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## Impact Factor (IF) true or false?

**Streszczenie.** W artykule opisano sposób wyliczania Impact Factor (IF), znanego w Polsce m.in. jako współczynnik wpływu, będący miarą siły oddziaływania i prestiżu czasopism naukowych. IF jest ogłaszany corocznie w bazie Journal Citation Report (JCR) przez firmę Clarivate Analytics (dawniej Thomson Reuters). Zwrócono uwagę na posługiwanie się tym współczynnikiem również przez czasopisma, które nie posiadają wskaźnika IF, które nie są indeksowane w WoS CC. Przypomniano istnienie "drapieżnych wydawców", którzy poprzez swoje działania marketingowe i informowanie o możliwości publikowania w czasopismach z IF (który nie ma nic wspólnego z bazą JCR i firmą Clarivate Analytics) mogą wprowadzić w błąd naukowców, którzy chcą publikować w czasopismach posiadających prawdziwy Impact Factor.

**Abstract.** The article describes how to calculate Impact Factor (IF), known in Poland (among others) as a factor of influence, a measure of the influence and prestige of scientific journals. The IF is published annually in the Journal Citation Report (JCR) by Clarivate Analytics (before Thomson Reuters). It has also been pointed out that this ratio is also used by journals that do not have IF and are not indexed in WoS CC. The existence of "predatory publishers" who, through their marketing efforts and newsletters in IF journals (which has no occur in the JCR database provided by and Clarivate Analytics), may have mislead scientists who want to publish in journals which have a true Impact Factor. (**Impact Factor (IF) prawda czy fałsz?**).

**Słowa kluczowe:** Impact Factor (IF), lista filadelfijska, drapieżni wydawcy, baza JCR  
**Keywords:** Impact Factor (IF), Philadelphia list, predator publishers, JCR base

### Introduction

What is the Impact Factor (IF) – that is one of important questions about IF indicator in the last decade in Poland raised by the scientists. The impact factor or simply IF attracted more and more attention according to journals evaluation. For all academic staff and researchers in Poland, whose scientific achievements have been subject to evaluation (parametrisation) for many years and for librarians and information science specialists who do bibliometric searches and analyzes - this indicator is one of the attributes of bibliometrics, incorporated, for example, into magazine ratings, contributes to the positioning of a magazine and determines its position from among other titles including those indexed in the Clarivate Analytics (before Thomson Reuters) Journal Citation Report (JCR). Hence the race among the authors to publish an article in highly rated journals with Impact Factor, which could be helpful in receiving new citations. Such a race is not a mystery, what predator publishers do, encouraging authors to publish in their Open Access journals [1-3].

In the next part of the paper the authors will discuss:

- The fact that Impact Factor is provided on websites of many journals, but not only those indexed in the Web of Science Core Collection - so where is it possible to find IF information?
- The fact that authors still receive invitations to publish articles in predatory journals
- Predatory publisher lists created by J. Beall - including recommendations for authors (2015)
- Examples of journals that provide an IF indicator - both indexed in WoS CC and not
- Authentication of journals by placing them on lists (eg. Index Copernicus) or in scientific communication services such as ResearchGate
- Whether IF is a real indicator of magazine ratings
- What to keep in mind when deciding to publish an article in a journal.

### Meaning of Impact Factor

In the Polish literature, the Impact Factor was introduced in the 1990s, when its knowledge was mostly in the discipline of science, and few people expected it to be of any relevance, including the representatives of medical or

social sciences. In order to illustrate its occurrences, the authors present selected titles in both the field of occupational health and safety as well as physics. The origins of the IFs date back to the 1960s, associated with Eugene Garfield, the creator of the ISI Institute in Philadelphia. Poland is the only country in which the term Philadelphia List is used to refer to indexed journals with IF.

To remind what this is, the Impact Factor is an indicator of the quotient of the number of all citations of articles published in a given year to their number. Here is an example for a magazine indexed in WoS CC since 1982: Electromagnetic Biology and Medicine:

Citations in 2015, according to publications from years:		Numbers of published articles in years	
2014	75	2014	43
2015	56	2015	60
<b>Sum:</b>	<b>131</b>	<b>Sum:</b>	<b>103</b>

To calculate Impact Factor, citations should be divided by publications as in the formula below:

$$IF = \frac{\text{citations}}{\text{publications}} = \frac{131}{103} = 1,272$$

Therefore, IF 2016 for Electromagnetic Biology and Medicine presented in June 2017 is 1,272.

