

Ranking of Indian Universities in Social Sciences using Bibliometric Indicators during 2008-12

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ABSTRACT

The paper analyses the rankings of 25 most productive Indian universities in overall social sciences and in its four subfields, based on various quantitative indicators, such as the total number of papers and international collaborative papers, qualitative indicators such as the average number of citations per paper and *h*-index value, and in terms of new composite indicator (which combines quantitative and qualitative aspects). Many universities changed their ranking positions, when their ranking based on quantitative and qualitative indicator is compared with composite indicator. Finally, analysed that the ranking, based on composite indicators, gives much better results than other indicators as it combines both quantity and quality. The overall ranking of top 25 Indian universities in social sciences give an indicative, if not nearly comprehensive, assessment of how the social science education is performing as generators of new knowledge.

Keywords: Bibliometrics, social science, Indian universities

1. INTRODUCTION

University rankings have gained popularity, especially after the launch of Academic Ranking of World Universities (also known as Shanghai Ranking) in 2003 and the ranking played an importance role in the growth, development, and management of universities. During the last few years, ranking of universities, through controversial, have become increasing popular. Global university ranking are used for variety of purposes. The governments, funding agencies and the media use university rankings as a source of strategic information on the global competition among the universities. The university managers use these university rankings as a marketing and decision support tool. Students and their parents use this university ranking as selection instrument¹⁻².

At the international level, few major ranking in general and in particular in social sciences are available. The most popular being:

(i) Shanghai Academic Ranking of World top 50 universities in social sciences–2012³: This ranking combines four criteria: Quality of education,

quality of faculty, research output, and per capita performance;

(ii) World Universities Rankings: Social Sciences 2012/13 by Times Higher Education⁴. This ranking combines 13 indicators categorised into five areas: Teaching, research, citations, industry income, and international outlook; and

(iii) SCImago Ranking of World Institutions (Social Science & Humanities)⁵. This ranking employs bibliometric data from Scopus database and the analysis is based on 6 indicators addressing issues like the scientific impact, thematic specialisation, output and international collaboration¹⁻².

At the national level only few efforts have been made on ranking Indian organisations in social sciences. Stanford university⁶ provides ranking of Indian universities and research institutions (with minimum of 20 publications in each sub-field) in four subject categories of social sciences, such as: (i) sociology, demography & family studies; (ii) economics, (iii) psychology, and (iv) business & management, using on two variables, namely, number

of articles in peer reviewed journals and number of citations, using Thomson ISI Web of Knowledge database during 2000-2010. Mukhopadhyay & Sarkar⁷ rank economic departments of Indian universities, based on publications appearing in domestic and international journals.

These three major global rankings in social sciences have attracted the attention of policy-makers, the research community, public, and media. Unfortunately, few Indian universities make it to the existing ranking schemes that exist internationally. In these rankings, the emphasis is largely or even wholly on research performance. Consequently, the number of publications and other bibliometric elements, such as citations play an important or even decisive role. Most of the international ranking schemes are complex exercises and assess both quantity and quality of research, but use elitist levels of achievement that they cannot be meaningfully applied in Indian context. Therefore, for ranking purposes in this study, the method and procedure suggested by Gangan Prathap⁸⁻¹⁰ is used for a ranking of research performance based on quantum of output and quality of research of various Indian universities in social sciences, using bibliographical data from Scopus database. So far, only few ranking of Indian universities in social sciences for their research performance has been undertaken. The present paper studies the ranking and performance of Indian universities in social sciences uses using quantitative and qualitative indicators, based on bibliometric data from international Scopus database.

2. OBJECTIVES

This paper analyses the research performance of 25 leading Indian universities in social sciences and in its four sub-fields, based on their research output, citations, international collaborative papers and a new performance indicator combining research output and quality during 2008-12.

