Statistics Research Project

In our formal project, you will apply the concepts we have been learning in class to collect, organize, and analyze data. The analysis will include both descriptive and inferential statistical results. Your final result will be a paper presenting your results. Assume that the reader of this paper will be an employer in your field of work that is familiar with basic Statistics terms.

For this project, you will be working in a group of 2-3 students from class. You have the option of either selecting your group or being placed in a group. Each member of the group is required to work together and contribute to the final result. A group member that fails to do this will receive a reduced grade.

Due Dates

Over the next two months, we will have a sequence of due dates for components of the project. This will allow you to have feedback on your work along with time to revise based on the feedback. Missed due dates will incur a one percent penalty per-day on the final grade.

End of Week 8 – Group chosen and topic approved by the instructor.

End of Week 10 – Data collected and procedure section of the paper submitted to the dropbox.

End of Week 12 – Required office hour conference. Bring your graphs, tables and analysis section of the paper to the conference.

End of Week 14 – Final paper is due to the dropbox. The final paper should incorporate any feedback you have received.

Beyond the required instructor conference, I recommend the use of the writing center. Students who have used this resource in past semesters have improved the quality of their project and received a higher grade.
**Project Topic**

The topic of the project will be chosen by the group. It is strongly recommend that you choose something of interest (related to your work, your hobbies, etc.). The survey question based on your chosen topic must have a numerical result with a wide range of possible responses. Both the topic and survey question must be approved before you begin collecting the data.

**Data Collection**

The group will collect a sample of either 40 data values (for two-member groups) or 60 data values (for three-member groups). These must be a random sample drawn from the population you are studying.

**Statistical Calculations**

Create a frequency distribution and histogram from your sample data (refer to Excel Assignment #1). Create a table of descriptive statistics from your sample data containing mean, median, mode, minimum, maximum, standard deviation and sample size (refer to Excel Assignment #2). Calculate a 95% confidence interval to estimate the population mean. These elements will be integrated into your final project in the Results section.

**Written Report**

1. Each group will submit one project. The project should have a cover sheet that contains: the title of your project, your names, and section number. Projects will be submitted to the dropbox on Falcon Online.

2. The project must be typed, doubled-spaced, in 12 point font with one-inch margins, and proofread for grammar, spelling, and punctuation. Tables and graphs should be neatly integrated into the Results section of the project. Tables and graphs should have a title and properly labeled axes.
3. This is a formal paper, not a list of numbered questions and answers. The paper should be written in 3rd person formal (do not use “I”, “we”, “you”, etc.). You should write the paper as if it was a report presented to your employer.

4. The paper should include the following:

   • Introduction – describe the purpose of your project. Why is your topic important? Does your group (“the researchers”) have a prediction about the results that you are trying to confirm?

   • Procedure – describe how the data was collected. In particular, how did you ensure your data will be a random sample from your population?

   • Results – include your tables and graphs at this point in the paper. Estimate the population mean using a 95% confidence interval.

   • Analysis – use the tables and graphs to describe what these results reveal about your sample data. The data analysis essay and resulting class discussion from earlier in the semester should provide ideas on writing this section.

   • Conclusion – summarize your results. Be sure to answer any topics posed in the introduction section of your paper.

5. At the end of the paper, provide an appendix containing your raw data.

6. Be sure to read the grading rubric and address all points on it.

Personal Reflection (optional)

Any student can also submit a short personal reflection on the project for a maximum of five bonus points. This will be submitted separately from the project. This essay can include why you chose the topic, how you approached it, any difficulties you encountered and how you overcame them. The essay should be a minimum of 150 words.