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Citation Impact of 'Letter to the Editor' Published by Indian Scientists in Journals Indexed by *Science Citation Index Expanded* (SCIE)

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ABSTRACT

An analysis of letters published by top 10 publishing countries in journals indexed by Science Citation Index Expanded (SCIE) during 1987-89, 1997-99 and 2007-09 indicates that the letters published by developed countries including China have declined as proportion of their total output. The number of letters published by Indian scientists has remained constant during the three blocks. These letters were scattered in a large number of journals published from advanced countries of the world and India. The letters came from more than 1000 institutions located in different parts of the country. The highest number of letters was published in the discipline of medicine and the letters published in the field of chemistry had the highest Relative Citation Impact (RCI).

1. INTRODUCTION

'Letter to the Editor' (here after mentioned as letter) is an important vehicle of scientific communication[1]. The importance given to this column is shared by several prominent medical and non-medical journals. In the past, several journals have started publishing letter type publications like *Journal of Material Science Letters*, *Journal of Physical Chemistry Letters, FEBS Letters,* etc. 'Letter to the editor' is generally of two types, namely, one that reports the original findings and the other that reports the response to some previous publications.

2. OBJECTIVES

Following are the objectives of the present study:

- To study the publication pattern of letters by ten top publishing countries, namely, USA, UK, Japan, France, Canada, Italy, Australia, the Netherlands, Spain, and China
- To identify publishing country of journals where Indian scientists publish letters
- To identify most preferred journals used by Indian scientists for publishing letters
- To identify publishing institutions
- To identify the disciplines of the published letters
- To study the impact of these letters by analysing citations received by them.

3. DATA AND METHODOLOGY

The data for the present communication consists of the letters published by Indian scientists in journals indexed by Science Citation Index Expanded (SCIE) in three different block years i.e. 1987-89, 1997-99 and 2007-09. Bibliometric data elements that were downloaded include the subject of the letter, affiliation of the author, name of the journal in which the letter appeared, and the citations received by each letter. In addition to the above, data of letters for top 10 publishing countries were also downloaded to examine the change in the publication pattern of letters for different countries. The data was analysed to study the stated objectives.

4. RESULTS

During three different block years, i.e., 1987-89, 1997-99 and 2007-09, Indian scientists published 7091 letters. Of these, 40 letters were published in Nature, 15 in Science, and 6 in Proceeding of the National Academy of Sciences of the USA. The number of letters published in these three journals varied for different blocks. Remaining 7030 letters were published in 948 journals published from developed and developing countries including India. These letters received 14,744 citations in all. The detailed analysis of the results of the study is as follows.

4.1 Pattern of Output of Letters

Table 1 presents the data on the total number of papers and the share of letters published by 11 select countries in three different blocks (1987-89,

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Table1. Pattern of output of papers and letters for select countries

Country	Year 1987-89		Year 1987-99		Year 2007-09	
	Output	Letters (%)	Output	Letters (%)	Output	Letters (%)
USA	744713	4.29	1065933	2.99	1355486	2.14
UK	178133	9.60	268412	6.45	339964	4.05
Japan	141943	2.18	263683	1.82	321592	1.39
France	109600	4.12	179206	2.79	238962	1.91
Canada	90533	3.72	127025	2.73	199968	1.96
Italy	54858	3.86	121821	3.15	206314	3.21
Australia	40805	5.83	75170	3.85	129664	3.10
Nether lands	39860	3.34	71740	2.79	107561	2.82
Spain	28173	8.86	76949	4.50	156176	3.11
China	19594	3.99	76298	1.36	528604	0.42
India	43952	2.90	56793	2.96	137121	3.01

1997-99 and 2007-09) in gap of 10 years. It indicates that the total output of papers has increased for all countries, but the share of letters of the total output has decreased for all countries, except for India. The decrease is very significant in case of China. In case of China, the proportion of letters was 4 per cent of the total output in the block year 1987-89, while in the last block 2007-09 the same has gone down to 0.4 per cent, a decrease of ten times. In case of all other countries, the decrease is about 50 per cent except for Italy and the Netherlands. In case of these two countries, the decline is not that high. However, in case of India, the proportion of letters remained almost constant during all the three periods. Possible reason for this decline may be that developed countries don't consider 'letters' as an indicator for evaluation i.e. it does not add as a paper in their biodata. Also, in recent times lot of information exchange and discussion is taking place in the cyber world, which can be another reason for this decline. 'Letters' are a part of post-publication review process and hence their decline may affect this process.

