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Research Paper

Mapping of Research Publications on Himalayas: A Scientometrics Exploration

Library Science

KEYWORDS : Himalayas, Scientometrics, Bibliometrics, H-Index, Citation Analysis

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ABSTRACT

The Himalayas are beautiful and useful to us in many ways. With Continuous study and research in the field of Himalayan Studies contributed huge amount of scientific literature to realize the various aspects of Himalayas. In this study we have made an attempt to quantitatively analyse the research trends in oceanography with the help of scientific publications reflected in the popular database web of science during the period 2000 to 2011. Here we have discussed about year wise growth of research publications on Himalayas, productivity of top authors, distribution of papers in various journals, country wise performance of research on Himalayas, citation patterns and many other aspects with the help of Scientometrics methods.

Introduction

The Himalayas form a natural boundary of the Indian sub continent. Since long they have formed a formidable barrier to the free movement of man. The Himalayas have tremendously influenced the climate of the Indian sub-continent. Many countries and research organizations invested huge amount of intellectual, human and economic resources on Himalayan research. Here we have made an attempt to study the research trends on Himalayas with the help of Scientometrics methods.

Statement of the Problem

Realizing the growing importance of Himalayas in today's complex environmental condition the present study aims at analysing the research trends and output on Himalayas in general and titled as "Mapping of Research Publications on Himalayas: a Bibliometric Analysis".

Objectives

The major objectives framed for the purpose of the study are:

- ù To identify and analyze the rate of growth of published literature on Himalayas.
- ù To measure and calculate the relative growth rate and doubling time for publications.
- ù To analyze the authorship pattern and examine the extent of research collaboration.
- ù To assess the Institution wise research concentration on Himalayas in India.

Methodology

The present study aims at analyzing the research output in the field of Himalayan studies. The growth rate of output in terms of both at absolute level and relative level are analyzed. The study is mainly exploratory in nature in identifying research output and it is also analytical in nature in strengthening the empirical validity due to application of suitable statistical tools.

Source of the Study

The publications are mostly in the form of primary Journals, Notes, Letters, reviews, Editorial materials, Meeting abstracts, Bibliographic items and Discussions. The most of the research papers published by the researchers on Himalayas covered in the annual version of Science Citation index database, which is taken as the prime source for the present study. The papers published from 2000 to 2011are accounted totally. They were retrieved from SCI database which is considered to be a prime source of data for the present study.

Data Analysis and Discussion

The data has been downloaded from the Web of Science database using the search string 'Himalayas' and limited for the period of 2000 to 2011 was exported into MS-Excel and Histcite software were analysed with standard bibliometric parameters to have a detailed look on the research trend prevailed during the study period on Himalayas.

Table 1: Year Wise Distribution of Publications

S. No	Publication Year	Records	Percentage	TLCS	TGCS
1	2000	190	4.9	2441	6457
2	2001	195	5.1	2077	5574
3	2002	231	6.0	1234	4055
4	2003	202	5.3	1437	4144
5	2004	246	6.4	1076	4375
6	2005	275	7.2	1362	4452
7	2006	278	7.2	1191	3987
8	2007	382	9.9	930	3413
9	2008	428	11.1	855	2983
10	2009	415	10.8	543	1983
11	2010	503	13.1	314	1400
12	2011	496	12.9	89	472

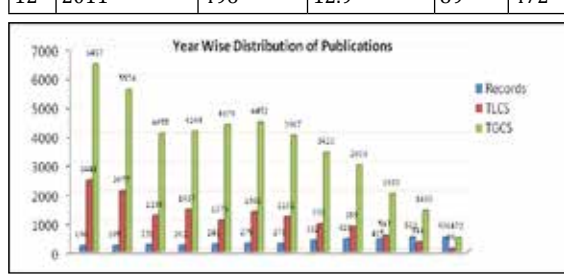

Figure: 1

The table 1 and Figure 1 depicts the research output, from the table, we could clearly see that during the period 2000 – 2011, a total of 3841 publications were published at global level. The highest publication is 503 in 2010 with 1400 Global Citation Score followed by 496 papers in 2011 with 472 as Global Citation Score and 428 papers in 2008 with 2983 Global Citation Scores and 415 papers in 2009 with 1983 Global Citation Scores. The lowest publication is 190 in 2000 with 6457 Global Citation Scores. It shows that even minimum numbers of records were scored higher global citations. The study also reveals that, all these 3841 publications have 17214 cited references. It shows that there is a healthy trend in citing references is found among the Scientists who are working on Himalayan studies.

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Table 2: Productivity of top 10 Authors

S. No	Author	Records	TLCS	TGCS
1	Owen LA	54	697	1468
2	Kumar R	45	227	397
3	Maikhuri RK	43	92	292
4	Searle MP	38	555	1021
5	Kumar A	36	105	266
6	Kumar S	36	45	190
7	Singh SK	35	135	369
8	France-Lanord C	33	252	706
9	Sangode SJ	33	145	269

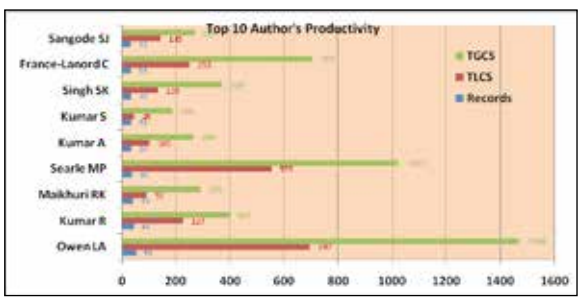

Figure: 2

The study of author productivity is an important aspect in analysing the performance of research output. Generally, research activity is carried out by a scientist or group of scientists depending on the nature and aim of the research. It also depends on the ability and efficiency of scientists. Depending on the skill and talent a scientist may contribute a quite number of papers and it may not be the case with the other scientists.The above table provides a list of top 25 authors who contributed good number of research articles on Himalayan studies. Among the authors, Owen LA, Kumar R and Maikhuri RK were occupied first three positions with 54, 45 and 43 publications and with a Global Citation Score of 1468, 397 and 292 respectively.

