POLS 6481, Spring 2021

Professor Scott Basinger

Reading Assignment week 13

Distributed Friday, April 23

Due Tuesday, May 4

Required: Kam & Franzese, 1–34, 43–58, 60–70, 78–87

Supplemental: Brambor, Clark, Golder “Understanding Interaction Models,” *Political Analysis* 14: 63–82

1. What is a “simple” relationship or “first generation” question? Provide an example from polisci.

What is a “complex” relationship or “second generation” question? Provide an example.

2. Wooldridge’s Example 7.6 explores how marriage and gender affect *log*(*wages*); if you estimate a model with dummy variables for *married* and *female*, and an interaction term (*married\*female*), as in equation **[7.14]** …

A. … precisely how should you interpret (in words) an estimated coefficient for *female*?

B. … precisely how should you interpret (in words) an estimated coefficient for *married*?

C. … precisely how should you interpret (in words) an estimated coefficient for *married\*female*?

D. … what value accurately defines the estimated effect of being married on *log*(*wages*) for a female?

3. Recalling the equation for estimating *proportional* changes in wages (a few weeks, when we discussed log-linear models), answer the following questions using the results shown in Wooldridge’s equation **[7.14]** (double-checking Example 7.6 if necessary):

A. … precisely what proportion less will an unmarried female earn than an unmarried male?

B. … precisely what proportion less will an unmarried male earn than a married male?

C. … precisely what proportion less will an unmarried female earn than a married female? (Be careful…)

4. Kam and Franzese’s second example explores how party and gender affect attitudes towards spending on social welfare; if you estimate a model with dummy variables for *Republican* and *female*, and an interaction term (*Republican\*female*), as in equations…

A. … precisely how should you interpret (in words) the coefficient for *Republican*?

B. … precisely how should you interpret (in words) the coefficient for *female*?

C. … precisely how should you interpret (in words) the coefficient for *Republican\*female*?

D. Calculate a number that captures the estimated effect of being a Republican on attitudes towards social welfare spending for a female.

5. For Kam and Franzese’s second example, do not provide equations for variances. Using earlier parts of that book and/or the Brambor, Clark and Golder article, fill in the necessary equations and perform the calculations for Tables 17 and 18 on page 55:

If *Republican* = 0 if *Republican* = 1

Marginal effect

Standard error *se*( )

*t* statistic

if *Female* = 0 if *Female* = 1

Marginal effect

Standard error *se*( )

*t* statistic

6. For Kam and Franzese’s first example, they provide an equation for variance of on p. 52. Fill that in:

Kam and Franzese do not provide an equation for variance of . Fill in that missing equation.

For the third row **(*Groups* = 2)** of Table 15 (p. 53), perform the calculations necessary to show how to

find the marginal effect (), the standard error of the marginal effect, and the t-statistic.

7. Interpret all three lines in figure 4 or figure 5 (p. 63, 65) of Kam and Franzese.

What interpretation must we give to the coefficient for *Runoff*, as estimated in table 1 (p. 19)?

What about this interpretation is nonsensical?

8. For Kam and Franzese’s third example, examining the effect of the number of parties in government, consider the linear-interactive version: , and examine Table 5 on p. 31. (Table 6 on p. 32 might give you some clues for answering my questions.)

A. What is the estimated value of ?

How do we interpret this coefficient (in words)?

Is this interpretation reasonable or nonsensical?

What simple change could you make so the value of has a more reasonable interpretation?

B. What is the estimated value of ?

How do we interpret this coefficient (in words)?

Is this interpretation reasonable or nonsensical?

What simple change could you make so the value of has a more reasonable interpretation?

9. Interpret all three lines in figures 8 and 9 (p. 69, 70) of Kam and Franzese.