry	116
	Plos one	55
	Sustainability	35
	Journal of Cleaner Production	35
2019	Indian Journal of Pscychiatry	137
	Indian Journal of Public Health	71
	Journal of Cleaner Production	56
2020	Sustainability	122
	Indian Journal of Public Health	101
	Indian Journal of Pscychiatry	93
2021	Sustainability	327
	International Journal of Environmental Research and Public Health	115
	Journal of Cleaner Production	92
2022	Sustainability	649
	Frontiers in Public Health	175
	International Journal of Environmental Research and Public Health	172
2023	Sustainability	665

Indian Journal of Pscychiatry	136
Frontiers in Public Health	118

5.5 Co-occurrence of keywords

To understand the major thrust areas, keyword co-occurrence analysis is conducted using VosViewer. Minimum number of occurrences of a keyword are chosen to be 5 and out of 74003 keywords, 6637 met the threshold. Five clusters have been identified. Cluster 1 has 324 items with keywords such as management, supply chain, sustainability, model, performance; Cluster 2 has 280 items with keywords such as prevalence, depression, children, risk factors; Cluster 3 has 188 items with keywords such as India, health, women, mortality, COVID-19, Cluster 4 has 170 items with keywords such as impact, climate change, agriculture, policy and cluster 5 has 38 items with keywords such as renewable energy, CO2 emissions, energy consumption, financial development. (Figure 5). The density visualisation of the keyword co-occurrence analysis is presented in Figure 6. The larger the number of items in the neighbourhood of a point and the higher the weights of the neighbouring items, the closer the colour of the point is to yellow. The other way around, the smaller the number of items in the neighbourhood of a point and the lower the weights of the neighbouring items, the closer the colour of the point is to blue. The latter visualization (Figure 6) is similar to the former visualization (Figure 5) except that the density of items is displayed separately for each cluster of items. (van Eck & Waltman, n.d.) A study by Bhardwaj (2017) highlights the importance of information literacy research in the social science and humanities fields. It was found that 160 institutions worldwide have contributed in information literacy research. Furthermore, in a study by Bui et al. (2021), the evolution and key features of global research on cultural and creative industries was examined from 1995 to 2020, utilizing bibliographic data from the SCOPUS database. In another bibliometric study on SCOPUS database, the word "scientometric" is the most used keyword and the top productive journal is found to be *Library Philosophy and Practice*. (Santra et al., 2021) The development of corruption research by Indian scholars showed an increase, particularly during the 2011-2020 period. The quality of publications was not high, with developing countries being the most productive authors. Research topics include gender, poverty, HIV, higher education, and sustainable development. Supporting policies and funding are needed to improve scholars' work and boost scientific production. Studies show that middle school science classes are a crucial factor in scientific research selection. The patterns observed for SSH research in India are also comparable to other Asian countries such as Vietnam. In the recent three years (2017–2019), there has been a significant increase in scientific output in Vietnam, with the number of publications surging to account for 53.76% of the total collection. Notably, Education, Environmental Sciences, Arts and Humanities, and Economics and Finances experienced the largest increases, while Psychology and Philosophy saw the smallest growth. This disparity highlights a need for government policy investment, as the development of psychology is crucial for advancing education and other fields in modern society. Policy changes from the government and from universities and research institutions was one of the main reasons given as explanation for this incensement of scientific output. (Pham-Duc et al., 2022) In a study by Tripathi et al. (2018), research trends in Social Sciences and Humanities disciplines in India from 2005 to 2014 were examined, focusing on the use of keywords and keywords plus assigned by authors and Web of Science. It also examined the similarity between these keywords and the Web of Science. It was found that Web of Science displays inconsistencies in assigning Keyword Plus across different research areas. For example, the average number of Keyword Plus per research paper in 'Religion' was 1.4, while in 'Psychology,' it was 7.3. A statistically negative association was found between the number of keywords and Keyword Plus across research areas, indicating that areas ranked high in the number of keywords tend to rank low in the number of Keyword Plus. The study also highlights that the overlap between author-assigned keywords and Keyword Plus varies by research area, with Sociology showing the highest overlap index. The number of unique keywords and Keyword Plus also differs across research areas. In cases of high overlap between keywords and Keyword Plus, indexing and sorting research publications by either will yield similar results. Uniqueness in keywords reflects the diversity of coverage in research areas, meaning that areas with a high number of unique keywords exhibit greater diversity. Search results in disciplines with few unique keywords tend to be generic, as most papers will appear if the search criteria match one of the few unique keywords. Therefore, researchers should adjust search criteria based on the uniqueness of keywords in a particular discipline. Keywords and Keyword Plus often appear in the titles and abstracts of research papers, making them useful for locating and retrieving specific information.

