

Bibliometric benchmarking of Himalayan studies in India

Dimri and Pandey¹ welcome the move by the Government of India to set up a Centre for Himalayan Study (CHiMS) in Uttarakhand. Currently, as bibliometric evidence will certify, most of the studies pertaining to the region are in the areas of earth and atmospheric sciences and the rich biodiversity resources of the region and its ecosystem. Bibliometric indicators allow the recent research in this area to be quantified and for this purpose we use both the Scopus and Web of Science databases.

We conduct our study using simple search strategies. We restrict attention to the 10 year period 2004–2013. For *Scopus*, the keyword ‘himalay*’ was used in ‘title, abstract and keyword’ tag. For the Web of Science Core Collection, the same keyword was used in the title, topic and publication name fields (accessed during the period 28 November 2014 to 5 December 2014).

A total of 112 countries, including India have published 9,041 articles during this period according to the Web of Science Core Collection database. These articles have collected 97,553 citations for a global impact of 10.79. During the same period, India acting alone (i.e. without any collaboration from any institution from the remaining 111 countries) published 3,574 articles. These articles collected 15,727 citations for an impact of 4.40. This is much lower than the overall global impact. It means that Indian research has played the role of a spoiler and has reduced the global impact. To quantify this, we queried the performance of the 111 countries for the case (rest of the world alone) where there was no collaboration with an Indian partner. A total of 4,845 publications were registered, attracting 73,258 citations for an even higher impact of 15.12.

Table 1 shows the steady growth in scientific output in Himalayan studies globally and from India (now including collaborative papers with other countries) during the period 2004–2013, using data from both the Web of Science Core Collection and *Scopus*. It is seen that in terms of raw counts of publications, India’s share has gradually increased to about half of the global output. This is visualized in Figure 1.

Table 1 and Figure 1 report only measures of the size or quantity of scientific

effort as given by the count of publications. We have already seen that in terms of impact, which is a proxy for quality, the publications from India acting alone are much lower in impact than those from the other countries where no collaboration with an Indian partner is involved. We shall track the trajectory of performance over the ten-year period using five-year windows for counting publications and the sixth year in each

case for counting citations for these two cases. Tables 2 and 3 show how the publication and citation counts and the impact and the second-order exergy indicators^{2,3} have varied during this period according to the competing databases. Figure 2 shows the impact–citations–exergy (*iCX*) trajectories on a two-dimensional map⁴. India’s impact is less than a third of the impact of the rest of the world.

Table 1. The growth in scientific output in Himalayan studies globally and from India during the period 2004–2013

Year	Web of Science			Scopus		
	World	India	Percentage share	World	India	Percentage share
2004	558	229	41.04	585	254	43.42
2005	605	278	45.95	659	301	45.68
2006	667	261	39.13	773	320	41.40
2007	776	364	46.91	888	390	43.92
2008	908	449	49.45	904	431	47.68
2009	926	420	45.36	949	467	49.21
2010	1043	495	47.46	1180	595	50.42
2011	1074	523	48.70	1248	684	54.81
2012	1193	548	45.93	1297	664	51.20
2013	1291	629	48.72	1484	765	51.55
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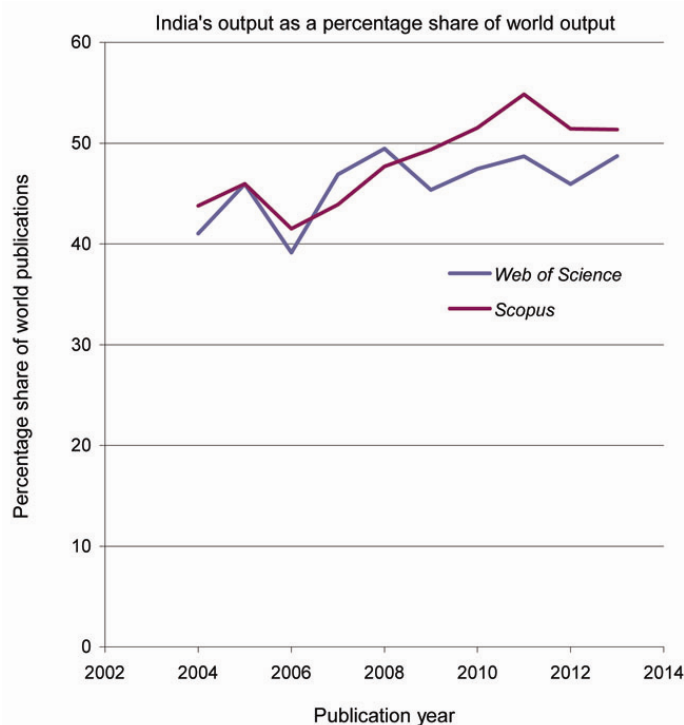


Figure 1. India’s share of the global scientific output in Himalayan studies is seen to increase steadily during the period 2004–2013.

