

Publication delay of manuscripts in periodicals published by CSIR-NISCAIR

K. C. Garg

Publishing in scholarly peer-reviewed journals causes long delays from submission to its subsequent publication. This may be due to the long peer-review process or backlog of manuscripts waiting in line in the journals. The present study examines the publication delay in 13 journals published by CSIR-NISCAIR at three different stages. These were delays between receipt of manuscript and its revision, editorial delay, revision and its subsequent publication, i.e. technical delay, and the total delay. The study examined 1223 articles published in these 13 journals in the year 2015, except for 1 journal for which data for 2104 have been used. The analysis indicates that the publication delay varied from one discipline to another and from one journal to another journal. The highest time delay was found to be for the Indian Journal of Chemical Technology, and lowest for the Indian Journal of Chemistry – A. The total publication delay varied between 5.2 and 22.4 months. In most of the journals, the reason for delay was technical.

Keywords: Scholarly publishing, review time, peer-reviewed journals, technical and editorial delay.

As science advances, the number of manuscripts submitted for publication increases. This results in further publication delays in journals. The delay between submission of a manuscript to a scientific periodical and its eventual publication in print or electronic form varies from a few months to years, depending upon the periodical and the discipline. Many factors contribute to such delays. One of them is the elaborate editorial and peer-review process, which varies considerably across journals and disciplines. Sometimes the review process involves extensive and repeated revision of manuscripts before acceptance in final form and publication. A long publication delay may affect the visibility and citation rate. Publication speed is an important consideration influencing an author's decision when choosing a journal for submitting his/her article. Publication delay is defined as the total time lag between the submission of an article to a journal and its final publication either in electronic or printed form. This article presents an analysis of publication delay for 13 science journals published by CSIR-National Institute of Science Communication and Information Resources (CSIR-NISCAIR) for articles published in 2015. These journals are available in print as well as in electronic version and are open access (OA).

Objectives of the study

CSIR-NISCAIR publishes 18 research journals in different disciplines of science, technology and social sciences.

K. C. Garg is in the CSIR-National Institute of Science, Technology and Development Studies, Dr K. S. Krishnan Marg, New Delhi 110 012, India.
e-mail: gargkc022@gmail.com

Among these, 13 journals have been the subject of the present study. Five journals, namely *Annals of Library and Information Studies (ALIS)*, *Journal of Intellectual Property Rights (JIPR)*, *Indian Journal of Radio and Space Physics (IJRSP)*, *Journal of Scientific Temper (JST)* and *Bharatiya Vaigyanik Evam Audyogik Patrika (BVAAP)* do not form a part of the present study as *ALIS* is not related to science and *BVAAP* is published in Hindi language. The publication delay in *JIPR* has already been examined in an earlier bibliometric study¹. *IJRSP* and *JST* were not included because these two journals published only 17 and 9 papers respectively, during 2015. All the 13 journals studied for delay in publishing are indexed by international abstracting and indexing services of their respective disciplines as well as by Science Citation Index Expanded (SCIE), except the *Indian Journal of Natural Products and Resources*, which now has been selected for inclusion in Emerging Sources Citation Index (ESCI) of Thomson Reuters. The main objective of the present study is to quantify publication delay in the 13 scientific periodicals at 3 different stages, i.e. delay from receipt of a manuscript to its revision, from revision to publication and total delay from receipt to publication in terms of months.

Data and methodology

It is international practice that periodicals now provide dates of receipt, revision and acceptance. Periodicals published by CSIR-NISCAIR also follow this practice. An examination of information provided by these journals

indicates that only the *Journal of Scientific and Industrial Research (JSIR)*, *Indian Journal of Pure and Applied Physics (IJPAP)* and *Indian Journal of Biotechnology (IJBT)* provide three separate dates for manuscripts, i.e. received, revised and accepted dates. Rest 10 journals provide only 2 dates, i.e. received and revised which is also the date of acceptance. The published date is one in which the article appeared in the journals. These dates were manually recorded for 1223 papers published in 2015, except for the *Indian Journal of Biochemistry and Biophysics (IJBB)*, for which data for 2014 have been used. Information was recorded from the respective websites of the 13 journals under study in M.S. Excel sheet. The date of revision has been taken as the date of acceptance, as it is not provided separately. The dates of acceptance in *JSIR*, *IJPAP* and *IJBT* have not been included in the data to maintain uniformity as the other 10 journals do not provide separate dates of acceptance. The noting down of dates is a tedious, labour-intensive and time-consuming process, but it provides accurate information about the submission and acceptance dates and thus, the journal publication speed. This is one of the reasons that studies on publication delay have not been undertaken in India, though there are several studies on other bibliometric aspects of journals by Indian authors². In this study, the gap between receipt of a manuscript and the date of revision has been recorded as editorial delay (ED), and the gap between revision and its subsequent publication in the journal as technical delay (TD). The total publication delay (TOD) was also recorded. This is similar to the study by Amat³ on the delay of papers published in 14 food science journals.

