

ECONOMICS, ECONOMETRICS AND FINANCE RESEARCH IN INDIA DURING 2004-2018: A SCIENTOMETRIC ASSESSMENT

Kaustuv Chakrabarti

Dhiman Mondal

Mr. Kaustuv Chakrabarti

Research Scholar
Dept. of Library and
Information Science
University of Calcutta, 87/1,
College Street
Kolkata – 700 073 (West
Bengal)
E-mail:
kaustuvculis@gmail.com

Mr. Dhiman Mondal

Librarian
Ananda Mohan College
102/1, Raja Rammohan Sarani
Kolkata – 700 009 (West
Bengal)
E-mail: dhiman.bon@gmail.com
Corresponding author

The present scientometric study explores the scholarly communication trend of the Indian Economists for the last 15 years period which covers pre-global financial crisis phase to pre-COVID-19 economic recession phase as reflected in the Scopus multidisciplinary database. The Indian economists authored total of 11,625 research articles comprising 21.55% international collaborated articles. The bibliographical details of the articles have been analysed on the basis of different aspects like chronological distribution, collaboration, authorship, productive authors, leading countries, institutions, preferred journals and citation impact. The United States secured leading position among the most collaborating countries and the Jawaharlal Nehru University contributed majority of articles. Further, the *Economic and Political Weekly* journal was found as the most favoured journal. The study also recommended that the nation's new economic strategy should be formulated immediately to face the upcoming challenges of the COVID-19 crisis.

Keywords: Economics, Econometrics, Finance, Scientometrics, Bibliometrics, Research, Publications, India.

INTRODUCTION

The Coronavirus (COVID-19) pandemic is a serious threat to the Global Economy and it has brought the global economy to a standstill (Reuters, 2020). According to Georgieva, the MD of International Monetary Fund (IMF), more than 90 countries have asked for emergency funding from the IMF to respond to the pandemic (Reuters, 2020) and she also forecasted that 2021 would only see a partial recovery (Robb, 2020). Meanwhile, the Covid-19 outbreak has worsened India's financial position too. Due to imposition of nationwide lockdown, most of the businesses have suddenly shutdown and unemployment rate has increased. The IMF already projects 1.9 per cent GDP growth for India in current fiscal and the Governor of Reserve Bank of India (RBI) expects a sharp turnaround recovery for India in the year 2021-22 (Kumar, 2020).

In the global financial crisis of 2008, India's trade collapsed and economic growth rate slowed down for few years (Kumar and Alex, 2009). But the present global recession is more severe than the 2008 financial crisis. Therefore, over the next few years policy makers as well as economists need to diagnose the economic challenges to survive and restart the economical growth. India's economy has showed steady and respectable growth performance in last few decades and it is the world's fifth-largest economy by nominal Gross Domestic Product (GDP) and is the third-largest by Purchasing Power Parity (PPP) ("Economy," n.d.). Many universities and institutions of higher learning in India's higher education system are involved in generating skilled manpower and quality research in economics and allied areas.

The three concepts i.e. Economics, Econometrics and Finance are interrelated with each others and these concepts together project the economic performance of a nation and its people. In this context, the purpose of the present effort is to identify the research trend in the field of economics and allied areas for the last 15 years period from pre-global financial crisis phase to pre-COVID-19 economic recession phase by finding answers to the following questions:

- i. What were the research growth and performance of the Indian economists?
- ii. What were the collaboration patterns and partner countries of the Indian economists?
- iii. What were the popular channels of scholarly communication?
- iv. Which institutions actively participated in the development of the field in India?

LITERATURE REVIEW

The present review of literature summarizes the earlier published literature on the quantitative aspects of India's research status in social sciences, economics and allied areas. For instance,

Gupta et al. (2013) presented India's performance in social sciences during 2001-10 and depicted that the United States produced lion's share of publications while India ranked 12th position having 21,671 papers (1.18%). In another attempt, Gupta et al. (2014) revealed Indian Universities' contribution in Social Sciences from the year 2008 to 2012 and pointed out that the University of Delhi, Jawaharlal Nehru University, Delhi and Anna University, Chennai were the most active institutions. In economics, econometrics & finance area, the top 25 Indian universities contributed 19.87 % share of all Indian papers in this area. Kirtania (2018) made a study on the trend of Indian social science literature in the open access environment. The results showed that the Indian Institute of Management, Bangalore and Indian Institute of Technology, Roorkee were the leading institutions. Furthermore, IIMB Management Review and Transportation Research Procedia were the most favoured journals among social scientists. Nandi and Bandyopadhyay (2008) assessed 68 research articles in the Indian Economic Review journal of Delhi School of Economics, University of Delhi during 1998-2002 and revealed that single authored papers were predominant as well. Besides 47.82% foreign contributors were published their research articles in the source journal.

