Metrics for Reproducibility

A call for contributions

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Background and aim of the study

One of the objectives of the Horizon Europe project iRISE (improving Reproducibility In SciencE) is a literature review of the metrics currently used or proposed to quantify reproducibility. In the following, we use reproducibility as an overarching term for aspects such as computational reproducibility, replicability, translatability, and generalizability. A detailed protocol of our review has been uploaded to the Open Science Framework (osf.io/j65wb). The first part of our review only investigates which metrics have actually been *used* to quantify reproducibility. A systematic search for all papers that use a certain metric or a set of metrics to quantify a specific type of reproducibility was judged infeasible (SP: why?). Therefore, we decided to collect large-scale efforts to quantify the reproducibility of, for example, an entire field of studies such as the famous Reproducibility Project: Psychology. Such large-scale reproducibility projects are specifically interesting as many of them used a whole set of metrics. We now need help from the wider research community to identify these projects.

Large-scale reproducibility projects - Definition

We are not interested in not single efforts to reproduce or repeat part or all of an "original" study or finding (SP: I find it weird to start with what we don't want, perhaps reformulate). Instead, we want to collect larger projects where a group or consortium of researchers attempt to reproduce or repeat a set of original studies, or the same original study several times. This includes large-scale replication projects in psychology, experimental economics, and other fields, as well as many-labs projects [REFS]. As meta-researchers with experience in designing and evaluating replication studies, we are particularly interested in projects dealing with other types of reproducibility that we are not aware of. Such projects could include, but are not limited to, efforts to reproduce the coding of qualitative data, to translate or generalize the effects of an intervention to another population, to reproduce the analysis code based on the methods description, etc.
To qualify as a large-scale reproducibility project, the project team should, in addition to conducting the set of reproducibility studies, attempt to summarize the results of the set of studies. The summarizing procedure will be of special interest to us.
Note that databases containing a collection of single study attempts to test the reproducibility of a finding, although very valuable, do not qualify as large-scale reproducibility projects according to our definition.

Submit reproducibility projects

We need your help to point us to large-scale reproducibility projects (as defined above) that we do not yet know about. A list with the names, descriptions, and links of projects already collected can be found here [link to public list]. To submit a project that is not yet on our list, please fill out this survey [link]. To submit multiple projects, you can fill out the survey multiple times. If you wish, you can also provide your name and contact information at the end of the survey to help us track origin of the collected data. Providing this information is completely optional and we will not share it at any time.

Get involved in data extraction, and screening for second part of our study

Once the projects were collected our team will start extracting the information on the reproducibility metrics used by the projects. For this task, we would benefit from additional help. Further, the second

part of our review involves systematic search for methodological papers suggesting reproducibility metrics. Also for the screening and the data extraction of this part of the review we would appreciate help. Substantial contributions to screening an data extraction will be credited with authorship on the final paper summarising our results. If you want to contribute, please let us know via email (let us know if you have prior experience with reviews and/or the topic).