THE TABLE: Systematic of statistical tests and guide lines on how to choose a test.

Choose adequate combination based on row 1, columns A and B/C.
- ⇨ If possible, use non-parametric approaches
- ⇨ Examples of other statistical approaches: cluster, discriminant, principal component, path, time series analysis, ...

A	B: explanatory variables		C: explanatory variables		
1		**Nonparametric tests**		**Parametric tests**	
		Outcome variable: ordinal scale		Outcome variable: interval or ratio scale possibly after transformation	Outcome variable: other distributions
		Residuals „symmetrical"		Residuals normally distributed	Residuals follow other distribution (e.g. Poisson, Binomial)
				linear models	**generalised linear models**
Non-paired, independent fixed effects only	1 factor 2 levels	Mann-Whitney-U-test (Wilcoxon, rank sum test)	1 factor 2 levels	t-Test for independent data	↓
	1 factor >2 levels	Kruskal-Wallis-test	≥1 factor ≥2 levels	ANOVA (analysis of variance, F-test)	↓
	1 factor >2 ordered levels	Jonkheere-trend-test	≥1 factor ≥2 ordered levels	Analysis of variance with ordered factors or corresponding contrasts	↓
	1 ordinally scaled	Spearman- , Kendall correlation	1 continuous	Pearson-correlation	–
			≥1 continuous	Regression	↓
			≥1 any type in combination	Linear models[1]	Poisson-regression Logistic regression
				linear mixed-effects models	**Generalised linear mixed-effects models**
dependent, repeated, nested additionally: random effects	1 factor 2 levels	Wilcoxon (signed rank test)	1 factor 2 levels	paired t-test	↓
	1 factor >2 levels	Friedman-test	≥1 factor ≥2 levels	repeated measures, nested ANOVA	↓
	1 factor >2 ordered levels	Page-Trend-test	≥1 factor ≥2 ordered levels	↓	↓
	1 ordinally scaled	No test if all data dependent	1 continuous	No test if all data dependent	↓
			≥1 continuous	↓	↓
			≥1 any type in combination	Linear mixed-effects models[1]	Generalised linear mixed-Effects models
Occurrences		χ^2-test, contingency table			Loglinear models

[1] all models listed above can be considered special cases, ↓: choose model listed below