Sudhier and Abhila (2011) analysed the publications of the Centre for Development Studies (CDS), Thiruvananthapuram during 1998-2008. Kerala's Developmental Issues and Industry, Technology & Development were the most productive areas. Additionally, Economic and Political Weekly journal published majority articles. A similar effort was done by Koganurmth et al. (2002) on the publications of Tata Institute of Social Sciences during 1990-2000 depicted that Indian Journal of Social Work and Economic and Political Weekly were the core favoured journals. The study also pointed out that single authorship pattern was apparent and there was a less scope for collaboration in the social sciences area. Chand (2016) did an analytical study on the publications on Indian economy in terms of key research areas, countries, institutions, and authors. The United States of America, England and Australia were the primary collaborating counties. Apart from these, planning, development, agriculture and environmental issues were the priority research areas for the economist. Further, Gupta et al. (2018) investigated 750 Indian publications on Indian Economy during 2006-17 in terms of growth, impact, collaboration, subject area, leading author, prolific organization, most productive journal and cited paper. The publications evidenced 25.73% share of international collaborative phenomenon.

Janmaijaya et al. (2020) analysed the research publications on economics discipline in India and figured out that the contribution was very less and the trends increased substantially over the period. The results showed that the Indian

Statistical Institute (ISI) and the University of Delhi were predominant among participated institutions. Further, competition, economic growth, developing country and unemployment were the prominent research topics in the country. The literature review reflects that every year the Indian authors produce significant number of research papers in the field of social sciences, economics and allied areas. Also a few attempts have been made to quantify the research performance in the subject area. However, the research output is still very low as compared to science and technology. Hence, it can be presumed that in India the research activity is largely skewed towards science and technology while domains of social sciences are negligible area. Therefore, in the coming years the country needs to accelerate its research capacity and competency for sustaining in social sciences domain by enhancing investment in R&D and strengthening international cooperation (Gupta et al. 2013). In this context, the present endeavour reports the India's research status in the broader inter-disciplinary areas of economics, econometrics and finance over the last 15 years period keeping in mind the global economic emergency due to the COVID-19 pandemic.

OBJECTIVES OF THE STUDY

The present study highlights the scholarly communication behavior of Indian authors in the discipline of economics and allied areas. The other objectives of the study are to:

1. find out the year wise distribution of journal articles,
2. identify the collaboration trend and scholarly impact,

3. examine the authorship distribution and prolific authors,
4. depict the leading collaborating countries and institutions,
5. illustrate the publications pattern and favoured source journals and
6. sketch the citation pattern of the articles.

SCOPE AND METHODOLOGY

The present scientometric study covers only Indian authored/ co-authored journal articles in the area of 'Economics, Econometrics and Finance' from the period from 2004 to 2018. The global financial crisis year of 2008 is significant from the economic perspectives and the year of 2019 will be remembered as the worst global economic emergency due to COVID-19 pandemic. Keeping in mind the above fact, the last 15 years period (during 2004 to 2018) which includes pre-global financial crisis phase to pre-COVID-19 economic recession phase has been considered.

For this purpose, the Scopus multidisciplinary abstracting and citation database of Elsevier has been consulted during the last week of November, 2019 and following advanced query string have been applied.

AFFILCOUNTRY(India) AND PUBYEAR>2003 AND PUBYEAR<2019 AND (LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SRCTYPE, "J"))

Out of the total publications, only journal articles (11,625) have been refined for the study. Later, the data have also been categorized and interpreted to get the desired output as specified

in objectives of the study. Tables and figures have been used to present the data. In addition, for measuring the citation impact and performance, different indices like *h*-index (Bornmann and Daniel, 2009), A-index (Jin et al., 2007) and *p*-index (Prathap, 2010, 2010a) have been applied.