Many academic workers in Poland receive invitations to publish their papers in the journal, for example, Journal of Ergonomics - which is published by the Omnic International with several locations around the world (India, USA, UK, Romania). This journal is not indexed in WoS CC or Scopus database and it is therefore not included in the list of journals developed by the Ministry of Science and Higher Education, announced in December 2016 or earlier, until 2014 inclusive. These invitations from predatory publishers are addressed to individuals as well as to the institution's secretariats, the assurance of fairness and the procedure (reviews), information on the fields of research in which the articles appear in the articles, and the indication of databases, platforms and services where the title is Indexed e.g. Google Scholar, J-Gate. For example, on

Index Copernicus, you can find information about the Journal of Ergonomics or about the Journal of Electrical & Electronic Systems. On the same page of Index Copernicus there is the information that magazines, that in principle counteract the policy of predatory journals, are rewarded with additional points.

It is worth to read the journals indexed in the ICI Journals Master List. The journals in the database have successfully passed the multi-parameter assessment process and have provided the original ICI with the original purpose of verifying the data submitted in the assessment survey. Magazines are evaluated each year. Periodicals that apply predatory journals policy are rewarded with additional points. That is very difficult to eliminate all titles of predatory journals, as it was in the case with Elsevier's Scopus database, where predatory journals also appeared. Another way to make a magazine credible is to index the articles, for example, in ResearchGate. Here is an example of how to post about the Journal of Ergonomics at ResearchGate (Fig. 1)

Impact Factor can be enumerated on its own, so there are no restrictions on publishers to indicate that the IF journal, such as the Journal of Ergonomics = 1.26. However, that IF has nothing to do with the Journal Citation Reports (JCR) base with Impact Factors, or on the publisher's website, which provides correlated information to JCR or WoC CC.

You can find the exact citation information on the journal's website and come up with Google Scholar. The tables below provide examples of journals that provide IF, but it should be noted that not all of them are from the JCR (Clarivate Analytics / former Thomson Reuters) database. However Impact Factors are provided by predatory publishers, not always with the methodology or source from which they are derived.

Journal of Ergonomics	
RG Journal Impact: 0.41*	
*This value is calculated using ResearchGate data and is based on average citation counts from work published in this journal. The data used in the calculation may not be exhaustive.	
RG Journal impact history	
2017 RG Journal impact	Available summer 2018
2015 / 2016 RG Journal Impact	0.41
2014 RG Journal impact	0.21

Fig. 1 A part of ResearchGate page with information about Journal of Ergonomics.

Table 1 Examples of journals – occupational safety and health (ergonomics)

	Publisher	Impact Factor (IF) (IF "publisher") IF/5 Yr Journal IF	Index Copernicus (IC)	Impact Factor (Clarivate Analytics / d.Thomson Reuters) 2016*	Indexed in WoS CC (number of articles / since)	Indexed in Scopus (number of articles / since)
Journal of Ergonomics	Omnics International (India, USA, Romania, UK)	1.26 / 2.28	ICV 2015: 65.83	—	—	—
Ergonomics	Taylor&Francis (UK)	—	ICV 2015: none	1,449	8,534 / 1957	2320 / 1973
Occupational Medicine & Health Affairs	Omnics International (India, USA, Romania, UK)	0.83	ICV 2015: 62.25	—	—	—
Occupational Medicine	Rapid Science Publishers (GB) (WoS CC) / Oxford University Press (Scopus)	—	ICV 2015: none	1,299	2,963 / 1992	4,686 / 1946
Journal of Textile Science & Engineering	Omnics (US by Index Copernicus)	0.343	ICV 2015: 83.27	—	—	—
Textile Research Journal	Textile Research Institute (USA)	—	ICV 2015: none	1,299	9,103 / 1945	11,076 / 1931

\*IF given in 2016 is for 2015.

Table. 2 Examples of physics journals related to electromagnetism and other phenomena

Journal title	Publisher	Impact Factor (IF) of "publisher" (annual / 5-years)	Index Copernicus IC	Impact Factor (annual/5-years) (ClarivateAnalytics before ThomsonReuters)	Indexed in WoS CC (number of articles / since in WoS CC)	Indexed in Scopus (number of articles / since in Scopus)
Journal of Electrical & Electronic Systems [Open Access]	Omnics	0.359 / 0.82	ICV 2015: 64.94	—	—	—
Journal of Electrical Engineering & Technology	KOREAN INST ELECTR ENG (Korea)	none	ICV 2015: 76.92	0,679	1455 / 2009	1598 / 2008
Journal of Electrical Engineering and Electronic	SciTechnol (USA)	0,33	ICV 2015: 76.92	—	—	—