4.2 Journal Publishing Country of Letters

Indian scientists published letters in 951 journals published from 39 different countries including India. Table 2 shows the distribution of letters published in journals from top 6 countries including India.It indicates that highest proportion of letters appeared in journals are published from USA, followed by India and UK. The proportion of letters published in US journals remained almost constant during all the three blocks; however, the share of letters appeared in journals published from UK, the Netherlands, Switzerland, and Germany decreased in 2007-09 as compared to 1987-89 and 1997-99. The proportion of letters published in Indian journals increased significantly in the last two blocks as compared to the first block. One of the probable reasons for the increase in letters in Indian journals may be due to the inclusion of more Indian journals in the *SCIE* database in later periods.

4.3 Publishing Institutions

Total number of letters published by the Indian scientists during these three blocks was contributed by authors from 1690 institutions located in different parts of the country and 135 letters were published by individuals having no institutional affiliation. Table 3 lists 31 most prolific institutions that published 0.5 per cent or more of the letters. Most of the institutions listed in Table 3 were either medical colleges or hospitals. Citation impact of these letters was examined by using Relative Citation Impact (RCI) developed by Institute of Scientific Information (now Thomson Reuters, USA) and has been used by Kumari[2] to study the impact of different countries in the field of synthetic organic chemistry research.

The RCI measures both the influence and visibility of different countries research output in global perspective.

RCI = (A country's share of world citations)/(Country's share of world publications);

RCI=1 indicates that country's citation rate is equal to world citation rate;

RCI>1 indicates that country's citation rate is higher than world's citation rate; and

RCI < 1 indicates that country's citation rate is less than world's citation rate.

In the present case country has been replaced by institutions. Among the 31 institutions listed in Table 3 only 9 institutions had RCI ≥ 1. The value of RCI for Seth G.S. Medical College and KEM Hospital was = 1. For the remaining 21 institutions, it was < 1. This indicates that the impact of the letters published by these institutions was less than the overall impact of letters published by Indian scientists. Letters published by Indian Institute of Technology, Madras had the highest impact as judged by the value of RCI. It was followed by Indian Institute of Technology, Bombay and Indian Institute of Science, Bangalore. These institutes have high values of RCI because some of their letters have been cited more than 100 times. The impact of the letters made by Indian Institute of Technology, Kanpur, Saha Institute of Nuclear Physics, Kolkata, and Tata Institute of Fundamental Research were almost equal. The impact made by letters published by medical institutions was low as compared to other institutions listed in Table 3.

4.4 Discipline of Published Letters

Table 2. Percentage of letters in different journal publishing countries

Year	USA	India	UK	Nether land	Switzerl land	Germany	Others countries	Total
1987-89	31.5	7.7	37.4	11.6	4.4	3.1	4.3 from 20 other countries	100
1997-99	31.6	25.0	25.9	3.8	5.4	1.6	0.2 from 13 other countries	100
2007-09	29.3	39.0	22.2	2.0	0.3	0.6	6.7 from 27 other countries	100
*Total	2144	2131	1830	295	157	88	446 from 33 other countries	7091

