

STATISTICAL RETHINKING 2025

WEEK 7

This homework continues with the BMJ submissions data from last week. You can find it in the homework folder or in the homework channel on the Discord.

1. Let's model the probability of submitting an article on a holiday. In addition to weekend submissions, there are submissions that fell on holidays. These are indicated by the H 0-1 variable. Build a partial-pooling model of holiday submission probabilities by country. Compare the estimates to the weekend results from last week. What similarities and differences do you notice?

2. Now build a covariance model for both weekends and holidays. The model should estimate both probabilities of submitting on weekends and holidays for each country. It should also estimate the covariance between weekend and holidays submission across countries. How do the new estimates differ from the estimates from the previous problem? Can you explain why they differ (or not)? It might help to make a plot like the one in the lecture (from the Bangladesh example), which shows individual estimates produced without correlated varying effects as well as estimates produced with correlated varying effects.