

Adherence of the Spanish National Plan of Science and Innovation to open access mandates: advantages and disadvantages for scholars

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ABSTRACT

As one of the fundamental pillars of open science (De Filippo & Mañana Rodríguez, 2020; De Filippo, Silva & Borges, 2019), open access (OA) is the central topic of the European Commission's Open Science Policy Platform (Mendez et al., 2020) and the main goal of the CoalitionS initiative for open publication of publicly funded research. The Spanish Science, Technology, and Innovation Act (BOE, 2011) requires that publicly funded research is published in OA, but with so many exceptions to the rule it makes OA rather a choice than a stipulation. Unfortunately, the draft of the new bill has retained the same formulation.

The Spanish National Plan of Science and Innovation (SNP) is Spain's leading research funding instrument. This paper analyses publications derived from the projects funded by the SNP in the period 2013–2019 and their compliance with the OA recommendations. Projects obtained after 2019 are not included as most of them do not have published results. We investigate the presence of OA by area, how OA influenced the citation impact of the publications, and how did their inclusion in journals by journal quartile. These are the two most common measures of the quality of the article and a requisite for academic advancement in Spain.

OA rates noticeably vary between research areas and types of institutions. OA rates highly (with over 60% of articles) in life sciences, biomedicine, physical sciences, and technology whereas in arts, humanities, and social sciences it is below 50%. As for the type of institution, regional research, government and technology centres and hospitals have over 70% of their academic production published in OA, whereas this decreases to 30% for private foundations. Surprisingly, the university rate is below 60%. Overall, OA has experienced a steady growth over the past years, which is reflected in a 9% increase in the studied period. This is an encouraging result compared to earlier reports (Borrego, 2016). Future research should look more closely into the differences between research areas and institution to inform policies and regulations on open access at universities and research institutions.

Our major finding is that the relationship between OA and citation count is positive (Mann-Whitney U test and GLM regression; $p < 0.01$) controlling for research area, number of authors, presence in Q1, international collaboration, reference count, and other article measures such as paper and abstract length. This result is in line with previous reports of citation advantages of OA publications (Bautista et al., 2020; Piwowar et al., 2018). However, being published in a Q1 has a significant negative relationship with OA. Although preliminary, these results show that publishing in OA might be positive for the article impact in terms of citations but punitive in terms of academic advancement if evaluation agencies and public policies have not adapted to the new OS paradigm. Further research might explore the effects on individual authors, who might be forced to publish in high-impact open journals. More importantly, OA publication might be punitive if only a few high-impact OA journals are available.

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KEYWORDS

citation analysis; open access; open science; research institutions; scientific performance

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