3. METHODOLOGY

The international multidisciplinary bibliographical database Scopus¹¹ has been used to gather the necessary data for the study. Based on the data on social science research in India obtained from Scopus, the top 25 Indian universities with comparatively higher output of publications during the five years period from 2008-12 were identified. The citations (C) received by papers (P) are considered for first three years (three-year citation window) from the date of their publications till November 2013. This allows the average number of citations per paper (C/P) to be computed for each of these universities for the three year citation window. The *h*-index for these universities for the same period was determined from the Scopus database. The number of papers which resulted from international collaboration could also

be determined (TICP) and from this the percentage share of papers from international collaboration to the total number of papers published (% TICP) could be determined. There are several ways of ranking performance; the simplest may be the quantity of papers or citations (P or C) or by citation quality or citation impact (mean citation rate=C/P) or by a performance index combining quantity and quality (such as *h*-index). As suggested by Gangan Prathap, the best single indicator which can be used for ranking using quality and quantity together, can be defined as $h_m = (C^2/P)^{(1/3)}$. This index is referred as *p*-index. For identifying papers in social sciences, the present study paper uses classification, already existing in Scopus database. It has five sub-fields relating to social sciences, namely social science-general, economics, econometrics & finance; business, management & accounting; decision sciences; and psychology. For deriving data on Indian universities in social sciences, the output under these five sub-fields has been derived and combined.

4. ANALYSIS

4.1 Social Sciences: University Ranking

India has published 23481 papers in social sciences during 2008-12, which constitutes 5.86 % share of the total Indian publications output during this period, as indexed in Scopus database. The Indian output in social sciences comes from different type of Indian institutions, such as institutes of national importance, research institutes, universities & colleges, government departments, private bodies, foreign aid agencies, etc.

A total of 25 universities with comparatively higher output of publications in social sciences during a 5-year period from 2008 to 2012 were identified. These universities had each published papers from 55 to 645 during this period, according to publication data downloaded from the Scopus database. Together, they contributed 3885 papers, constituting 16.54 % share to the cumulative research output of India in social sciences during 2008-12. Table 1 shows the summary of the data for the 25 Indian universities in social sciences, i.e., the number of papers published (P), the citations obtained during the citation window (C), the average number of citations per paper, also known as citation impact ($i = C/P$), the Hirsch *h*-index, number and share international collaborative papers (ICP) and the composite performance index (*p*). Table 2 provides ranking of Indian universities in social sciences by various schemes or indices.

On ranking Indian universities by research output, it is observed from Table 1 that, University of Delhi tops the list with 645 papers, followed by Jawaharlal Nehru University (510 papers), Anna University (383 papers), Jadavpur University (278 papers), Aligarh Muslim University (190 papers), etc.

Table 1. Performance of top 25 Indian universities in social sciences during 2008-12

S. No.	University	Papers	Citations	Average citation index	<i>h</i> -index	International collaborative papers (ICP)	ICP (%)	Composite performance index (<i>p</i>)
1.	University of Delhi	645	703	1.09	7	22	17.6	9.15
2.	Jawaharlal Nehru University, New Delhi	510	442	0.87	6	18	20.22	7.26
3.	Anna University, Chennai	383	281	0.73	7	15	19.23	5.91
4.	Jadavpur University	278	702	2.53	15	113	17.52	12.1
5.	Aligarh Muslim University	190	348	1.83	12	59	11.57	8.61
6.	University of Calcutta	189	296	1.57	12	40	21.05	7.74
7.	University of Hyderabad	161	190	1.18	6	30	18.63	6.08
8.	Panjab University, Chandigarh	153	148	0.97	5	22	20.37	5.23
9.	Banaras Hindu University, Varanasi	125	155	1.24	12	26	13.76	5.77
10.	University of Pune	108	78	0.72	4	7	9.211	3.83
11.	Cochin University of Science & Technology	99	115	1.16	7	13	8.497	5.11
12.	Guru Nanak Dev University, Amritsar	98	81	0.83	6	7	8.75	4.06
13.	University of Mumbai	89	57	0.64	4	8	13.33	3.32
14.	University of Mysore	88	55	0.63	4	10	17.86	3.25
15.	Visva Bharati University	81	144	1.78	7	55	19.78	6.35
16.	Pondicherry University	80	76	0.95	8	11	11.11	4.16
17.	Andhra University	80	75	0.94	6	2	2.041	4.13
18.	University of Allahabad	78	142	1.82	9	28	7.311	6.37
19.	Annamalai University	76	51	0.67	3	15	23.08	3.25
20.	M.S.University of Baroda	74	49	0.66	5	6	9.375	3.19
21.	Osmania University	65	36	0.55	5	4	7.273	2.71
22.	GGSI Indraprastha University, Delhi	64	59	0.92	5	15	17.05	3.79
23.	University of Burdwan	60	45	0.75	7	13	16.25	3.23
24.	Indira Gandhi National Open University (IGNOU), New Delhi	56	38	0.68	6	9	12.16	2.95
25.	University of Lucknow	55	46	0.84	7	29	35.8	3.38
Total & Average		3885	4412	1.14	7.4	577	14.85	5.24

