

Homework H Rubric

PQHS 431

2019/11/08

General/Administrative

- Subtract 20 points for not submitting both HTML and RMD files before 3:00 PM but doing so before 6:00 PM
- Unless Dr. Love has excused the student give the entire assignment a grade of 0/100 if their work is submitted after 6:00 PM

Question 1 (out of 10 points)

- Award 5 points for providing a visualization comparing at least two population means/medians (can be paired or independent samples).
- Award 3 points for providing a copy of the image.
- Award 2 points for a complete reference to the work that contained the visualization.

Question 2 (out of 10 points)

- Award 5 points for describing the purpose of the comparison and why this comparison is important. The response must be written in complete English sentences and use proper grammar.
- Award 5 points for specifying a reasonable research question. The response must be written in complete English sentences and use proper grammar.

Question 3 (out of 10 points)

- Award 4 points for a thorough description of the relationship between the visualization and the comparison being made.
- Award another 4 points for a detailed explanation of what the student believes the visualization is trying to do and if they believe it is effective.
- The entire response must be written in complete English sentences and use proper grammar.
- Award up to 2 more points if the student did a particularly good job

Question 4 (out of 10)

- Award 4 points if a reasonable suggestion to improve the visualization is provided.
- Award another 4 points if the suggestion was properly justified.
- The entire response must be written in complete English sentences and use proper grammar.
- Award up to 2 more points if the student did a particularly good job

Question 5 (out of 10 points)

- Award 2 points for correctly describing the difference between the two data files (hWH_data1 is wide, hWH_data2 is long)
- Award 5 points for correctly deciding that the hWH_data1 file is the more useful file for fitting an ANOVA.

- Award 3 points for describing that, in this case, the wide format contains 1 row per subject (a fundamental of “tidy” dataframes). This is why one would want to use the hWH_data1 CSV file.

Question 6 (out of 10)

- Award 6 points for correctly calculating the sample PDS means in the 3 groups.
- Award 4 points for correctly stating the rank order of the sample PDS means in each of the three groups. Note the R output does not need to correctly specify the rank order as long as it is specified in an English sentence.

Question 7 (out of 10 points)

- Award 6 points for a visualization that can reasonably assess the variance and normality of each group’s PDS scores’ distribution.
- Award another 4 points for a thorough and accurate discussion of conclusions drawn from the visualization. The student should mention the distributions follow a normal distribution fairly well and that the variances appear to be similar (although Group B’s variance may be a bit larger). Taken altogether, the student should conclude it would be appropriate to fit an ANOVA on this data.

Question 8 (out of 10 points)

- Award 5 points for correctly fitting and reporting the results of the ANOVA.
- Award an additional 5 points for correctly interpreting the ANOVA results at a 90% confidence level.
 - The group (category) accounts for about 0.06% of the variation in the PDS values.

Question 9 (out of 10 points)

- Award 4 points for correctly running and reporting the results from the Tukey HSD test at a 90% confidence level.
- Award another 4 points for correctly running and reporting the results from the Bonferroni adjustment.
- Award 2 points for noting the conclusions drawn between the group means do not differ between the two methods (Tukey HSD or Bonferroni adjustment)

Question 10 (out of 10 points)

- Award 3 points for correctly building a linear regression model that predicts PDS scores based on group membership and active status.
- Award 3 points for correctly noting that the model accounts for roughly 1.89% of the variation in PDS scores (according to the R^2 value).
- Award another 4 points for correctly calculating how much more variation (roughly 1.83%) is explained when using a model containing information on both group membership and active status, as opposed to a model only including group membership status. The variance explained by the model containing information only on group status can be calculated via a second linear model or through the eta-squared statistic in the ANOVA.