**Figures given in the bottom row are absolute number of letters*

Table 3. Most prolific institutions publishing letters

No.	Name of institute	No. of letters (%)	No. of citations (%)	RCI
1.	All India Institute of Medical Sciences, New Delhi	613 (8.6)	803 (5.3)	0.6
2.	Postgrad. Inst. of Medical Education & Research, Chandigarh	389 (5.5)	440 (2.9)	0.5
3.	Christian Medical College & Hospital, Vellore	203 (2.9)	291 (1.9)	0.6
4.	Kasturba Medical College & Hospital (Mangalore)	151 (2.1)	147 (1.0)	0.5
5.	Maulana Azad Medical College, New Delhi	135 (1.9)	156 (1.0)	0.5
6.	Indian Institute of Science, Bangalore	128 (1.8)	1091 (7.2)	4.0
7.	Banaras Hindu University, Varanasi	122 (1.7)	168 (1.1)	0.6
8.	Tata Memorial Hospital, Bombay	100 (1.4)	93 (0.6)	0.4
9.	Bhabha Atomic Research Centre, Bombay	98 (1.4)	363 (2.4)	1.7
10.	Sanjay Gandhi Postgrad. Institute of Medical Science, Lucknow	96 (1.4)	90 (0.6)	0.4
11.	Seth GS Medical College & KEM Hospital, Bombay	83 (1.2)	177 (1.2)	1.0
12.	Tata Institute of Fundamental Research, Bombay	78 (1.1)	547 (3.6)	3.3
13.	National Institute of Mental Health and Neuroscience, Bangalore	77 (1.1)	47 (0.3)	0.3
14.	Sree Chitra Thirunal Inst. Medical Science & Technol,Trivendrum	75 (1.1)	50 (0.3)	0.3
15.	Chhatrapati Shahuji Maharaj Medical University, Lucknow	60 (0.8)	93 (0.6)	0.7
16.	Jawaharlal Inst. of Postgrad. Med. Educ. & Research, Pondicherry	60 (0.8)	47 (0.3)	0.4
17.	Indian Institute of Technology, New Delhi	59 (0.8)	294 (1.9)	2.4
18.	Government Medical College & Hospital, Chandigarh	58 (0.8)	36 (0.2)	0.3
19.	LNJP Hospital, New Delhi	56 (0.8)	58 (0.4)	0.5
20.	Indian Institute of Technology, Madras	55 (0.8)	802 (5.3)	6.6
21.	University College of Medical Sciences, Delhi	55 (0.8)	30 (0.2)	0.3
22.	Centre for Logistics Research and Innovation, New Delhi	53 (0.7)	41 (0.3)	0.4
23.	Indian Institute of Technology, Bombay	44 (0.6)	431 (2.8)	4.7
24.	Sir Ganga Ram Hospital, New Delhi	40 (0.6)	26 (0.2)	0.4
25.	Saha Institute of Nuclear Physics, Kolkatta	40 (0.6)	289 (1.9)	3.2
26.	Christian Medical College and Hospital, Ludhiana	39 (0.6)	32 (0.2)	0.4
27.	Sant Parmanand Hospital, Delhi	37 (0.5)	5 (0.0)	0.0
28.	Guru Teg Bahadur Hospital, Delhi	37 (0.5)	27 (0.2)	0.4
29.	University of Delhi, Delhi	36 (0.5)	92 (0.6)	1.2
30.	Indian Institute of Technology, Kanpur	35 (0.5)	261 (1.7)	3.4
31.	Lokmanya Tilak Municipal General College, Bombay	35 (0.5)	15 (0.1)	0.2

Table 4. Distribution of letters by disciplines

Discipline	No. of Letters (%)*	No. of Citations (%)	RCI
Medicine	4478 (63.2)	4833 (31.9)	0.5
Multidisciplinary	890 (12.6)	576 (3.8)	0.3
Physics	782 (11.0)	4896 (32.3)	2.9
Life sciences	644 (9.1)	1615 (10.7)	1.2
Engineering	397 (5.6)	2065 (13.6)	2.4
Chemistry	352 (5.0)	2503 (16.5)	3.3
Environment	296 (4.2)	359 (2.4)	0.6
Material sciences	189 (2.7)	1072 (7.1)	2.6
Agriculture	71 (1.0)	190 (1.3)	1.3
Mathematics	35 (0.5)	155 (1.0)	2.0
Others	206 (2.9)	264 (1.7)	0.6
Total	7091(100.0)	14744(100.0)	

**Percentage is more than 100 as many journals were classified in more than one category.*

These 7091 letters were published in 11 different disciplines. Table 4 presents the distribution of these letters in different disciplines. 63.2 per cent of the letters was published in the discipline of medicine. It was followed by letters in multidisciplinary sciences and physics. The share of letters in these three disciplines was almost 87 per cent of all published letters. To identify the discipline of highest impact authors made use of RCI described above. The values of RCI for different disciplines indicate that the letters published in the discipline of chemistry made the highest impact followed by letters in the discipline of physics and material science. Letters published in the field of medicine and multidisciplinary sciences were having a very low impact. Mathematics and agriculture are low impact fields, but the letters published in both these disciplines were having higher impact than medicine, which is a high impact field.

4.5 Most Preferred Journals and their Impact

Table 5 lists most preferred journals where Indian scientists published their letters. Of the most preferred 24 journals, 11 were Indian journals and the rest were published from USA (5), UK (6), the Netherlands (1) and Ireland (1). Citation impact of these letters was examined by using RCI.

Of all the letters published in these 24 journals, the letters published in five journals had made more impact than the overall impact of letters published by Indian scientists. The letters published in *Journal of Physics A–Mathematical and General* made the highest impact followed by *Astrophysics and Space Science*. This indicates that letters published in the field of physics made more impact than in medicine.

4.6 Pattern of Citation of Letters

Citation is an indicator of influence and visibility. Of the total 7091 letters published by Indian scientists during the three different blocks (1987-89, 1997-99, and 2007-09), about 60 per cent remained uncited. However, the proportion of uncited letters varied during different periods (Table 6). For instance, the proportion of uncited letters was highest for the block year 2007-09 and lowest for the block year 1987-89. One of the possible reasons for high proportion of uncited letters for the last block may be a shorter citation window as compared to other blocks. The proportion of uncited letters will decrease as the citation window will increase. Table 6 shows the pattern of citations for three different blocks. Appendix lists letters that received 70 or more citations.