Jadavpur University with Average Citations Per Paper (ACPP) of 2.53 tops the list among Indian universities followed by Aligarh Muslim University (1.83), University of Allahabad (1.82). In terms of *h*-index, Jadavpur University tops with 17, followed by University of Delhi (15), Aligarh Muslim University, etc. Lucknow University reported the highest share (35.8 %) of international collaborative papers among the Indian universities, followed by Annamalai University (23.08 %), University of Calcutta (21.05 %), Panjab University (20.37 %), Jawaharlal Nehru University (20.23 %), etc.

In terms of composite performance index (*p*), Jadavpur University again tops the list with composite index value of 12.1, followed by University of Delhi (9.15), Aligarh Muslim University (8.61), University of Calcutta (7.74), etc.

Compared to ranking by research output, ranking of the top 10 best performing universities (in terms

of composite performance index), have shown mixed results:

- (i) Jadavpur University, University of Calcutta, University of Allahabad, and Visva Bharati University have improved their ranking;
- (ii) Jawaharlal Nehru University and Anna University have left behind in ranking; and
- (iii) Not much change in the ranking of Aligarh Muslim University, University of Delhi, University of Hyderabad and Banaras Hindu University was reported.

Jadavpur University, which achieved first rank in composite performance index (*p*), had 1st rank in both ACPP and *h*-index, 4th in terms of publication output and 11th rank in terms of international collaborative papers. University of Calcutta, which achieved 4th rank in *p* index, had 3rd rank in international

Table 2. Ranking of top 25 Indian universities in social sciences using various schemes, 2008-12

S. No.	Ranking of Indian universities using various indices			
	Composite performance index (<i>p</i>)	Average citation index (C/P)	<i>h</i> -index	International collaborative papers (ICP %)
1.	Jadavpur University (12.10)	Jadavpur University (2.53)	Jadavpur University (17)	University of Lucknow (35.8 %)
2.	University of Delhi (9.15)	Aligarh Muslim University (1.83)	University of Delhi (15)	Annamalai University (23.08 %)
3.	Aligarh Muslim University (8.61)	University of Allahabad (1.82)	Aligarh Muslim University (12)	University of Calcutta (21.05 %)
4.	University of Calcutta (7.74)	Visva Bharati University (1.78)	University of Calcutta (12)	Panjab University (20.37 %)
5.	Jawaharlal Nehru University (7.26)	University of Calcutta (1.57)	Jawaharlal Nehru University (12)	Jawaharlal Nehru University (20.22 %)
6.	University of Allahabad (6.37)	Banaras Hindu University (1.24)	Anna University (9)	Visva Bharati University (19.78 %)
7.	Visva Bharati University (6.35)	University of Hyderabad (1.18)	Cochin University of Science & Technology (7)	Anna University (19.23 %)
8.	University of Hyderabad (6.08)	Cochin University of Science & Technology (1.16)	University of Allahabad (7)	University of Hyderabad (18.63%)
9.	Anna University, Chennai (5.91)	University of Delhi (1.09)	Visva Bharati University (7)	University of Mysore (17.86%)
10.	Banaras Hindu University (5.77)	Panjab University (0.97)	Banaras Hindu University (7)	University of Delhi (17.6 %)
11.	Panjab University (5.23)	Pondicherry University (0.95)	Panjab University (7)	Jadavpur University (17.52 %)
12.	Cochin University of Science & Technology (5.11)	Andhra University (0.94)	Andhra University (7)	GGs Indraprastha University (17.05 %)
13.	Pondicherry University (4.16)	GGs Indraprastha University (0.92)	University of Hyderabad (6)	University of Burdwan (16.25 %)
14.	Andhra University (4.13)	Jawaharlal Nehru University (0.87)	Pondicherry University (6)	Banaras Hindu University (13.76 %)
15.	Guru Nanak Dev University (4.06)	University of Lucknow (0.84)	Guru Nanak Dev University (6)	University of Mumbai (13.33 %)
16.	University of Pune (3.83)	Guru Nanak Dev University (0.83)	M.S. University of Baroda (6)	Indira Gandhi National Open University (12.16 %)
17.	GGs Indraprastha University (3.79)	University of Burdwan (0.75)	University of Mumbai (6)	Aligarh Muslim University (11.57 %)
18.	University of Lucknow (3.38)	Anna University (0.73)	G.G.S. Indraprastha University (5)	Pondicherry University (11.11 %)
19.	University of Mumbai (3.32)	University of Pune (0.72)	University of Lucknow (5)	M.S. University of Baroda (9.37 %)
20.	University of Mysore (3.25)	Indira Gandhi National Open University (IGNOU)(0.68)	University of Pune (5)	University of Pune (9.21 %)
21.	Annamalai University (3.25)	Annamalai University (0.67)	University of Mysore (5)	Guru Nanak Dev University (8.75 %)
22.	University of Burdwan (3.23)	M.S. University of Baroda (0.66)	University of Burdwan (4)	Cochin University of Science & Technology (8.50 %)
23.	M.S. University of Baroda (3.19)	University of Mumbai (0.64)	Indira Gandhi National Open University (IGNOU) (4)	University of Allahabad (7.31 %)
24.	Indira Gandhi National Open University (IGNOU) (2.95)	University of Mysore (0.63)	Annamalai University (4)	Osmania University (7.27 %)
25.	Osmania University (2.71)	Osmania University (0.55)	Osmania University (3)	Andhra University (2.04 %)

