

The Open Access Landscape 2009

Bo-Christer Björk¹, Patrik Welling¹, Peter Majlender¹, Turid Hedlund¹, Mikael Laakso¹, Gudni Gudnasson².

¹ HANKEN School of Economics, Helsinki, Finland

² Innovation Center Iceland, Reykjavik, Iceland

Abstract

The Internet has technically facilitated making scientific results available to a much wider readership than ever before, both via electronic subscriptions but also for free in the spirit of Open Source licensing of software and the knowledge sharing of Wikipedia. This emerging openness has important implications for better impact of published research in general and for bridging the digital divide between the researchers of the leading universities and the developing nations.

A central question many policymakers ask is how common Open Access is today and how fast the share of OA is increasing. What proportion of journal articles are OA and to what extent do researchers post OA copies in repositories? Accurate answers to such questions would be very valuable for instance for research funders and for university administrators. The purpose of the study reported on in this paper is to provide answers to this type of questions.

Keywords: Open access publishing, prevalence of open access articles

1. Earlier studies

Although some estimates of OA prevalence have been published over the last few years there is a clear need for rigorously conducted studies. Also the share is constantly changing and thus studies need to be up-to-date. So far the volume of OA has been studied for instance in the following ways.

- For gold OA publishing it has been easy to compare the number of OA journals listed in the DOAJ index to the total number of active peer reviewed scholarly journals listed in the Ulrich's periodicals directory.
- For green OA there are directories listing repositories and statistics of how many documents these contain.
- For particular limited disciplines it is possible to take the content in a few leading journals and check the availability of OA copies via googling
- For larger masses of articles the availability of full text versions OA can be checked by web crawling robots (cf. ex, [1]) that are fed by article titles from indexing services such as Web of Science.

All these methods suffer from limitations. On average OA journals publish far fewer articles per annum than subscription based one [2] and thus the share of OA articles in the total global article volume is much lower than the share of titles. Secondly the criteria for inclusion in DOAJ and Ullrich's might differ, so that the number of journals may not be directly comparable.

Counting the number of documents in repositories may tell a lot about the growth of the repositories, but the numbers cannot usually easily distinguish between copies of articles published elsewhere and a wide range of other materials (thesis, working papers, research data, teaching material etc).

2. Research methods and Results

The proportion of all peer reviewed scholarly journal articles, which are available openly on the web without any restrictions (Open Access), was empirically studied. A sample was constructed using articles from 2008 obtained from a citation indexing service (Scopus) which covered approximately 1,2 million articles, estimated to represent around 80 % of the whole peer reviewed article stock of that year. The sample, which all in all included 1773 titles, was stratified over 9 disciplines so that roughly equal

numbers of titles were included in each of the sub-samples. The research method consisted of using a web search engine in order to find free full text copies of the articles. A team of researchers shared the workload, aided by a spreadsheet tool linked to the search engine.

The detailed results will be presented at the conference itself. We have submitted manuscripts to journals, which prohibit publishing them in the conference proceedings (which are openly available) at this stage. Readers of this abstract can check for the results later by googling using the authors' names.

References

- [1] Hajjem, C., Harnad, S., Gingras, Y. (2005). Ten-Year Cross-Disciplinary Comparison of the Growth of Open Access and How it Increases Research Citation Impact. *IEEE Data Engineering Bulletin*, 28(4): 39-47. Available at: <http://eprints.ecs.soton.ac.uk/11688/>
- [2] Björk, Bo-Christer, Roos, Annikki, Lauri, Mari 2009 Scientific journal publishing – yearly volume and open access availability, *Information Research*, 14(1) paper 391. <http://InformationR.net/ir/14-1/paper391.html>]