Measuring scientific value of Indian journals beyond impact factor: a case with physics-chemistry-biology journals

Bhaskar Mukherjee

Qualitative scientific journals play a vital role in scholarly communication processes. However, during the last few years, there is a mushroom growth of journals in every discipline in India. There has been no single source of systematic advice on how to measure the scientific value of Indian journals. The present study is an attempt to minimize the gap by developing a mechanism for measuring scientific value of Indian journals. Consulting various international databases and their journal inclusion policy, a viable mechanism has been devised and tested with 100+ Indian journals in the fields of physics, chemistry and biology. The results indicate that although the quantity of yearly additions of new journals in each of the three disciplines is quite impressive, the yearly discontinuation is also alarming. Almost 29% of physics journals, 11% of chemistry journals and 21% of biology journals were stopped within a year. Although irregularity in publication, improper execution of review process, non-disclosure of article processing charges, lower percentage of foreign contributors and low citation rate were identified as some drawbacks with Indian physics, chemistry and biology journals. The percentage of predatory journals in these three disciplines is quite less till date. In order to choose a better platform of scholarly publishing, this study suggests some recommendations for prospective authors.

Keywords: Scientific value - Indian journals, scholarly journal publishing - India, status of PCB journal - India.

IN the publishing domain, reputed scientific research journals have some common features of reliability. These include a genuine peer review – even with a low rejection rate; an editor and editorial board who acknowledge their association with the journal and work for the journal; encouraging scientific debates, criticisms and comments; permanent visibility – the published work will be permanently available; and clear and transparent pricing (if author is required to pay processing and publication fees or article processing charges (APCs)). Importantly, to be called a journal it must publish regularly, be it print or web publishing. Absence of most of these features indicates that the journal in question is not well recognized in the scholarly communication system¹.

In the last few years, there is a mushroom growth of journals in every discipline in India. On the other hand, there has been no single source of systematic advice on how to measure the scientific value of Indian journals. The only available indicator is the impact factor, a measure of citation likelihood of journals, persons and institutions throughout the world. However, such surrogate measures cannot be widely considered for Indian journals because of the fact that most Indian journals are yet to index in the Thompson Reuter's (currently Clarivate Analytics) database. Further, existing literature also reveals that impact factor alone is not the best possible way to measure the impact of scientific research.

Earlier studies

Since inception in 1665, journals have served as a primary vehicle to share new ideas among peers. By publishing in a journal, scientists establish ownership of their intellectual property², validating the quality of research³. Goldreich⁴ identified four roles of journals:

- Timely dissemination of scholarly and technical work.
- Evaluation and verification of the contents of such work.
- Archiving such work.
- Serving as basis for scholarly credits.

He adds that the first role of journals has been abolished in the light of conference discussions and new media such as online publication; however, it was the first role that

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made journals central to the scientific process. Gradually the journal's role has shifted from only disseminating knowledge to becoming a source of gaining greater prestige and merit within the scientific community by authors and academics publishing articles in such journals.

The development of the World Wide Web was a boon to the journal project. One of the important breakthroughs of the post-web era is that a large number of journals are also available in open access. Presently, open access (OA) advocates two types of strategies for promoting free availability of scholarly literature: 'Green' and 'Gold' roads to OA^5 respectively. While a green publisher (or journal) has given a green light to its authors to selfarchive their papers (i.e make the research output open by depositing the full text on a toll free, publicly accessible web site), gold OA publishers ask for charges from the author instead of users to publish articles.

Considerable literature claims that one of the important criteria to judge the scholarly value of journals, either subscription based or open access, is peer review. At the same time studies also mention that different types of research cannot be validated by a single reviewer. A reviewer can check the accuracy of a paper by reading the text without reviewing external evidence beyond other published sources. For example, a reviewer is unlikely to replicate experimental results to review articles in medical science, computer systems or even pure mathematics⁶. Coley⁷ explained that peer review of scholarly publications is a 'broken' system because of (often) lengthy timelines involved between submission, review and publication, but believes that 'like the majority in our field, peer review (even, and especially, blind peer review) provides certain checks and balances, collaboration, and prestige to our publications. 'While selecting where to publish important results, an established researcher is often more interested in establishing primacy through rapid publication than in the imprimatur of peer review'8.

Measuring scientific value of Indian journals

The most pertinent question in this existing situation is how to effectively measure the contribution of Indian science globally. The present study aims at developing precise methods for measuring and evaluating the scientific value of Indian journals in the fields of physics, chemistry and biology (PCB). The specific objectives of the present paper are:

- To trace and track the growth of scientific journals of India under PCB disciplines, and to identify the present status.
- To evaluate the scientific value of PCB journals by developing an alternative mechanism which is not necessarily only by counting citations.

Methodology developed

In order to fulfil our two-fold objective, we started our study by identifying journals by consulting various print as well as web resources. Since our study started in the last quarter of 2015, we identified journals that were available in December 2014. By consultation, a total of 45 physics journals, 47 chemistry journals and 104 biology journals were identified. Mere criteria of having International Standard Serial Number (ISSN) is not a benchmark of treating a journal as peer-reviewed, referred or scholarly. Therefore, in the next step we attempted to develop a mechanism for evaluating Indian journals. In this stage, we consulted several international databases and studied their policies for inclusion of journals in such databases. Databases like WoS, SCOPUS, Indian Science Abstracts, Directory of Open Access Journals (DOAJ), Scientific Electronic Library Online (SciELO), etc. were consulted for this purpose. The consultation of various databases led to a better understanding the essential issues for evaluation of a journal and helped develop a conceptual framework for measuring quality of Indian journals. Accordingly, a mechanism for journal evaluation that goes beyond the impact factor was developed. In this mechanism, a toolbox consisting of 30 criteria and several sub-criteria was identified and grouped into four categories: (1) basic criteria, (2) essential criteria, (3) subsidiary criteria and (4) publisher criteria. Each criterion was further assigned with a value (positive or negative) ranging from 0.001 to 0.1. The sum of all values indicates the relative score of a journal in our system.

