

Societal Impact in Research Information Management Systems' Activity Data

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Abstract

The presentation draws from a master's thesis that conducted a case study analyzing the activities reported in the research information management systems of two universities: the University of Aberdeen and Aalto University. Alongside publications, activities are considered among the most significant academic merits of researchers. The focus was on understanding how these activities demonstrate societal impact and the whether the data could be used for research evaluation. The study found that both universities offered a variety of activity types describing societal impact, but relatively few activities were reported within these categories. Disciplinary differences in reporting were also noted. As a result, it can be said that in order to use activity data from research information management systems for research evaluation, it is necessary for the data to be reported more systematically, and decisions need to be made, for example, at the national level, regarding the types of activities that should be collected.

Introduction

Societal impact is a concept increasingly used in the context of science and research, although its precise definition and meaning can vary in different contexts. Most often, societal impact refers to the ways in which research contributes to positive changes or improvements in society. This impact can manifest in many forms, such as improving public health, changes in policies or legislation, advancements in technology or innovation and shifts in people's attitudes or behaviors. (Woolston, 2023.)

Assessing the societal impact of universities is challenging due to its multifaceted nature. Measuring societal impact with traditional metrics is insufficient, as they only capture a portion of the phenomena (Muhonen, 2022). Currently, there are no commonly accepted comprehensive indicators for determining the societal impact of universities. However, evaluation is already being utilized because there are increasing demands from the government and funders for universities to demonstrate the usefulness of their activities (Bornmann, 2013).

Recent trends in research evaluation have shifted towards valuing diverse assessments, moving away from solely focusing on publication metrics and striving to evaluate researchers' work with a broader perspective. For instance, the Coara (Coalition for Advancing Research Assessment) agreement on the reform of research assessment, published in 2022 by the European research community's consortium, serves as a guide for changing the evaluation practices of research, researchers, and research-performing organizations. The agreement aims to promote responsible researcher evaluation by advocating for open and diverse assessments. It emphasizes qualitative assessment, with peer review playing a central role, while also recognizing indicators as supportive tools if used responsibly. Moreover, the agreement strongly underscores the quality and impact of research, advocating for these aspects through open science. Additionally, societal impact is highlighted as an evaluation criterion. (CoARA, 2022.)

The comprehensive contents of universities' research information management systems (CRIS or RIMS-systems) could support such evaluations. Despite storing extensive data on researchers and research activities, these systems are currently underutilized in research evaluation, e.g., in Finland they are primarily used for the publication data collection for the Finnish Ministry of Education and Culture. (Biesenbender et al., 2019; Heikkilä & Nieminen, 2022.)

One key feature of research information management systems is their ability to exchange data between different platforms, reducing redundancy and the need for maintaining the same data across multiple systems. This also enables the integration of data from individual organizations into national and European level systems. Such integrations allow for the standardized evaluation of organizational data, which could be utilized in research assessment.

Case Study: A Comparison of Activity Contents in Research Information Systems of Two Universities

This research, based on a master's thesis (Mure, 2023), examines the manifestation of societal impact within the activity contents of research information management systems at two universities, the University of Aberdeen in Great Britain, and Aalto University in Finland. The universities were selected to this study because both institutions utilize Elsevier's Pure research information management system¹, so the data models of the systems were similar. This facilitated a comparative analysis between the two universities.

Activities, besides publications, encompass various academic endeavors carried out by researchers thanks to their expertise. These include, for instance, supervising and evaluating theses, as well as conference presentations. Pure provides various pre-defined templates for different academic activities within the system, but organizations have the flexibility to customize these templates. Thus, institutions can decide which activities to collect. For example, at Aalto University, an activity reform was carried out in 2022 with the specific aim of gathering information related to societal impact and open science. Additionally, activities pose a challenge as they are not typically collected or validated as systematically as publication data, allowing researchers to freely decide what activity information they input into the systems.

The research questions aimed to determine the proportion of reported activities by researchers that demonstrate societal impact and to identify discipline- and university-specific differences and similarities between the examined institutions. Additionally, an analysis was conducted on the suitability of the systems' activity contents for assessing societal impact.

Research data and method

The data consisted of activity contents collected from the public research portals of the universities' research information management systems². The research was quantitative, covering all the publicly available activity contents of the universities in question. A quantitative method was used in the analysis, which enabled the comparative examination of the data. The data was initially divided into activities directed towards the academic community and activities directed outside the academic community, which were considered to reflect societal impact. This categorization utilized the built-in

¹ Elsevier Pure system introduction page: <https://www.elsevier.com/products/pure>

²Research portals: University of Aberdeen (<https://abdn.pure.elsevier.com/>) and Aalto University (<https://research.aalto.fi>)

categories of research information management systems, some of which could be interpreted as indicative of societal impact. By examining the percentage of activities representing societal impact, the relative proportion of these activities among all reported activities at the universities was determined. Furthermore, all activities were categorized and placed into five different functional categories:

1. Expertise
2. Education
3. Scientific communication
4. Knowledge exchange
5. Other activities.

Disciplines were classified into broad subject areas based on the universities' units. Finally, the distribution of different discipline activities into functional categories was analyzed, revealing discipline- and university-specific reporting differences.

Results

The analysis revealed that both universities reported relatively few activities demonstrating societal impact, despite the diversity of activity categories at both institutions. Another key finding was that although there was a need for both universities to showcase activities demonstrating societal impact in their systems, this was not reflected in researchers' entries. The study also uncovered both discipline- and university-specific differences in activity reporting. Additionally, it is essential to recognize that the variations in reporting different activities may also be influenced by cultural differences. Education was consistently the most reported category across all disciplines at both universities, although more prominently at Aalto. Aberdeen had more categories representing societal impact, but their names were unclear, leading to researchers reporting significantly different or even incorrect activities under the same category. In contrast, Aalto's category names were clear. Activities related to knowledge exchange were absent at Aalto, indicating Aberdeen's greater need to highlight collaboration and networking outside the academic community. This was also evident in Aberdeen's diverse science communication categories. The proportion of reported science communication activities was also significantly higher than at Aalto. Both universities also had many activities with no entries at all. Universities should investigate the reasons for the scarcity of entries: whether the categories are necessary or too unclear.

Conclusions

In conclusion, utilizing activity data from research information management systems for research evaluation necessitates improving data quality. Data collection and validation should be organized within organizations in a similar way to the validation and collection of publications in these systems. Additionally, activity categories should be harmonized across organizations, and different systems should be compatible to facilitate the transfer of data between systems, thus providing a comprehensive overview of a researcher's academic footprint. In Finland, a national activity code system for activity types has been developed, enabling harmonized data collection of organizational activities into the national level research portal³. Currently, the activity code system does not clearly differentiate activities representing societal impact. The research provides insights for national discussions on whether societal impact should be considered in the national model.

³ Finnish national research portal: <https://research.fi/en/>

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