

Five years "Journal of Informetrics"

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# Five years “Journal of Informetrics”

by

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## ABSTRACT

End of 2011, the Journal of Informetrics (Elsevier) existed five years. We overview its scope, published articles (topics, co-authorship, authors' countries), editorial decisions, editorial and production times, impact factor and article downloads aspects. Finally we present a local citation environment map of JOI

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# Introduction

Journal of Informetrics was founded in 2007 by Elsevier, Oxford, UK on advice of this author, who became founding editor-in-chief. There was a preliminary “study period” (2005-2006) where e.g. two special issues were published in the Elsevier journal Information Processing and Management with this author as guest-editor and where the topic was “informetrics” (see Egghe (2005, 2006)).

## Scope of the Journal of Informetrics (JOI)

The scope is well-known from the leaflets and website but we can describe it briefly here, for the sake of completeness.

JOI publishes refereed articles on fundamental quantitative aspects of information science. Accepted articles should contain good models and/or fundamental data sets.

The Journal covers the broad field of informetrics, including the field bibliometrics, scientometrics, webometrics and cybermetrics. Specific topics can be described (non-exhaustively) as follows: informetric laws, modeling generalised bibliographies, aspects of inequality or concentration and diffusion, citation theory, linking theory (in general: social networks, including the Internet, citation and collaboration networks), downloads, indicators, evaluation techniques for scientific output (literature, scientists), evaluation techniques for documentary systems (information retrieval) including ranking theory, digital and classical library management, visualisation and mapping of science (individuals, fields, institutes, topics).

Further in this note we will study the published articles: topics, co-authorship, authors' countries. Then we continue by informing on editorial decisions, editorial and production times, impact factor and article downloads aspects. Finally we present a local citation environment map of JOI.

## Study of published articles

The number  $N$  of published articles in the five volumes of JOI and the average number  $\bar{\#}$  of authors per article are given in Table 1.

Table 1. Number  $N$  of published articles and average number  $\bar{\#}$  of authors per article

	$N$	$\bar{\#}$
Vol. 1	33	2.182
Vol. 2	34	1.882
Vol. 3	36	2.528
Vol. 4	69	2.101
Vol. 5	67	2.537

Over the five volumes there are 239 published articles with an average number of authors per article equal to 2.276. Here all articles and “letters to the editor” are taken into account. In total there are 544 (co-)authors. Of each (co-)author we noted their “main” country, which was easy to determine in most cases and in case of doubt, the country mentioned in their e-mail address was used. We never used a second or higher number of countries. The countries that occurred at least 3 times in this way are given in Table 2 in decreasing order of occurrence.

Table 2. (co-)authors’ main countries ( $\geq 3$  (co-)authors)

Country	# of (co-) authors
USA	67
Spain	62
Netherlands	61
China	53
Belgium	48
UK	36

Switzerland	31
Canada	26
Italy	25
Germany	21
Taiwan	13
Brasil	12
Australia	11
Denmark	8
France	8
Iran	8
Poland	8
Sweden	8
Portugal	7
Mexico	5
Israel	4
Japan	3

The topics of these papers are described in Table 3.

Table 3. Topics of published papers

Topics	# of papers
citation analysis	77
<i>h</i> -type indices	51
miscellaneous	32
visualisation	19
WWW	12
mathematical models	12
peer review	12
collaboration	12
evaluation	11
review paper (informetrics)	1

We linked only one (main) topic to each paper. So a paper does not fall in two or more categories. Of course, sometimes, a paper could be linked to more than one category (e.g. papers on *h*-type indices can also deal with citation analysis) but we feel that Table 3 gives a rather accurate topical view. It's clear that a bit more than 50% of the papers deal with citation analysis and/or *h*-type indices.