collaborative papers, 4th rank in *h*-index, 5th rank in ACPP and 6th rank in publication output. University of Allahabad, which achieved 6th rank in composite

performance index (*p*), had 3rd rank in ACPP, 8th rank in *h*-index, 18th rank in publication output, and 23th rank in share of international collaborative

papers. Visva Bharati University, which achieved 7th rank in *p* value, had 4th rank in ACPP, 6th rank in share of ICP, 9th rank in *h*-index, and 15th rank in publications output.

Jawaharlal Nehru University, which achieved 5th rank in composite performance index, had 2nd rank in publication output, 5th rank in both *h*-index and share of international collaborative papers and 14th rank in ACPP. Anna University, which achieved 9th rank in composite performance index, had 3rd rank in publication output, 6th rank in *h*-index, 7th rank in share of international collaborative papers and 18th rank in average citation per paper.

The University of Delhi, which achieved 2nd rank in composite performance index, had 1st rank in publication output, 2nd rank in *h*-index, 9th rank in ACPP and 10th rank in share of international collaborative papers. Aligarh Muslim University, which achieved 1st rank in composite performance index, had 2nd rank in average citation per paper, 3rd rank in *h*-index, 5th rank in publication output and 17th rank in share of ICP. University of Hyderabad, which achieved 8th rank in composite performance index, had 7th rank in both publication output and average citation per paper, 8th rank in international collaborative papers and 13th rank in *h*-index.

4.2 Business, Management & Accounting

India has contributed 6544 papers in business, management & accounting during 2008-12. The top 25 Indian universities in business, management & accounting have contributed 723 papers, which accounts for 11.05 % share of all Indian papers in this area. The summary of the scientometric data about the top 19 Indian universities in business, management & accounting is presented in Table 3. These 19 universities have contributed 705 papers during 2008-12 (Table 3).