Table 3: Distribution of Publications in top 10 Journals

S. No	Journal	Records	Percent	TLCS	TLCS/t	TGCS	TGCS/t	TLCR
1	Current Science	284	7.4	740	102.90	1486	213.02	462
2	Journal of the Geological Society of India	198	5.2	236	39.25	397	65.43	360
3	Journal of Asian Earth Sciences	137	3.6	526	80.81	1064	183.55	550
4	Earth and Planetary Science Letters	133	3.5	1480	221.61	4033	629.75	1108
5	Himalayan Geology	97	2.5	36	10.57	59	16.78	329
6	Geology	75	2.0	1114	145.94	3240	422.63	310
7	Tectonophysics	67	1.7	288	49.53	743	133.23	472
8	Tectonics	63	1.6	352	32.00	1483	219.96	872
9	Geological Society of America Bulletin	58	1.5	1098	162.20	1992	305.16	672
10	Geomorphology	57	1.5	243	47.48	762	144.61	342

The study found that the total research output of the Himalayas for the study period (2000 – 2011) published in 711 journals. The journal "Current Science" topped with 284 publications with a Global Citation Score of 1486, next "Journal of the Geological Society of India" has 198 publications with a Global Citation Score of 396 and "Journal of Asian Earth Sciences" with 137 publications with a Global Citation Score of 1064.

Table 4: Productivity of top 10 institutions

S. No	Institution	Recs	%	TLCS	TGCS
1	WadiaInst Himalayan Geol	327	8.5	1024	1999
2	Chinese AcadSci	245	6.4	489	2750
3	GB Pant Inst Himalayan Environm&Dev	178	4.6	324	1018
4	Indian InstTechnol	154	4.0	422	1016
5	KumaunUniv	125	3.3	190	436
6	HNB GarhwalUniv	109	2.8	116	294
7	Univ Delhi	96	2.5	339	701
8	NatlGeophys Res Inst	86	2.2	224	536
9	China UnivGeosci	84	2.2	225	1092
10	Phys Res Lab	69	1.8	245	672

Table 4 reflects the performance of top 10 institutions in Himalaya research.

The institution wise distribution of the publications output shows that Wadia Institute of Himalayan Geology as the top Institute to publish 327 publications that covers (8.5 %) of the total research output during the study period. It is followed by Chinese Academic Services with 245 publications (6.4 %), GB pant institute of Himalayan environment with 178 publications (4.6 %).

Table 5: Relative Growth Rate and Doubling Time of Himalaya Publications

S. No	Publication Year	Records	$\log_e 1^p$	$\log_e 2^p$	Rt(P)	Dt(P)
1	2000	190	-	5.247	-	-
2	2001	195	5.247	5.273	0.026	26.65
3	2002	231	5.273	5.442	0.169	4.10
4	2003	202	5.442	5.308	0.134	5.17
5	2004	246	5.308	5.505	0.197	3.52
6	2005	275	5.505	5.617	0.112	6.19
7	2006	278	5.617	5.628	0.011	63.0
8	2007	382	5.628	5.945	0.317	2.19
9	2008	428	5.945	6.059	0.114	6.08
10	2009	415	6.059	6.028	0.031	22.35
11	2010	503	6.028	6.220	0.192	3.60
12	2011	496	6.220	6.207	0.013	53.30
		Mean values of Rt(P) and Dt(P)			1.316 (0.110)	196.15 (16.35)

It is observed that its relative growth rates have shrunk gradually from 0.026 at 2000 to 0.192 at the year of 2010. The whole study period records the mean relative growth rate of 0.11Contrarily; the Doubling Time for publication of all sources of Education research output has increase from 26.65 in 2000 to 53.30 at 2011. The doubling time for publications at the aggregate level has been computed as 16.35 years.

Findings and Suggestions

· The year wise growth reflects the increasing Importance of research on Himalayas as the total number reached more than double within 10 years. But the concern here is decreasing usage as the citation score is decreasing continuously so there is a need of focussing on quality to attract the active researchers to use the publications.

· When we look at the top author's performance there is a variation in total number of papers and citations so there is a need of having balance in both to ensure quality with quantity.

· Current Science dominates in both total output and citation score. There are some journals which are having more numbers of papers with very less numbers of citations so there is a need

of improving quality.

· Country wise performance of the research in Himalayan Research places India on the top followed by China and USA. Though USA country from other continent contributing more in Himalayan research which shows the research interest of USA. There is a need of promoting research on Himalaya in the Asian countries to realize the importance of Himalayas in various aspects of Asian continent.

Conclusion

Research and Development activities in each field are acknowledged on the basis of the investigations into identified problems. There are new approaches to settle scientific paradigms, searching for new research prospects with the task of giving theoretical maturity with factual foundations. This study reveals many interesting aspects on the research trends of Himalayan studies. Himalayas are playing very significant role in socio-economic, cultural life of Asian people with its unique geographical conditions. This study reflects that as compare to other area of research there is still a lot of effort needed to be taken by Asian countries so we can consider this study as foundation for improving the research performance on Himalayas.

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