The scoring system we devised is tentative and should never be considered as final; but it is relatively free from bias because it can be applied by anyone. Over time, the experience gathered from actual handling of data may lead to further development of the approach. Among the criteria for measuring quality, there are no neutral criteria. Every criterion has a relative weight, as well as positive and negative values. Just because a publisher or publication has a negative score, it does not necessarily imply that the publisher and publication are poor.

We believe that all the 30 criteria developed are important in thoroughly evaluating the quality of any journal. However, in the present study, we have considered 10 essential criteria and score journals accordingly. The detailed methodology of scoring is explained in Annexure 1. The 10 point criteria are: (a) longevity and availability; (b) promptness and regularity; (c) review policy; (d) editorial quality; (e) internationalization of editorial members and contributors; (f) number of articles per issue; (g) ratio of cited/uncited articles; (h) inclusion of journals in conventional databases; (i) time-delay in publishing, and (j) ethical procedures followed. In order to test our mechanism we have applied these 10 criteria in 60 journals of PCB and calculate journal score. The journals and related score is mentioned in Annexure 1.

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Cumulative growth	Physics	Chemistry	Biology
No. of journals available up to 1950 (>50 years gap)	3	3	13
No. of journals available during 1951–2000 (50 years gap)	31	21	105
No. of journals available during 2001–2010 (10 years gap)	59	39	178
No. of journals available 2011 onwards (5 years gap)	63	60	236

Table 1. Cumulative growth of PCB journals in India

Table 2. Status of PCB journals in India

Status	Physics	Chemistry	Biology
Journals live up to 2013	45	47	104
Journals live up to 2014	32 (71.1%)	43 (89.3%)	83 (79.8%)
Percentage of journals available in open access	71.87%	74.4%	65.0%
Percentage of OA journals follow article processing charges publishing model	74%	68%	72%

Results and discussion

Longevity and availability

This criterion attempts to examine how long the journal has been published regularly as per the stated frequency and how the journal can be accessed? Table 1 shows the cumulative growth of PCB journals during the last 100 years. Table 2 shows the percentage of journals that stopped publication during this decade.

As indicated in Table 1, there is a phenomenal difference in the quantity of journals published in the last 60 years before the year 2000 and the 15 years after 2000. In the last fifty years or so, before 2000, there were only 31 journals in physics, 21 journals in chemistry and 105 journals in biology. In only 15 year after 2000, it reached 63 journals in physics, 60 journals in chemistry and 236 journals in biology. One possible reason may be technology; another may be the evolving of a new model of publishing, i.e. open access and a new business model of open access (OA), i.e. gold OA.

Although the number of yearly additions of new journals in each of the three disciplines is quite impressive, at the same time the yearly discontinuation is also alarming. Almost 29% of physics journals, 11% of chemistry journals and 21% of biology journals that were live in 2013 stopped publishing by 2014. We observed that most of the terminated journals started their publication only from 2005 onwards. Of the total live journals, 72%, 74% and 65% journals of PCB respectively, are accessible without any subscription fees, i.e. end users can access journals free of cost. It is interesting to note that a majority of chemistry journals in India are now available free of charge, while a majority of biology journals are available on subscription basis.

If anybody publishes an article in a journal that later ceases publishing, the likelihood that other scholars are able to readily access it is indeed very low. This is one of the risks of scholarly publishing and the risk of such discontinuation is higher with newly established journals. One possible way to overcome such a scenario is to submit articles to only those journals which maintain digital archiving for their back volumes or at least allow authors to submit articles in institutional repositories.

It is true that in India a majority of journals are now available free of charge. Each format has a separate benefit and we believe that open access is a very positive component. At the same time it is also important to note that making journals open access does not mean publishing anything of any quality. Heather Joseph (quoted in Straumsheim)⁹ executive director of the Scholarly Publishing and Academic Resources Coalition (SPARC), in her report quoted that 'The practice of judging authors on where an article is published rather than on the quality of information in the article itself is clearly one that needs to be challenged'. Therefore, format of publication is not as important as the quality of contents.

Promptness and regularity

Under this criterion we have checked in the last five years, how many times various journals of a subject have missed their pre-stated frequency or combine more than one issue in one issue. Table 3 shows the result.

It was observed that of the total 60 biology journals considered, 25 journals did not maintain the frequency stated in their documentation. This was one of the notable drawbacks of the biology journals.

Review policy

The peer review process is most likely the most important quality control aspect of the publishing process, and thus how it is conducted is important. However, it is difficult to ascertain, as the system of peer review of journals is a

 Table 3.
 Regularity in publication

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Status	Physics	Chemistry	Biology
Percentage of journals maintain regularity	72%	89%	59%
Number of times combined issues came (during last 5 years; irrespective of journals)	6(5)	16(6)	29(11)
Number of times issues missed (irrespective of journals)	14(5)	48(13)	65(12)

human-handled quality control process. Declaring review processes as 'double blind' in journal documentation does not prove that the journal seriously follows the process. Similarly, not explaining review processes in detail also does not prove that the journal does not have a proper review policy. In our study we observed that at least 12–18% journals in PCB did not correctly inform as to how the article evaluation process occurs and what criteria are used in the assessment of submitted articles. Furthermore, at least 22–28% of journals did not complete the basic task of review as the reference style differed significantly from article to article.

Mimicry nomenclature as an indicator of predatory: Beall¹⁰ explained that 'many journals and their publishers use adjectives such as "world", "global" and "international" in the journal title. Some sites appeared amateurish or gave little information about the organization behind them.' In our study it was observed that 7 physics journals, 15 chemistry journals and 18 biology journals contain terms such as 'international', or 'global' in the titles and mimic the name of other reputed journals. On analysing the addresses given in the links of these spurious publishers, we noticed that the 'aim/scope/mission' of these journals tends to be incredibly broad and the content bridges unrelated domains. These journals do not have appropriate distribution of editorial functions across the globe, contributions from foreign authors, etc. which denotes their false claim as well. It appears that the publisher wants to accept many papers and receive as much publication fees as possible. Interestingly most publishers of such journals were individual publishers. Although this sounds intuitively plausible, Shen et al.¹¹ observed that of the sample 617 journals studied, 34.7% authors from India contributed articles to predatory journals. In our study we are unable to trace other predatory features in the PCB fields.