5. CONCLUSIONS

The study indicates that the total output of papers has increased for all the countries, but the share of letters of the total output has decreased for all countries, except for India. The decrease is very significant in case of China.

The letters published by Indian scientists appeared in 951 journals published from 39 different countries including India and the highest proportion of letters was in journals published from USA, followed by India and UK.

Letters published by Indian Institute of Technology, Madras had the highest impact as judged by the value of RCI. It was followed by Indian Institute of Technology, Bombay and Indian Institute of Science, Bangalore.

Almost two-third of the letters was published in the discipline of medicine followed by letters in multidisciplinary sciences and physics. Letters published in the discipline of chemistry made the highest impact.

About 60 per cent letters remained uncited. However, the proportion of uncited letters varied during different periods. Of all the letters published in most commonly used 24 journals, letters published in only five journals had more impact than the overall impact of letters published by Indian scientists.

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Table 5. Most preferred journals used by Indian scientists for publishing letters

Journal title (country)	No. of letters (%)	No. of citations (%)	RCI
Current Science (India)	813 (11.5)	334 (2.0)	0.20
Indian Journal of Dermatology (India)	200 (2.8)	82 (0.5)	0.20
Lancet (USA)	166 (2.3)	630 (3.8)	1.65
Neurology India (India)	160 (2.3)	68 (0.4)	0.20
Indian Paediatrics (India)	144 (2.0)	37 (0.2)	0.10
National Medical Journal of India (India)	141 (2.0)	47 (0.3)	0.15
Indian Journal of Paediatrics (India)	108 (1.5)	29 (0.2)	0.14
Pediatric Anaesthesia (UK)	104 (1.5)	42 (0.3)	0.20
Indian Journal of Medical Research (India)	97 (1.4)	59 (0.4)	0.30
Indian Journal of Pathology and Microbiology (India)	84 (1.2)	8	0.10
Journal of Sound and Vibration (UK)	69 (1.0)	212 (1.3)	1.30
Plastic and Reconstructive Surgery (USA)	66 (0.9)	60 (0.4)	0.45
Acta Cytologica (USA)	65 (0.9)	190 (1.2)	1.34
Indian Journal of Ophthalmology (India)	63 (0.9)	20 (0.1)	0.12
Anaesthesia and Analgesia (USA)	61 (0.9)	34 (0.2)	0.23
Int. Jour. of Leprosy & Other Mycobacterial Diseases (UK) (USA)	59 (0.8)	94 (0.6)	0.75
Acta Anaesthesiologica Scandinavica (UK)	58 (0.8)	25 (0.2)	0.25
Astrophysics and Space Science (Netherlands)	58 (0.8)	246 (1.5)	1.87
Indian Journal of Medical Microbiology (India)	52 (0.7)	21 (0.1)	0.14
Medical Hypotheses (UK)	52 (0.7)	47 (0.3)	0.43
Mausam (India)	51 (0.7)	7 (0.0)	0.0
Journal of Physics A–Mathematical and General (UK)	50 (0.7)	439 (2.7)	3.85
Leprosy Review (UK)	50 (0.7)	54 (0.3)	0.43
International Journal of Cardiology (Ireland)	50 (0.7)	86 (0.5)	0.71
Other 927 journals	4270(60.2)	11873(80.5)	1.40
Total	7091(100.0)	14744(100.0)	

Table 6. Pattern of citation published by Indian authors

No. of citations	Year (1987-89)		Year (1997-99)		Year (2007-09)		Total	
	letters	letters (%)	letters	letters (%)	letters	letters (%)	letters	letters (%)
0	473	37.6	818	49.2	2921	70.8	4212	59.7
1-5	531	42.2	613	36.9	1136	27.5	2280	32.3
6-10	120	9.5	105	6.3	46	1.1	271	3.8
11-20	77	6.1	56	3.4	17	0.4	150	2.1
21-50	50	4.0	53	3.2	7	0.2	110	1.6
>50	8	0.6	18	1.1	1	0.02	27	0.4
Total	1259	100	1663	100	4128	100	7050	100

Appendix

Highly cited letters

1.	Goodman, D.J.; Valenzuela, R.A.; Gayliard, K.T.; Ramamurthi, B. Indian Inst of Technology, Madras. IEEE *Trans. on Communi.*, Aug 1989, **37**(8), 885-90	378
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