On ranking Indian universities by publication output, Anna University tops the list with 161 papers, followed by University of Delhi (93 papers), Jadavpur University (63 papers), Aligarh Muslim University (46 papers), etc. University of Calcutta tops the list among Indian universities with average citation per paper (ACPP) of 2.42, followed by Aligarh Muslim University (2.33), Jadavpur University (1.98), University of Delhi (1.85), etc. In terms of *h*-index, Aligarh Muslim University and Jadavpur University tops the list with *h*-index value of 8 each, followed by University of Delhi (6), G.G.S. Indraprashta University (5), University of Calcutta (4), etc. In terms of share of international collaborative papers (ICP), University of Hyderabad tops the list with international collaborative share

Table 3. Performance of top 19 Indian universities in business, management & accounting during 2008-12

S. No.	University	Papers	Citations	Average citation index (C/P)	<i>h</i> -index	International collaborative papers (ICP)	ICP (%)	Composite performance index (<i>p</i>)
1.	Anna University	161	110	0.683	4	8	4.969	4.2
2.	University of Delhi	93	172	1.849	6	19	20.43	6.8
3.	Jadavpur University	63	125	1.984	8	4	6.34	6.3
4.	Aligarh Muslim University	46	107	2.326	8	5	10.87	6.3
5.	Jawaharlal Nehru University	37	61	1.649	4	8	21.62	4.7
6.	M.S. University of Baroda	33	40	1.212	4	2	6.061	3.6
7.	Annamalai University	28	30	1.071	4	3	10.71	3.2
8.	University of Calcutta	26	63	2.423	4	2	7.692	5.3
9.	University of Mysore	25	1	0.04	2	5	20.00	0.3
10.	G.G.S. Indraprashta University	24	37	1.542	5	3	12.50	3.8
11.	Pondicherry University	24	8	0.333	3	1	4.167	1.4
12.	University of Mumbai	24	8	0.333	2	2	8.333	1.4
13.	G.N.D. University	23	8	0.348	2	2	8.696	1.4
14.	Cochin University of Science & Technology	22	10	0.455	3	5	22.73	1.7
15.	Panjab University	18	16	0.889	3	3	16.67	2.4
16.	Andhra University	18	18	1	3	5	27.78	2.6
17.	University of Hyderabad	15	15	1	4	6	40.00	2.5
18.	University of Burdwan	13	16	1.231	3	1	7.69	2.7
19.	Osmania University	12	18	1.5	2	3	25.00	3.0
	Total & average	705	863	1.22	3.9	87	12.3	3.4

of 40 %, followed by Andhra University (27.8 %), Osmania University (25 %). Cochin University of Science & Technology (22.7 %), Jawarhalal Nehru University (21.6 %), University of Delhi (20.4 %), etc. University of Delhi tops the list in composite performance index ranking with 6.8, followed by Aligarh Muslim University (6.3), Jadavpur University (6.3), University of Calcutta (5.3), Jawarhalal Nehru University (4.7), Anna University (4.2), etc.

University of Delhi, which ranked at 1st place in composite performance index, had 2nd rank in publication output, 3rd rank in *h*-index, 4th rank in ACPP and 5th rank in share of international collaborative papers. Aligarh Muslim University, which ranked at 2nd place in composite performance index, had 1st rank in *h*-index, 4th rank in publication output and 10th rank in share of international collaborative papers. Jadavpur University, which ranked at 3rd in composite performance index, had 1st rank in *h*-index, 3rd rank in both publication output and ACPP and 16th rank in share of ICP. University of Calcutta, which ranked at 4th rank in composite performance index, had 1st rank average citation per paper, 4th rank in *h*-index, 8th rank in publication output and 14th rank in share of ICP.

4.3 Economics, Econometrics & Finance

India has contributed 3955 papers in economics, econometrics & finance during 2008-12. The top 25 Indian universities in economics, econometrics & finance have contributed 786 papers, which accounts for 19.87 % share of all Indian papers in this area. The summary of the scientometric data of the top 15

Indian universities in economics, econometrics & finance is presented in Table 4. These 15 Indian universities have contributed 778 papers during 2008-12.

On ranking Indian universities by publication output, University of Delhi tops the list with 230 papers, followed by Jawaharlal Nehru University (225 papers), Jadavpur University (52 papers), University of Hyderabad (41 papers), University of Calcutta (39 papers), etc. Banaras Hindu University tops the list with ACPP of 2.71, followed by University of Calcutta (1.36), Jadavpur University (1.23), Jawaharlal Nehru University (0.94), University of Delhi (0.93) and University of Allahabad (0.91). In terms of *h*-index, Jawaharlal Nehru University tops the list with *h*-index value of 9, followed by University of Delhi (9), Banaras Hindu University (5), Jadavpur University (5), etc.

