

# AI Statistical Analysis Validation Checklist

Use TRACE before accepting an AI-assisted method, result, or explanation.

| TRACE check     | Validation question                                                           |
|-----------------|-------------------------------------------------------------------------------|
| Target          | Is the outcome, contrast, and estimand exactly the research question?         |
| Research design | Are pairing, clustering, time, sampling, and allocation represented?          |
| Assumptions     | Were relevant assumptions assessed with appropriate evidence?                 |
| Calculation     | Can the numerical result be reproduced in a deterministic engine?             |
| Explanation     | Does interpretation respect uncertainty, effect size, design, and population? |

## Evidence record

- ☐ Data version and preprocessing decisions are preserved.
- ☐ Prompts, model or assistant version, and generated suggestions are saved.
- ☐ Analysis settings, diagnostics, and calculated output are archived.
- ☐ High-stakes numerical results are checked independently.
- ☐ The final interpretation was reviewed by a qualified person.

Use this resource with the related DataStatPro guide. Adapt every decision to the approved protocol, data structure, and destination requirements.