STV 4025
Quantitative Political Science
SPRING 2012

Instructor: Prof. Håvard Hegre & Prof. Bjørn Høyland

Time and Location: Mondays and Wednesdays 10:15-12:00, Room 847

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Overview and Objectives

The aim of this course is enable students to evaluate and replicate quantitative research in political science. The course will introduce the students with a large range of statistical techniques that political scientists use in their analysis. Some of the techniques are fairly general, while others are develop for specific topics in political science. The course will emphasis practical aspects such as execution of the analysis and presentation of results.

We will use **R**, a free statistical programming language. It is available at `www.r-project.org`. Here, you will also find a lot of useful information about **R**. I also recommend you to use Rstudio, `www.rstudio.org` for running **R** on your computer. I use LaTeX to typeset my papers and presentations. It works great in combination with **R** and **Rstudio**.

Assessment

There will be 5 written assignments. The assignments are to be submitted in fronter. The deadline for submission is Sunday 23:59 the following week. All five assignments must be submitted in order to pass the course. The will be no final exam.

Required Texts

- Long, S. J. (1997). *Regression Models for Categorical and Limited Dependent Variables.* SAGE, London

- Box-Steffensmeier, J. M. and Jones, B. S. (2004). *Event History Modeling: A Guide to Social Scientists.* Cambridge University Press

- Poole, K. T. (2005). *Spatial Models of Parliamentary Voting.* Cambridge University Press

Useful texts for further study

- King, G. (1989). *Unifying Political Methodology: The Likelihood Theory of Statistical Inferences.* Cambridge University Press, Cambridge

- Fox, J. (2008). *Applied Regression Analysis and Generalized Linear Models.* SAGE

- Greene, W. H. (2011). *Econometric Analysis.* Prentice Hall

- Gill, J. (2006). *Essential Mathematics for Political and Social Research.* Cambridge University Press

Course Outline

The main text for the first part of the course is Long, S. J. (1997). *Regression Models for Categorical and Limited Dependent Variables.* SAGE, London. This book provides an accessible overview of generalized linear models. We will consider both standard and multilevel versions of such models. For the week on event history models, we will rely on Box-Steffensmeier, J. M. and Jones, B. S. (2004). *Event History Modeling: A Guide to Social Scientists.* Cambridge University Press as it has established itself as the key text of event history models in political science. Similarly, for the week on parliamentary voting, we use the book by Poole, K. T. (2005). *Spatial Models of Parliamentary Voting.* Cambridge University Press, as is the key reference in this literature. In addition, multiple articles are assigned. Some of these will be theoretical, while others will be applied.

Learning R

There are several free resources for learning R on the R-webpage. In addition, there are many books available, a selection is listed below. For the models we consider in this class, we will provide computing notes, Høyland, B. (2012). *R-notes for quantitative political science.* These will develop as we move along. Suggestions for improvements and additions are much welcome.

Useful R books

- Gelman, A. and Hill, J. (2007). *Data Analysis Using Regression and Multilevel/hierarchical Models.* Cambridge University Press

- Fox, J. and Weisberg, S. (2011). *An R Companion to Applied Regression.* Sage, 2 edition

Intro and Binary choice (23/4)

- Long, S. J. (1997). *Regression Models for Categorical and Limited Dependent Variables.* SAGE, London (Chs. 1 - 4)

- King, G., Tomz, M., and Wittenberg, J. (2000). Making the Most of Statistical Analyses: Improving Interpretation and Presentation. *American Journal of Political Science*, 44(2, April):341–355

- Brambor, T., Clark, W. R., and Golder, M. (2006). Understanding interaction models: Improving empirical analyses. *Political Analysis*, 14(1):63 – 82

- Jones, B. and Steenbergen, M. (2002). Modeling Multilevel Data Structures. *American Journal of Political Science*, 46:218–237

Application:

- Hix, S. (2004). Electoral Institutions and Legislative Behavior: Explaining Voting-Defection in the European Parliament. *World Politics*, 56(1):194–223

- Replication data: `Hix2004.dta`

Ordered dependent variable (25/4)

