Lab 7

# Regressions

**Questions (only one correct answer)**

Q1. For the following research hypothesis, which of the variables is predicted (y)?

”the effect of subjective hearing assessment on subjective memory functioning” (Ilinca and Cutler 2018)

1. Subjective hearing assessment
2. Subjective memory assessment

Q2. For the following research hypothesis, which of the variables is a predictor (x)?

”The influence of socioeconomic status and psychological well-being on hypertensive condition is assimilated by age as a variable with both biological and social foundations” (Matei et al. 2018)

1. Psychological well-being
2. Hypertensive condition

Please read the following Results section extracted from a research article:

”We found (a) cognitive worries at Waves 1, 2, and 3 were generally associated with lower levels of psychological well-being at each of these waves;(b) there was no evidence of long-term, lagged effects, and (c) these relationships were statistically similar across groups of adult children and controls” (Cutler and Brăgaru 2017)

Q3. Which of the following statements are true provided the above section (in Cutler and Brăgaru 2017)?

1. The research had a longitudinal approach, analyzing the dynamics of data in time.
2. The predicted variable was cognitive worries.
3. The authors did not test if the patterns are kept controlling for other variables.

Please read the following Results section extracted from a research article:

”With reference to age and type of delivery, women are more likely to give birth by caesarean section at any age group (the association is not statistically significant at P < .05), except for the age of 15 years (five out of six patients in our sample had a spontaneous birth). Smoking was the most common risk behavior in the sample (45.9%, n = 34), followed by alcohol consumption (17.5%, n = 13) and drug use (5.40%, n = 4)” (Dimitriu et al. 2018)

Q4. Which of the following statements are true provided the above section (in Dimitriu et al. 2018)?

1. One of the predicted variables is smoking.
2. The probability to give birth by caesarean section can be obtained if we include in the model the following variables: age, smoking and alcohol consumption.
3. The probability to give birth cannot be predicted by gender.

Programming

P1. Take a look at the code in the file **regression\_1.py**. This is one example of linear regression for the function (1). The output provides the mean of the slope.

Function (1): y = slope \* x

Function (2): y = intercept + slope1 \* x1 + slope2 \* x2

1. Add to the code the necessary pieces of information in order to model the regression function (2) and provide the following numbers in the output: the mean of the intercept, the mean of the slope1 and the mean of the slope2.
2. Let us say that y represents individual level of happiness. Provided the results in a) (the values obtained for each slope), which of the following sets of variables could be x1 and x2?
3. x1= income, x2=stress
4. x1=the amount of hours slept, x2=the amount of gifts received that day

Cited works:

Cutler, Stephen J., and Corina Brăgaru. 2017. “Do Worries About Cognitive Functioning and Concerns About Developing Alzheimer’s Disease Affect Psychological Well-Being?” *Journal of Aging and Health* 29 (8): 1271–87.

Dimitriu, Mihai, Cringu Antoniu Ionescu, Alexandra Matei, Roxana Viezuina, George Rosu, Corina Ilinca, Mihai Banacu, and Liana Ples. 2018. “The Problems Associated with Adolescent Pregnancy in Romania: A Cross‐sectional Study.” *Journal of Evaluation in Clinical Practice*. https://doi.org/10.1111/JEP.13036.

Ilinca, Corina, and Stephen J. Cutler. 2018. “Long-Term Influence of Subjective Hearing Assessment on Subjective Memory Functioning: Results from the Health and Retirement Study.” *Social Work Review* 17 (1): 33–40.

Matei, Ștefania, Stephen J. Cutler, Marian Preda, Maria Dorobanțu, Corina Ilinca, Oana Gheorghe-Fronea, Luminița Rădulescu, et al. 2018. “The Relationship Between Psychosocial Status and Hypertensive Condition.” *Current Hypertension Reports* 20 (12): 102. https://doi.org/10.1007/s11906-018-0902-y.