Tutorial 9 HT

Research Methods for Political Science - PO3110

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A few more things on Logistic Regression

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- This leads to an ARTIFICIAL increase in the probability of rejecting the predictor as being statistically significantly different than zero. (Type II error – false negative).

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- Cox Snell never reaches its theoretical maximum of 1 (equation in field if you are curious).The Nagelkerke measure performs an ad hoc adjustment to CS so that it can reach 1.
- Independently, in the logistic regression context, these measures tell us very little.
    1. A pseudo R-squared only has meaning when compared to another pseudo R-squared of the same type, on the same data, predicting the same outcome.
    2. In this situation, the higher pseudo R-squared indicates which model better predicts the outcome.

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- Larger values of deviance indicate a poorer fit. You can either look at them across the different models or:
- SPSS always compares that with the baseline model (Omnibus test for model coefficients box). How does that work?

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- The likelihood ratio statistic is simply the deviance of the baseline model MINUS the deviance of the new model.
- Since this ratio converges asymptotically to a chi squared distribution, SPSS calculates the p-values from there.
- Looking at the p-values we can now determine whether our new model is a significant improvement upon the baseline model.