Works of fiction? Impact statements should focus on pathways to impact over short-term outcomes

As a precondition to receiving research funds, many research funders require applicants to state how their project will ultimately achieve impacts prior to any work being undertaken. Reflecting on a study of these impact statements made to the Science Foundation Ireland Investigators Programme, **Lai Ma***, argues that such statements often introduce a narrow short-term bias to considerations of impact and presents four ways impact statements could be used more productively.*

Impact statements, or pathways to impact, are often required in grant applications. Many researchers, however, describe the writing of impact statements as works of fiction. The reason is simply that it is not usually possible to predict or forecast what might happen—and what impacts they can achieve—after the research project. Chubb and Watermeyer have reported that impact statements are often perceived as 'lies, stories, disguise, hoodwink, game-playing, distorting fear, distrust, over-engineering, flower-up, bull-dust, disconnected, narrowing" by grant applicants.

At the stage of writing a grant application, impact is a prediction. Hence, *ex ante* impact evaluations (those that take place prior to a research project) are judgements based on guesses—not evidence—of impact. It has been reported that random judgments are common in the review process of the United States National Science Foundation's Broader Impact Initiatives. Earlier this year, the UKRI announced the suspension of the impact requirement in their grant proposals as they deliberate the steps needed to increase the efficiency and effectiveness of the application and evaluation processes. Indeed, problems and issues, such as attribution and time lag, have not been resolved in *ex post* impact assessment in many REF-related studies. It is therefore a challenge as to how we evaluate *ex ante* impact without any evidence or proofs.

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In a recent study I undertook with Junwen Luo, Thomas Feliciani, Kalpana Shankar, we analysed reviewers' comments on impact statements for the Science Foundation Ireland Investigators Programme in 2016. In the call document, impact has been defined broadly, from fostering relationships with businesses and industry to enhancing quality of life, health and creative output. The definition of impact, however, does not differentiate the stages of impact in a typical linear (or logical) model—inputs (funding), outputs (scientific publications), outcomes, and impact. Nevertheless, we found that peer reviewers seemed to favour short-term, tangible impacts in their review as they commented on process-oriented (formative) impact in a more concrete and elaborative manner than on outcome-oriented (summative) impact. As some reviewers also explained, it is impossible for them to evaluate the long-term impact because that is very much dependent on the results and findings of research projects.

Based on the findings of our study, the evaluation of *ex ante* impact seems to be most useful for funding programmes that have shorter-term and specific goals in, for example, academic-industry collaboration and the manufacturing of certain end-products. In other words, research where likely impacts are mostly pre-determined. The research proposal and the pathways to impact would be more like a business or feasibility plan with various work packages that aim to produce patents, licenses, and spin-off companies. These impacts can be foreseen and commented upon more concretely because they are stated as the primary goals and objectives of the research projects. However, most research projects, especially in basic science, do not have 'end-products' in mind, nor can they predict what their impact will be in 5, 10, or 25 years. One characteristic of research, after all, is to embrace and challenge the unknowns. For much research and scholarship, making predictions of their impact seem to make no sense whatsoever.

Hence, we must rethink how to evaluate *ex ante* impact if it is to remain an important criterion in funding decisions. Here are our suggestions:

- The criteria of *ex ante* impact evaluation should be designed and developed in accordance with the objectives of funding programmes. For programmes aim to foster academic-industry collaboration and to produce foreseeable outcomes such as patents, licenses, and end-products, the impact evaluation should focus on the feasibility, timeframe, and perhaps the commercial values of the products.
- For programmes that support more exploratory research, the impact evaluation should not be based on the impact that *might* be achieved, but the processes by which impact can be achieved. In other words, the **pathways** that will lead to impact outcomes. One can say, for example, they have planned to have public engagement activities, visits to schools, podcasts, and seminars with R&D departments in the industry. While the broader and long-term impact is unknown, these activities can be assessed based on applicants' concrete plans and their existing partnership with non-governmental organisations, charity organisations, industry partners, policymakers and so on, as well as the infrastructure and support the research institutions can provide. Such criteria can be more concrete and hence more appropriate in *ex ante* impact evaluation.
- Funding agencies should not use a wish list of impact in their call documents and review process. Although the definition and description of impact can be useful, the term 'impact' can mean outputs, outcomes, and broader impacts and each of these 'stages' can and should use different evaluative criteria. It should be considered that impact is often difficult to trace and track *ex post*, not to mention *before* a research project has been undertaken.

Funding allocation can have significant implications for knowledge production and solving important problems such as poverty, the climate crisis and pandemics. Shifting the focus to formative, process-oriented impacts can reduce the uncertainties and randomness and increase fairness and transparency in *ex ante* impact evaluation, while the writing of impact statements prompts plans and activities to generate and achieve impacts—rather than prediction of impact.

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