Technology [Open Access]						
Electromagnetic Biology and Medicine	MARCEL DEKKER INC (USA) WoS CC / Informa Healthcare (Scopus)	none	ICV 2015: none	1,208	575 / 2002	1055 / 1982
Journal of Biomedical Engineering and Technology [Open Access]	Science and Education Publishing	none	ICV 2015: none	—	—	—
International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering [Open Access]	Ess & Ess Research Publications (India)	5,621	ICV 2015: none	—	—	—

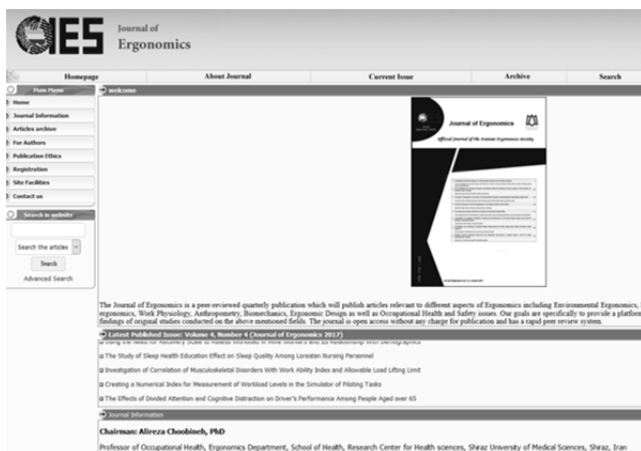


Fig. 2. Impact Factor of Journal of Ergonomics published by the publisher = 1.26 (accessed May 29, 2017)

In the Fig. 2 there is another example of the "credibility" web page of the journal provided by Omnics International.

In Fig.3 there is presented a screenshot from the Journal of Ergonomics website with information about their "own" Impact Factor of the magazine.

It is not the proper Impact Factor, interesting for scientists concerned in WoS CC list.

**Submit Manuscript**

**Journal Impact Factor 1.26<sup>\*</sup> ; 2.28<sup>\*</sup> (5 Year Impact Factor)**  
 Submit manuscript at <https://www.editorialmanager.com/openaccessjournals> or send as an e-mail attachment to the Editorial Office at [ergonomics@scholarlyjournals.org](mailto:ergonomics@scholarlyjournals.org)

**About the Journal**

The Journal of Ergonomics is one of the best Open Access journals of Scholarly publishing and aims to publish most complete and reliable source of information on the discoveries and current developments in occupational health, musculoskeletal disorders, driver safety, anthropometry, biomechanics, mechanical engineering, industrial engineering, industrial design, information design, kinesiology, physiology, psychology, working ergonomics and making them freely available through online without any restrictions or any other subscriptions to researchers worldwide.

Fig. 3 . Part of website of the Journal of Ergonomics (accessed May 26, 2017).

What to keep in mind to minimize the risk of publishing an article in a predatory journal:

- ✓ Check where the journal is indexed (WoS CC, Scopus other reputable databases and/or services)
- ✓ Check where articles are indexed from a journal, where in the network environment you can find information about journal
- ✓ Google Scholar indexing does not always confirm the status of a journal
- ✓ Use the information provided by Jeffrey Beall in years. - In January 2017, J. Beall suspended the predatory journals information, but archived information is still available in the Internet
- ✓ Review the criteria to help you decide to publish in a magazine that was made available by J. Beall in January 2015
- ✓ Check what IF gives the magazine, whether calculated by itself or whether it comes from JCR / WoS CC (Clarivate Analytics / former Thomson Reuters)
- ✓ Ask librarians / opinion specialists about the magazine.

### Summary

Scientists who want to publish their papers in journals with IF should be careful because predatory publishers are still trying to persuade authors to publish in their journals. This paper should help to consolidate information related to IF. It is also another warning for the rapid publication of an article that will not benefit the author, will not count as a scientific achievement when applying for a doctorate degree or higher scientific title. It also will not be taken into account in the parametric assessment of the affiliated institution, although it is not known yet what will be the parametrization rules for the next 2021, may be information about citations will be not required. Having a website is not a sufficient verifier of reliability, nor does it include articles and indexing them, for example, in ResearchGate or other Research Communications platforms and/or services. The IF indicator has been one of the elements used in scientific policy for years. Many people are aware of its imperfections, only limited to one base, which indexes about 12 thousand journals from all over the world. Impact Factor depends on the value citations, and this is variable and depends on the scientific field or the popularity of issues which are in the scientific circulation.

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