RESULTS

The bibliographical details of the 11,625 articles have been analysed and interpreted in the following sub-sections:

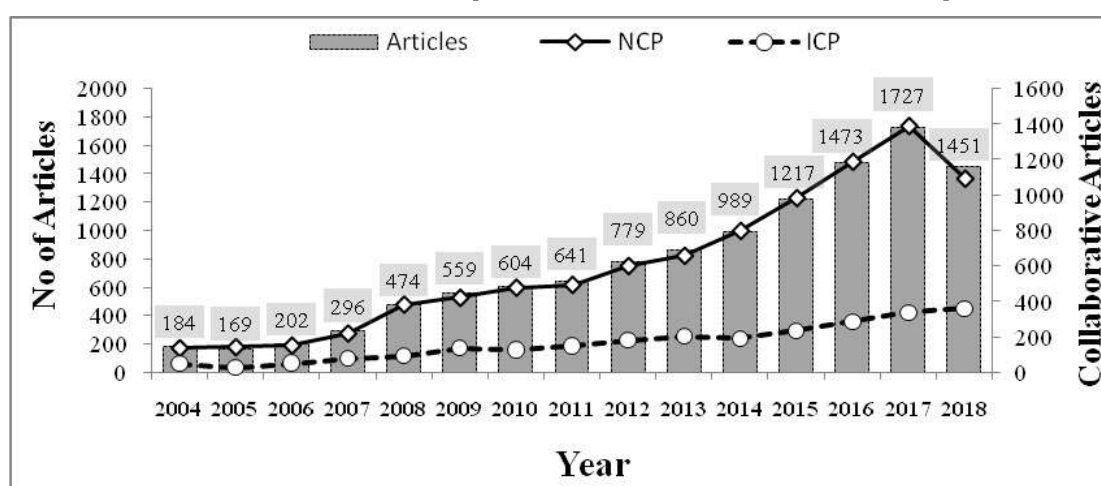
Distribution of articles by year

Triennial period wise distribution of articles and corresponding collaboration trend has been demonstrated in the table 1. In the last 15 years from 2004 to 2018, the Indian authors published a total of 11,625 articles comprising 2,505 international collaborative papers (21.55%). During the period of 2016-2018, Indian authors contributed majority of 4,651 articles (40%) which also count maximum 986 international collaborative papers. This is followed by the period of 2013-2015 with 3066 articles (26.37%). It is seen from the figure-1 that a gradual increasing trend has been found up to the year 2007 and afterward, a sharp rising trend has seen in terms of total contribution and domestic collaboration. The international collaborative phenomenon showed gradual decrease from 36.71 % share during 2001-05 and from 31.49 % share during 2006-10 (Gupta et al., 2013).

Table 1: Triennial period wise break-up of articles during 2004-2018

Year	Number of articles	% of articles	NCP	ICP
2004-2006	555	4.77	429	126
2007-2009	1329	11.43	1021	308
2010-2012	2024	17.41	1569	455
2013-2015	3066	26.37	2436	630
2016-2018	4651	40	3665	986
Total=	11,625	100	9120	2505

NCP=National Collaborative Papers; ICP=International Collaborative Papers

**Figure 1: Year wise distribution of articles**

Collaboration trend

The table 2 illustrates the collaboration wise distribution of articles and corresponding scholarly impact. Out of total 11,625 articles, national collaborative efforts produced majority of 78.45% articles while internationally collaborated articles attracted greater citation impact with 14.98 average citations per paper, h -index of 80. Additionally, 50 internationally collaborated articles received at least 100 or more citations. However, the nationally collaborated articles received maximum A-index of 141.30 and

34.93% papers remain uncited. It is seen from the table that averagely the total 11,625 articles got 7.92 citations per paper and overall 30.72% articles were uncited.

