

Assignment 3

Applied Econometrics

ECON 5645 \ 6645

Due: March 18th, 2022, by midnight

Please see the accompanying 2016 wave of the Canadian Community Health Survey (CCHS) for solving Questions 1 and 2. Note that the survey has been restricted to those age 25-64.

Question 1 [5 marks]

Examine the social determinants of illicit drug use (variable name ‘illicit’) using a probit specification. Present (in an appropriate table) and interpret your results in terms of average marginal effects (and include their accompanying standard errors). The explanatory variables under consideration are: income, education, marital status, immigrant and visible minority status, sex, and age. Determine how you would like to include each control in your regression and briefly explain your method prior to interpreting your results (e.g. log transformation, quadratic terms, choice of reference category).

Question 2 [5 marks]

Examine the social determinants of perceived mental health (variable name ‘gendvmhi’) using an ordered probit specification. Present (in an appropriate table) and interpret your results in terms of average marginal effects regarding the lowest category of mental health (and include their accompanying standard errors). The explanatory variables under consideration are: income, education, marital status, immigrant and visible minority status, sex, and age. Determine how you would like to include each control in your regression and briefly explain your method prior to interpreting your results (e.g. log transformation, quadratic terms, choice of reference category).

Question 3 [5 marks]

Consider an anti-smoking policy which prevents tobacco-use inside homes having children under the age of 18. This policy is enacted in New Brunswick in 2015, but was not implemented in Nova Scotia. You have annual individual-level data spanning 2010-2020 for both provinces.

- a. [2 marks] Derive a model that determines whether tobacco consumption fell as a result of this policy - i.e., did people smoke less as a result of this intervention? Lump together control variables unrelated to policy and place using the term X .
- b. [1 mark] How would you test the assumption of parallel trends?
- c. [2 marks] Say that you wanted to test the extent to which this policy impacted Indigenous peoples relative to non-Indigenous. More specifically, were there heterogeneous effects? Derive a new model to test this question.