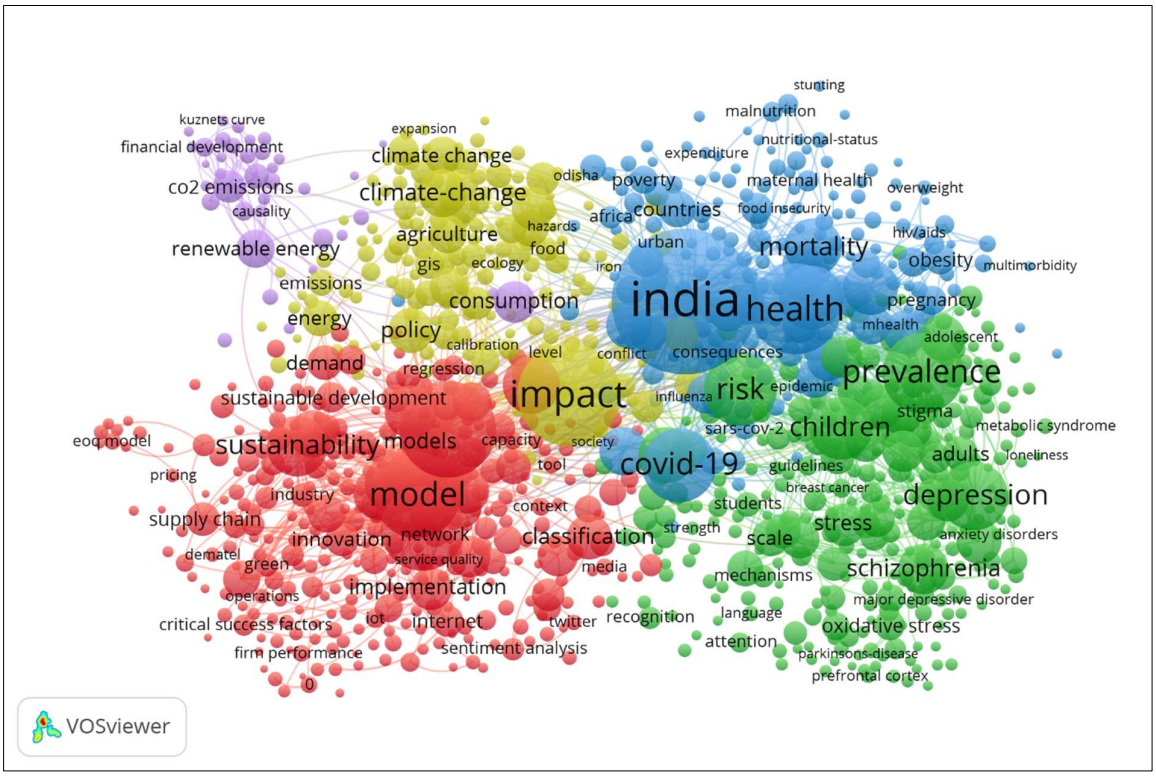

Fig 5: Co-occurrence of Keywords in SSH disciples (Network Visualisation)