Editorial quality

How the editor or publisher communicates with the scientific community is important. The use of false names, generic or illusive titles or hidden identities are all perceived as 'hiding' something, which are a negative signs. We observed that at least 4% of chemistry journals contained falsified information about their editors. Aggressively campaigning for academics to submit articles or serve on editorial boards¹² and not allowing academics to resign from editorial boards¹³ are uncommon in qualitative journals. Beall¹⁴ explained that listing academics as members of editorial boards without their permission is an indicator of predatory practice. He also pointed out few more issues that are indicators of poor quality journals. They are:

- (a) Enlisting members of editorial boards who are not experts in the field.
- (b) Having board members who are prominent researchers but exempting them from any contributions to the journal, except the use of their names and photographs.
- (c) Providing insufficient contact/affiliation information about board members.
- (d) Do not hold at least Ph D in the subject where s(he) is serving as editor, etc.

Table 4 shows that editors of at least 25% of biology journals and 23% of chemistry journals did not belong to the subject on which they served as editor. Nearly 40% of biology journals did not provide sufficient information about their editors; either their affiliation or contact detail was insufficient to trace their identity.

Internationalization of editorial members and contributors

While the nationality of contributors/editors is not a perfect indicator for measuring quality of articles and journals, it is a reasonable proxy for the type of research and sources of data that are likely to be included. We found 90% of physics journals and almost 75% of biology and chemistry journals and each journal claimed that they have foreign members on the editorial board. However, in 60% of physics journals, 22% of chemistry journals and 37% of biology journals, we were unable to verify such claims because of non-availability of any mail address of the members. On the other hand, of the total published articles in these PCB journals, 41% of articles in chemistry have been contributed by foreign authors (Table 5).

Number of articles per issue

A considerable number of studies concluded that there has been consistent growth in the number of articles per

1 2	5		
Status	Physics	Chemistry	Biology
Percentage of journal editors not belonging to the subject of the journal	12%	23%	25%
Same editor for more than one journal	15%	34%	36%
Common editorial board for more than one journal	3.12	4.33	6.21

Table 4. Editorial quality of PCB journals

Table 5. Internationalization of editorial members and contributors

Status	Physics (%)	Chemistry (%)	Biology (%)
Overall percentage of editorial members from foreign	30.38	53	37.85
Percentage of articles contributed by international authors	29	20	43.21

Table 6. Quantity of articles in open and non-open access PCB journals

Article status	Physics	Chemistry	Biology
Average yearly production of articles/journal	47	82	62
Average number of articles in open access	14	18	14
Average number of articles in closed access	12	10	18

Table 7. Citation pattern and database coverage of PCB journals

Citation and database coverage	Physics	Chemistry	Biology
Ratio of cited/uncited articles	78:22	69:31	71:29
Percentage of journals included in WoS and Scopus	25%	16%	15%

issue in open access journals when compared to non-open access journals. However, in our study such a trend was not seen (Table 6). The average number of articles per issue in open access and non-open access PCB journals in India is almost the same, i.e. 12–18 articles per issue.

Citation pattern and bibliographic database coverage

In terms of citations received by PCB journals published in India, it has been observed that one article of physics received on an average 1.49 citations, followed by biology with 1.26 citations and chemistry with 0.45 citations. Almost 40% of physics journals, 39% of chemistry journals, and 43% of biology journals did not receive any citations (Table 7). Multiple factors may be responsible for this sorry state. A major cause, as identified by Lakhotia 'is the official policies that directly or indirectly buttress the common perception that the quality of research reported in papers published in journals from outside India (international journals) is better than that of the papers published in 'national' journals'¹⁵ and, therefore, publication of one's findings in an 'Indian' journal is believed to imply poor quality by default. Indian scientists and consequently the quality of journals published in India have thus been trapped in the vicious circle of poor impact factor and, therefore, poor journals which together result in overall poor ranking in science'¹⁶. Finally, it must be remembered that, while it is true that science that is not visible does not exist, visibility alone is not enough. Effective presence requires being in such a state of visibility that anyone neglecting it will be faulted for carelessness, incompetence or ignorance.

Time delay in publishing

Regarding the speed of review, from experience, a wellconducted and thorough peer review process can be realistically completed within 2 months and each round of review will take 2 months. Thus, considering the review process of two rounds of peer-review and edit, 4–6 months is considered reasonable. Greater than 6 months is slow; less than 1 month is excessively fast and might reveal either an excellent manuscript, of a fake review, or a rushed job. We observed that almost 50% of journals of physics and chemistry each and 33% of biology took 4–6 months in publishing including submission, review and printing. On the other hand, in almost 10% of journals in the PCB

field, authors can publish their article in a month, which is quite unrealistic (Table 8).

Ethical procedures followed

Under this criterion we examine whether the journal mentions ethical policies of publishing or whether the journal requires authors to sign an ethical policy agreement before publishing articles. We observed that, 31% of physics journals, 28% of biology journals or even less, and only 16% of chemistry journals followed any publication ethics (Table 9).

It is needless to mention that at present almost all highly reputed PCB journals mention publication ethics clearly in their journals. International publishers also appeal to the leaders of academic research groups to inform their students and research associates about the ethical responsibilities of authors of scientific publications and to ensure that when they are given the responsibility for submitting a paper, they are fully aware of the potential consequences, to themselves and to their co-authors, of violations in these ethical guidelines.

Suggestions and conclusion

Dependence on a single number, i.e. impact factor, to gauge scientists' contribution in a domain and make decisions can affect their career progression or may force people to enhance the quantity of low quality papers instead of focusing on a more important activity – doing good science. Considering the complex issues associated with the calculation of scientific performance metrics, it is clear that a comprehensive approach should be used to evaluate the research worthiness of a scientist. We should not rely excessively on a single metric.