Review of the literature

Several studies have been reported in the literature dealing with publication delay in journals of social sciences as well as science, technology and medicine (STM). However, the quantum of these studies is much less compared to bibliometric studies related to cross-national assessment or bibliometric assessment of individual countries⁴. The reason for this is that the data collection on individual papers for delay is time-consuming compared to that for cross-national assessment or assessment of output of individual countries, which can now be downloaded with a click of a button if one has access to a database. Since the present study deals with publication delays in science journals, only studies related to science and technology have been cited here.

Diospatonyi *et al.*⁵ examined publication delays in 10 major analytical chemistry journals for the period 1985–1999. The authors analysed the time from the receipt of manuscripts to their publication, and the period between their acceptance and publication in four selected years: 1985, 1990, 1995 and 1999. They found that the average

delay between receipt of an article and its publication was 7.1 months. Majority of journals showed good average performance. *Analyst* was found to be the leader in publication speed. Carroll⁶ examined publication delay for six journals in the discipline of statistics and found slight decrease from 25.2 months in 1994 to 22.3 months in 1999. The reason for this decline as pointed out by him was electronic publishing in later periods. Bjork and Turk⁷ examined three journals in the discipline of civil engineering and found that the delay for OA journals was 6.7 months, whereas for conventional journals it was between 18 and 18.9 months. Dong *et al.*⁸ examined how the delay in publications varied between three publishing models in the discipline of biomedicine. They compared six OA journals published by BioMed Central (BMC) with six journals on corresponding topics from Nature Publishing Group (NPG) as well as six other BMC journals with 11 Society journals. The study found that the NPG journals were similar to the BMC journals in overall publication delay (4.5 months), but marginally faster if the electronic publication dates were compared. The BMC journals clearly outperformed the Society journals (4.8 versus 8.9 months). Tort *et al.*⁹ analysed the delay between electronic and print publishing in 61 neuroscience journals, and found that it increased steadily from 2003 to 2011. Using a modified impact factor based on on-line rather than print publication dates, the authors also demonstrated that on-line-to-print delays artificially increased the impact factor of a journal, and that this was greater for longer publication delays. Recently, Bjork and Solomon¹⁰ examined publication delay in 2700 papers published in 135 journals sampled from Scopus database in different disciplines of STM, social sciences and arts/humanities, and business and economics. They found that the shortest overall delay occurred in STM and the longest in social sciences and arts/humanities, and business and economics. Recently, a study quantifies the delay in publication of five Indian biomedical journals¹¹. The authors found that the delay ranged between 7 and 14 months and it was more than the international journals in biomedicine. In the present study, an attempt has been made to quantify the delay between receipt of a manuscript for publication and subsequent publication in different journals published by CSIR-NISCAIR.

Results and analysis

Table 1 presents the distribution of 13 periodicals by their disciplines along with the summary statistics on the frequency of publication of journals, total number of papers published in each journal and the gap between different stages of publication of papers for each journal. Here ED reflects the delay between peer review and revision process, and TD reflects the time taken from revision to publishing, and TOD is the total time taken from

Table 1. Average time gap (in months) for different stages of publication of manuscripts

