

Research impact – How to deal with it? Editorial impact series part 3

We seek the truth and will endure the consequences.

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Charles Seymour

(American historian 1885–1963)

This publication is the last part of a three-editorial series about research impact. In the first (Sandes-Guimarães & Hourneaux Junior, 2020), we presented the main concepts and ideas that define research impact. In the second (Hourneaux Junior & Sandes-Guimarães, 2020), we discussed the most important models and frameworks for assessing research impact in the literature.

If these two challenges – identifying and measuring – are not quite enough, another task presents itself to researchers, universities and society in general. It is related to the numerous constraints and difficulties can be found in the literature regarding the research impact assessment.

In this editorial, we aim to present the most critical (and controversial) problems and critics in the current debate on research impact and discuss some initiatives and possible solutions to those problems.

Main problems and critics on research impact

Despite its importance and extensive knowledge, literature also presents diverse problems and some criticism regarding research impact. Some of these issues are discussed next.

Causality/attribution The attribution and causality issues are repeatedly highlighted in the research impact literature as one of the main limitations of impact assessment. Causality refers to the challenge in attributing impacts to a specific source or cause. Attribution means the proportion of influence or impact that can be attributed to efforts derived from research projects, researchers or organisations (Derrick & Samuel, 2016; Morgan Jones, Manville, & Chataway, 2017).

Using a linear and unidirectional logic model, from inputs to impacts, one can have the impression that the research is solely responsible for impacting that group or community directly and measurably (Edwards & Meagher, 2020). However, it has been recognised that the path between scientific research and its impact is a complex and non-linear process, including several interactions among researchers, users and stakeholders and interconnections among research activities and their outcomes (Penfield, Baker, Scoble, & Wykes, 2014; Riley *et al.*, 2018). In this sense, the impact or the perceived change derives

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from specific research and several factors that are at stake, including “luck”, serendipity and complex networks that interact in this interface between scientific knowledge and society (Penfield *et al.*, 2014).

Morton (2015) pointed out that research results are integrated with current beliefs and understandings, so it is not reasonable to attribute change owing to specific research. Meagher, Lyall, and Nutley (2008) and Morgan Jones *et al.* (2017) highlighted in their study this complexity in attributing impact to findings of any particular research. They also stated that in some cases, it was more reasonable to associate the impact with a researcher’s expertise and body of research rather than a specific research output.

In scientific disciplines undertaking fundamental research, such as pure mathematics, attribution poses unique challenges because the impact of research is unlikely to be foreseen. Research results can be absorbed in other science areas and further developed before impacts occur, at which stage attribution becomes a substantial problem. We must be able to evaluate the contribution of fundamental science and not undermine its impacts when compared to more applied research (Penfield *et al.*, 2014).

Many researchers have now distanced themselves from this attempt to attribute an impact to specific research (linear causality). They started to understand the research’s contribution to the “change” they may have been related, recognising the dynamic nature of the research impact process and the many influencing factors that contribute to generate impact; and research is only one of them (Morton, 2015). Analysing how the research has contributed to a specific impact, rather than caused it and understanding the role of contextual factors in this process, is one way of addressing the attribution problem (Morton, 2015).

Temporality. The time-lag between the research (the period when it was actually done) and its impact can vary widely, depending on the field of knowledge and other factors. For example, in the medical area, the average estimate of the impact is 17 years “from bench to bedside”, while in physics, impacts may take more than 50 years to emerge (Morgan Jones *et al.*, 2017). Other examples cited in the literature (from DNA discovery to DNA fingerprinting – 30 years; treatments for cardiovascular diseases – 10–25 years) (Penfield *et al.*, 2014) mark the difficulty in deciding for a timeframe for impact evaluation. In this sense, depending on when the assessment takes place, it can influence the degree and importance of the impact (Penfield *et al.*, 2014).

For researchers in basic sciences, such as physics and mathematics, the research impact may take several decades to occur. Such impacts are usually unknown when research is being designed and carried out. In the UK context, the Research Excellence Framework (REF) (REF, 2019) values impact case studies being more than published papers (one 4-star case study = six 4-star scientific papers). As highlighted by McKenna (2021), this practice might diminish the pursuit of knowledge-driven by curiosity and towards blue skies (even though this can be highly impactful in the medium to long term). Another consequence is that it can drive researchers to address actual grand challenges (George, Howard-Grenville, Joshi, & Tihanyi, 2016).