Institutions should insist that their scientists and faculty members opt for publications in peer-reviewed open

Table 8. Time delay in publishing PCB journals

Time delay	Physics	Chemistry	Biology
Not identified	9	10	18
Rapid/less than one month	3	4	6
1–3 months	3	6	12
4–6 months	16	21	22
>6 months	1	2	2

Table 9. Ethical procedure followed in PCB journals

Ethical status	Physics	Chemistry	Biology
Percentage of journals followed ethical standard while publishing articles	31%	16%	28%

access journals. One important feature distinguishing the scientific journal domain of OA from other publishing industries such as books, film, etc. is that scientific know-ledge is public good produced mainly with public funding and the author who generates scientific information usually does not get any financial benefit in terms of sales royalty. Hence from an author viewpoint there is no problem with potential piracy; on the contrary, as wide a dissemination of article as possible is desirable. Therefore, prospective authors should choose OA platforms for disseminating their research to global audiences. Furthermore, funding agencies should also ensure that the output funded research must be available in open access repositories.

In a nutshell, we suggest that prospective authors must consider the following points of a journal before submitting articles.

• Balanced editorial board: Journals covering overlapping fields of science may provide an excellent platform for publishing articles among diversified audiences. However, it is essential for an author to confirm whether such journals have unique, well-balanced editorial boards. Adhering to a proper review process, identifying proper reviewers, understating the comments and suggestions of reviewers who are experts in their field – such activities, performed by a single person for different subject domains are uninstituted. Therefore, it is essential to check whether the editor of any journal is exclusively the editor of one journal or a group of journals covering different subjects.

• Clear details of members in editorial board: The acceptance rates of a quality journal would typically be low and the editorial board would be dominated by leaders in the field from many top institutions. Journals mentioning their editorial board clearly with full detailed information and affiliations of the editors can be considered as a qualitative journal.

• Realistic peer-review process: The peer-review process for journal publication is essentially a quality control mechanism. Generally, a minimum of 2 peer reviewers (up to 6) are chosen for the peer review. Peer reviewers are ideally experts in their field. The peer review is complete once all the reviewers send the journal a detailed report with their comments on the manuscript and their recommendations. In practice, peer review is not always ideal, nonetheless, no better or viable alternative exists. Typically, reputed journals ask reviewers to complete their reviews within 6–8 weeks. Therefore the phenomena of 'rapid publication within a week' or by '48 hours of submission' seems an unrealistic process. Prospective authors, therefore, should avoid such journals for publishing articles.

• Clear-cut article charging policies: Journals maintaining clear-cut policies of processing charges of articles can be considered as a platform of scholarly publishing.

5		Appendix 1. Criteria and scor	ing technic	lues of m	sasuring scientific value of Indian journals
SI no.	Criterion	Explanation	SI	NN	Kemarks
	Basic criteria Longevity	Years of existence of a journal since	Open		0.5 for 10 years of existence, 1 for 30 years of existence and 1.5 for >50 years of
1.1	Availability	its beginning. Open or closed access	0.1	-0.1	existence. Positive score for open access and vice versa, a negative score if closed access.
ы В С	Essential criteria Regularity and Promptness	Missing issue/combined Issue/ late issue?	0.1	-0.01	In case of the publication pattern, over the last 5 years the publication is found to be uninterrupted, 0.1 added. However, if any such case is found in last five volumes of a journal then a negative score of (-0.01) is assigned for each case.
m	Review policy of the jour Whether the review polic:	nal y of the journal is mentioned or not?	0.01	-0.1	If the review policy is mentioned in detail then a 0.01 score is added. If review policy of the journal is not mentioned clearly in the documentation of the journal then a negative score of (-0.1) has been
	Whether there is any false	s information about the reviewers?		-0.1	assigned, otherwise no score. If any faistified information about reviewer is found then negative score of
3.1	Cross checking of review	policy?	0.1	-0.01	(-0.1) tas occut assigned. On checking 20 randomly selected articles, if references are found asymmetrical by each other, either in same article or two different articles of the same journal, then a negative score of (-0.01) has been computed,
3.2	Originality in articles? or plagiarized?	If the articles of the journal are original	0.5	-0.1	otherwise if such uniformity found a 0.1 positive score has been assigned. On checking 20 randomly selected articles through plagiarized software, if the percentage of duplication shows less than 10% then 0.5 is added. However, if such duplication shows more than 30% of an individual article (excluding self-citation,
4	Configuration of the editu Identity of the chief editor Identity of board member	rial board s	0.01	-0.01	quotations, retenences), a negative score of (-0.1) has been assigned. If the name of the chief editor is mentioned then no score is given but if the name is unavailable then negative score of (-0.01) has been assigned. If the full identity (designation, affiliation and contact details, etc.) of board members is obtainable or searchable, 0.01 is added and if not then a negative score of (-0.01) has been assigned. Further, if any falsified information related to designation, affiliation, etc. about the editorial
	Members from same orga	nization?		-0.03 to -0.01	members is found then a negative score of (-0.01) is augmented. If there are >50% members of editorial board from same organizations then negative score of (-0.03) , and if in between 21–50% then 0.02 is assigned, and if <20% but greater than 10% then 0.01 and within
	Whether editor serves as Expertise in year and subj	editor in more than two journals ject expertise	0.01	-0.1	10% then no deduction has been made. If same editor servers as editor of more than two journals negative scoring has been assigned. If the Editor-in-Chief is qualified (at least a Ph D holder in the concerned subject of the journal) and he/she has sound experience in editing a journal of more than 5 years then a positive score of 0.01 otherwise no
1610					score has been assigned. (Con

