

Case Study 6

for March 5

Your client is a Food Science graduate student who is working on sensory specific satiety (SSS). SSS occurs when eating one kind of food makes similar foods less attractive. In her case, she is working with five flavored popcorns: plain, buttered, caramel, white cheese, orange cheese.

Here is an outline of her experiment. She has 35 subjects. Each subject comes to the lab on five consecutive Tuesdays. On each visit to the lab, the subject eats a fairly large portion of one of the five popcorns (the test corn). Over the five visits to the lab, each subject will have all five types of corn as test corn, with the test corns assigned in random order (separately and independently for each subject) to the five Tuesdays. After finishing the test corn, the subject rates his or her “liking” of the test corn on a 1 to 100 scale (100 is likes best). Then the subject is presented with smaller portions of all five popcorns. The subject is asked to choose one of the five and eat the portion. Thus the data we have is five sets of (test corn, liking, choice corn) for each subject.

How might you analyze this discrete choice data? What kinds of models are appropriate? Is there software available to do the analysis (ie, how would you do this in R or SAS)? Are there any unusual issues or problems when working with these kinds of models/data (ie, are there land mines to be avoided)? What can you estimate? What hypotheses could you test?

Your presentation is for fellow statistics graduate students who work in the consulting clinic, but you should point out places where you anticipate trouble communicating with the client.

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The chair for this week is Eric Graalum.

Students with a “bye” week are: Teng Zhang, Wei Qian, Qing Mai.