EVALUATION OF THE PERFORMANCE OF THE BIAL FOUNDATION'S GRANTS

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Background: Bibliometric indicators have been considered reliable and informative tools to assess scientific research performance and impact, as long as their limitations are acknowledged. With the creation of an online database in 2014, the Bial Foundation started performing bibliometric analysis for a more systematic and quantitative assessment of projects' productivity over the years, complementing the qualitative analysis of the scientific reports.

Aims: To monitor and analyse the scientific performance and impact of projects supported by the BIAL Foundation by using bibliometric indicators.

Method: The research projects' productivity was assessed through the number of publications indexed in Scopus or Web of Science (WoS) databases, excluding abstracts. The publications' impact was assessed by "times cited" retrieved from WoS Core Collection in February 2024, considering the total number of citations and the citations per paper (quotient obtained by dividing number of citations by number of papers). The BIAL Foundation h-index was calculated by combining the number of indexed papers (i.e., productivity) with the number of times they have been cited (i.e., impact). Moreover, for papers published between 2013 and 2023, the number of citations was compared with the expected number of citations for papers in the same research field and publication year, based on field baselines percentiles dataset of Essential Science Indicators (ESI) and ESI journal list, updated on January 11th, 2024. The *Highly Cited Papers*, featuring those that rank in the top 1% by citations for field and publication year in WoS, were also retrieved. The journals' performance was assessed by their impact factor and mainly by their quartile score (provided by Journal Citation Reports) in order to mitigate differences between research fields. When a journal was assigned to different quartiles (i.e., Q1, Q2, Q3 or Q4) depending on the subject category, the highest quartile was chosen. Globally, the results were compared with the previous assessment made in March 2022, following the same criteria, to determine the development trend.

Results: Since 1994, the BIAL Foundation has approved for funding 865 projects and supported 847 projects, in the areas of Psychophysiology (430 grants, 51%), Parapsychology (253 grants, 30%) and Interdisciplinary – a combination of Psychophysiology and Parapsychology (164 grants, 19%).
The 847 projects have produced 2457 papers from 1995 to March 2024, out of which 1957 were indexed in Scopus or WoS. In comparison with the previous analysis made in 2022, additional 351 indexed papers were published, which represents an increase of 22%.
Excluding the last 2 grant editions (2020/21 and 2022/23), in which most projects are still ongoing or starting, it was obtained a ratio of 2.63 indexed papers per project (1815 papers from 690 projects). This represents an improvement given that in previous analysis the ratio was 2.43. Overall, a total of 45.764 citations were counted, with 1770 papers being cited on average 26 times (M = 25.86), ranging from 0 to 652 citations. Comparing to 2022 this constitutes an increase of 30% in terms of number of citations. The BIAL Foundation h-index went from 80 in 2022 to 97 in 2024, that is, 97 papers were cited 97 times or more. Between 2013 and 2023, 10% of the papers (n = 236) ranked in the top 10% by citations for field and publication year and 18 were *Highly Cited Papers*.

Of the indexed papers, 1718 were published in journals with an average impact factor of 4.2, representing an increase of 26%, since the previous assessment.
The majority of papers were published in journals of quartile 1 ($n = 808$; 47%) and quartile 2 ($n = 510$; 30%).

Conclusion: Bibliometric indicators provide a basis for ongoing analysis of the performance of supported projects, and may support decision-making during grant lifecycle, from pre- to post-award. When comparing the present results with the previous assessment conducted in 2022, the increase of indexed publications per project and the total number of citations is noteworthy.

Keywords: BIAL Foundation grants, Indexed publications, Citations, Field baselines, Impact factor, Quartiles