

Table 11.1 Commonly Used Tests, Based on the General Linear Model.

Analysis	Response Variable	Explanatory Variable	Interaction?	Comments
t-test	1 ratio	1 nominal	Absent	compares two means
1-way ANOVA	1 ratio	1 nominal	Absent	compares 3 or more means in 1 category
2-way ANOVA	1 ratio	2 nominal	Present	tests for interactive effects compares means in 2 categories, if no interaction
Paired Comparison	1 ratio	2 nominal	Usually absent	compares 2 means within 1 factor, controlled for 2nd (random) factor (blocks or units)
Randomized Blocks	1 ratio	2 nominal	Usually absent	compares 3 or more means in 1 factor, controlled for 2nd (random) factor (blocks or units)
Hierarchical ANOVA	1 ratio	≥ 2 nominal	Absent	nested comparison of variance among means Within random factors
ANCOVA	1 ratio	≥ 1 ratio ≥ 1 nominal	Present	compares two or more slopes
			Absent	compares means, controlled for slopes
Regression	1 ratio	1 ratio	Absent	tests linear relation of response to explanatory
Multiple Regression	1 ratio	\geq ratio	Usually absent	tests linear relation to 2 explanatory variables relation expressed as a plane