0	Appen	dix 1. (Contd)								
•1	31 no.	Criterion	Explanation	PS	NS		Remark	S		
		International members in	the editorial board?		-0.01	In case the journal's edition of the countries, then 0.01% been added under pos	torial board consists of of the total percentag itive score.	of members fi ge of the fore	rom foreign sign member has	
		Percentage of foreign con	tributors in the journal	Open		The score has been calculated contributors in last five	ilated by taking 0.1% e years (total contrib	of the average oution other th	ige foreign han India/total	
~	<u>,</u>	Articles per issue	Verify number of the articles per issue with its stated frequency			contributors × 100). Scoring have been perfo against the frequency	rmed on the basis of of the journal:	number of ar	ticles per issue	
						Four is Monthly year/q Articles Art (score) (sco	sue per Larterly Three icles Arti ore) (sc.	; issues icles ore)	Half-yearly Articles (score)	Yearly Articles (score)
						0-4 (0.02) 0-4 (0.03)	$\begin{array}{cccc} (0.01) & 0-4 \\ (0.02) & 5-10 \end{array}$	0.005) (0.01)	0-4 (0.001) 5-10 (0.005)	0-4 (0.001) 5-15 (0.005)
						10-15 (0.01) 11-15 >15 (0) 16-25 >2:	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	(0.02) (0.03) (0.01)	11-15 (0.01) 16-25 (0.02) 25-40 (0.03) >40 (0)	16-25 (0.01) 26-40 (0.02) >40 (0.001) 0-4 (0.001)
	7	Citation impact								
	~~	Citation received by the to in last three years? Indexing database coverage	otal articles published in journal ze	Open		10% of the average citat in last three years	ion received by the a	rticles publis	thed	
		Conventional Databases it	ncluded?	0.1 - 0.3	-0.1	In cross checking if the	journal is found inclu	ided in the da	itabases mentioned	in
CURREN		Whether any falsified info	ormation is available?		-0.1	documentation then p -0.2, subject database leads to negative scor If any falsified informat score is assigned.	ssitive score for inde -0.1 has been assign e of (-0.1). ion found regarding i	xed in JCR–0 ned. Any falsi nclusion in di	0.3, scopus ified information iatabase of the journ	nal then negative
T SCIEN	C. Sub:	sidiary criteria Article level check-points Time lag in publication			-0.01	If the time lag in publics	tion for 20 articles is	s more than 3	months (for online) and
ICE, VO		Rapid publication facility	a vailab le		-0.01	6 months (for print) the journal has a facilistic score of (-0.01)	hen negative score of ity of publishing artic	(-0.01). cle in less that	in 4–5 weeks then n	legative
L. 114, 1	D. Pub. 10	lisher's Criteria Publication ethics		0.1	-0.01	If publication ethics is a	vailable in the docum	nentation of th	he journal and if is	a standard
NO. 8, 25 A		Journal's own ethics or str License agreement of artic	andard code of ethics is followed? cle if the journal is available in OA?	0.01	-0.01	If the journal has an ope score and if not then r	n access license agree n access license agree legative score of (-0.	gauve score o ement (creati 01) is assigne	ive commons) then ed.	o.01
APRIL 2018	PS, Po:	sitive score; NS, Negative sc	ore.							

