

STATISTICAL RETHINKING 2024

WEEK 9

The data in `data(Achehunting)` are 14,364 individual hunting trips by 147 men among the indigenous Aché of Paraguay. Each trip has recorded the hunter's identity (anonymized id), hunter's age at the time of the trip, the duration in hours of the trip, and the kilograms of meat returned. Many of the trips have missing values for duration.

1. In this first problem, estimate the influence of age on the probability of trip success. Define “success” as a trip that returns any non-zero amount of meat. Ignore individual hunter identities for now. You can use any functional relationship for age and success that you think is sensible, but be sure to justify it and check it against posterior predictions.

2. Now incorporate individual hunter varying effects into your analysis from the previous problem. Allow the influence of age on success to vary for each individual. How much variation in success is explained by individuals and how much by age?

3-OPTIONAL CHALLENGE. Repeat the analysis in problem 3 above for the measured kilograms of meat returned on each trip, not just a 0/1 indicator of success. Is the relationship between age and kilograms returned different from the relationship between age and success? Why or why not? Hint: The tricky part of this problem is modeling the outcome variable.