We can deduce from this that JOI gained its own position in the informetrics field. JASIST (Journal of the American Society for Information Science and Technology), JDOC (Journal of Documentation) and JIS (Journal of Information Science) are more general information science journals that occasionally publish informetrics articles. IPM (Information Processing and Management), Elsevier's "sister" journal to JOI, is mainly devoted to information retrieval but publishes occasionally informetrics articles. Finally the journal *Scientometrics* is closest to JOI in that it also publishes mainly on citation analysis. A difference between *Scientometrics* and JOI is that JOI publishes more model-theoretic papers and papers on networking issues while *Scientometrics* publishes more case studies.

## **Editorial and production aspects**

In principle, decisions on acceptance/rejection of submitted papers to JOI are based on the advice of 2 referees and a third referee is invited in case the first two referees disagree. Most accepted papers are accepted after minor or major revisions. For rejected papers we make a distinction between "reject" and "reject – out of scope". "Reject" is usually decided after the advice of referees; "reject – out of scope" is usually decided by the editor-in-chief, without appointing referees. When a submitted paper is clearly out of scope of JOI, there is indeed no point in inviting referees. Hereby we make the burden for possible referees lighter. We must underline that the burden of referees is high and is increasing due to the increasing number of submitted papers.

In Table 4 one can find the rejection rates (i.e. total rejections, including out of scope papers) for each submission year.

Table 4. Total rejection rates (RR) for each submission year

Year	RR
2007	38.24%
2008	47.69%
2009	54.13%
2010	49.65%

So, nowadays, we are close to a total rejection rate of 50%. This is a good rate but it cannot be a “numerous clausus”: every submitted paper should get a fair chance to be considered. Also, if potential authors feel that the rejection rate is high, they might refrain of submitting weaker papers by which the rejection rate might decrease. The rejection rate “out of scope” is about 50% of all rejected papers – so about one quarter of all submitted papers are decided “reject – out of scope”. The publisher encourages (whenever applicable) the out of scope rejections in order to be able to spend more editorial and referee time to submitted papers that fall within the scope of the journal.

We can report on the editorial times and production times for JOI in 2011 (first 3 issues). The editorial time is the time between first submission of a paper and its final acceptance (hence its arrival at the Elsevier office since this is within seconds after acceptance). The production time is the time between arrival of an accepted paper at the Elsevier office and the appearance of the article in final version on the web.

Editorial time is about 18 weeks and production time is about 5 weeks. In the editorial time we include, of course, the time of a re-review in case of major revision. There is also the time between the arrival of the article at the Elsevier office and the e-publication of the complete issue on the web. This was in 2011 (first 3 issues) about 15 weeks. This is a difference of about 10 weeks as compared to the production time for the article on the web. This difference is caused by the fact that an article on the web had to “wait” for the complete issue to be constituted. Only when the complete issue is there, the article can be fully cited (issue, pages, ...).

This has changed from volume 6, issue 1 onwards where “Article Based Publishing” (ABP) is introduced. This means that, once an accepted article is available on the web, it is immediately linked to an issue and pages. The article can then already be fully cited, including volume, issue and pages (instead of “Journal of Informetrics, to appear”). According to the above statistics this saves about 10 weeks of citing time.

In general, authors consider JOI as a fast journal as far as editorial and production times are taken into account. The editor-in-chief is sending – when necessary – regularly reminders to referees in order to keep the editorial time to a minimum, but one can never exclude late reviews.

## Use of JOI: impact factors and downloads

JOI has been accepted in 2008 by Thomson Reuters for receiving an impact factor. The impact factors can be found in Table 5 (© Thomson Reuters Journal Citation Reports 2011).

Table 5. Impact factors of JOI

Year	IF
2008	2.513
2009	3.379
2010	3.119

These are very high numbers, certainly for a young journal. They are the highest for any “metrics” journal in the Journal Citation Reports (JCR) Subject Category Listing “Information and Library Science” (LIS). The slight decrease of the IF from 2009 to 2010 is also noted by other LIS metrics journals, probably due to the fact that papers on the *h*-index (and related indices) have reached their maximum in terms of citations. In fact JOI increased its relative impact from 2009 to 2010 since the value  $IF = 3.379$  ranked JOI fourth out of 66 journals in



the LIS Subject Category Listing while the value  $IF = 3.119$  ranked JOI third out of 76 journals in the LIS Subject Category Listing.