Table 2. The impact–citations–exergy (*iCX*) indicators during 2004–2013 for publications from India alone and the rest of the world alone using Web of Science database

Five-year window for publications	2004–2008	2005–2009	2006–2010	2007–2011	2008–2012
Sixth year for citations	2009	2010	2011	2012	2013
India alone					
Papers in 5-year window	1363	1525	1713	1920	2062
Citations in 6th year	1138	1405	1520	1934	2091
<i>i</i> based on moving windows	0.83	0.92	0.89	1.01	1.01
<i>X</i> based on moving windows	950.14	1294.44	1348.74	1948.10	2120.41
Rest of the world alone					
Papers in 5-year window	1933	2110	2331	2476	2709
Citations in 6th year	5437	6375	7144	8177	9120
<i>i</i> based on moving windows	2.81	3.02	3.06	3.30	3.37
<i>X</i> based on moving windows	15,292.79	19,260.96	21,894.78	27,004.58	30,702.99

Table 3. The *iCX* indicators during 2004–2013 for publications from India alone and the rest of the world alone using Scopus database

Five-year window for publications	2004–2008	2005–2009	2006–2010	2007–2011	2008–2012
Sixth year for citations	2009	2010	2011	2012	2013
India alone <i>Scopus</i>					
Papers in 5-year window	1410	1601	1847	2051	2391
Citations in 6th year	1259	1559	1871	2478	2575
<i>i</i> based on moving windows	0.89	0.97	1.01	1.21	1.08
<i>X</i> based on moving windows	1124.17	1518.10	1895.31	2993.90	2773.16
Rest of the World alone <i>Scopus</i>					
Papers in 5-year window	2133	2264	2491	2702	2737
Citations in 6th year	4843	5597	6429	7277	8364
<i>i</i> based on moving windows	2.27	2.47	2.58	2.69	3.06
<i>X</i> based on moving windows	10,996.08	13,836.75	16,592.55	19,598.35	25,559.55

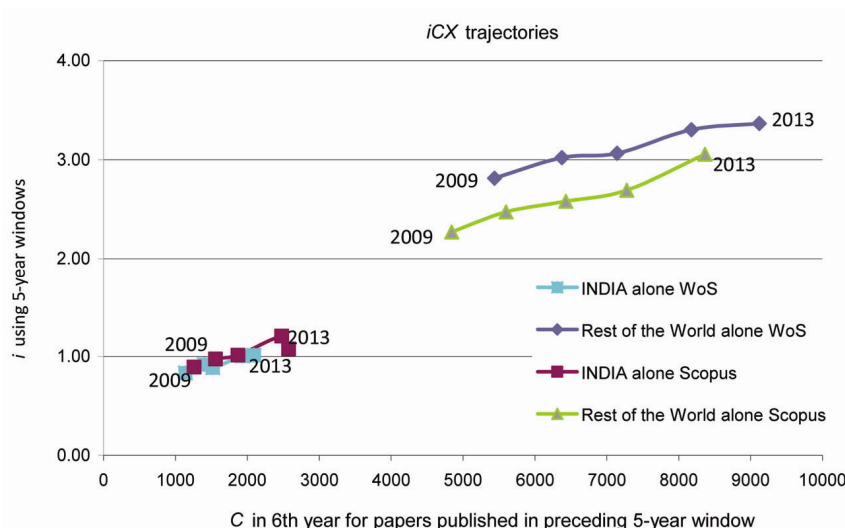


Figure 2. India’s impact for its global scientific output in Himalayan studies is seen to be a fraction of that of the rest of the world during the period 2004–2013.

It is clear that Himalayan studies is one area of scholarly research where India contributes nearly half of the global

research output. A simple bibliometric evaluation model shows that the Indian contribution compares poorly with that

from the rest of the world. India must consider taking serious initiatives to enhance the quality of its research¹.

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