

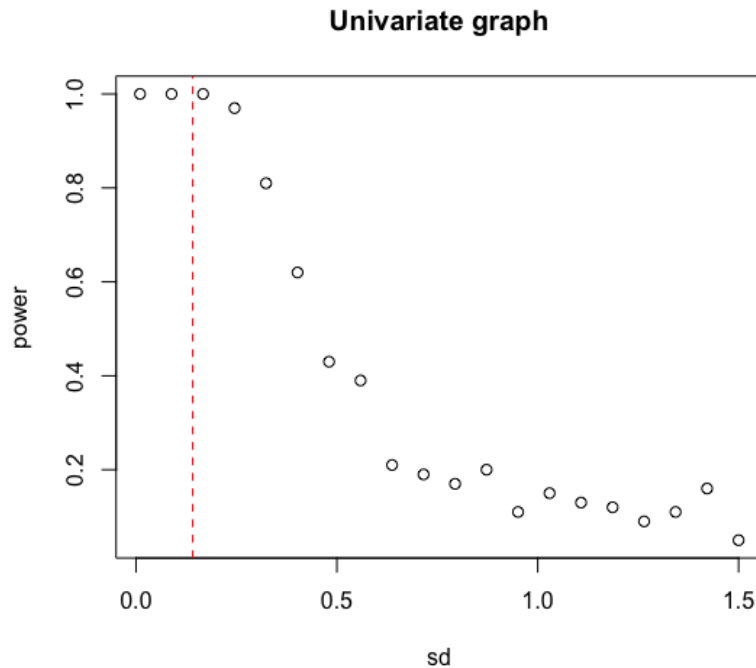
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ECo 634: Michael France Nelson

Lab 11: Simulation and Power Analysis

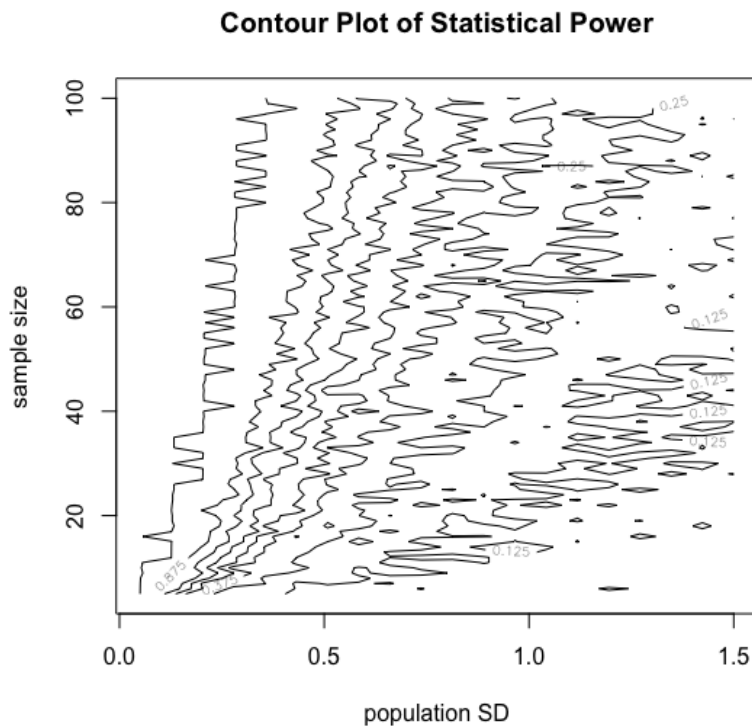
Q1 (2 pts.): Include a figure of your line plot in your report.



Q2 (2 pts.): Why do you think that statistical power decreases as population dispersion increases?

Statistical power decreases with an increase in population dispersion because population dispersion creates noise or variation in the data. Therefore, statistical power is weakened because our inferences of the data are also weakened with more noise.

Q3 (2 pts.): Include a figure of your contour plot in your report.



Q4 (2 pts.): Qualitatively describe the patterns you see in the contour plot. Make sure you discuss the effects of sample size and population dispersion on statistical power.

There is a higher density of lines on the left side indicating that the contour lines are steeper to the left than right. Therefore, the lower the sample size, the higher the population SD. Since this is true, a greater sample size indicates that there is greater statistical power since SD and power are inversely related. Also, when statistical power is low, population dispersal is high.

Q5 (5 pts.): Upload your plot as an interactive html file. NOTE: some Mac users are not able to use RGL. You may also upload a static plot created with `persp()` if you can't get RGL to work on your computer.

Uploaded separate html

Q6 (2 pts.): Describe how you could use the information shown in your plot when designing an experiment.

I could use the information shown in the plot when designing an experiment to determine how large the sample size must be to improve (increase) the statistical power as much as reasonably possible. There is certainly a realistic sample size that can achieve the highest possible statistical power and the plot could be used to figure out the ideal and realistic size.