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EDITORIAL NOTE

The 2022 Impact Factor of the AABC

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Every year, editors of scientific journals await, with greater or lesser anxiety, the publication of the Journal Citation Reports (JCR). Among the various metrics that accompany this annual publication by Clarivate (2023), is the Impact Factor (IF) which, despite several and constant criticisms, is still very popular in the scientific publication industry, particularly for the decision-making process of where authors submit their articles (e.g., Ali 2021).

The Annals of the Brazilian Academy of Sciences (AABC) is also required to observe IF index very carefully (e.g., Kellner 2021). As the sole broad multidisciplinary journal published in Brazil (Kellner 2022), there is a great variety in the themes and areas that are covered. This fact seems to be a potential problem for the AABC and other broad multidisciplinary journals.

As has been known for some time, different areas have different citation potential (e.g., Rieder et al. 2010). The AABC receives articles of large research areas that can potentially result in higher citations, such as studies related to cancer (Health Sciences, e.g., Nery et al. 2022). By the way, a specialized journal in this field has received the highest IF in 2022 (CA: A Cancer Journal for Clinicians - IF 254.7). But, at the same time, the AABC also publishes studies in scientific areas where the citation potential is traditionally much lower (Mathematical Sciences, e.g., Bouali et al. 2021).

The nature of this mixture, which is a necessity for a journal edited by a scientific society as broad as the countries' scientific academies, can potentially have a negative effect on the IF. Important and prestigious journals from some academic societies such as the Proceedings of the National Academy of Sciences of the United States of America (PNAS) have overcome potential problems regarding the need to publish results from different areas by obtaining considerable prestige in the most active and competitive scientific arenas around the world. Therefore, PNAS not only receives articles with greater impact potential in all areas, but the journal is also more consulted – a great value in these days when there seems to be an infinite number of journals and where time has become a very valuable asset. It is not surprising that a respectable position achieved by a journal increases the chances of its articles being more cited, resulting in positive feedback regarding its IF.

The history of AABC's IF has its complexities. Having faced some difficulties regarding very long publication times, in 2002 the magazine received its first IF regarding the online version of this periodical (available in this medium since 2000), which was less than 0.5 (Table I). Over the years, IF values have increased, with some fluctuations, up to a maximum of 1.811 last year (JCR 2021). This was achieved without a significant contribution from self-citations, which are considered one of the

"gambling" problems with IF (Siler & Larivière 2022). For the AABC, self-citations were never an issue, remaining around 5%.

The most recent IF of the AABC recorded a significant drop of more than 25% (Table I). The reasons for this reduction, the largest experienced by the journal to date, are not well understood. There is a general feeling among editors that publishing fewer articles can potentially increase the possibility of achieving higher bibliometric numbers. While this may be the case as it implies a more rigorous selection process, this does not appear to apply to the AABC. It should be noted that for such a broad multidisciplinary journal, there must be a substantial number of articles published to be considered by researchers in a particular area of science. The more areas covered by the journal, the more papers are needed to be published to encompass these areas. PNAS, for example, publishes more than 3,500 articles annually (PNAS 2023). Since 2007, when more specific surveys began to be carried out on AABC publications, this journal went from 60 articles published in 2007 to a record 439 articles last year (Table II). There has also been an increase in submissions, although these have decreased during the pandemic.

Naturally, no one discusses the importance of improving the selection process of articles with the greatest potential for impact. Of the 776 citable items published by the AABC (according to Clarivate: 351 in 2020 and 425 in 2021, which differ slightly from our records - see Table II), only 424 received at least one citation during 2022. This results in an Article Citation Factor (ACF - see Kellner 2020) of 0.5464 (Table III). If only cited articles were considered (Reescalated Article Impact Factor - RAIF, see Kellner 2020) the IF would almost double (2.427, Table III). As can be seen, less than 30% of the articles published by AABC considered in JCR 2022 received two citations or more (ACF-2 - 0.2783, Table III); if only these articles had been published by AABC, the journal's IF would have been around 3.8 (RAIF-2, Table III).

There is obviously no possibility to be sure in advance how an article might influence or be considered relevant for any particular field, for all taking into account the time limit considered for the IF calculation. Nonetheless, editors are increasingly required to find a fair way to evaluate manuscripts submitted to their journals, especially in the current competitive scientific world we live in (e.g., Kowaltowski et al. (2021).

Table I. The IF reported in the JCR for the AABC.

Year	IF	Year	IF	Year	IF
JCR 2002	0.469	JCR 2009	1.074	JCR 2016	0.861
JCR 2003	0.510	JCR 2010	0.925	JCR 2017	0.956
JCR 2004	0.435	JCR 2011	1.094	JCR 2018	0.938
JCR 2005	0.653	JCR 2012	0.851	JCR 2019	1.280
JCR 2006	0.737	JCR 2013	0.875	JCR 2020	1.753
JCR 2007	0.895	JCR 2014	0.734	JCR 2021	1.811
JCR 2008	0.881	JCR 2015	0.717	JCR 2022	1.3*

*** For comparison purposes, the correct number is 1.326.**

Table II. Number of articles submitted and published by the AABC (excluding editorials and letters).

Year	Submitted	Published	Year	Submitted	Published
2007	-	60	2015	827	185
2008	176	61	2016	830	200
2009	170	74	2017	950	250
2010	202	97	2018	1281	300
2011	317	112	2019	1512	301
2012	301	104	2020	1880	350
2013	470	140	2021	1528	424
2014	641	175	2022	1070	439

Table III. Citations in 2022 of articles published in 2019 and 2020 according to the Journal Citation Reports 2022.

Art Pub 2020-2021	776
Cit JCR 2020-T	608
Cit JCR 2021-T	421
Cit JCR 2020-2021-T	1.029
Cit Art JCR 2020-2021/2022	424
ACF JCR 2020-2021/2022	0.5464
Cit-2 Art JCR 2020-2021/2022	216
ACF-2 JCR 2020-2021/2022	0.2783
RAIF JCR 2020-2021/2022	2.427
RAIF-2 JCR 2020-2021/2022	3.801

ACF JCR 2020-2021/2022 – Article Citation Factor concerning articles published in 2020 and 2021 cited at least once in 2022 based on the Journal Citation Reports (JCR) 2022, ACF-2 JCR 2020-2021/2022 – Article Citation Factor concerning articles published in 2020 and 2021 cited at least twice in 2022 based on JCR 2022, Art Pub 2020-2021 - Article published in 2020 and 2021 according to JCR 2022; Cit Art JCR 2020-2021/2022 – number of articles published in 2020 and 2021 cited at least once in 2022 according to the JCR 2022; Cit-2 Art JCR 2020-2021/2022 – number of articles published in 2020 and 2021 cited at least twice in 2022 according to the JCR 2022; Cit JCR 2020-T – total number of citations in 2022 of items published in 2020 presented by JCR 2022, Cit JCR 2021-T – total number of citations in 2022 of items published in 2021 presented by JCR 2022, Cit JCR 2020-2021-T – total number of citations in 2022 of items published in 2020 and 2021 presented by JCR 2022, RAIF JCR 2020-2021/2022 - Reescalated Article Impact Factor concerning articles published in 2020 and 2021 cited at least once in 2019 based on JCR 2022, RAIF-2 JCR 2020-2021/2022 - Reescalated Article Impact Factor concerning articles published in 2020 and 2021 cited at least twice in 2019 based on JCR 2022.

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