In terms of share of ICP, Jadavpur University tops the list with international collaborative share of 26.9 %, followed by University of Delhi (22.2 %), Banaras Hindu University (21.4 %), University of Allahabad (18.2), etc. University of Delhi tops the list in composite performance index (*p*) ranking with 5.86, followed by Jawaharlal Nehru University (5.83), Banaras Hindu University (4.69), Jadavpur University (4.29), University of Calcutta (4.16), University of Hyderabad (3.22), etc.

University of Delhi, which ranked at 1st place in composite performance index (*p*), had 1st rank in publication output, 2nd rank in both *h*-index and share of international collaborative papers (*p*) and 5th rank in ACPP. Jawaharlal Nehru University, which ranked at 2nd place in composite performance index, had 1st rank in *h*-index, 2nd rank in publication

Table 4. Performance of top 15 Indian universities in economics, econometrics & finance during 2008-12

S. No.	University	Papers	Citations	Average citation index	<i>h</i> -index	International collaborative papers (ICP)	ICP (%)	Composite performance index (<i>p</i>)
1.	University of Delhi	230	215	0.93	9	51	22.17	5.86
2.	Jawaharlal Nehru University	225	211	0.94	9	29	12.89	5.83
3.	Jadavpur University	52	64	1.23	5	14	26.92	4.29
4.	University of Hyderabad	41	37	0.90	4	4	9.756	3.22
5.	University of Calcutta	39	53	1.36	4	5	12.82	4.16
6.	University of Mumbai	30	5	0.17	2	5	16.67	0.94
7.	Anna University	29	5	0.17	2	4	13.79	0.95
8.	Panjab University	24	6	0.25	2	0	0.00	1.14
9.	Pondicherry University	21	10	0.48	4	0	0.00	1.68
10.	G.N.D. University	19	9	0.47	2	2	10.53	1.62
11.	University of Pune	17	15	0.88	2	3	17.65	2.37
12.	University of Burdwan	16	9	0.56	1	1	6.25	1.72
13.	Banaras Hindu University	14	38	2.71	5	3	21.43	4.69
14.	University of Allahabad	11	10	0.91	2	2	18.18	2.09
15.	Osmania University	10	9	0.9	1	1	10.00	2.01
	Total & average	778	696	0.89	3.6	124	15.94	2.84

output, 4th rank in average citation per paper and 8th rank in share of international collaborative papers. Jadavpur University, which ranked at 3rd place in composite performance index, had 1st rank in share of international collaborative papers, 3rd rank in both publication output and average citation per paper and 4th rank in *h*-index. University of Calcutta, which ranked at 4th in composite performance index, had 2nd rank in average citation per paper, 5th rank in both publication output and *h*-index and 9th rank in share of international collaborative papers.

4.4 Decision Science

India has contributed 3153 papers in decision science during 2008-12. The top 25 Indian universities in decision science have contributed 801 papers, which accounts for 25.4 % share of all Indian papers in this area. The summary of the scientometric data about the top 18 Indian universities in decision science is presented in Table 5. These 18 Indian universities have contributed 563 papers during 2008-12.

On ranking Indian universities by publication output, University of Delhi tops the list with 76 papers, followed by Jadavpur University (75 papers), Anna University (66 papers), etc. Jadavpur University tops the list in average citation per paper (ACPP) with 5.51, followed by University of Calcutta (3.42), Pondicherry University (2.60), GGS Indraprastha University (2.45), etc. In terms of *h*-index, Jadavpur University tops the list with *h*-index value of 14,

followed by University of Calcutta (9), Anna University (9), etc. Visva Bharati University top the list in the share of international collaborative papers with international collaborative share of 60 %, followed by University of Hyderabad (44.4 %), Aligarh Muslim University (44 %), etc. Jadavpur University tops the list in composite performance index (*p*) ranking with 13.2, followed by University of Calcutta (8.24), University of Delhi (6.46), etc.

