Inferential Statistics Final Project

Note: *This course is currently only available for free, so you won't be able to submit your work for review. We encourage you to use the specifications and evaluation tools to complete it, then self-assess and seek feedback from family, friends, and your social networks. Use their feedback to improve, then you'll have a great example of your work to show-off anytime!*

Overview

For the Inferential Statistics final project, you are required to perform a detailed analysis on one or more of the provided data sets. With your chosen data set(s) you will come up with a hypothesis which you wish to test. You will then design an experiment to test this hypothesis and choose an appropriate test. For example, you may use t-tests, ANOVA tests, or any other hypothesis test covered in the course. Remember to check the conditions of any test that you choose to use. Once you've run your test you will also need to provide visualizations to support your test. These can be any of the visualizations we learned in this course or in Descriptive Statistics (i.e. histogram, box-whisker plot, scatterplot, etc.). Make sure to follow the final project template found below.

When you complete the final project be sure to check through the project rubric before you submit!

Main points to be covered in the final project are as follows:

- Introduce the topic related to the data set - why it is important to analyze
- Your research question and hypothesis
- Experimental design - type of analysis and reason for this choice
- Analysis results and data visualizations
- Conclusion - what you learned and what are the real life implications

Datasets

Examples of datasets that you may use for your final project may be found in this document.

Final Project Template

Introduction

In this section, you should give an introduction to the topic related to your chosen data set. Describe the topic and explain why it is important to analyze and understand the results. You should provide enough information on the topic in this section so that someone who has no knowledge of the topic can understand what you are doing and why it is important.

Research Question & Hypothesis

In this section, you should present the question you are trying to answer with your analysis along with a prediction of what you think the results will be. Remember that your results will either support or not support your hypothesis. Do not be concerned if your results do not support your hypothesis as this leaves room for you to discuss in the conclusion why you think the results supported or did not support your hypothesis.

Experimental Design

Here, you should explain what type of analysis you will use and why it is the appropriate type of analysis. In the course, you learned about a number of ways to analyze data. You learned about z-tests, t-tests, and how to run an analysis of variance. You also learned about performing regression and how to perform chi-squared tests. Choose one of these methods as your main type of analysis and provide detailed reasoning for this choice.

Results

This section should include all of the results from your analysis. Provide all the information from your analysis even if it does not support your hypothesis. You should also provide screenshots/images of your data. You can use whatever types of visualizations that best represent the data (i.e. graphs, bar charts, histograms, etc).

Conclusion

Here, you should discuss whether or not the results from your data supported or did not support your hypothesis. If the results did not support your hypothesis, discuss why you think they did not and if there is anything that could have been done differently that would

have changed the outcome. If your results did support your hypothesis, explain what this means and the real life implications. In either case, discuss why further research on the topic should be done and why it is important to do so.