

## Inferential Statistics Cheat Sheet<sup>1</sup>

### Statistical Analysis for Weak Experimental Research Designs

Design	Analysis Procedure
One-Group posttest-only design	Descriptive and Correlational Statistics
One-group pretest-posttest design	Paired <i>t</i> test or one-way repeated measures ANOVA
Posttest-only design with nonequivalent groups (with two groups)	Independent <i>t</i> test or one-way ANOVA
Posttest-only design with nonequivalent groups (with more than two groups)	One-way ANOVA (with follow-up tests as needed)

### Statistical Analysis for Strong Experimental Research Designs

Design	Analysis Procedure
<b>Between-Participants Design</b>	
Posttest-only control group design (with two groups)	Independent samples <i>t</i> test or one-way ANOVA
Posttest-only control group design (with more than two groups)	One-way ANOVA (with post hoc tests as needed)
Pretest-Posttest control group design (with two groups)	One-way ANCOVA or mixed model ANOVA
Pretest-posttest control group group design (with more than two groups)	One-way ANCOVA (with post hoc tests as needed) or mixed model ANOVA (with post hoc tests as needed)
Between participants factorial design (with two independent variables and no pretest)	Two-way ANOVA (with post hoc tests as needed)
Between participants factorial design (with two independent variables and pretest)	Two-way ANCOVA (with post hoc tests as needed)
<b>Within-Participants Design</b>	
Within-participants posttest-only design (with two conditions)	Paired <i>t</i> test or one-way repeated measures ANOVA
Within-participants posttest-only design (with more than two conditions)	One-way repeated measures ANOVA (with post hoc tests as needed)
Within-participants factorial design (with two within-participants independent variables)	Two-way repeated measures ANOVA (with post hoc tests as needed)
<b>Factorial Design Based on a Mixed Model</b>	
Factorial design based on a mixed model	Two-way mixed model ANOVA (with post hoc tests as needed)

### Statistical Analysis for Quasi-Experimental Research Designs

Design	Analysis
Nonequivalent comparison-group design (with two groups)	One-way ANCOVA or reliability corrected ANCOVA or mixed model ANOVA
Nonequivalent comparison-group design (with more than two groups)	One-way ANCOVA (with post hoc tests as needed) or reliability corrected ANCOVA (with post hoc tests as needed) or mixed model ANOVA (with post hoc tests as needed)
Interrupted time-series design	Autoregressive integrated moving average (ARIMA) model for long series with 50 points or more
Regression-discontinuity design	ANCOVA on adjusted scores

<sup>1</sup> Research Methods, pg.440