Morton (2015) presents some solutions to address this problem based on examples from literature: early documentary research and, after a lag period, a workshop-based follow-up; immediate analysis to characterise local and short-term and impacts and analysis after a time lag to evaluate long-term and broader impacts. It might also be necessary to adapt the time window of analysis for some knowledge areas, as explained before. In REF, for example, the general impact case studies must be from the past 20 years, but the architecture area was granted five more years considering the specificities of the field (McKenna, 2021).

The inclusion of continued case studies for the REF 2021 assessment also enables the improvement of previously submitted case studies demonstrating the impact's evolution.

Performance x process. As we showed in the last editorial (Hourneaux Junior & Sandes-Guimarães, 2020), research impact is commonly assessed in two forms, considering either the research process or the research performance. We will not dive into each one's specificities, as we explained before. The idea is to argue that the decision to focus either on the process or the performance will have different implications for the research assessment.

The focus only on the performance – results or outcomes – of research and how it generated some impact on society fails to consider the paths and processes that have led to this impact, especially the engagement with users during the research process. This engagement is essential, as knowledge is socially built, and this interaction facilitates this mobilisation of knowledge among different communities (Hughes, Webber, & O'Regan, 2019). Besides, the focus only on the results disregards mistakes and learnings during the process, which can help academics in future researches.

Evaluators' bias towards more direct impacts. The evaluators' panel for assessing impacts on society in REF (2014, 2019) consists of academics and users or stakeholders of the academic research. Most of these evaluators will have their first time participating in a panel for research impact assessment. These contrasting views are vital to understanding what counts as societal impact.

Samuel and Derrick (2015) studied these differences. They identified that some evaluators perceived impact only “after there had been a marked health, economic, or other similarly ‘final’ outcome” while others perceived it as an incremental process, accounting for more than the outcome, but considering the process and movements made towards that outcome. Overall, the authors concluded that the evaluators' views favoured “impact as an outcome over a process involving several individual impact events”. A recent study showed that the REF cases which received the lowest impact scores were focussed mainly on the process and the path to generating impact and less on the change or contribution itself (compared to cases with higher impact scores) (Reichard *et al.*, 2020). In this sense, there can be a certain bias of the evaluators (even with users in the evaluation process) for those more direct and instrumental impacts, possibly focussing on causality and attribution.

Having different views about what societal impact means and how it should be evaluated is normal and beneficial. This way, we can challenge our own opinions and come to think differently about the assessment process. Nevertheless, a panel of evaluators must reach a consensus on the impact of a specific case study. To have a foundation guide for evaluators, the alignment of what should be considered impact is necessary to reach a consensus in the evaluation, regardless of their diverse opinions and ideas. Derrick and Samuel (2017) suggest, for example, having pre-evaluation training.

Another criticism regarding evaluators is the composition of such panels. The inclusion of societal impact in research evaluation processes should be accompanied by non-academic actors' inclusion in the assessment process. Including only academics to assess the societal (hence non-academic) research impact could decrease the assessment process's credibility. Scholars might attribute more importance to impacts most valued by their own group because of the academic culture's values. Thus, it is essential to include users and other stakeholders in the evaluation process (Gunn & Mintrom, 2017). The optimal percentage is still debateable. In REF, 27% of the panel was composed of users, while in Australia, this percentage was 70% (Morgan Jones *et al.*, 2017). Still, regardless of the optimal ratio, research users should be included to reduce the bias towards more “academic-like” impacts.

Research impact: what has been done

Given the difficulties mentioned earlier regarding research impact, it is also important to discuss “what to do” considering this challenging background. We can observe that there is a series of recent movements and trends regarding dealing with research impact coming from the several actors involved in this process.

First, regarding scholars. It may be obvious that whatever happens related to research impact can have a huge impact, without any pun intended, on scholars. The consequences of the new forms of assessment can be inevitable and profound to them in terms of academic practice, recognition and future rewards (Gunn & Mintrom, 2017; Joly & Matt, 2017). It may also require a change in their mindset and maybe in their current research focusses.

In contrast, we can notice that scholars have felt that they can also “be a part of the solution”. One interesting academic initiative is the Responsible Research for Business and Management (RRBM), a network “dedicated to inspiring, encouraging and supporting credible and useful research in the business and management disciplines” (RRBM, 2020). RRBM’s signatory researchers are supposed to follow seven principles, as we can see in Table 1.