Source: Author made

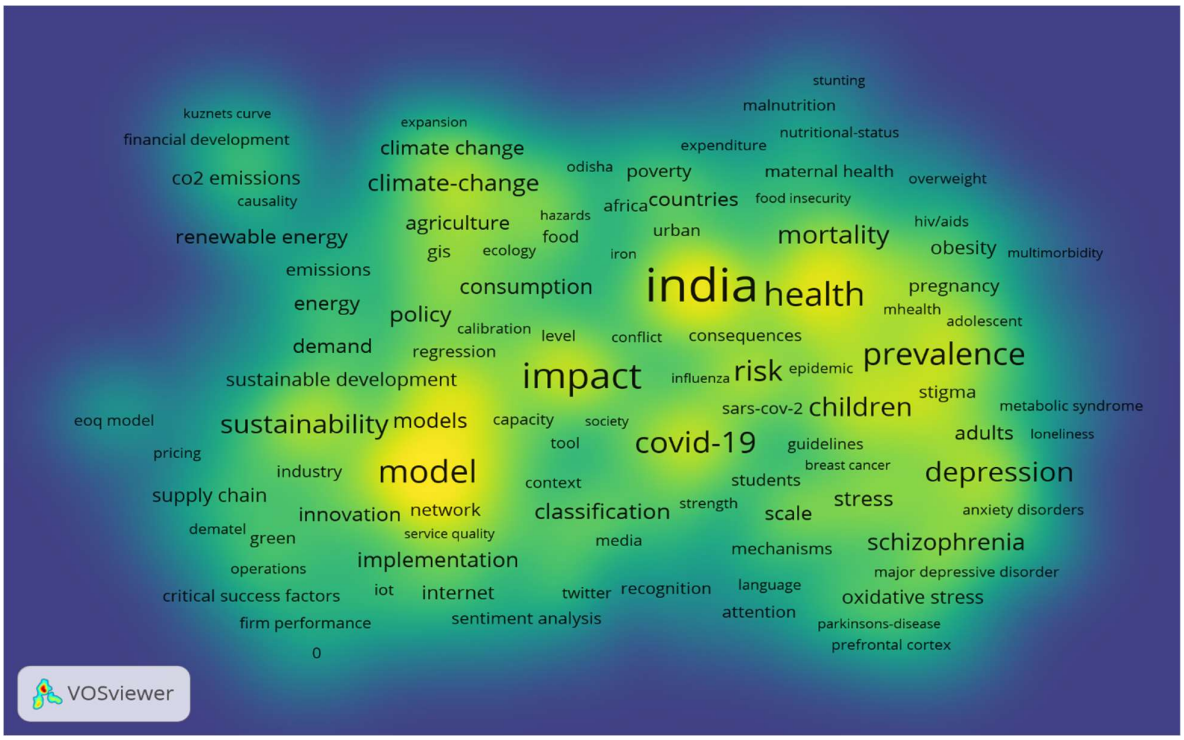

Fig 6: Co-occurence of Keywords in SSH disciples (Density Visualisation)