The h -index defines that the h papers have cited at least h times and the remaining papers have received fewer than $d > h$ citations each (Bornmann and Daniel, 2009). The A-index counts average number of citations of h -core papers in the h -index and it can be formulated as follows (Jin et al., 2007):

Table 2: Collaboration wise break-up of articles and citation impact

Collaboration Types	Number of articles	% of articles	ACPP	<i>h</i> -index	A-index	AC ₁₀₀	% of uncited
National Collaboration	9120	78.45	5.98	75	141.30	40	34.93%
International Collaboration	2505	21.55	14.98	80	134.75	50	15.41%
Total=	11,625	100	7.92	96	170.21	90	30.72%

ACPP= Average citations per paper; AC₁₀₀ = Number of articles received at least 100 or more citations

$$A = \frac{1}{h} \sum_{j=1}^h cit_j$$

where, *h* = *h*-index, and *cit_j* = Total citations counts of *h*-core papers

Authorship distribution and scholarly impact

The table 3 shows the data related to authorship pattern and corresponding scholarly impact. Out of total articles, largest number of 4169 articles (35.86%) was two-authored, followed by single-authored having 3671 articles

(31.58%). On the whole, the average authorship was 2.34 per paper. Conversely, more than ten-authored contributed only 36 articles that also gained wider average citations of 28.05 per article. On the contrary, the two-authored articles attracted highest *h*-index score of 66 and maximum 32 articles cited at least 100 or more times. It is also evident from the dataset that the maximum 37.7% single-authored articles were uncited, followed by two-authored articles (32.62%) and overall 30.72% articles remain uncited.

Table 3: Authorship pattern and impact

Authorship	Total articles	% of articles	ACPP	<i>h</i> -index	AC ₁₀₀	% of uncited
1	3671	31.58	4.03	39	4	37.7
2	4169	35.86	07	66	32	32.62
3	2104	18.01	10.43	63	22	26.19
4	809	6.96	14.20	49	14	19.28
5	367	3.15	15.39	38	7	19.34
6	213	1.83	18.79	32	6	10.8
7	137	1.18	14.95	24	0	11
8	60	0.51	19.08	18	1	8.33
9	32	0.27	14.34	12	1	6.25
10	27	0.23	14.41	10	1	7.40
>>10	36	0.31	28.05	13	2	8.33
Total=	11,625	100	7.92	96	90	30.72

ACPP= Average citations per paper; AC₁₀₀ = Number of articles received at least 100 or more citations

Most prolific authors

The table 4 reveals the rank list of leading authors. During 2004-2018, the notable author, A. K. Tiwari published the highest number of 92 articles, followed by S. Marjit having 66 articles. Out of top 10 authors, the papers of R. Jayakumar received the maximum citations impact having 1661 citations, *h*-index of 21, A-index of 73.42

and *p*-index of 43.29. In terms of *p*-index, the papers of A. K. Tiwari secured second the highest value of 23.91, followed by S. Ghosh with 18.85. The composite performance index (*p*-index) or mock *h*-index was introduced by Prathap (2010, 2010a) and can be measured as follows.

$$p\text{-index} = \left(C \cdot \frac{C}{P} \right)^{1/3}$$

Where, C= total number of citations; P= total number of papers

Table 4: Most productive authors

Rank	Author	Affiliation	No. of articles (P)	Total Citations (C)	ACPP (C/P)	<i>h</i> -index	A-index	<i>p</i> -index
1	Tiwari, A.K.	Montpellier Business School, France	92	1122	12.19	20	37.3	23.91
2	Marjit, S.	Centre for Studies in Social Sciences, Calcutta, India	66	501	7.59	11	29.90	15.60
3	Ghosh, S.	Reserve Bank of India, Mumbai, India	48	567	11.81	12	37.25	18.85
4	Teltumbde, A.	Committee for the Protection of Democratic Rights, Mumbai, India	44	18	0.41	02	02	1.94
5	Pradhan, R.P.	Indian Institute of Technology Kharagpur, India	41	468	11.41	14	26.21	17.48
6	Chaudhuri, S.	University of Calcutta, India	34	425	12.5	11	28.27	17.45
6	Jayakumar, R.	Amrita Vishwa Vidyapeetham, Kochi	34	1661	48.85	21	73.42	43.29
8	Goyal, A.	Indira Gandhi Institute of Development Research, Mumbai, India	33	127	3.85	06	14.5	7.88
9	Chandrasekhar, C.P.	Jawaharlal Nehru University, New Delhi, India	29	57	1.96	04	11.25	4.81
10	Amudha, R.	SASTRA University, Thanjavur, India	28	03	0.11	01	01	0.69

