Analyzing Data

There is more to analyzing your data than running statistical tests, summarizing comparisons, and creating visualizations. Analyzing your data also involves ensuring that a future researcher (who may or may not be you) can understand and potentially replicate your analyses.

What does it mean to analyze data?

The methods you use to draw conclusions from your data will, of course, depend on your research questions, your field of research, and the tools you have available to you. However, here are two factors to consider when analyzing your data.

DOCUMENTING ANALYSIS DECISIONS

You should be as transparent as possible about how and why you conducted your specific analyses.

MANAGING ANALYTICAL OUTPUTS

If your analyses generate additional outputs (documents, images, etc.), you should organize and save them as if they were any other research product.

Requirements and how to meet them

Your research group, field of research, or institution may have a set of standards or best practices related to how data should be analyzed and how analytical outputs should be managed.

These may be as simple as a set of guidelines about how procedures, parameters, or protocols should be documented.

If you are unsure about the specific requirements that apply to you, try to think about documenting your analyses and managing your outputs as "showing your work."

Things to think about

- Properly documenting and managing your analyses is important for reasons related to research transparency and reproducibility. However, they will also help prevent you from wasting time and losing data.

- While many best practice recommendations apply mostly to analyses underlying a scholarly publication, you should apply the same procedures to all of the analyses you conduct, no matter the outcome.