How society publishers practice open science beyond open access publishing?

Elina Late
Federation of Finnish Learned societies
Helsinki, Finland
Elina.Late@tsv.fi

Janne Pölönen
Federation of Finnish Learned societies
Helsinki, Finland
Janne.Polonen@tsv.fi

ABSTRACT

Scholarly publishing has rapidly moved towards open access (OA) over the last few decades. However, OA publishing is only one part of a larger open science movement. The recent UNESCO recommendation for open science (UNESCO, 2021) defines open science broadly to cover the openness of scientific knowledge, science infrastructures, engagement with societal actors, and dialogue with other knowledge systems. In its recommendations, open scientific knowledge includes OA to scientific publications but also open research data, metadata, open educational resources, software, and source code and hardware. Earlier research about open scientific knowledge from the point of view of academic publishers has mainly been focused on one element such as OA publishing and neglected other elements.

This paper aims to fill this gap by surveying how society publishers in Finland adopted other elements of open scientific knowledge. In Finland, learned societies account for 70% of national journal output (Late et al., 2020) and their publishing model is mainly diamond open access, which excludes author processing charges and relies on publishing subsidies (Pölönen et al., 2020). Furthermore, their activities often go beyond scholarly publishing to include education and research activities such as funding research and collecting and storing research data (Korkeamäki et al., 2019).

We conducted an electronic survey addressed to Finnish learned societies in November 2021 to answer the following research questions: "To what degree society publishers take up the elements of open scientific knowledge including open access to publications, open data, and open education?" (RQ1) and "Are elements of open scientific knowledge cumulative?" (RQ2)

In total 97 society publishers responded (40% response rate). We analysed their responses through nine variables measuring how they adopted different elements of open scholarly knowledge (Table 1) in view of the UNESCO recommendations for open science.

Table 1. Variables measuring the adoption of open scientific knowledge

	Variable
Open scholarly publications	V1 Publish open access peer reviewed publications (gold, green, hybrid OA)
	V2 Define self-archiving policy for publications
	V3 Define data policy for publications
Open research data	V4 Provide open research data or metadata
	V5 Provide open research infrastructure
	V6 Provide training for opening research data
Open educational resources	V7 Arrange open educational events
	V8 Provide open educational materials
	V9 Provide training for open education

The results show elements related to open scholarly publications prevail. Almost 70% of respondents publish either gold, green, or hybrid OA publications. Most society publishers reported to support open data policies only some do collect, store, and provide open access to research datasets. Furthermore, only a few societies offer training for opening research data. Even so, a high share of publishers offers open education, and some share their educational materials openly. Although earlier studies have reported differences in adopting open science between disciplines (Rousi & Laakso, 2020), our analysis does not support these findings.

However, it has confirmed that adopting the elements of open scholarly knowledge is cumulative, as OA publishers are more likely to take up other elements of open scholarly knowledge. However, adopting all elements is not yet common. Since activities (e.g. collecting research data, offering education, etc.) of publishers other than societies seem to influence the take up of these elements, further research of their activities is needed. For example, it will show how often and how openly these other publishers provide research data or education beyond.

KEYWORDS

open data; open education; open publishing; open science; open scientific knowledge; society publishers

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