Cleo Falvey

Final Report Edits

Intermediate Report: Feedback

MATH 448 - Spring 2020

Cleo: this is a great report. Wonderful presentation, good research questions, correctly conducted statistical analyses and good comments & interpretation of results. I have only very few suggestions to make.

Question 1: first table. Display numbers with fewer decimal places, it will look better

I rounded all my units.

Question 2: here’s a challenge for you. You could try what I proposed, namely to introduce a shift parameter to allow the data to be closer to zero, which should increase the likelihood of a fitted model for the gamma distribution (or any distribution that starts at zero). More precisely, you would maximize the log-likelihood function where are your data values and is the density function of the gamma distribution with parameters (shape) and (scale). Then you might observe this: the distribution of your commute times looks like a shifted chi-square distribution. And you could test that with a likelihood ratio test. This would be a very cool, advanced application of the methods you’ve learned in this course. But don’t feel obliged to do this if you have other interesting analyses in mind for the final report.

We talked about this; I managed to get minimized negative-log-likelihood values for each, though they weren’t really significantly different from each other. I found that the shifted parameter chi-square distribution with 23 degrees of freedom and a shifting constant of 32.91041 was the best.

THE REST OF THE REPORT: I bolstered analysis by finishing up the conclusions because now we can say that one of the best models is a chi-square distribution with 23 degrees of freedom. I also edited Question 5 to include a confidence interval using the shifted chi-square distribution. I fixed some of the graphs, including adding better legends and axes labels and colors. I changed the theme of the document again (presentation is everything and I like that it’s interactive now). I did some minor text edits.