

Statistics Project—Measuring Resistance

Background: Throughout chapter two of the Moore text the mean and standard deviation are characterized as “not resistant to extreme values”. Where as the median and IQR are “resistant to extreme observations”. This project runs experiments to measure resistant of these measures and two other measures of centrality—the trim mean and the “bisquare mean”.

Basic Test: Starting with a sample from a population with known distribution. Posit an extra bogus value. How much do our statistics change due to the bogus value?

Getting Started: Generate data from a Normal distribution (your instructor will help you with this). Compute the mean, median, and 20-80 trim mean. Add one extra value to your data set. Try various values of the extra value and observe the new computed statistics.

First Meeting: Prior to the meeting do the “Getting Started” exercise. Meet with your instructor and explain your project in terms of what you will be measuring. Write a summary of this meeting and turn it in to the instructor.

Computational Setup: Based on the decisions from the First Meeting make up an Excel sheet that will be used for this project. Make some preliminary runs and review this setup with your instructor (second project meeting).

Conduct Tests and Compute Statistics: Your team should end up with a table of test results and a table of statistics based on the test results.

Third Meeting: Present your results. If there are problems with the testing procedures resolve them and run the tests again. Discuss what conclusions are justified. Discuss every section of the project report and what should be there. Pay particular attention to using graphs to present your results..

Write Project Report Draft: Use the guidance from the Third Meeting to write your draft report.

Fourth Meeting: Present your draft report to the instructor. Use your instructor’s critique to write the final report.

Write the Project Report.

Additional Project Guidelines:

Due Dates

[Report Format](#)

[Report Writing Cautions.](#)