432 Lab 02 Rubric

432 TAs

Due 2021-02-22. Version: 2021-03-01

Contents

General

- Labs received on time can receive up to 100% of the available points for the lab. We do not penalize lab work received within one hour of the deadline (so, by Monday at 10 PM Eastern.)
- Labs received more than one hour after the deadline but before noon on the following day (Tuesday) will receive a late penalty of 10% of available points on the lab.
- Lab submissions received after the answer sketch is published at noon Tuesday but within one week of the deadline will receive a late penalty of 25% of available points.
- Lab submissions received more than one week after the deadline will not be graded.

1 Question 1 (30 points)

- Award 26 points for a good effort and 27-30 points for an especially strong effort (one of the top 3-6 visualizations we saw).
- Anything that seems way off the mark should get 19 or less, and should be drawn to my attention, as should the graphs that get 27-30 points.
- Take off 2 points from the total if you find one or two typographical or syntax/grammar errors in this response.
- Take off 4 points from the total if you find three or more such errors.

Most people are expected to score 21-26 points on this question.

2 Question 2 (20 points)

We don't write sketches for essay questions.

- Award 17 points for any essay that is within the word limit (or close) of 150 and 250 words and answers all three parts of the question reasonably well.
- Award 18-20 points for an essay that does a really nice job.
- Award 13 or fewer points to anything that doesn't address all three parts of the question.
- Take off 1 point from the total if you find one or two typographical or syntax/grammar errors in this response.
- Take off 3 points from the total if you find three or more such errors.

3 Question 3 (20 points)

- Estimating the result correctly is worth 6 points.
- The other 15 points are awarded if the student has an excellent description of the effect size. That description should:
  - describe a comparison between two *counties*, with the *same median income*, who differ by 1 *point* in `food_env` and come to a conclusion about the *size* and the *direction* of the effect on `obese_pct`, while using *appropriate units* for `food_env` and `obese_pct` and indicating the *statistical significance* of the result at the *10% significance level* (or *90% confidence level*) with reference to the confidence interval.
  - the seven key elements (2 points each) are:
    1. this model describes counties, not subjects/individuals/whatever
    2. holding the same median income
    3. comparison of two counties with differing food environments with the correct units for the food environment measure
    4. description of effect on an outcome with the correct units for the outcome
    5. size of effect specified to match their model
    6. direction of effect specified to match their model
    7. confidence interval endpoints and level of confidence/significance
- Showing the effect graphically is a nice, but ungraded, touch.

4 Question 4 (10 points)

- 6 points total (1.5 points per plot) for evaluating each of the four main plots (1, 2, 3, and 5)
- 3 points for correctly identifying the amount of variation (~28%) in `obese_pct` explained by the model.
- 1 point for making a reasonable suggestion on how to improve the model

5 Question 5 (20 points)

- Estimating the result correctly is worth 6 points.

- The other fourteen points are awarded if the student has an excellent description of the effect size. That description should:
  - describe a comparison between two *counties*, with the *same pm2_5*, who differ by 1 *percentage point* in `sev_housing` and come to a conclusion about the *size* and the *direction* of the effect on `h2oviol` in terms of an odds ratio, while using *appropriate units* for all variables, referring to odds changes, rather than changes in risk or probability and indicating the *statistical significance* of the result at the *10% significance level* (or *90% confidence level*) with reference to the confidence interval.
  - the seven key elements (2 points each) are:
    1. this model describes counties, not subjects/individuals/whatever
    2. holding the same pm2.5 or pm2_5 (depending on whether they cleaned the names)
    3. comparison of two counties with differing percentages meeting the `sev_housing` standard
    4. description of effect on the `h2oviol` odds
    5. size of effect specified to match their model
    6. direction of effect specified to match their model (which should be about the odds of having a violation)
    7. effect size confidence interval endpoints and level of confidence/significance
- Showing the effect graphically is a nice, but ungraded, touch.