Journal*	Freq**	TNP	ED		TD		TOD	
			Mean	SD	Mean	SD	Mean	SD
Multidisciplinary								
JSIR	M	111	9.9	4.6	8.4	4.6	18.3	8.1
IJTK	Q	98	4.6	3.4	5.4	4.0	9.9	4.1
IJNPR	Q	46	9.2	4.6	3.3	1.3	12.5	3.9
For all three journals		255	7.7	4.9	6.3	4.4	14.0	7.2
Engineering and technology								
IJEMS	Bi-M	82	8.4	3.5	5.7	1.9	14.1	4.0
IJFTR	Q	66	3.9	2.6	14.2	2.0	18.1	3.1
IJCT	Bi-M	46	8.3	4.0	14.3	5.7	22.4	7.3
For all three journals		194	6.8	4.0	10.6	5.3	17.4	5.7
Biology								
IJEB	M	103	4.5	4.3	9.6	4.2	14.1	4.9
IJBB	Bi-M	69	6.1	2.9	1.9	0.9	8.0	3.1
IJBT	Q	67	7.3	3.5	11.0	3.6	18.3	4.1
For all three journals		239	5.7	3.9	7.8	5.1	13.5	5.7
Chemistry								
IJC-B	M	106	10.0	4.5	2.7	1.0	12.7	4.4
IJC-A	M	79	4.2	2.8	1.0	0.3	5.2	2.8
For both journals		185	7.5	4.8	1.9	1.1	9.5	5.3
Physics								
IJPAP	M	105	7.7	4.6	7.2	3.6	14.9	5.7
Earth sciences								
IJMS	M	245	4.0	3.6	14.2	6.8	18.2	7.1
For all 13 journals		1223	6.4	4.5	8.3	6.2	14.7	6.9

*See footnote in Figure 1 for journal names. **M, Monthly; Q, Quarterly; BI-M, Bimonthly.

receipt of the paper to publication in the concerned journal. The journals studied have been classified into six broad disciplines. These are multidisciplinary, engineering and technology, biology, chemistry, physics and earth sciences. During the period under study the 13 journals published 1239 papers, but we have analysed only 1223 papers as information regarding dates for 16 papers was either not available or was incorrect. Highest number of papers was published in the *Indian Journal of Geo-Marine Sciences (IJMS)*, which has been classified under earth sciences.

Time delay by disciplines

Analysis of the data presented in Table 1 indicates that the total average delay for the 13 journals in the 6 disciplines was 14.7 ± 6.9 months and it varied significantly from one discipline to another. For instance, the highest (18.2 ± 7.1 months) total delay was for earth sciences, followed by engineering and technology for which the total delay was 17.4 ± 5.7 months. The lowest (9.5 ± 5.3 months) average delay was for chemistry. The average time delay for earth sciences, and engineering and technology was almost twice that of chemistry. For the

remaining three disciplines, i.e. biology, multidisciplinary and physics, the average time delay varied between 13.5 ± 5.7 and 14.9 ± 5.7 months. For chemistry the average time delay is almost comparable to that reported by Bjork and Solomon¹⁰ (8.91 ± 7.30 months). For engineering and technology, earth sciences and physics, the total time delay for CSIR-NISCAIR journals is more than that reported by Bjork and Solomon¹⁰. Delay for chemistry is more than that of analytical chemistry journals reported by Diospatonyi *et al.*⁵.

Time delay by individual journals

The total time delay varied from one journal to another. For instance, the total delay was highest (22.4 ± 7.3 months) for the *Indian Journal of Chemical Technology (IJCT)* and lowest (5.2 ± 2.8 months) for the *Indian Journal of Chemistry – A (IJC-A)*. Four other journals also had more than the average total time delay. These were *JSIR*, *Indian Journal of Fibre and Textile Research (IJFTR)*, *IJBT* and *IJMS*. The average total delay time for the four journals did not differ significantly. For these four journals the total time delay was more than three