Jadavpur University, which ranked at 1st place in composite performance index, had 2nd rank in both publication output and *h*-index, 3rd rank in ACPP and 16th rank in share of ICP. University of Calcutta, which ranked at 2nd place in composite performance index, had 1st rank in average citation per paper, 5th rank in *h*-index, 6th rank in publication output and 14th rank in share of international collaborative papers. University of Delhi, which ranked at 3rd place in composite performance index, had 1st rank in publication output, 3rd rank in *h*-index, 4th rank in average citation per paper and 6th rank in share of international collaborative papers.

4.5 Psychology

India has contributed 1237 papers in psychology during 2008-12. The top 25 Indian universities in psychology have contributed 193 papers, which accounts for 15.6 % share of all Indian papers in this area. The summary of the scientometric data about the top 11 Indian universities in psychology is

Table 5. Performance of top 18 Indian universities in decision science during 2008-12

S. No.	University	Papers	Citations	Average citation index	<i>h</i> -index	International collaborative papers (ICP)	ICP (%)	Composite performance index (<i>p</i>)
1.	University of Delhi	76	143	1.88	8	6	7.89	6.46
2.	Jadavpur University	75	413	5.51	15	19	25.30	13.2
3.	Anna University	66	124	1.88	9	10	15.20	6.15
4.	Aligarh Muslim University	50	93	1.86	8	22	44.00	5.57
5.	Cochin University of S&T	49	52	1.06	6	4	8.16	3.81
6.	University of Calcutta	48	164	3.42	9	5	10.40	8.24
7.	Visva Bharati University	30	67	2.23	5	18	60.00	5.31
8.	University of Hyderabad	27	63	2.33	5	12	44.40	5.28
9.	University of Pune	22	16	0.73	3	6	27.30	2.27
10.	Banaras Hindu University	20	19	0.95	3	7	35.00	2.62
11.	Panjab Universty	18	10	0.56	3	2	11.10	1.77
12.	Andhra University	16	35	2.19	4	3	18.80	4.25
13.	Annamalai University	14	15	1.07	3	3	21.40	2.52
14.	GGS Indraprastha University	11	27	2.45	5	1	9.09	4.05
15.	Jawaharlal Nehru University	11	6	0.55	2	2	18.20	1.48
16.	G N.D University	10	20	2.00	3	0	0.00	3.42
17.	Pondicherry Unversity	10	26	2.60	3	3	30.00	4.07
18.	Osmania University	10	8	0.80	2	1	10.00	1.86
Total & average		563	1301	2.32	5.33	124	22.02	4.57

Table 6. Performance of top 25 Indian universities in psychology during 2008-12

S. No.	University	Papers	Citations	Average citation index	<i>h</i> -index	International collaborative papers (ICP)	ICP (%)	Composite performance index (<i>p</i>)
1.	University of Allahabad	37	117	3.16	7	9	24.3	7.18
2.	University of Delhi	30	48	1.6	5	10	33.3	4.25
3.	Banaras Hindu University	19	35	1.84	3	4	21.1	4.01
4.	University of Calcutta	16	14	0.88	2	2	12.5	2.30
5.	University of Mysore	12	10	0.83	2	5	41.7	2.03
6.	Aligarh Muslim University	12	98	8.17	5	5	41.7	9.28
7.	Pondicherry University	7	6	0.86	2	2	28.6	1.73
8.	University of Hyderabad	7	4	0.57	1	2	28.6	1.32
9.	Jawaharlal Nehru University	7	6	0.86	1	1	14.3	1.73
10.	Andhra University	6	4	0.67	2	2	33.3	1.39
11.	University of Mumbai	6	23	3.83	3	4	66.7	4.45
Total & average		159	365	2.3	3	46	28.9	3.61

presented in Table 6. These 11 Indian universities, each publishing papers from 6 to 37, have contributed 159 papers during 2008-12.

On ranking Indian universities by publication output, University of Allahabad tops the list with 37 papers, followed by University of Delhi (30 papers), Banaras Hindu University (19 papers), University of Calcutta (16 papers), University of Mysore (12 papers), etc. Aligarh Muslim University tops the list among Indian universities with average citation per paper (ACPP) of 8.17, followed by University of Mumbai (3.83), University of Allahabad (3.16), Banaras Hindu University (1.84), University of Delhi (1.60), etc. In terms of *h*-index, University of Allahabad tops the list with *h*-index value of 7, followed by Aligarh Muslim University (5), University of Delhi (5), University of Mumbai (3), etc. University of Mumbai top the list in share of international collaborative share with 66.7 % share, followed by Aligarh Muslim University (41.7 %), University of Mysore (41.7 %). Aligarh Muslim University tops the list in composite performance index ranking with composite performance index of 9.28, followed by University of Allahabad (7.18), University of Mumbai (4.45), University of Delhi (4.25), etc.

