Stat 201: Statistics I
Week 10 StatCrunch

Metropolitan State University

Week 10
Inference for Categorical Data

Section 10.1
Hypothesis tests for proportions

Hypothesis tests for a proportion in StatCrunch

- Stat → Proportion Stats → One Sample → With Summary
- Enter "# of successes" and "# of observations"
- Select "Hypothesis test for p"
- Enter the appropriate values for null and alternative hypotheses.
- Click "Compute!"
- The test statistic and p-value are found in "Z-Stat" and "P-value"

Hypothesis tests for two proportions in StatCrunch

- Stat $\rightarrow$ Proportion Stats $\rightarrow$ Two Samples $\rightarrow$ With Summary
- Enter "# of successes" and "# of observations" for sample 1 and sample 2
- Select "Hypothesis test for $p_1 - p_2$"
- The null hypothesis should always be $H_0 : p_1 - p_2 = 0$
- Enter the appropriate value for the alternative hypothesis.
- Click "Compute!"
- The test statistic and p-value are found in "Z-Stat" and "P-value"

Section 10.2
Goodness-of-Fit Tests

Goodness-of-fit tests in StatCrunch

- Stat $\rightarrow$ Goodness-of-fit $\rightarrow$ Chi-Square Test
- Select column that contains observed data
- Specify expected distribution:
  - For uniform distributions, select "All cells in equal proportion"
  - For non-uniform distributions, select the column which contains expected frequencies
- Leave default value of "Expected" for display
- Click "Compute!"
- The test statistic and p-value are found in "Chi-Square" and "P-value"

Section 10.3
Tests for Independence

Tests for independence in StatCrunch

- Stat $\rightarrow$ Tables $\rightarrow$ Contingency $\rightarrow$ With Summary
- Select the columns that contain observed data
- Select the column that contains row labels
- If desired, select calculated values to be displayed ("Expected count" can be useful)
- Leave "Hypothesis tests" on default value of "Chi-Square test for independence"
- Click "Compute!"
- In the "Chi-Square test" table, the test statistic and p-value are found in "Value" and "P-value"