



Hypothesis Testing II

Winter 2011

Unpaired T-Test

- This test is very similar to the paired t-test
- Instead of comparing two measurements within our entire population, we use only one measurement but break our population into two natural subgroups, testing whether there is a statistically significant difference between the means of these two subgroups.
- As in the case of the paired t-test, our primary statistic of concern is the p-value, and again it has the same interpretation.

Problem 12.1

Question: Are the prices of houses near the Charles River more expensive than the prices of houses away from the Charles River.

State the Null Hypothesis

Perform an unpaired t-test (Independent Samples T-Test in PASW)

Problem 12.1

- What is the test variable? Why?
- What is the grouping variable? Why
- Next, Define Groups
- Do you accept or reject the Null Hypothesis? Why?
- State your conclusion

Correlation Analysis

- Correlation Analysis addresses the following: Is there a statistically significant association between variable X and variable Y?
- Interpreting the Pearson Correlation Coefficient is not an exact science. We might use the following interpretation:
 - -1.0 to -0.7 strong negative association
 - -0.7 to -0.3 weak negative association
 - -0.3 to +0.3 little or no association
 - +0.3 to +0.7 weak positive association
 - +0.7 to +1.0 strong positive association

Correlation Analysis Visual

- Use Scattergrams (Scatterplots) to visually display data analyzed with this test.
- You can also produce a correlation matrix of the relationship of all variables in the matrix.

Problem 12.2

- Create a correlation matrix of Cholesterol, Triglycerides, HDL, and LDL.

Identify the strongest positive correlation in the matrix.