Aligarh Muslim University, which ranked at 1st place in composite performance index, had 1st rank in average citation per paper, 2nd rank in share of international collaborative papers and 5th rank in both *h*-index and publications output. University of Allahabad, which ranked at 2nd place in composite performance index, had 1st rank in publication output, 3rd rank in average citation per paper, 7th rank in *h*-index and 8th rank in share of international collaborative papers.

5. SUMMARY AND CONCLUSIONS

Jadavpur University, which secured first rank in overall social sciences as well as in decision science, had 3rd rank both in economics, econometrics and finance and business, management & accounting.

University of Delhi, which secured 2nd rank in overall social sciences, had 1st rank both in business, management & accounting and economics, econometrics & finance, 3rd rank in decision science and 4th rank in psychology. Aligarh Muslim University, which secured 3rd rank in overall social sciences, had 1st rank in psychology, 2nd rank in business, management & accounting and 5th rank in decision science. University of Calcutta, which secured 4th rank in overall social sciences, had 2nd rank in decision science, 3rd rank in business, management & accounting, 5th rank in economics, econometrics & finance and 6th rank in psychology. Jawaharlal Nehru University, which secured 5th rank in overall social sciences, had 2nd rank in economics, econometrics & finance, 5th rank in business, management & accounting, 8th rank in psychology and 17th rank in decision science. University of Allahabad, which secured 6th rank in overall social sciences, had 2nd rank in psychology and 8th rank in economics, econometrics & finance. Visva Bharati University, which secured 7th rank in overall social sciences, had 6th rank in decision science. University of Hyderabad, which secured 8th rank in overall social sciences, had 6th rank in economics, econometrics & finance, 7th rank in decision science, 11th rank in psychology and 13th rank in business, management & accounting. Anna University, which secured 9th rank in overall social sciences, had 4th rank in decision science, 6th rank in business, management & accounting and 14th rank in economics, econometrics & finance. Banaras Hindu University, which secured 10th rank in overall social sciences, had 3rd rank in economics, econometrics & finance, 5th rank in psychology and 13th rank in decision science. Panjab University, which secured 11th rank in overall social sciences, had 17th rank in decision science. Cochin University of Science & Technology, which secured 12th rank in overall social sciences, had 11th rank in decision science and 15th rank in business, management & accounting.

Pondicherry University, which secured 13th rank in overall social sciences, had 8th rank in psychology, 9th rank in decision science, 11th rank in economics, econometrics & finance and 16th rank in business, management & accounting. Andhra University, which secured 14th rank in overall social sciences, had 8th rank in decision science, 10th rank in psychology and 12th rank in business, management & accounting. Guru Nanak Dev University, which secured 15th rank in overall social sciences, had 12th rank both in decision science and economics, econometrics & finance and 18th rank in business, management & accounting.

In this paper, a more rational procedure (using composite performance index) has been presented along with other procedures for ranking the research performance of Indian universities in social sciences. The ranking of 25 Indian universities in overall social sciences, as well as in four sub-fields, namely economics, econometrics & finance; business, management & accounting; decision science; and psychology give an indicative bibliometric assessment in terms of few parameters, which through some light on how the social science higher education is performing as generator of new knowledge. The leading performers of Indian universities in social sciences and in its sub-fields are also identified. Such universities can be selected as a centre for advanced study for future funding by research agencies. Such an exercise will also create competition for Indian universities for securing of future research grants from funding agencies as well help in attracting bright new students for postgraduate studies and PhD research. Finally, ranking provides an opportunity to universities to improve their policies, including the funding structure, research infrastructure and environment, quality, etc. It concludes that ranking based on composite performance indicator as compared to other indicators used here gives much better results as it combines both quantity and quality aspects.

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