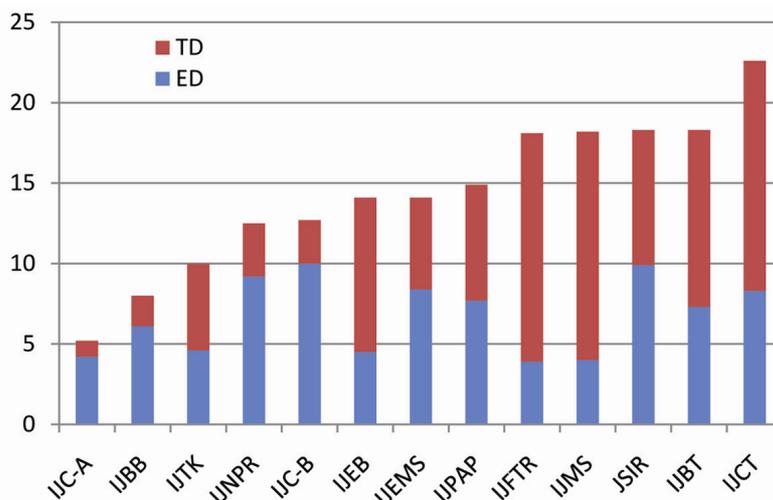


Figure 1. Average editorial (ED) and technical (TD) delay time for 13 journals. *IJC-A, *Indian Journal of Chemistry-A*; IJBB, *Indian Journal of Biochemistry and Biophysics*; IJTK, *Indian Journal of Traditional knowledge*; IJNPR, *Indian Journal of Natural Products and Resources*; IJC-B, *Indian Journal of Chemistry-B*; IJEMS, *Indian Journal of Engineering and Materials Sciences*; IJPAP, *Indian Journal of Pure and Applied Physics*; IJEB, *Indian Journal of Experimental Biology*; IJFTR, *Indian Journal of Fibre and Textile Research*; IJMS, *Indian Journal of Geo-Marine Sciences*; JSIR, *Journal of Scientific and Industrial Research*; IJBT, *Indian Journal of Biotechnology*; IJCT, *Indian Journal of Chemical Technology*.

times the total delay for *IJC-A*, having the lowest time delay among all the listed journals. For three journals, namely *Indian Journal of Experimental Biology (IJEB)*, *Indian Journal of Engineering and Materials Sciences (IJEMS)* and *IJPAP* total delay was close to the average delay. An attempt has been made to analyse if this was an ED or a TD. An examination of the mean values for ED and TD for different journals indicates that in case of *JSIR* as well as *IJPAP*, both ED and TD are responsible for the large total delay. In *IJNPR* and *IJC-B*, editorial delay causes large total delay. In case of *IJFTR*, *IJCT*, *IJEB*, *IJBT* and *IJMS*, TD caused large total delay. However, in these journals ED is much less than the average ED. One possible reason for the large TD may be the large number of papers awaiting publication in these journals. *IJC-A* had a low TD as the journal had no backlog of manuscripts. Papers were published in the subsequent issue of the journal after revision. Figure 1 shows the average ED and TD time for 13 journals.

Individual papers having large ED and TD were identified in different journals. It was found that for *JSIR*, ED in 18 papers was one and a half times more than the average (9.9). Similarly, in 12 papers TD was about twice the average (8.4). This explains the large TOD for *JSIR*. In case of *IJCT*, TD was more than 20 months in 8 papers. However, in case of *IJFTR* and *IJMS*, the delay between receipt of a manuscript and its subsequent revision was considerably less than the average, but the delay between revision and its subsequent publication in several of the papers was much more than average. In *IJBT*, TD for 8 papers was also more than 15 months, almost twice the average delay of papers in the journal.

The results of the present study were compared with that undertaken by Bjork and Solomon¹⁰. In the latter study the average delay between receipt and revision was 6.41 months and between acceptance and subsequent publication was 5.78 months, whereas TOD between receipt and publication was 12.18 months. However, it varied from subject to subject. In the present study, the average delay between both receipt and revision and between revision and publication varied from 6.5 to 8.5 months. However, the average TOD between receipt and subsequent publication in the present study was about 15 months, which is slightly higher than that reported by Bjork and Solomon¹⁰. Thus we can conclude that the time lag in journals published by CSIR-NISCAIR is comparable to global journals. However, it differs from one discipline to another.

Conclusion

This study examines publication delay for Indian journals in different disciplines. However, it would have been better if a large sample of data from different publishing groups were taken and compared. Based on the study it can be concluded that there is a remarkable difference between total time delay for different journals. For instance, the total time delay for *IJCT* is 22.4 ± 7.3 months, whereas for *IJC-A* it is just 5.2 ± 2.8 months. It is also observed that for some individual articles, the delay time is excessively large compared to other articles within the same journal, which has resulted in increase in total delay time. In most of the journals, TD mainly

causes large total delay. The study indicates that the shortest time delay occurred in the discipline of chemistry and *IJC-A* outperformed all other journals with respect to ED and TD. It would be useful to study how the delays have changed over time in these journals. In some cases the reason for large ED might be because the authors may have taken more time in carrying out the revision suggested by the reviewer. The present study may help the management of CSIR-NISCAIR to take the necessary steps in order to reduce the time gap between receipt and subsequent publication of manuscripts.

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