

## Homework

Use the nels data set to do the following exercise.

1. Define a variable 'college' that equals 1 if a high school graduate chooses either a 2-year or 4-year college, and zero otherwise. What percentage of the high school graduates attend college?
2. Estimate a probit model explaining College using grades, faminc, famsiz, parcoll, female, and black (see the labels in Stata for definitions). Are the signs of the estimated coefficients consistent with your expectations? Explain. Are they statistically significant?
3. Using the estimates in (2) predict the probability of attending college for a black female with grades=5, faminc= sample mean, from a family with 5 members and a parent that attended college. Repeat this for grades = 10.
4. Repeat the calculations in (3) for (i) white female and (ii) white male.
5. Reestimate the model in (2) omitting the variables parcoll, black, and female. How are the signs and significance affected?
6. Test the joint hypothesis that these (i.e., parcoll, black, and female ) can be omitted.
7. Discuss the fit of the model. (Use the model table).
8. Find the marginal effects at the means of the independent variables.
9. What is the marginal effect of another \$1000 of income for a black female with grades=5, faminc= sample mean, from a family with 5 members and a parent that attended college. Repeat this for grades = 10. Repeat the calculation for a white female.
10. Compare these marginal effects to ones obtained using a linear probability model.