We thank these high impact factors to the thorough refereeing process (for which I thank all referees) and the relative high rejection rates, by which only the best papers are accepted and published. As a consequence they attract(ed) relative high numbers of citations and hence the high impact factor for JOI.

The number of full text downloads of articles of JOI increases every year with about 40% - 50%, reaching in 2011 around 5.000 full text downloads per month. They mainly come from European institutes (around 40%), Asian institutes (around 30%) and American institutes (around 20%). (Co-)authorship (Table 2) is a different matter than downloads but if we compare these downloads percentages with Table 2 we see that Asia downloads relatively more than it publishes in JOI while the opposite is true for Europe. The 20% downloads of American institutes are more or less in line with Table 2. This clearly shows the growing interest and development of Asia in the informetrics literature, especially of China.

## Local citation environment map of JOI

Figure 1 presents a local citation environment map of JOI. It was produced by Matthew Richardson of Elsevier, Oxford, UK, using citation data of Scopus in the period 2007-2010 (cited and citing documents). The properties of this map are explained below.

The map is produced in Gephi, using the ForceAtlas 2 layout algorithm ([http://webatlas.fr/tempshare/ForceAtlas2\\_Paper.pdf](http://webatlas.fr/tempshare/ForceAtlas2_Paper.pdf)). It positions all journals with respect to the journals that they cite. Journals are mapped out using all of the citation links between them: related journals cluster together as they cite one another more frequently. Journals are selected for the map by virtue of being among the top 30 journals that JOI cites or the top 30 journals citing JOI in the mentioned period.

These two lists are distinct but overlapping: journals can be present among both the top-cited and top-citing journals. Such journals are shaded grey on the map. The journals shaded black

are those journals that are only in the list of journals citing JOI, while the white coloured journals are only in the list of journals cited by JOI. It is very possible that white journals have cited JOI and black journals have been cited by JOI; however they are not in the relevant top 30 list.

Connections on the map represent citations. However a filter is applied to remove the weakest relationships. The remaining lines are those that represent more than 5% of citations to the cited journal, from all journals in the map. The strength of the attraction and repulsion forces between any two nodes is determined by the edge weight. In this case the edge weight is a value between 0 and 1, calculated as the percentage of citations the cited journal receives from the citing journal, out of citations received from all journals in the map. The citation direction is from A to B if the edge is concave and is from B to A if the edge is convex. Another way to think about it would be to see the citing journal as the node from which edges come out clockwise; it is the cited journal if edges come out counter-clockwise. The node size is based on the mean number of citations received per paper (period 2007-2010).

In this map, JOI sits in the centre with a core of informetrics journals, with branches leading to different clusters of research. At the top are the large multidisciplinary journals (mainly cited by JOI rather than citing it); at the right, a group of physics journals with “Physics World” acting as a bridge from the informetrics journals. At the bottom of the map are mathematical and information science journals and at the left are “Research Policy” and “Research Evaluation”.