ACPP= Average citations per paper

Collaborating Countries

The table 5 exhibits the data related to the contribution of top 15 collaborating countries and corresponding scholarly impact. Out of 130 collaborating partners, the United States secured the leading position having 936 articles which also received maximum *h*-index of 59, A-index of 124 and maximum 26 articles cited at least 100 or

more times. This is followed by the United Kingdom having 380 articles and Australia having 205 articles. Alternatively, the 98 articles of China attracted maximum average citations of 29.07 per paper whereas, the maximum share of 22.22% collaborated articles with Singapore remain uncited. The figure 1 sketches the network visualization of leading 15 collaborating countries with India.

Table 5: Leading collaborating countries

Sl. No.	Country	No. of articles	ACPP	<i>h</i> -index	A-index	AC ₁₀₀	% of uncited
1.	United States	936	17.03	59	124	26	13.14
2.	United Kingdom	380	13.3	35	65.37	04	8.68
3.	Australia	205	15.02	27	67.22	04	12.2
4.	Canada	149	19.75	28	68.03	04	12.08
5.	France	149	13	24	56.12	02	8.72
6.	Germany	149	14.50	24	60.46	04	14.1
7.	China	98	29.07	29	81.34	07	8.16
8.	Japan	95	22.87	25	67.4	07	18.94
9.	Netherlands	82	17.44	16	69.12	03	18.3
10.	Saudi Arabia	81	13.50	20	35.15	00	18.52
11.	Singapore	63	17.51	16	55.81	01	22.22
12.	Italy	62	17.35	16	53.12	02	8.06
13.	Malaysia	62	10.30	13	36.30	00	21
14.	South Africa	54	11.83	16	28.87	00	13
15.	South Korea	52	21.77	19	47.52	01	7.7

ACPP = Average citations per paper; *AC*₁₀₀ = Number of articles received at least 100 or more citations

Leading National Institutions

The table 6 determines the most prolific national institutions. Out of leading 10 national institutions, the Jawaharlal Nehru University published majority of 458 articles, followed by the University of Delhi with 436 articles. The 202 articles of Indian Institute of Technology

Kharagpur received the maximum average citations of 14.25 per paper and maximum *h*-index of 29. Alternatively, the articles of the University of Delhi secured the highest A-index of 67.5 and also maximum 05 articles received at least 100 or more citations. In terms of *p*-index score, the Indian Statistical Institute Kolkata gained maximum *p*-index of 35.29, followed by

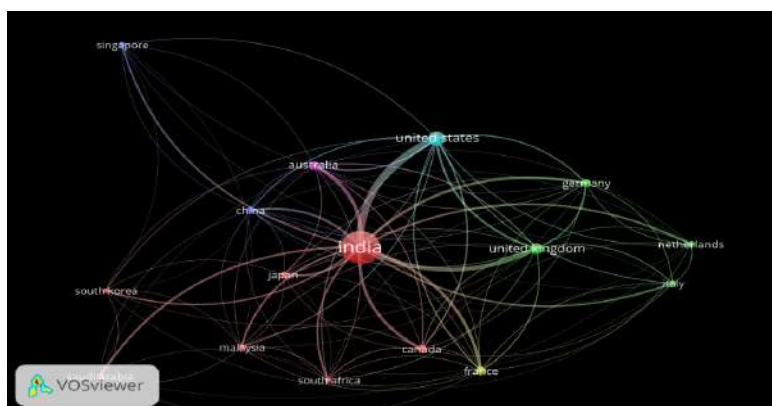


Figure 2: Network visualization map of top 15 collaborating countries with India

the Indian Institute of Technology Kharagpur having p -index of 34.49.