Within RRBM’s principles, we can notice that most of them are directly related to the research impact itself. By acknowledging – and practising – these principles, scholars naturally would increase a broader research impact in their activities. A similar network created by scholars is the Impact Scholar Community, founded by participants of the Organisations and the Natural Environment Division of the Academy of Management (AOM), but focussed on early-career management researchers (Impact Scholar Community, 2020).

Second, regarding higher education institutions (HEIs). HEIs and their post-graduate programs will undoubtedly be affected by changes in how research impact is defined and measured. We can expect natural internal changes in HEI’s processes, from the faculty

Principle #	Name	Definition
<i>Principle 1</i>	<i>Service to Society</i>	Development of knowledge that benefits business and the broader society, locally and globally, for the ultimate purpose of creating a better world
<i>Principle 2</i>	<i>Valuing Both Basic and Applied Contributions</i>	Contributions in both the theoretical domain to create fundamental knowledge and in applied domains to address pressing and current issues
<i>Principle 3</i>	<i>Valuing Plurality and Multidisciplinary Collaboration</i>	Diversity in research themes, methods, forms of scholarship, types of inquiry and interdisciplinary collaboration to reflect the plurality and complexity of business and societal problems
<i>Principle 4</i>	<i>Sound Methodology</i>	Research that implements sound scientific methods and processes in both quantitative and qualitative or both theoretical and empirical domains
<i>Principle 5</i>	<i>Stakeholder Involvement</i>	Research that engages different stakeholders in the research process, without compromising the independence of inquiry
<i>Principle 6</i>	<i>Impact on Stakeholders</i>	Research that has an impact on diverse stakeholders, especially research that contributes to better business and a better world
<i>Principle 7</i>	<i>Broad Dissemination</i>	Diverse forms of knowledge dissemination that collectively advance basic knowledge and practice

Table 1.
RRBM’s seven principles

Source: RRBM (2020) Retrieved from <https://www.rrbm.network/executive-briefing/eb-principles/>

selection to its evaluation and reward (Gunn & Mintrom, 2017; Joly & Matt, 2017), as mentioned before. Further, with today's impact-oriented funding systems, HEIs will be required to demonstrate how their research is not only adding new knowledge but also benefitting societal actors.

HEIs will also need to justify their worth to stakeholders and public funding agencies. This process will require new modes of research organisation and knowledge production, perhaps more interdisciplinary and coproduced with research users, at least in part. HEIs should also start keeping better track of their own data and information, analysing their situation internally and contributing to promoting changes in the evaluation process based on these data. One example is the universities UK network, an initiative of 140 universities in England, Scotland, Wales and Northern Ireland, for disseminating their impact activities. Another is the project called metricas.edu, developed by three universities in the State of Sao Paulo, Brazil, to monitor and understand the importance of activities performed by these universities and build their own metrics to assess their contribution to regional and national development (Metricas.edu, 2020).

Third, regarding government. The government can also participate in this debate by raising the bar and pushing other impact categories rather than the traditional approach (number of publications, number of citations and so on) as criteria for post-graduate programs' evaluation. Following foreign tendencies such as REF (2014, 2019), the Brazilian Government has recently shifted to emphasise research impact as essential, not only for evaluating academic performance but also to establish criteria for project funding approval. Coordination for the Improvement of Higher Education Personnel (CAPES) is the government post-graduation regulation agency that monitors and evaluates all the countries' research institutions. Recently, CAPES has increased the weight of social, cultural and economic impacts in its program evaluation criteria (CAPES, 2019). Moreover, the Brazilian Ministry of Science, Technology, Innovations and Communications and its research funding agency CNPq (National Council for Scientific and Technological Development) have restricted the criteria for selecting research funding, directing the resources to projects more directly related to "economic and social development of the country" (Ministério da Ciência, Tecnologia, Inovações e Comunicações [MCTIC], 2020).

Finally, the journals. As the prevalent form of disseminating research, journals also have an essential role in this process. Journals can create clauses, including any other type of impact as mandatory for publication approval, besides the traditional theoretical and practical. For instance, since 2020, authors who submit their papers to *RAUSP Management Journal* must include a brief description of their research's "social impact" in the extended abstract. It is also a way to emphasise to the reviewers if the article has an actual social impact. Moreover, it can also be a criterion for desk-rejecting the article (please see [Hourneaux Junior \[2020\]](#)).

Final remarks

It is quite clear that research impact research represents a challenge for all the actors somehow involved in research activities. It configures a novel reality that requires different behaviours and processes, resulting in new and hopefully better effects. With this editorial series, we hope we could help the reader understand and tackle this challenge.

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