

Homework 2

Applications

1. 3.9. Follow Agresti's instructions for accessing GSS data sets, but select the variable DEGREE rather than EDUCATION, and filter on YEAR(2014) rather than YEAR(2010); you will likely have to experiment with the site a little—it has a lot of functionality. Under Output Options, select Summary Statistics, and deselect Column under Percentaging. Once you have your output, compare test statistics and residual diagnostics to those you would compute in SAS using, e.g., the CHISQ and MEASURES options.
2. 3.11. You can use either computer programs or hand calculations for 3.11(c).
3. 3.15. Verify X^2 and M^2 in SAS. Explain why the p-values are so different. Compare test results to a test on $\gamma = 0$.
4. 3.18a. Compare results from 3.18a to results from Berger's unconditional exact tests using a pooled Z-test statistic and $\gamma = 0.001$. Use `pexact` to find the p-value for a one-sided exact test constructed from the pooled Z test for a difference in row proportions for $\pi = 0.1, 0.2, \dots, 0.9$; comment. Note: You will want to reverse the row labels so that Berger's test and `pexact` will work properly without modification.

Theory and Methods

1. 3.26. It helps to write the logit as $\log \pi - \log(1 - \pi)$.