
Report Resume:

Back to Earth. Landing Real-World Impact in Research Evaluation

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It is a truism to say that we live in a civilisation marked by science. The scientific and technological achievements of recent centuries are responsible for the current well-being of humanity, including life expectancy and the management of diseases that once were an automatic death sentence. Technological developments resulting from past scientific inquiries continue to transform life on the planet, and scientists are far from issue the final word. ‘The endless frontier’, the unreachable horizon of scientific research, marks the fields of further research, exploration, discovery and inevitable questions about the implications of new knowledge.

There is, however, one ‘but’ in this. It is at the root of the study, which was conducted by scientific publisher Elsevier. The results were published in the report *Back to Earth. Landing Real-World Impact on Research Evaluation*¹. The ‘but’ is the question of what, how and why to measure the real impact of research on the surrounding reality. The Elsevier report is the result of a September 2023 online survey of 400 respondents in Australia, New Zealand, the Netherlands, the UK, the US and the Scandinavian countries, i.e., the most scientifically advanced countries in the Western world. Respondents included 180 representatives of academic institutions (including those in charge of them), 120 research scientists, and 100 managers of research funds at various companies and institutions.

The authors of the report remind us that the discussion on how to measure the usefulness of scientific inquiry has been going on for more than three centuries. Francis Bacon, the English Renaissance philosopher and statesman, had argued that science is a public good and as such should be supported by states. However,

¹ Back to Earth. Landing Real-World Impact on Research Evaluation, Elsevier, October 2023, [Back-to-Earth WEB.pdf \(ctfassets.net\)](#) [accessed: 15 December 2023].

as the report's authors point out, it must have taken 350 years after the great philosopher's words before governments harnessed science to change reality, as exemplified by the Manhattan Project, launched in 1942 to obtain nuclear energy and use it to produce a new type of weapon, the atomic bomb.

However, public belief in the need and usefulness of scientific research is not evident. Interesting phenomena in this regard can be observed on the example of the United States only in the last decade. According to the U.S. Pew Research Center², as recently as 2016, trust in science in the American public reached about 21% (in parallel with a higher rate of trust among Democratic party voters and a lower rate among voters declared Republican), to reach 39% in 2020. However, when the survey was repeated a year later (and thus at the apogee of the pandemic state), the rate had declined by a full 10 points to just 29% (with a concomitant drop in confidence among both groups of voters).

The report's authors thus recognise the political dimension of the research issue, but do not absolutize it. At the centre of this analysis, of course, is the issue of public funding for scientific research. It turns out that in this context, the relative decline in public confidence in science can be an incentive to create a system for evaluating the impact of scientific research. 63% of those surveyed in 2022 say there is an increasing overall desire for oversight of research spending.

A survey conducted by Elsevier shows that more than half of those surveyed see a need to change the current system. Indeed, as it stands, undue emphasis is placed on the academic effects of this research, or, in short, quantitative indicators of publications, citations, and the like. The shift, according to those surveyed, should be toward measuring the impact of research on society. Only 1% of respondents consider the existing state of affairs to be optimal, and see neither the need nor the necessity at all for scientific research to serve anything other than the pursuit of researchers' scientific interests. However, 99% reject such a concept of 'science for science's sake' in favour of seeking tangible results of scientific inquiry. As many as 58% feel frustrated by the inability to show the impact of the research on the wider world. The need for a paradigm shift in research evaluation in favour of a more holistic approach is a conviction held by most stakeholders. Strongly agreeing or agreeing with this statement were:

- 68% of academic leaders (20% and 48%, respectively),
- 58% of researchers (16% and 42%, respectively),

² The Pew Research Center is a non-partisan news centre that informs the public about the issues, attitudes and trends shaping the world. It conducts opinion polls, demographic surveys, content analysis and other data-driven social science research. It does not take political positions. For more see: Pew Research Center | Non-partisan, non-advocacy, public opinion polling and data-driven social science research | Pew Research Centre [accessed: 15 December 2023].

- 72% of funders (29% and 43%, respectively).

According to the Elsevier report, the consensus in all countries surveyed was that research evaluation should at least move toward measuring its real-world impact. The clear leader of such attitudes is the United Kingdom with 93% of such indications, followed by the following: New Zealand (88%), the US (88%), Japan (83%), Scandinavian countries (80%), Australia (69%) and the Netherlands (64%). According to the report's authors, it is possible to speak of a global trend toward a more holistic approach to research evaluation, while at the same time there is a growing emphasis on intensifying the process of transformation.

But what will it take for a change in the approach to research evaluation to take place? Among the barriers to change that survey respondents point to is the lack of a common methodological platform for developing evaluations (56% of indications). Other problems include the lack of consensus on what constitutes the impact of research on reality (48%), the lack of appropriate tools (45%), and the issue of synergy resulting from the interaction of different actors in the process (40%).

The differences in views on the current system and the prospects for changing it among representatives of research institutions (academics and scientists) and funders (private and public) are interesting. While both sides of the equation – because they are not in dispute – agree that it is necessary to move from bibliometric indicators of research effectiveness to a more holistic approach, while pointing out that the current arrangements promote vested interests (nearly two-thirds of respondents in both groups, with a slight advantage for the 'side' of the funders), they have a slightly different perception of the extent of change that should happen for the various participants in the process.

The academic and scientific side undoubtedly has greater demands on the level of industry involvement in the transition to new ways of evaluating research. Only 17% of researchers and academics consider industry involvement sufficient, whereas on the funders' side acceptance of the status quo reaches 33%. The two groups have slightly different emphases when it comes to perceived obstacles to change, although the differences are not significant. Both groups at the same time desire changes to the current system almost equally.

While the tone of the entire report is undoubtedly utilitarian and indicative of the need to increase the social utility of science, it is not a cry for greater mercantile or outright commercial benefits from scientific research. What benefits do respondents see in the potential systemic change? Fifty-four percent of respondents point to the impact on education first and foremost as a desired effect, 48% on the environment, 47% on academia, 45% on society, and 43% on the impact on the economy as a whole. Twenty percent point to specific commercial outcomes of the research. Thirty-one percent see potential in influencing health issues, 28% see opportunities to influence technological change.

Thus, the preference for the social benefit of science, first and foremost, by enriching it with knowledge that makes it possible to influence the surrounding world in the general interest of society, not strictly partisan or ad hoc economic interests, prevails.

The survey and report indicate a lively discussion and need for change in the scientific and academic world in the West. Although it is silent on the situation of research evaluation in the CEE region and in Poland (as well as in the European Union as a whole) it can certainly provide an analytically important reference point and encourage the scientific community with its own conclusions and initiatives.

