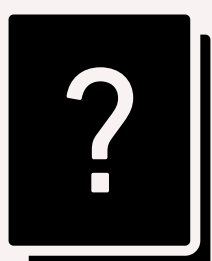


SPOTTING BAD RESEARCH

Defining quality research can be difficult. Nonetheless, to be effective scientists, we must learn to be critical of the research we read and the research we produce. Spotting these quality traps is essential

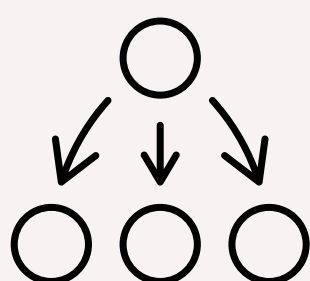
Six Quality Traps to Avoid



1

NOT SPECIFYING THE HYPOTHESIS

The null and alternative hypotheses must be developed before the data is viewed and must be explicitly stated in the paper.



2

MULTIPLE HYPOTHESIS TESTING

If multiple research hypotheses are tested in one paper, the methodology must be appropriate for multiplicity.



3

P-VALUE HACKING

P-values should be limited to the original study hypotheses. All calculated p-values (significant or not) should be reported.



4

CHEATING

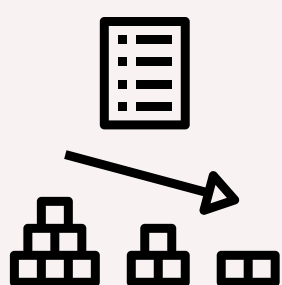
Data fabrication, excluding data that do not seem to fit, reporting only positive findings, and lying are all forms of cheating.



5

UNPROVEN ASSESSMENT TOOLS

Assessment tools, surveys, and questionnaires must be reliable and validated. Preferably these tools should have been previously published and used in other studies.



6

SMALL SAMPLE SIZE

Small sample sizes can be a fact of life. Beware of type-2 errors. Authors should limit the strength of conclusions and use simple statistical techniques.