



EDITORIAL NOTE

Impact and performances of different scientific fields at the AABC

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Continuing with the evaluation of the impact of different scientific fields for the bibliometric indexes of the Annals of the Brazilian Academy of Sciences (AABC) that was recently started (Kellner 2020a, b), here I focus on the publications regarding Mathematical, Chemical, Earth and Engineering Sciences during 2018 considered in the 2019 Journal Citation Reports (JCR).

Concerning Mathematical Sciences, only six papers were published, two of which were cited during 2019 – one and two times, respectively. This results in an Article Citation Factor (ACF, see Kellner 2020a) of 0.3333, showing that only about one third of the articles published by the AABC in this area were cited in the following year. The Impact Factor (IF) of Mathematical Sciences of these papers in 2019 is 0.500 – much lower than the 2019 IF of this journal (1.280). If only the two cited papers are considered, the Reescalated Article Impact Factor (RAIF, see Kellner 2020a) is 1.500.

In Engineering Sciences, a total of seven manuscripts were published, three of which were cited once during 2019, resulting in an ACF of 0.4286, which is slightly higher than the ACF of Agrarian and Biological Sciences (Kellner 2020b). RAIF is 1.000 and if only this scientific field is considered, the IF of the AABC would be 0.429.

A different situation is found in Earth Sciences. The total number of articles published during 2018 is 28, but two were not retrieved by JCR, resulting in a Missing Article Index (MAI, see Kellner 2020b) of 0.0714. From the 26 articles considered by JCR 2019, 16 were cited, producing an ACF of 0.6154. Most articles received one or two citations, but one was cited 17 times (Marengo et al. 2018), contrasting with all others. If all papers are considered, RAIF is 2.875, but if the most cited article is excluded, the value drops to 1.933. The same happens with the IF if only publications of this scientific field are considered, changing from 1.160 to 1.769 if the contribution of Marengo et al. (2018) is included.

The last area that is analyzed here is Chemical Sciences that has also provided the greatest contribution to the 2019 IF of the AABC considering the papers published in 2018 (Kellner in prep). A total of 41 articles were published, including two special volumes (Cavaleiro 2018, Crespilho 2018). From the 41 published papers, 29 were cited resulting in an ACF of 0.7073. RAIF is 3.621 and IF is 2.561 – almost the double of the 2019 IF of this journal (1.280).

Examining the evolution of these specific areas in the AABC compared to the overall rates of submissions, rejection, and publication (Fig. 1), Mathematical (Fig. 1a) and Engineering Sciences (Fig. 1b) have similar trajectories, with a small but steady growth. However, the numbers are clearly much lower than in other scientific fields that have contributed to the AABC.

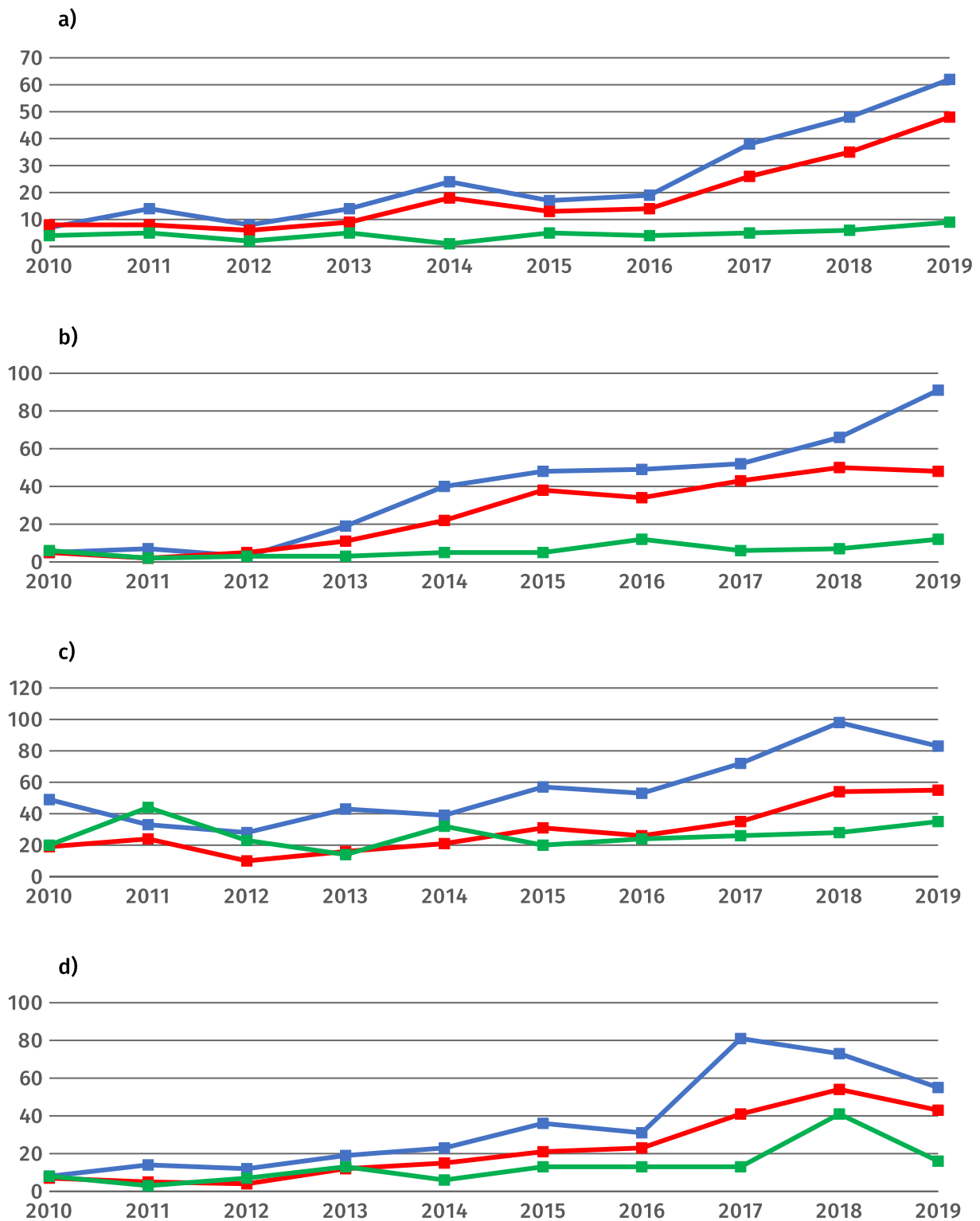


Figure 1. The graphs show the manuscripts received (in blue), rejected (in red), and published (in green) by the Annals of the Brazilian Academy of Sciences (AABC) between 2010 and 2019 in (a) Mathematical, (b) Engineering, (c) Earth, and (d) Chemical Sciences.

The submissions in Earth Sciences are more substantial but the curves vary. There have been more papers submitted starting in 2016, but there is a decrease between 2018 and 2019 (Fig. 1c). The publication rate also varies, with marked fluctuations.

Regarding Chemical Sciences, there has been a steady increase in submissions, with a spike from 2016 and 2017, slightly decreasing from there on until 2019 (Fig. 1d). The higher number of submissions in 2017 can be attributed to the two special issues published in 2018 (Cavaleiro 2018, Crespilho 2018).

In summary, there is a clear contrast in the number of articles and citations regarding the four scientific fields analyzed here, with Chemical Sciences followed by Earth Sciences making a more substantial contribution than the others to the 2019 IF of the AABC.

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