***Source: Author made*5.6 Co-authorship**

Further, co-authorship analysis was done based on organisation and on country. For both, minimum and maximum number of documents were chosen to be 3 and 25 respectively. For organisations, out of 19,490 organisations, 4488 meet the threshold and 11 clusters have been identified. (Figure 7). For countries, out of 186 countries, 161 meet the threshold and 6 clusters have been identified. (Figure 8) In the largest cluster (red) with 263 items, Indian Institute of Technology, University of Delhi and Jawaharlal Nehru University & NIT form the highest weighed circles. Next is the cluster with 202 items in it (green) with Indian Institute of Science, Indian Statistical Institute as the flag-bearers followed by foreign universities such as University of Oxford, University of Minnesota etc. All Indian Institute of Medical Sciences (AIIMS), National Institute of Mental health & Neurosciences, & London School of Hygiene & Tropical Medical are the other prominent institutes promoting medical research. In terms of co-authorship patterns amongst countries, besides India, USA, England, Australia, Canada, People's Republic of China, Germany, Sweden, Netherlands, South Africa are the top collaborating countries contributing to booming research in SSH disciplines from 2014-2023. In a bibliometric analysis of literature published by Indian authors in the Arts and Humanities Citation Index (A&HCI) of Web of Science, it was found that Indian authors' publications were less in A&HCI compared to three other Asian countries (China, Japan and South Korea) but there has been a gradual increase since 2011. (Singh et al., 2017) The study focuses on research publications indexed in Scopus during 2010-19 and compares them with three top internationally renowned business schools. The results show that older IIMs like Ahmedabad and Bangalore are at the top in terms of publication counts and citations, while newer IIMs like Rohtak and Raipur perform well in publications. IIM Udaipur has the highest citations per paper value among all IIMs. The paper suggests that IIMs need to improve their research output and quality to be at par with top business schools globally. Singh et al. 2022 conducted a bibliometric analysis of research output and quality of top Indian Institutes of Management (IIMs) compared to the top ranking business schools of the world, Harvard Business School, MIT Sloan School of Management, and NUS Business School. The study aimed to answer questions about publication trends, citation trends, international collaboration, open accessibility, social media attention, major thematic areas, gender distribution, and research performance. Previous research studies have found that Indian institutions have a high growth rate in research output but a relatively low quality level. The study also highlighted the need for collaborative action across institutions and specialized competence among faculty members to foster core academic activities. The study also suggested the need for indigenous scholarship, context-relevant methodologies, and modes of dissemination to suit the developmental and academic requirements of India.

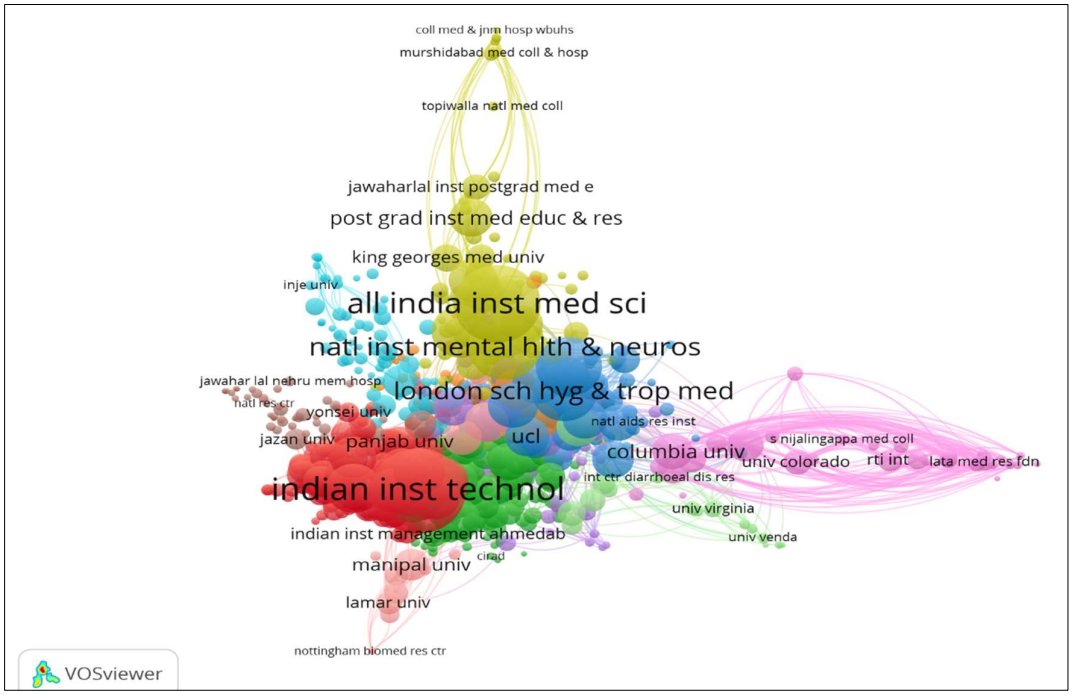

Fig 7: Co-authorship of Organisations in SSH disciples (Network Visualisation)

