Generalized Linear Regression in R

Workshop Description

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Wednesday, March 16, 2022, 1-2.30pm
Virtual (via Zoom)

Overview

This workshop focuses on techniques when your outcome variable is not continuous or normally distributed. Such outcome variables are considerably more common in social science data than normally distributed outcome variables. We will briefly explore four different types of outcome variables: binary, ordered, unordered, and count variables. For point of reference, the material in this workshop is referred to using several different titles including generalized linear models, categorical data analysis, and limited and categorical dependent variable regression.

Prior Knowledge

The workshop is designed for individuals with experience using linear regression in other statistical software (e.g., Stata, SPSS) and want to learn how to run generalized linear regression models in R. Further, it is assumed that individuals have a basic understanding of R. We will also be using R Markdown, but it is not critical for learning the material.

Software Details

Make sure you are using R 4.0 (the specific version should not matter). I advise using the RStudio IDE as it is very user-friendly (much more than R's GUI).

You should also install the following packages we are using prior to the workshop. To do so, run this code:

```
install.packages(c("tidyverse","rmarkdown","coefplot","pscl","brant","nnet",
                   "mlogit","AER"))
```

Workshop Plan

The workshop will review the topic, cover the main R functions, and go through a few live demos. Following the workshop, an annotated lab handout will be provided with a small problem set for you to practice on your own.

Workshop Delivery

This workshop will be offered virtually using Zoom.[1] All workshop materials will be provided in a shared folder in Google drive.

Topics

The topics covered during the workshop include:

- Binary outcome models (logit/probit)
- Ordered outcome models (ordered logit/probit)
- Unordered outcome models (multinomial logit/probit)
- Count models (Poisson, negative binomial)
- Statistical significance and regression coefficient interpretation
- Visualizations of regression coefficients

Registration

To sign-up for the workshop, please fill in this Google form by **Monday, March 14, 2022**: https://forms.gle/VVE1a9AmxzewWtyf8

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[1]Note: it was originally scheduled for in-person in 246 Hesburgh Library.