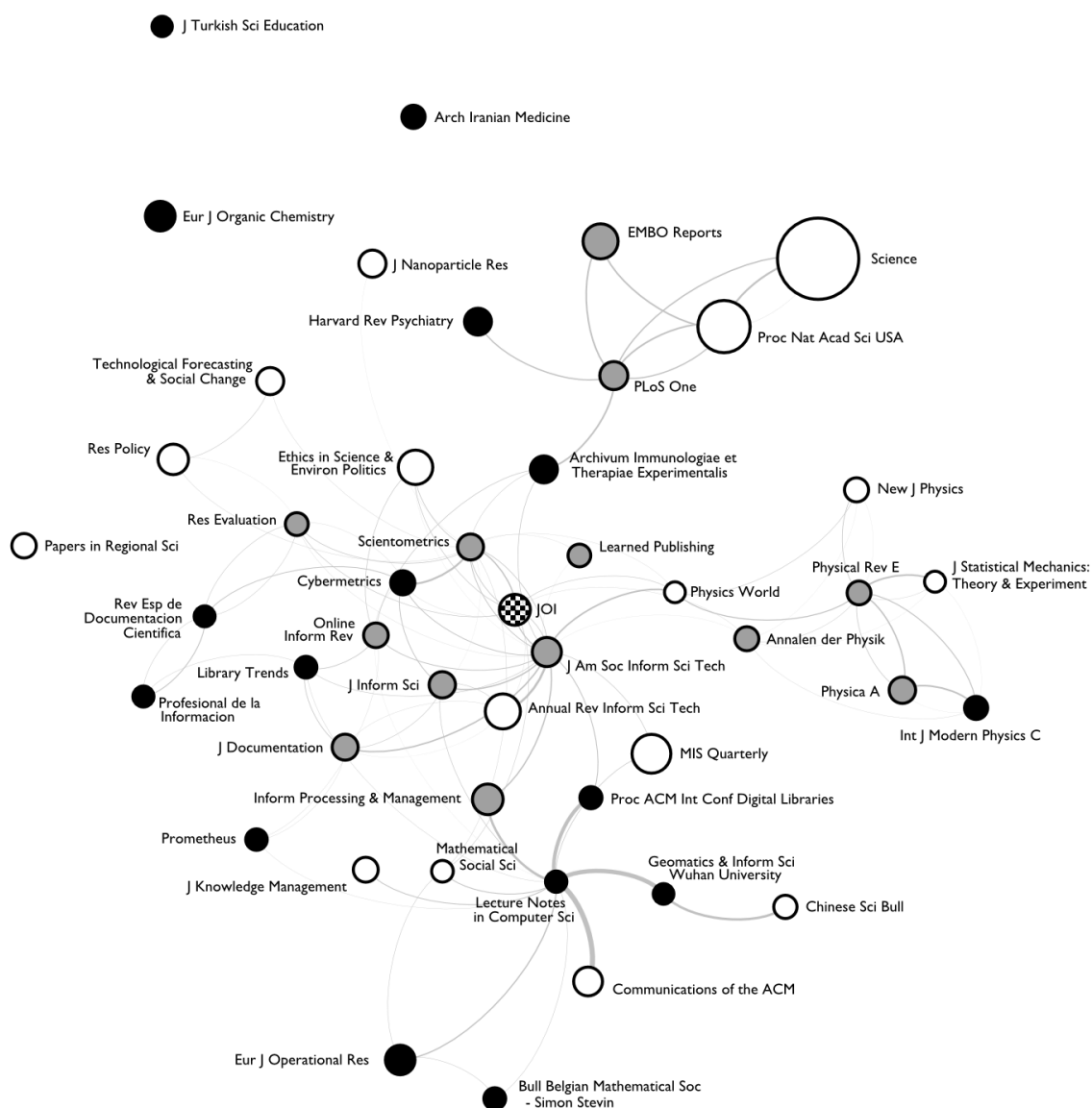


Fig. 1: Local citation environment map of JOI (2007-2010)

## Final remarks

From the above data it is clear that Journal of Informetrics has become a well-established informetrics journal in its five years of existence. Especially the high impact factor is remarkable. Based on the (co-)authors' data and full text download data, it is clear that JOI is an international journal covering the developed parts of the world. The data also show the high interest of Asian institutes in the JOI articles while in terms of publications, Europe is a bit over-represented.

JOI is representative for the field of informetrics: more than 50% of the published papers deal with citation analysis and/or *h*-type indices.

The future of JOI looks bright: before the year 2011 is finished we have more submitted papers than in any year before. As editor-in-chief, I am very pleased with the quality of the refereeing work. Our referees understand that only high quality papers can be accepted. This, together with a very professional support by the Elsevier publishing team, gives the good result we have now and makes us confident in the continuation of the quality and impact of JOI papers.

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