		Starting	Coverage in	
Name of the journal	Publisher	date	databases	Scol
Journal of Biosciences	Indian Academy of Sciences and Springer	1934	D/S/M	5.948
Journal of Genetics	Indian Academy of Sciences and Springer	1910	W/S/G	4.223
Indian Journal of Experimental Biology	National Institute of Science Communication and Information			
	Resources	1963	W/G	2.636
Proceedings of the National Academy of Sciences,	National Academy of Sciences, India (Allahabad)	1930	D/S/M	2.270
India, Section B – Biological Sciences		1 000	(000
Virus Disease (Indian Journal of Virology)	Indian Virological Society (IVS) with Collaboration of Springer	0661	כ	7.08
The Indian Journal of Genetics and Plant Breeding	I he Indian Society of Genetics and Plant Breeding, New Delhi with collaboration of indiaiournals com	1942	w/c	7.0.7
Physiology and Molecular Biology of Plants:	Prof. H.S. Srivastava Foundation for Science and Society with			
An International Journal of Functional Plant Biology	Springer India Private Limited	1995	IJ	2.00
Indian Journal of Plant Protection	Plant Protection Association of India with collaboration of	1973	IJ	1.80
5	indiajournals.com			
Journal of Bombay Natural History Society (JBNHS)	Bombay Natural History Society (JBNHS) Maharashtra, India	1886	IJ	1.70
International journal of ecology and environmental	National Institute of Ecology (Department of Botany, Thiversity of Delhi, Delhi,	1974	S/G	1.66
Journal of Duringman and all Dislows	Curvesity of Dourt, Dourt	1000	5/3/M	1 61
Journal of Environmental Biology	III Veili Elikeipiises Ladion Society of Mant Constin Documents, Nam Dolhi	1000		10.1
Indian Journai of Fiant Genetic Resources	Indian Society of Flant Genetic Resources, incw Denti	1700	<u>z</u> (1.10
Journal of Indian Water Resources Society	Indian Water Kesources Society (Under Water Kesources Develonment Training Center IIT Roorky	1981	כ	1.10
		1000	C	1 0.1
Apputed Diological Research	Centre for Advancement of Applical Sciences	1 996	יכ	
Bulletin of Pure and Applied Sciences – Botany	BPAS Kesearch	0661	יכ	1.02
Indian Journal of Applied and Pure Biology	Indian Journal of Applied and Pure Biology Bhopal	1986	5	1.00
Ecology, Environment and Conservation	EM International Pune	1995	S/G	0.98
Journal of Biological Control	Society for Biocontrol Advancement, National Bureau of	1987	U	0.97
	Agriculturally Important Insects Bangalore			
Biosciences Biotechnology Research Asia	Oriental Scientific Publishing Company	2003	S/G	0.93
Indian Journal of Physics	Indian Association for Cultivation of science with Springer	1926	S/G	0.93
International Journal of Integrative Biology	International Society for Integrative Biology	2007	S/G	0.91
Journal of Insect Sciences	Indian Society for the Advancement of Insect Science	1998	IJ	0.76
	(Department of Entomology, Agri. University Ludhian)			
The Bioscan	The National Environmentalists Association Ranchi (Jharkhand)	2006	IJ	0.72
GERF Bulletin of Biosciences	Green Earth Research Foundation	2010	Z	0.69
Indian Journal of Environmental Protection	Kalpana Corporation Banaras	1981	S/G	0.69
The IIOAB Journal – Institute of Integrative	Institute of Integrative Omics and Applied Biotechnology (IIOAB)	2010	S/G	0.67
Omics and Applied Biotechnology (IIOAB)		-		
International Journal of Bioassays	International Journal of Bioassays	2012	IJ	0.65
The Journal of Innovative Biology (JIB)	SKN Online Publishing House	2014	U	0.63
Plant Cell Biotechnology and Molecular Biology	Society for Biology and Biotechnology	2000	S/G	0.61
Asian Journal of Conservation Biology (AJCB)	Turtle Conservation and Research Programme (TCRP)	2012	IJ	0.55
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31 Drefault Research Lithary biological disconcessional and Mercehology (CBI Ech) 2010 N 0.643 32 CBF Ech Jonnal of Mercehology International Jonnal of Mercehology (CBI Ech) 2011 0 0 0 33 CBF Ech Jonnal of Mercehology International Jonnal of Sciences Center for Info Bio Technology (CBI Ech) 2011 0 0 0 0 0 34 Contrast of Named of Science Center for Info Bio Technology (CBI Ech) 2011 0		33	Indian Journal of Chemistry – Sec A	National Institute of Science Communication and Information Resources	1963	W/G	0.512
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Application		36	Indian Journal of Fundamental and	Centre for Info Bio Technology (CIBTech)	2011	IJ	0.457
31Claster Journal of Sology (ClPTech)2012G0.42133International Journal of Sology (Section)Centre for Info Bin Technology (ClPTech)2011G0.3734Constant Science (CS)South Manuel of Experiment BiologySouth Manuel Science2011G0.3741International Journal of Advanced Life SciencesSouth Manuel Science2011G0.31641International Journal of Advanced Life SciencesSouth Manuel Rolegy with Kamla-Raigy2011G0.31642International Journal of Environmental ScienceHind Bin Technology (ElFech)2012G0.32643International Journal of Environmental ScienceHind Bin Technology (ElFech)2011G0.32644International Journal of Physics and Mathematical ScienceHind Bin Technology (ElFech)2011G0.32645International Journal of ChanistroRoss ScienceRoss Science2011G0.32646International Journal of ChanistroRoss Science2011G0.32647International Journal of ChanistroRoss Science2011G0.32648International Journal of ChanistroRoss Science2012G0.32649International Journal of ChanistroRoss Science2011G0.32640Ross ScienceRoss ScienceRoss Science2012G0.32641International Journal of ChanistroRoss Science2012G0.326 <td></td> <td></td> <td>Applied Life Sciences</td> <td></td> <td></td> <td></td> <td></td>			Applied Life Sciences				
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10 International Journal of Advanced Life Sciences Dr.G. Molatargian 2012 W/G 0.73 11 Journal of Himan Ecology Indian Society for Himan Ecology with Kamh-Raj 2012 W/G 0.316 13 Attan-Journal of Himan Ecology Enterprises New Delhi Enterprises New Delhi 2003 SG 0.209 14 International Journal of Physics and Carter of Sciences and Technology in Association with Hind 2003 SG 0.203 15 International Journal of Physics and Carter for Info Bio Technology (CIBTech) 2011 G 0.203 16 Chemical Biology (Latters RNOS Publication RNOS Publication 2011 G 0.203 17 Matemational Journal of Chemical Science RNOS Publication 2011 G 0.203 18 Atom Journal of Chemical Science RNOS Publication RNOS Publications (CIBTech) 2011 G 0.147 18 Atom Journal of Chemical Science RNOS Publications (CIBTech) 2012 G 0.143 19 Research Journal of Chemical Science RNOS Publications (CIBTech) 2011 G 0.143 10 <td></td> <td>39</td> <td>South Asian Journal of Experimental Biology</td> <td>South Asian Journal of Experimental Biology</td> <td>2011</td> <td>G</td> <td>0.379</td>		39	South Asian Journal of Experimental Biology	South Asian Journal of Experimental Biology	2011	G	0.379
41 Journal of Human Ecology India Society for Human Ecology with Kamla-Raj 1900 G 0.316 42 International Journal of Chemical Science Enterprises New 2003 S/G 0.29 43 Astar Journal of Evolventeural Science Enterprises New 2003 S/G 0.20 44 International Journal of Advances Chemical Science Hind Intitue O Science and Technology in Association with Hind 2003 S/G 0.23 44 International Journal of Advances (DRIS) Centre for Info Bio Technology (CIBTech) 2011 G 0.218 45 Chemical Science Phils Namule of Advances in Chemical Science Enterprises New 2011 G 0.219 46 Chemical Science Phils Namule of Advances in Chemical Science Phils Nig 2012 G 0.149 47 Rasyma Jornal of Chemical Science International North Wide Web Publications (P), India 2011 G 0.149 48 Science Pranactions: An International Research Journal of Chemical Science North Wide Web Publications (P), India 2012 G 0.149 49 Chemical Science Pranactions: An International Proce		40	International Journal of Advanced Life Sciences	Dr G. M. Natarajan	2012	D/M	0.37
1Enterprises New DelhiEnterprises New DelhiEnterprises New DelhiEnterprises New DelhiEnterprises New Delhi2003S/G203613Asian Journal of Environmental ScienceHind Institue of Science and Technology (CIBTech)2001G0.2914International Journal of Physics and Mathematical Science (Chemical Science and Technology (CIBTech)2011G0.2014International Journal of Physics and Mathematical Science (Chemical ScienceEnterprise (DMS)2011G0.2015International Journal of AlpancesCentre for Into Biol ScienceEnterprise2011G0.2016Chemical Biograd LettersRescort Journal of Chemical2012G0.14917Rescort Journal of ChemicalScienceIntegrated Science Physiking2012G0.14918Rescort Journal of ChemicalRescort Journal of Chemical ScienceNorld Wide Web Publications (P), India2012G0.14919Rescort Journal of Chemical ScienceRescort Journal of BiologyRescort Journal of Chemical Science2012G0.14919Rescort Journal of Chemical ScienceRescort Journal of Chemical ScienceNorld Wide Web Publications (P), India2012G0.14910Rescort Journal of Chemical ScienceRescort Journal of Chemical ScienceNorld Wide Web Publications (P), India2012G0.14911Rescort Journal of Chemical ScienceRescort Journal of Chemical ScienceNorld Wide Web Publications (P), India201		41	Journal of Human Ecology	Indian Society for Human Ecology with Kamla-Raj	1990	Ð	0.316
42International Journal of Chemical SciencesSudgarn MblisationsSudgarn MblisationsSudgarnSud				Enterprises New Delhi			
43Astan Journal of Environmental ScienceHind Institute of Science and Technology in Association with Hind2008G0.2344International Journal of Physics and Mathematical ScienceHind Institute2011G0.23645Indian Journal of Advances (1PMS)KROS Publication2011G0.23646Generical Biological LettersIntegrated ScienceKROS Publication2011G0.23648Mathematical ScienceKROS Publication2012G0.14349Resourt Journal of AdvancesChemical Biological Letters2014G0.14340Research Journal of ChenistryRasayan Journal of ChenistryChemical Biology2013G0.14350Chemical Biology Chemical ScienceResearch Journal of Science Transactions: In InternationalWorld Wide Web Publications (P), India2012G0.04351Crement Topics in CaudysisResearch Journal of Chemical ScienceResearch Journal of SciencesNorld Wide Web Publications Soliguur2012G0.03652Crement Topics in CaudysisDamational PeerResearch Journal of Sciences, In International Publications Soliguur2012G0.03653Archives of Physics for CaudysisDAMA International Publications Soliguur2012G0.03654Archives of Physics fearerScienceNorld Wide Web Publications Soliguur2012G0.03654Archives of Physics fearerScience ScienceScience ScienceScience		42	International Journal of Chemical Sciences	Sadguru Publications	2003	S/G	0.296
41International Journal of Physics and Mathematical ScienceAgri-Horicultural ScienceAgri-Horicultural ScienceAgri-Horicultural Science0.2080.20843Indamentical Sciences (PMS)Centre for Info Bio Technology (CIBTech)2011G0.20844Indamentical Sciences (PMS)Research Journal of Advances in Chemical ScienceResearch Journal of Chemistry2012G0.14944Ranyan Journal of ChemistryResearch Journal of BiologyResearch Journal of Chemistry2013G0.14950Chemical ScienceResearch Journal of ChemistryResearch Journal of ChemistryNorth Wide Web Publications (P), India2012G0.14951Chemical ScienceTermadia ScienceResearch Journal of ChemistryNorth Wide Web Publications (P), India2012G0.00853Arbines of Physics ResearchResearch Journal of ChemistryNorth Wide Web Publications Solgut2012G0.03853Arbines of Physics ResearchResearch Journal of ChemistryNorth Wide Web Publications Solgut2012G0.03854Advances in Elores of Mathies Concess Research Journal of ChemistryNorth Wide Web Publications Solgut2012G0.03853Arbines of Physics ResearchResearch Lounal of ChemistrySciencesJSciences0.03855Janual of ChemistryResearch Journal of ChemistryScience Science2012G0.03854Advances in Elores of SciencesResearch Ionnal of ChemistryScienc		43	Asian Journal of Environmental Science	Hind Institute of Science and Technology in Association with Hind	2008	Ð	0.29
44International Journal of Lender Journal Journal Of Advances in Chemical Sciences (PMS)Centre for Inio Bio Technology (CIBTech)2011G0.27845Indam Journal of Advances in Chemical Science (PMS)KROS PublicationKROS Publication2012G0.18946Chemical Journal of Advances in Chemical ScienceKROS PublicationKROS Publication2014G0.18947Rasopan Journal of Chemical ScienceKROS PublicationsRasopan Journal of Chemical Science2014G0.14748Asiar Journal of Chemical ScienceRasopan Journal of Chemical ScienceKROS Publications (P), India2012G0.14749Research Journal of Chemical ScienceResearch Journal of Chemical ScienceResearch Journal of Chemical Science2013G0.14351Chemical ScienceResearch Journal of Chemical ScienceResearch Journal of Chemical ScienceResearch Journal of Chemical Science2013G0.01452Chemical ScienceResearch Journal of Chemical ScienceResearch Journal of Chemical Science2013G0.01453Chemical ScienceResearch Journal of Chemical ScienceResearch Library20142012G0.03853Archines of Physics ResearchScienceScienceScience2012G0.02354Advances of BouscienceJournal of Life ScienceJournal of Life Science2013G0.02354Advances of BouscienceJournal of Chemical ScienceJournal of Science2				Agri-Horticultural Science			
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45Indian Journal of Advances in Chemical ScienceKROS PublicationKROS PublicationConnect of Advances in Chemical ScienceKROS PublicationConnect of AdvancesConnect of Chemical LettersC0.1890.203C0.203<			Mathematical Sciences (JPMS)				
46Chemical LettersIntegrated Science PublishingIntegrated ScienceIntegrated ScienceIntegrat		45	Indian Journal of Advances in Chemical Science	KROS Publication	2012	G	0.208
47Rassyan Journal of ChemistrySide $Side$ Si		46	Chemical Biological Letters	Integrated Science Publishing	2014	Ð	0.189
48Asian Journal of Chemistry48Asian Journal of Chemistry50Chemical Publishing Co.49Research Journal of Stoingy (RJB)Research Journal of Stoingy (RJB)Norld Wide Web Publications (P), India2013G0.14750Chemical Science Transactions: An InternationalWorld Wide Web Publications (P), India2012G0.14551Current Topics in CatafysisExercise Transactions: An InternationalWorld Wide Web Publications (P), India2012G0.00851Current Topics in CatafysisBAMA International PeerResearch Trans2012G0.03853Archives of Physics ResearchScholars Research Library2010G0.03854Advances in Biorsearch: A Quarterly PeerSociety of Education, India2010G0.02755Journal of Research Journal of Life SciencesPBS JOURNALS2011G0.02756Journal of Research Journal of StoincePBS JOURNALS2012G-0.25657WIDE SPECTR/M Research Journal of Experimental ChemistryPane Asian Journal of Experimental ChemistryPane Asian Journal of Experimental ChemistryArian Socience and Technology in Association with Hind2007N-0.22558Journal of Experimental ChemistryPane Asian Journal of Experimental ChemistryPane Asian Journal of Experimental ChemistryArian Journal of Science and Technology in Association with Hind2007N-0.25659The Asian Journal of Experimental ChemistryArian Science and Technology in Associati		47	Rasayan Journal of Chemistry	Rasayan Journals	2008	S/G	0.188
49Research Journal of Biology (RJB)Research Journal of Biology (RJB)Research Journal of Biology (RJB)Go 0.14750Chemical ScienceTransactions: An InternationalWorld Wide Web Publications (P), India2012G0.14551Chemical ScienceResearch Tansactions: An InternationalWorld Wide Web Publications Solapur2012G0.09152Trends in Life Science:Reviewed JournalScholars Research Library2012G0.09853Archives of Physics ResearchScholars Research Library2010G0.06354Atomics in Biorscence:Scholars Research Library2010G0.03653Archives of Physics ResearchScholars Research Library2010G0.03654Atomics in Biorscence:Journal of Lipe Sciences2011G0.03655Journal Journal Journal of Lipe SciencesDICINNALS2011G0.02756Journal of Research Journal of ScienceDICINNALS2012G-0.25657Journal of ScienceDurnal of Atimal ScienceDICINNALS2012G-0.25658Journal of Kesernical Journal of ScienceDurnal of Science and Technology in Association with Hind2007N-0.23658The Asian Journal of Experimental ChemistryHind Institute of Science and Technology in Association with Hind2007N-0.23657WiDE SpectratolDisologyDisologyDisologyDisologyDisola-0.238<		48	Asian Journal of Chemistry	Chemical Publishing Co.	1989	S/G	0.149
50Chemical Science Transactions: An International Research Journal of Chemical Science Research Journal of Chemical ScienceWorld Wide Web Publications (P), India2012G0.14521Current Topics in CatalysisResearch Journal of Chemical ScienceResearch Journal of Chemical Science0023Turrent Topics in CatalysisDAMA International PeerDAMA International Publications Solapur2012G0.09823Archives of Physics ResearchDAMA International PeerDAMA International Publications Solapur2012G0.09833Archives of Physics ResearchScholars Research LibraryScholars Research Library2010G0.08654Advances in Bioresearch: A Quartery PeerScociety of Education, India2011G0.02755Jatomaal of Research Journal of Life SciencesJ Research Biological and Life SciencesJ Research Biological and Life SciencesJ Research Biological and Life SciencesG-0.02556Asian Journal of Research JournalMaine of Science and Technology in Association with Hind2006G-0.25657WTDE SPECTRUM Research Journal of Life ScienceAgric-Hortcultural ScienceAgric-Hortcultural Science2012G-0.03257WTDE SPECTRUM Research JournalDournal of Experimental ChemistryThe Asian Journal of Experimental ChemistryC-0.02558Main Journal of Experimental ChemistryThe Asian Journal of Experimental ChemistryThe Asian Journal of Experimental ChemistryMain -0.02258 <td< td=""><td></td><td>49</td><td>Research Journal of Biology (RJB)</td><td>Research Journal of Biology</td><td>2013</td><td>Ð</td><td>0.147</td></td<>		49	Research Journal of Biology (RJB)	Research Journal of Biology	2013	Ð	0.147
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• Journals must fulfill normal international academic standards, i.e. selection of articles based on objective review policy, use of anti-plagiarism software for checking originality of submitted text, following a common, uniform style pattern for writing references, defined policies on what forms of text are accepted and what are not.

