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## **Abstract**

Although research funders wield enormous power over knowledge production and science policy, their decision-making processes are opaque. The inner workings of funding agencies involve numerous stakeholders, processes, and data; like other complex institutions they rely on an evidence base that supports and reflects individual and collective decision-making and personal judgement, but little of this data is available for scrutiny and what is available internationally is uneven. To date, we have seen little scholarly or policy discussion on the intersection of research funding bodies, knowledge production, and transparency and accountability.

**Keywords** – research funding; research policy, transparency; accountability; open data

## **1 Introduction**

A 2020 report from the European Commission’s Joint Research Center argues that the goal of open government in fostering research is “to increase transparency, participation and collaboration in common-good initiatives that require knowledge generation, management and sharing.” (Martí et al., 2020, p.9) Setting research priorities and funding researchers to enact them are generally in the purview of funding councils, private and public foundations, and some government agencies.

The lack of openly available data from funding decision-making processes inhibits outside research and critique. While aggregated statistical data could show some patterns in funding allocation, the ability to scrutinise language in reviews might potentially yield more insight into unconscious biases in decision-making process with respect to gender, institution, geography, race/ethnicity, career

stage and other concerns around research policy. Lastly, the lack of transparency inhibits research on the funding process itself that could be deployed to improve the review process, making it more responsive, effective, and less costly to implement.

In short, while making publicly funded research data more open and accessible has been integrated into the research landscape, funding bodies themselves are making decisions about their allocations of resources in ways that remain generally opaque to researchers, policy-makers, and the public. Further, the evidence base (the quantitative and qualitative data) that funding bodies draw upon for their own decision making is equally opaque. In this abstract, we focus on the lack of transparency and accountability in research funding bodies to its stakeholders as a case of missing data for policymaking in the complex ecology of funding bodies.

## **2 Transparency and accountability in research funding**

The concept of transparency in the public sector has a long history. Although it is expressed differently in different contexts, what these different concepts and approaches share in their formulation is symmetry of information exchange (Lyrio, et al., 2018)..

Studies of funding agencies and their practices with respect to transparency are limited, but there has been some work in transparency health care funding. Gurwitz, et al (2014) identified “incremental” and “radical” approaches towards making granting agencies transparent. The incremental approach, they argue, makes some information about grant review processes open in order to buttress the legitimacy of organizational procedures and to demonstrate efficiency. A more “radical” approach would be opening up the entire process to scrutiny. In their assessment of 27 Websites of publicly funded biomedical research funding bodies, they found that almost all of the agencies took an incremental approach by publishing their peer review principles, the names and affiliations and amount of funding of successful applicants, and in some cases, abstracts of funded projects. Other items were almost entirely restricted. Only one agency published the names of reviewers before the evaluation process; some publish at the end of the year.

## **3 Which data are open?**

Some reasons for the opacity are relatively obvious: peer reviewers fear reprisals for giving negative reviews, unsuccessful applicants fear reputational loss or losing their intellectual outputs to competitors. Funding agencies invoke the privacy of reviewers and applicants; they are perhaps less likely to discuss their concerns for

their own reputations and being open to scrutiny and criticism.

Nevertheless, some funding bodies around the world do make their data open but they vary widely in what is made available and under what conditions. While information on funding calls and their evaluative processes and aggregated statistics are widely available as part of open government mandates, access to the content of specific peer reviews and scores of proposals, proposal texts, applicant rebuttals, and meeting minutes of peer review panels and/or selection committees are not widely available, nor is much data on non-funded proposals. Even final reports are not always published (Lyrio et al). In many cases, it is difficult to even establish how researchers obtained internal data, since scholarly publications derived from such internal data from funding agencies do not give details on how data and access were obtained.

Openly available funding data - the content of peer reviews, reviewer demographics (even in aggregated form), and other texts and documents pertaining to decision making - can support deeper research on many of the issues that raise concerns for the transparency and accountability of funding agencies. Moreover, data and information about non-awarded proposals also needs to be more open. Having data available about what was *not* funded -and why- supports and clarifies why other proposals were funded.

## **4 “Mind the gap”: missing peer review data**

While there has been a body of research calling for more open data for studying journal review (Squazzoni, et al. 2020), there has been far less attention paid to making data open in the case of funding bodies (Gurwitz, et al., 2014; Liaw, 2017). Such opacity is out of step with the

larger landscape of scholarly communication, where there has been a clarion call for more openness and transparency in the research process. Funding agencies and councils are intertwined with many of these developments and indeed support and foster them - open access, open innovation, responsible research and innovation, evolving evaluation metrics, to name a few. In fact, they have made decisions to develop funding streams, evaluate prospective grantees and reviewers, and base their funding priorities and allocations in response to them (Rip, 2000). To give an example, Smaldino et al. (2019) opine on the proliferation of poor quality research methodologies that are incentivised by the use of questionable metrics by funding agencies to award grants; however, how such metrics are actually understood and used by peer evaluators and funding agencies has yet to be investigated in a comprehensive fashion because the data are not made openly available.

The inner workings of funding agencies involve numerous stakeholders and processes; like other complex problems they rely on an evidence base that supports and reflects individual and collective decision-making and personal judgement. To date, we have seen little discussion on making these processes and crucial data more transparent and accountable. Analyses by other researchers provide a good first step but there is more that can be done. In addition to using agency Websites, it would be a useful benchmarking exercise to understand more about how funding agencies make their data open (publication, request, a repository). Conducting interviews with relevant stakeholders could help us understand how transparency and accountability are conceptualised, what data were made open and what impacts they've had, and how these decisions fit into the larger national and cultural practices and policies around open data,

government transparency and decision-making, and science culture and policy. The goal, ultimately, would be to create a platform for cross-national comparative research and policy making to understand/analyse how and why they do so, how permissions are obtained, and what data are made available and under what constraints.

## **5 Empirical studies**

Mietchen (2014) and Gurtwitz et al (2014) provide some useful frameworks for understanding transparency and openness in funding agencies, which can be built on with more empirical data on how funding agencies make their workings available, why, and under what conditions. One step (which Gurtwitz has already undertaken in the biomedical funding realm) would be to identify approaches taken by other disciplinary councils and foundations. While their study focused on what is made available on Websites, some researchers have obtained data from within funding agencies, and it would be useful to interview them to know how they obtained access and under what conditions. Another step is to understand the legal and organisational mandates that are invoked to make such data open, how the approach that is taken contributes to transparency and accountability, and organisational learning that results from openness.

## **6 Conclusion**

A concrete policy objective that could be achieved would be to advance practices funding agencies to make practices more accountable and transparent by making clear what other agencies do or do not do. Such a project would make meta-research, or "research on research" more empirically driven. This will be developing a typology that makes concrete what relevant

legal remits, technical and human infrastructures, access mechanisms, and existing practices around openness currently exist, to expand upon the work already done. This approach, in collaboration with the funding bodies, would potentially improve stakeholder

engagement. As more and more private sector organisations also fund research and partner in public research initiatives, this project will also advance transparency in public-private partnership funding.

## Acknowledgements

Thanks to Thomas Feliciani for reading and commenting on this draft. This material is based upon works supported by the Science Foundation Ireland under Grant No.17/SPR/5319.

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