



Glossary of Module 4 Terms

Chapter 11: Independent and Dependent t-tests

independent-groups t-test	test for situations in which two separate and independent groups are compared
control group	group of subjects not subjected to experimental treatment, but like the experimental group in all other ways
dependent-groups t-test	test for situations in which two, non-independent groups are compared; see <i>matched pairs</i> , <i>within subjects</i> , and <i>repeated measures</i>
independent sample	sample in which the behavior of the members is not related to the behavior of members of another sample
sampling distribution of the mean differences	distribution whose scores are differences between pairs of sample means
estimated standard error of the mean differences	estimated standard deviation of the sampling distribution of the differences
two-tailed test	significance test that considers both ends of the distribution; higher standard and preferred to one-tail test
one-tailed test	significance test that only considers the end of the distribution predicted by the experimenter
homogeneity of variance	condition in which the population variances are the same
robustness of a test	the property of a statistical test to give valid conclusions even when its assumptions are violated
matched pairs	dependent samples in which subject pairs are as closely matched as possible on some characteristic(s) relevant to the dependent variable
within-subjects comparison	the same individuals are subjected to each of two treatment conditions
repeated measures design	experimental design in which each subject experiences all levels of the independent variable; also known as a within-subjects design

Chapter 12: One-Way ANOVA

ANOVA	ANalysis Of VAriance-widely used test to compare two or more groups
one-way ANOVA	analysis of variance involving only one independent variable
additivity	the property of variance that, for individual samples, the variance of a sum of parts is equal to the sum of the variances of the parts
total variability	variability in data based on the deviation between each score and the total mean
within-groups variability	part of the ANOVA test based on the deviation between each score in a group and the group mean; variability within a group
experimental error	source of variability in data caused by such things as imprecise measuring equipment, momentary changes in experimenter and subject attention, and slight changes in background conditions during data collection
between-groups variability	part of the ANOVA test based on the deviation between each group mean and the total mean; variability between the groups
ANOVA summary table	table used to summarize the results of the analysis of variance
mean square	the analyzed variance in the ANOVA test, found by dividing each sum of squares by the appropriate df
F-ratio	ratio of the variability between groups to the variability within groups; test statistic for the ANOVA test; also referred to as F-comp
post-hoc test	testing, after significant F-comp; used to determine significant differences between pairs of group averages
Fisher LSD	least significant difference test; powerful post-ANOVA test that compares pairwise differences in means with a computed least significant difference
pairwise comparisons	comparing several groups one pair at a time
repeated-measures ANOVA	form of the ANOVA test used in situations in which the same (or matched) participants are tested on more than two occasions
two-way ANOVA	ANOVA involving data resulting from the administration of two independent variables

Chapter 13: Pearson's r Correlation And Regression

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correlation	the degree of relationship between variables
linear relationship	the degree to which a straight line best describes the relationship between two variables

positive correlation	a direct relationship between variables; as one variable increases, the other does also
negative correlation	an inverse relationship between variables; as one variable increases, the other decreases
zero correlation	no relationship between the variables
scatterplot	a graph in which score pairs are plotted, with scores on one variable on the X axis and scores on the other variable on the Y axis
Pearson product-moment correlation coefficient	major index used to show linear relationship between two variables; the mean of the z-score products for X and Y pairs
Pearson r	another name for the Pearson product-moment correlation coefficient
covariance	extent to which two variables vary together; frequently expressed as a correlation coefficient
regression equation	equation for the straight line that best describes the linear relationship between two variables
least squares line	line generated by the regression equation; the least squares line is the line that perfectly bisects a scatterplot generated from bivariate data
regression coefficient	the slope of the regression line
coefficient of determination	the square of the correlation coefficient; percent of variance shared by variables; measure of predictability
homoscedasticity	scores on the Y variable are normally distributed across each value of the X variable.
Spearman rank order correlation coefficient	alternative to the Pearson r; used when one or both of the variables are measured on an ordinal scale
biserial correlation coefficient	alternative to the Pearson r; used when one of the variables has been "artificially" converted to a dichotomous variable
point biserial correlation coefficient	correlation coefficient useful when one variable is dichotomous (has only two values) and the other is continuous

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LAST UPDATED: 2014-08-25 6:54 PM

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