Homework 9

Learning Objective

- Apply Bayesian analysis in a research project

Steps

In this homework, you will perform one preliminary Bayesian analysis for your course project, and create a brief report. Students working in a group can work together on the analyses and use the same analysis, but each should submit their own write-up. The write-up will need to be a GitHub Markdown document uploaded to the GitHub repository you previously created.

You can reference a sample report on https://github.com/marklhc/20221-psyc573-usc/tree/main/hw_ templates (see the .Rmd file for the source and the .md file for the output).

1. Your report should include

   - Name and date
   - Your research question for the preliminary analysis in one sentence
     - E.g., "Does the job training intervention programs reduce participants' depressive symptoms?"
   - Description of each variable in your preliminary analysis
   - Mathematical expressions of your model and priors
   - Your code for running the Bayesian analyses
   - A convergence check of MCMC
   - A table and/or a figure showing the posterior distributions of the key model parameters
   - Interpretation of the results in relation to the research question.

2. Your report should **NOT** include unnecessary information such as printing out the full data, messages from loading packages, etc. Use chunk options such as `message = FALSE` and `include = FALSE` to hide unnecessary information.

3. Knit your file as a GitHub Markdown document (as in the template) or as a PDF, as these two formats are accessible on GitHub. (If you have trouble with both, knit it to HTML and print it into PDF.)

4. Upload your Rmd and your knitted files to your GitHub repository. You may also need to upload the folder "XXX_files" if your Rmd file has the name "XXX.Rmd."

5. On Blackboard, copy and paste the link to your knitted output on GitHub.