Source: Author made

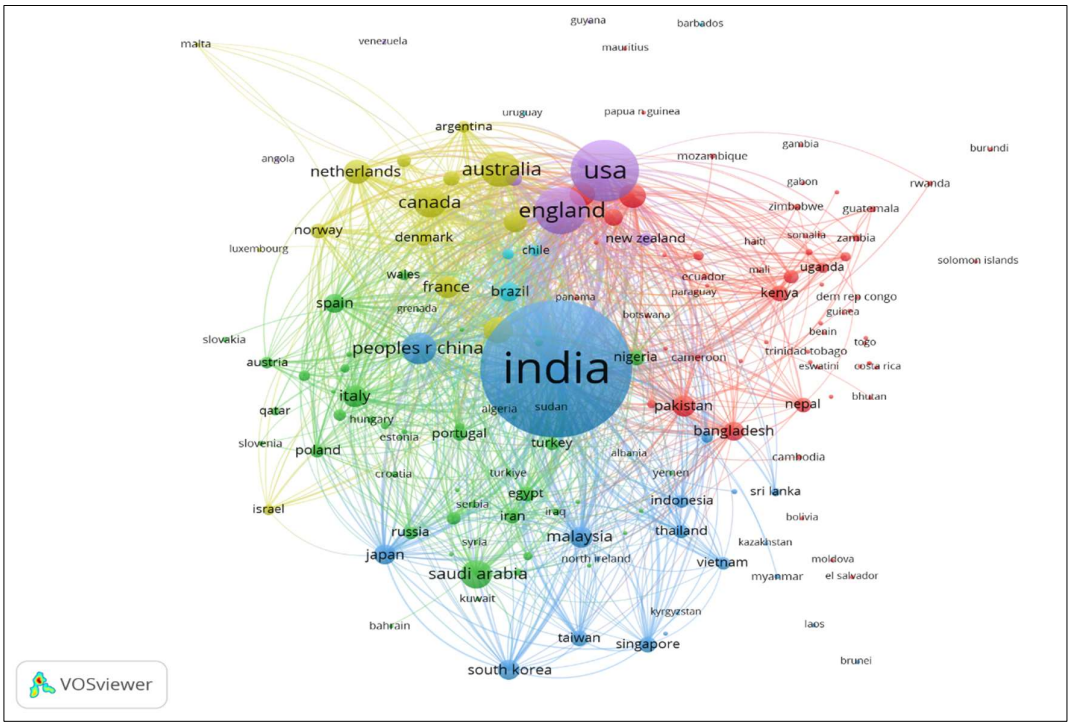

Fig 8: Co-authorship of Countries in SSH disciples (Network Visualisation)

Source: Author made**Conclusions**

In conclusion, this bibliometric study highlights the robust growth and evolving dynamics of Social Science and Humanities (SSH) research in India from 2014 to 2023. The analysis indicates a significant increase in research output, with a notable rise in collaborative authorship and a shift towards original research articles and review papers. Environmental Sciences, Public Environmental Occupational Health, and Psychiatry are among the top SSH categories, with "Sustainability" and the "Indian Journal of Psychiatry" emerging as leading publication sources. Despite a slight decline in publications in the last two years, the overall trend showcases a consistent enhancement in the quantity and quality of SSH research, reflecting India's growing emphasis on these critical disciplines. The growth of social science research in India has been influenced by international collaborations and can also be contributed to the development of open access journals. (Kirtania, 2018) This study underscores the importance of continuous support for diverse and collaborative research efforts to sustain and further this positive trajectory in SSH scholarship in India.

Limitations

It has been seen in this paper that the distribution of document type varies significantly across years in the ten year period from 2014-2023. Further investigation may be warranted to explore the specific factors driving the observed associations between publication types and years of publication. This could involve qualitative research methods, such as interviews or surveys with researchers, editors, and other stakeholders, to gain insights into the decision-making processes behind the choice of publication types. In terms of database, the analysis in this paper is restricted to WoS dataset which may not capture all papers published within Indian SSH disciplines, and hence could affect the generalizability of the findings. Future studies could look at other databases such as SCOPUS, ABDC etc.

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