

Presentation: CiteScore vs JIF and Other Journal Indicators

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Extended abstract

Introduction

Journal impact factor is controversial when used for assessing articles or individuals (DORA, 2012; Hicks, Wouters, Waltman, De Rijke, & Rafols, 2015), but is still used extensively in evaluations. It was created for evaluating journals and not individual publications (Garfield, 2006). In December 2016 Elsevier released its own journal indicator, CiteScore (Zijlstra & McCulloch, 2016). CiteScore has a publication window of three years before the one-year citation window, and counts citations from every document type to every document type. This value is normalized by the number of publications in the journal (all document types) in the publication window. Citation counts are derived from Elsevier's Scopus.

Bergstrom and West (2016) analyzed CiteScore vs. JIF, and found that the Nature Group journals and the Lancet group journals are doing well when ranked with CiteScore, and the Elsevier journals (except for the Lancet group) have an advantage when ranked by CiteScore. The pros and cons of CiteScore have been discussed on different platforms (blogs, news items and journal publications (de Silva & Memon, 2017; Van Norden, 2016; Waltman, 2016).

In the current study, we compare CiteScore to several journal impact measures: those provided by Clarivate: the Journal Impact Factor (JIF), the 5-year journal impact factor (JIF5), EigenFactor (EF) and Article Influence (AI), and those provided by Elsevier SNIP and SJR (actually provided by Scimago). Correlations between these indicators are computed and the rankings based on JIF and CiteScore of the 20 top journals ranked according to each of the two measures are shown.

Methods

Both Clarivate and Elsevier allow to download the complete list of sources for which journal indicators are available. The Elsevier list for 2016 includes journals, book series, trade journals and conference proceedings, altogether 22,615 sources. The 2016 list of journals from the JCR, includes 11,457 journals. The number of journals indexed by both databases is 10,869, there are 11,746 sources having only CiteScore and 588 journals appearing only in JCR. It should be noted that 140 sources defined as book series or trade journals in the CiteScore data also appear in the JCR. To sum up our dataset is comprised of 10,869 journals appearing on both lists. The comparison will be done on this set of journals. We computed Pearson and Spearman correlations between CiteScore (CS) and the following journal indicators: JIF, JIF5, EF, AI, SNIP and JCR. The results are displayed in Table 1. The Pearson correlations are around .80 except for the correlation between CiteScore and the EigenFactor which is only .35. The most probable reason for the low correlation coefficient is that the EigenFactor is the only indicator not normalized by the number of publications in the journal. Article Influence is the normalized version of the EigenFactor – and the correlation between CiteScore and Article Influence is similar to the other correlations.

Spearman correlations are higher for all the indicators, except for SNIP. Interesting to note that the correlations (both Pearson and Spearman) are highest between CiteScore and the 5-year journal impact factor.

Pearson	CS	JIF	JIF5	EI	AI	SJR	SNIP
CS	1	.87**	.90**	.35**	.79**	.83**	.82**
N	10,869	10,869	10,624	10,869	10,624	10,865	10,849
Spearman	CS	JIF	JIF5	EI	AI	SJR	SNIP
CS	1	.94**	.95**	.77**	.83**	.88**	.78**
N	10,869	10,869	10,624	10,869	10,624	10,865	10,849

Table 1: CS vs the other journal indicators – Some of the indicators were not available for all journals

The Spearman correlation between CiteScore and JIF is .94 – which is very high, but still the rankings based on CiteScore and JIF are not identical as can be seen in Tables 2 and 3. The differences are quite remarkable, in line with the findings of Bergstrom and West (2016). There are only 7 journals among the top twenty that appear in both lists (highlighted in the Tables).

Journal Title	Ranked by JIF	Ranked by CS
CA-A CANCER JOURNAL FOR CLINICIANS	1	1
NEW ENGLAND JOURNAL OF MEDICINE	2	77
NATURE REVIEWS DRUG DISCOVERY	3	137
CHEMICAL REVIEWS	4	2
LANCET	5	314
NATURE REVIEWS MOLECULAR CELL BIOLOGY	6	36
JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION	7	339
NATURE BIOTECHNOLOGY	8	74
NATURE REVIEWS GENETICS	9	45
NATURE	10	66
NATURE REVIEWS IMMUNOLOGY	11	49
NATURE MATERIALS	12	16
Nature Nanotechnology	13	20
CHEMICAL SOCIETY REVIEWS	14	3
Nature Photonics	15	22
SCIENCE	16	54
NATURE REVIEWS CANCER	17	41
REVIEWS OF MODERN PHYSICS	18	4
LANCET ONCOLOGY	19	133
PROGRESS IN MATERIALS SCIENCE	20	8

Table 2: The top-20 journals ranked by JIF

Journal Title	Ranked by CS	Ranked by JIF
CA-A CANCER JOURNAL FOR CLINICIANS	1	1
CHEMICAL REVIEWS	2	4
CHEMICAL SOCIETY REVIEWS	3	14
REVIEWS OF MODERN PHYSICS	4	18
Annual Review of Astronomy and Astrophysics	5	21
Annual Review of Immunology	6	28
MATERIALS SCIENCE & ENGINEERING R-REPORTS	7	26
PROGRESS IN MATERIALS SCIENCE	8	20
PHYSIOLOGICAL REVIEWS	9	31
PROGRESS IN POLYMER SCIENCE	10	38
Energy & Environmental Science	11	24
Annual Review of Plant Biology	12	43
Annual Review of Psychology	13	55
Annual Review of Pathology-Mechanisms of Disease	14	32
IEEE Communications Surveys and Tutorials	15	79
NATURE MATERIALS	16	12
Annual Review of Biochemistry	17	57
CELL	18	22
CLINICAL MICROBIOLOGY REVIEWS	19	54
Nature Nanotechnology	20	13

Table 3. The top-20 journals ranked by CiteScore

There are three parameters that differentiate between CiteScore and JIF:

1. The size of the citation window (3 years vs. 2 years)
2. The citation source (Scopus vs. Elsevier)
3. Both CiteScore and JIF count all the citations received within the citation window to all items published within the publication window. For CiteScore this number is divided by the total number of items within publication window, however for JIF the division is by the number of “citable items” (usually articles and reviews) – boosting the impact factor of journals where there are considerable number of citations to items that are not defined as “citable” by the JCR.

Further studies are needed in order to understand the differences and similarities between journal indicators.

References

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