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Table 6: Most productive national institutions

Sl. No.	Institution	No. of articles (P)	Total citations (C)	ACPP (C/P)	h -index	A-index	AC ₁₀₀	p -index
1.	Jawaharlal Nehru University	458	2821	6.16	26	52.5	02	25.90
2.	University of Delhi	436	3666	8.41	26	67.5	05	31.35
3.	Indian Statistical Institute Kolkata	218	3095	14.2	21	107	03	35.29
4.	Indian Institute of Technology Kharagpur	202	2879	14.25	29	55.41	02	34.49
5.	Indian Institute of Management Bangalore	196	2266	11.56	22	61.27	04	29.7
6.	Indira Gandhi Institute of Development Research	194	1295	6.67	18	32.66	00	20.52
7.	Indian Institute of Management Ahmedabad	172	988	5.74	16	31.87	01	17.83
8.	Jadavpur University	168	1455	8.66	22	38.6	00	23.27
9.	Indian Statistical Institute Delhi	153	1895	12.38	21	52.76	01	28.63
10.	Vellore Institute of Technology	145	398	2.74	11	22.18	00	10.29

ACPP= Average citations per paper; AC₁₀₀ = Number of articles received at least 100 or more citations;

Leading foreign collaborating Institutions

The table 7 ascertains leading foreign collaborating institutions. Out of top 11 foreign collaborating institutions, the International Food Policy Research Institute, United States secured the leading position with 64 articles which also gained wider citation impact with *h*-index of 18, *A*-index of 59.83 and maximum 3 articles cited at least 100 or more times. This is followed by

the Monash University, Australia having 51 articles and the Montpellier Business School, France having 40 articles. Furthermore, 31 articles of the World Bank, USA achieved the highest average citations of 25.48 per paper. In case of *p*-index value, the International Food Policy Research Institute secured *p*-index of 30.49, followed by the World Bank, USA having 27.20.

Table 7: Most productive foreign collaborating institutions

Sl. No.	Foreign collaborating institution	No. of articles (P)	Total citations (C)	ACPP (C/P)	<i>h</i> -index	<i>A</i> -index	AC ₁₀₀	<i>p</i> -index
1.	International Food Policy Research Institute, United States	64	1347	21.04	18	59.83	03	30.49
2.	Monash University, Australia	51	574	11.25	12	34.75	00	18.62
3.	Montpellier Business School, France	40	624	15.6	12	42.66	00	21.35
4.	University of Manchester, UK	36	434	12.05	13	25.53	00	17.36
5.	The World Bank, USA	31	790	25.48	15	44.8	02	27.20
6.	Institut Zur Zukunft Der Arbeit, Germany	30	166	5.53	08	14.37	00	9.72
7.	University of Texas at San Antonio, United States	28	158	5.64	07	15.57	00	9.62
8.	National University of Singapore	28	374	13.36	09	35.9	00	17.1
9.	Universiteit Van Pretoria, South Africa	27	215	7.96	09	19.11	00	12
10.	King Saud University, Saudi Arabia	25	601	24.04	14	36.71	00	24.35
11.	University of California, Berkeley, United States	25	495	19.8	11	40.82	01	21.40

ACPP= Average citations per paper; AC₁₀₀ = Number of articles received at least 100 or more citations;