- Sohail, S., Of predatory publishers and spurious impact factors. J. Colle. Phys. Surg. Pak., 2014, 24(8), 537–538.
- Guédon, J., In Oldenburg's long shadow: Librarians, research scientists, publishers, and the control of scientific publishing. Presentation to the May 2001 meeting of the Association of Research Libraries (ARL); 2001; <u>http://www.arl.org/arl/proceedings/ 138/guedon.html</u>.
- Schafner, A. C., The future of scientific journals: lessons from the past. *Inf. Technol. Lib.*, 1994, 13, 239–247.
- Goldreich, O., *The Current Role of Journals* (online) Essays and Opinions by OdedGoldreich, 2003; <u>http://www.wisdom.</u> weizmann.ac.il/~oded/on-journals.html
- 5. Guédon, J.-C., The 'Green' and 'Gold' roads to open access: the case for mixing and matching. *Ser. Rev.*, 2004, **30**(4), 315–328.
- Arms, William Y., What are the alternatives to peer review? Quality control in scholarly publishing on the web. J. Electron. Publ., 2002, 8(1); <u>doi:http://dx.doi.org/10.3998/3336451.0008.103</u>.
- 7. Coley, T., Chronological dependence. *Rhetoric Rev.*, 2008, **27**(3), 325–327.

