Reviewer’s report

Title: The acceptability of using a lottery to allocate research funding: A survey of applicants

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Reviewer: Patrick Forscher

Reviewer's report:

The authors present survey evidence of applicant perceptions of the acceptability of a lottery to allocate research funds. They find that, of the 126 applicants, 63% felt that a lottery was an acceptable way to allocate funds for Explorer Grants.

Overall, I felt this was an interesting paper that deserves to be made more publicly available. Scientists have voiced increasing levels of concern that current models of funding are inefficient and arbitrary; information on whether applicants perceive lotteries as acceptable/fair is valuable. I do have some thoughts and concerns that I would like to see addressed in some form, which I list in bullet points below.

* It would be useful to know the percentage of people who make it past the first step in the review process for Explorer Grants. If a sufficient number of applicants are filtered out at the first step, the Explorer Grant scheme could de facto be operating so similarly to a more traditional peer review scheme that it is perceived that way by applicants.

* Do the authors have access to any data on the perceived acceptability of more traditional grant schemes? Or data on the perceived acceptability of the Explorer Grant scheme prior to the implementation of the lottery? I found myself wondering if the 63% represents a low value, a high value, or par for the course (and whether the lottery may have improved perceived acceptability for this particular granting mechanism).

* I would like some data on the representativeness of the people who returned their surveys given the 39% response rate. Do the authors have a way to compare the demographics of the people who returned their surveys to the general pool of applicants? Or, alternatively, can they compare the funding rate of the surveyed applicants to the normal funding rate of Explorer Grants (see https://bmjopen.bmj.com/content/3/5/e002800 for an example of this approach)?
* Similarly, I would like to see the authors temper their interpretations with some reflection on the possibility that their results may have been affected by selection bias. For example, is it possible that most of the people who returned their surveys were irritated at not receiving funding and were expressing "sour grapes" at the funding scheme? (This is just one possibility - I'd just like to see some discussion of selection bias more generally)

* People are not terribly accurate at retrospectively estimating how much time they spend on a task (https://www.researchgate.net/profile/Ann_Bostrom2/publication/247937960_The_Overestimated_Work_Week_What_Time_Diary_Measures_Suggest/links/0c96053bc136625223000000.pdf). I think the authors should temper their interpretations of the time estimate data accordingly

* Please put the study N and response rate in the abstract

* The authors might consider mentioning theoretical evidence suggesting that typical "contest" models of allocating funding are inherently inefficient https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000065

* To facilitate reproducibility, the authors should deposit their data, materials, and analysis code on a public repository (I recommend the Open Science Framework (https://osf.io/), but there are other options

Despite the fact that I've offered a rather large number of comments, I found this paper quite interesting and would love to see the findings made public in some form.

I sign all of my reviews,

Patrick S. Forscher
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Please indicate how interesting you found the manuscript:

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