Hypothesis Tests

Mean

Parametric	Pair of Sample	Multi Sample
Independent	Student t-test (one, two tailed), Unpaired t-test [1], Welch's t-test [2]	ANOVA (one-way, two-way)
Dependent	Paired t-test	Repeated ANOVA

Non-Parametric	Pair Sample	Multi Sample
Independent	Mann-Whitney test	Kruskal-Wallis
Dependent	Wilcoxon test	Friedman test

Variance

Parametric	Pair of Sample	Multi Sample
Independent	F-Test	Bartlett Test (Levenes Test)
Dependent		

Non-Parametric	Pair Sample	Multi Sample
Independent		
Dependent		

Aggreement

Correlation

Parametric	Pair Variable	Multi Variable
Independent , Dependent Variables	Pearson test (Co-variance)	RV coefficient
Dependent , Dependent Variables	Auto-correlation	Cross-correlation

Non-Parametric (Ordinal Variable)	Pair Sample	Multi Sample
Independent , Dependent Variables	Spearman τ rank test	
Dependent , Dependent Variables	Spearman τ rank test	

Non-Parametric (Nominal Variable)	Pair Sample	Multi Sample
Independent , Dependent Variables	Cohen κ test	

Non-Parametric (Nominal Variable)	Pair Sample	Multi Sample
Independent , Independent Variables	Cohen κ test [2]	

Cohen κ reference table

K	Level of Agreement
≥ 1	Perfect [3]
≥ 0.8	Almost perfect
≥ 0.6	Substantial
≥ 0.4	Moderate
≥ 0.2	Fair
> 0.0	Slight
≤ 0.0	No Agreement
Landis & Koch (1977)	

Distribution

Parametric	Pair Sample	Multi Sample
Independent		
Dependent		

Fisher Exact test

χ^2 test

Kuiper test

Kolmogorov-Smirnov test

Shapiro-Wilk test

Hosmer–Lemeshow test

Anderson–Darling test

[^]:

1. For ↩

2. Welch's test is used when your samples have significant different variables. ↩ ↩

3. Never Trust a Kappa equal to 1 ↩