

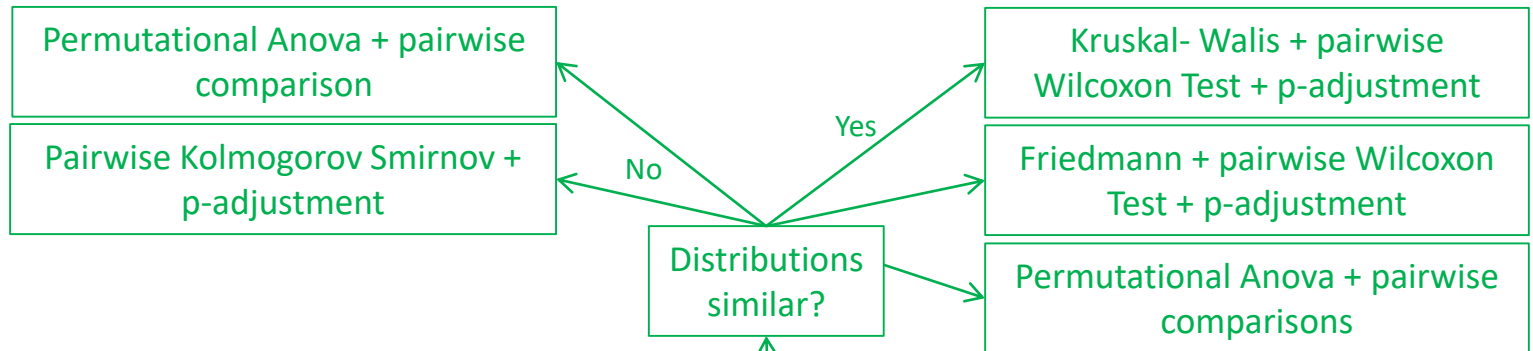
RenR 480/711

Method Selection

Method selection

Goal	Parametric	Non-Parametric	Binomial
Descriptive Statistics	Mean, variance, standard deviation	Quantiles	Proportions
Compare 2 groups	T-test	Wilcox Kolmogorov-Smirnov	Z-test
Compare > 2 groups	ANOVA	Kruskal-Wallis Friedmann Perm ANOVA	Chi-square test
Relationship between 2 variables	Pearson correlation	Spearman/Kendall correlation	(Contingency coefficients)
Predict one variable from another	Linear/non-linear regression	Non-parametric regression	(Logistic regression)

Logical Sequence of Analysis



Data checking and cleaning

Normality within treatment levels?

- Tools:
 → Boxplots
 → Histograms

- Fix issues:
 → Correct mistakes
 → Flag outliers

- Tools:
 → Histograms
 → Residual plots

- Fix issues:
 → Transformations (log, sqrt, inverse)
 → Apply to all units

No

Ok

Non-parametric tests

Equal variance within treatment levels

- Tools:
 → Residual plot

No

Ok

Pairwise t-tests with adjustment for multiple inferences

ANOVA

Significant effects

N.S.

Selected contrasts or all pairwise comparisons

End

- Tools:
 → Adjustments: Bonferroni, Tukey, Holm