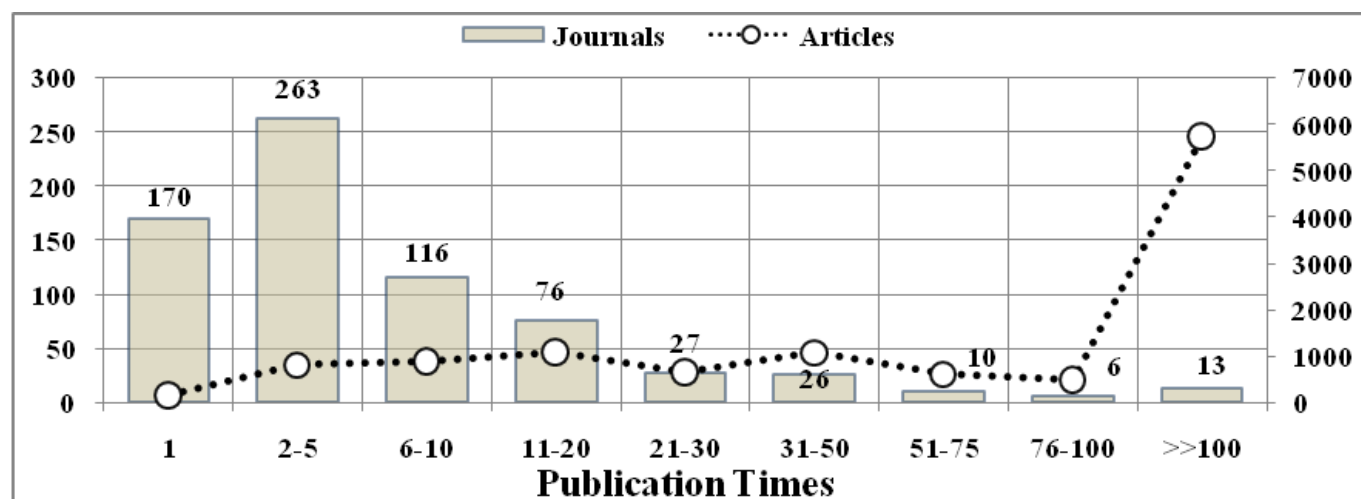
Publications pattern

The table 8 assesses the data related to scattering of journals and their share of the total number of articles. The Indian authors used 707 journals for scholarly communication of 11,625 research articles. Of these, majority of 263

journals (37.2%) contributed 820 articles (7.05%), whereas, lion's share of 5,756 articles (49.51%) published in 13 journals (1.84%) only. The shape of the figure 2 establishes the fact that the Indian authors preferred some selective core journals to publish their major research findings.

Table 8: Scattering of journals and articles

Publication pattern	Journals	% of journals	Articles	% of articles
1 time	170	24.04	170	1.46
2-5 times	263	37.2	820	7.05
6-10 times	116	16.41	898	7.72
11-20 times	76	10.75	1093	9.40
21-30 times	27	3.82	663	5.70
31-50 times	26	3.68	1085	9.33
51-75 times	10	1.41	627	5.4
76-100 times	06	0.85	513	4.41
More than 100 times	13	1.84	5756	49.51
Total=	707	100	11,625	100

**Figure 3: Publication pattern of articles in journals**

Application of the 80/20 rule on Journal-Article distribution

The “80/20 Law” is also called “Pareto’s law” that states that generally 80% of all effects result from 20% of all causes (Hardy, 2010). The rule has been widely accepted in multi-disciplinary areas to indicate cause-effect relationship. According to the law, 20% most

productive journals contain 80% of articles and 80% journals contain 20% articles.

In the present data set of table 9, out of total 707 journals, 141 (20 %) journals contributed 9,546 articles (82.1 %) while the rest of the 80 per cent journals i.e. 566 shared 2079 articles (17.9 %). The observed data is almost similar to the expected data. The percentage of error in 20

Table 9 : Distribution of 80/20 rule in sources journals and articles

80/20 Effect	No. of journals	No. of articles			
		Expected	%	Observed	%
20 % of journals	141	9300	80%	9546	82.1%
80 % of journals	566	2325	20%	2079	17.9%

per cent journals output is= $[(9546 - 9300) \times 100 / 9546] = 2.57\%$. Hence, it can be argued that the percentage of error is nominal and the data set fits 80/20 effect.

Preferred source journals

The table 10 highlights the list of preferred source journals that publish at least 100 or more

articles. Out of top 13 leading journals, the Economic and Political Weekly journal published maximum of 1,917 articles. This is followed by the International Journal of Biological Macromolecules with 1142 articles which also received greater *h*-index of 61, A-index of 95.13 and 17 articles cited at least 100 or more times.