- Guthrie, K. M., What Do Faculty Think of Electronic Resources. (online) ALA Annual Conference Participants' Meeting, 2001; <u>http://www.jstor.org/about/faculty.survey.ppt</u>
- Straumsheim, Carl, Predatory' Publishing Up, 2015; <u>https://</u> www.insidehighered.com/news/2015/10/01/study-finds-huge-increasearticles-published-predatory-journals
- 10. Beall, J., Predatory publishers are corrupting open access. *Nature*, 2012, **489**, 179.
- Shen, C. and Bjork, B.-C., Predatory' open access: a longitudinal study of article volumes and market characteristics. *BMC Med.*, 2015, 13, 230; <u>http://www.ncbi.nlm.nih.gov/pubmed/26423063</u>.
- 12. Butler, D., Sham journals scam authors. *Nature*, 2013, **495**, 421–422.
- Kolata, G., For Scientists, an Exploding World of Pseudo-Academia, 2013; <u>http://www.nytimes.com/2013/04/08/health/for-</u> scientists-an-exploding-world-of-pseudoacademia.html
- Beall, J., Scholarly Open Access, 2016 (online) available at: <u>http://scholarlyoa.com</u>.
- Lakhotia, S. C., 'National' versus 'International' journals. *Curr. Sci.*, 2013, **105**, 287–288.
- Lakhotia, S. C., Predatory journals and academic pollution. *Curr. Sci.*, 2015, **108**(8), 1407–1408.

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