Table 10: Leading source journals for scholarly communication

Sl. No.	Journals	Country	SJR, 2018	No. of articles	ACPP	<i>h</i> -index	A-index	AC ₁₀₀	% of uncited
1.	Economic and Political Weekly	India	0.299	1917	4.27	36	59.22	02	34.06%
2.	International Journal of Biological Macromolecules	Netherlands	0.962	1142	18.91	61	95.13	17	2.71%
3.	International Journal of Applied Business and Economic Research	India	0.114	674	1.11	06	92.83	04	81.16%
4.	Indian Journal of Labour Economics	Germany	0.139	469	1.63	10	14.5	00	50.10%
5.	International Journal of Economic Research	India	0.138	405	0.24	04	5.5	00	86.91%
6.	Indian Journal of Finance	India	0.201	252	1.59	07	8.86	00	33.73%
7.	Environment Development and Sustainability	Netherlands	0.505	147	6.52	14	28.64	00	8.16%
8.	Iimb Management Review	United Kingdom	0.414	147	7.16	16	34.62	01	17%
9.	Margin	United Kingdom	0.197	129	1.84	06	10.5	00	41.08%
10.	Economics Bulletin	United States	0.193	126	2.57	07	25.43	00	46.03%
11.	International Journal of Production Economics	Netherlands	2.475	126	41.75	42	92.9	10	2.38%
12.	Economic Modelling	Netherlands	1.039	117	15.52	25	44.36	01	06%
13.	World Development	United Kingdom	2.254	105	25.82	27	70.85	06	2.86%

SJR= SCImago Journal Rank; *ACPP*= Average citations per paper; *AC*₁₀₀ = Number of articles received at least 100 or more citations

Alternatively, the 126 articles of International Journal of Production Economics having maximum SJR of 2.475 attracted wider average citations 41.75 per paper. Eventually, two Indian journals i.e. the International Journal of Economic Research and the International Journal of Applied Business & Economic Research contain maximum uncited articles of 86.91% and 81.16% respectively.

Citation Pattern

The table 11 examines the distribution of articles according to citation. Majority of 5724 articles which constitute 49.24% achieved citations within the range of ≥ 1 - <10 followed by the 1178 articles (10.13%) containing citations in the range of ≥ 10 - <20 . Conversely, only 1 article received more than 500 citations and 3572 articles (30.72%) remain uncited.

Table 11: Citation wise distribution of articles

Citation Range	Total	% of articles	Cumulative Percentage
≥ 500	01	0.008	0.008
≥ 100 - <500	89	0.76	0.768
≥ 50 - <100	252	2.17	2.94
≥ 20 - <50	809	6.96	9.9
≥ 10 - <20	1178	10.13	20.03
≥ 1 - <10	5724	49.24	69.27
Uncited	3572	30.72	100
Total=	11,625	100	

CONCLUSION

In the last one and half decades, an increasing trend was observed in the contribution of Indian economists witnessing 21.55% share of internationally collaborated articles. Overall, total articles attracted 7.92 average citations per paper and 30.72% articles were uncited. Here, international collaborative papers gained larger citation impact due to their larger scope and wider visibility but it may be argued that the international collaborative efforts were declining gradually (Gupta et al., 2013). Subsequently, the developed nations like the United States, United Kingdom and Australia were the most productive collaborating partners that also

corroborate the earlier findings (Gupta et al., 2018), (Chand, 2016). Except the United States, the collaborative outputs with other developed countries were still nominal. Hence, more priority should be given on international collaborative partnerships to identify their strategic policies and activities for enhancing economic sustainability. Furthermore, among leading Indian institutions, the Jawaharlal Nehru University shared the largest contributions, whereas, among the foreign collaborating institutions, the International Food Policy Research Institute, United States produced the highest research papers. Further, the Economic and Political Weekly journal has been found as the most favoured

journal by the Indian authors for their scholarly communication.

It is also worth noting that the two Indian-origin economists named *Prof. Amartya Sen* and *Prof. Abhijit Banerjee* won the prestigious award in Economics for their remarkable contribution to welfare economics and global poverty (PTI, 2019). So India has great potentiality and prospect in the domain being one of the largest economies of the world. In the financial crisis of 2008, the Indian economy recovered faster which confirmed that the domestic sector is strong enough to cushion any external shocks from the global economy (Mukherjee, n.d.), (Viswanathan, 2010).

Now in the economic recession period of 2020, the growth of Indian economy has been shrunked again and necessary measures should be immediately taken to protect the nation from the worst economic crisis. The first focus should be on protecting the health of the people. Subsequently, the RBI along with the actively participated economics schools/ economists should come forward to frame the nation's new economic strategy for regaining growth levels. Rajan, the former governor of the RBI also expressed his deep concern and stated that 'India reforms only in crisis' (Nag and Sircar, 2020). The result of the study is an attempt to arrest the attention of the policy makers/ authorities to put priorities on the defined area to face the upcoming challenges of the COVID pandemic.

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