- Long, S. J. (1997). *Regression Models for Categorical and Limited Dependent Variables*. SAGE, London (Ch. 5)

- Jones, B. and Westerland, C. (2006). Order matters (?): Alternatives to conventional practices for ordinal categorical response variables. Unpublished Manuscript, Univeristy of Arizona

Application

- Branton, R. P. and Jones, B. S. (2005). Reexamining racial attitudes: The conditional relationship between diversity and socioeconomic environment. *American Journal of Political Science*, 49:359–372

- Replication data: `AJPS2005repdata.dta`

Categorical choice (30/4)

- Long, S. J. (1997). *Regression Models for Categorical and Limited Dependent Variables*. SAGE, London (Ch. 6)

- Alvarez, M. R. and Nagler, J. (1998). When politics and models collide: Estimating models of multiparty elections. *American Journal of Political Science*, 42(1):55 – 96

Application

- Anderson, R., Tilley, J., and Heath, A. F. (2005). Political knowledge and enlightened preferences: Party choice through the electoral cycle. *British Journal of Political Science*, 35(2):285 – 302

- Replication data: `UKVote.dta`

Count models (2/5)

- Long, S. J. (1997). *Regression Models for Categorical and Limited Dependent Variables.* SAGE, London (Chs. 8 - 9)

- Zeileis, A., Kleiber, C., and Jackman, S. (2011). Regression Models for Count Data in R. Technical report, Univeristy of Innsbruck

Application

- Yoshinaka, A., McElroy, G., and Bowler, S. (2010). The appointment of rapporteurs in the european parliament. *Legislative Studies Quarterly*, 35(4):457 – 486

- Replication data `EPCommittees.dta`

Event history models (7/5 and 9/5)

- Box-Steffensmeier, J. M. and Jones, B. S. (2004). *Event History Modeling: A Guide to Social Scientists.* Cambridge University Press

- Licht, A. A. (2011). Change Comes with Time: Substantive Interpretation of Nonproportional Hazards in Event History Analysis. *Political Analysis*, 19(2):227 – 243

Applications

- King, G., Alt, J. E., Burns, N. E., and Laver, M. (1990). A Unified Model of Cabinet Dissolution in Parliamentary Democracies. *American Journal of Political Science*, 34(3, August):846–871

- Replication data `cabinet.dta`

- Gates, S., Hegre, H., Jones, M. P., and Strand, H. (2006). Institutional inconsistency and political instability: Polity duration, 1800 - 2000. *American Journal of Political Science*, 50(4):893 – 908

- Replication data `AJPS2006Institutions.dta`

Estimating positions from votes (14/5 and 16/5)

- Poole, K. T. (2005). *Spatial Models of Parliamentary Voting.* Cambridge University Press

- Poole, K. (2011). Using Poole's Optimal Classification in R. Technical report

- Poole, K., Lewis, J., Lo, J., and Carroll, R. (2007). Scaling Roll Call Votes with wnominate in R. *Journal of Statistical Software*, 22(1):1 – 23

- Spirling, A. and McLean, M. I. (2007). UK OC OK? Interpreting Optimal Classification Scores for the U.K. House of Commons. *Political Analysis*, 15(1):85–96

Applications

- Voeten, E. (2000). Clashes in the assembly. *International Organization*, 54:185–215

- Replication data `UN.RData`

- Hix, S., Noury, A., and Roland, G. (2006). Dimensions of Politics in the European Parliament. *American Journal of Political Science*, 50(2):494–511

- Replication data `EPVoting.RData`

Estimating positions from surveys (21/5)

- Linzer, D. A. and Lewis, J. B. (2011). polca: An r package for polytomous variable latent class analysis. *Journal of Statistical Software*, 42(11):1 – 29

Application

- Blaydes, L. and Linzer, D. A. (2008). The political economy of women's support for fundamentalist islam. *World Politics*, 60(4):576 – 609

- Replication material `BlaydesLinzer-WP08.R`

Estimating positions from text (23/5)

- Laver, M., Benoit, K., and Garry, J. (2003). Extracting Policy Positions from Political Texts Using Words as Data. *American Political Science Review*, 97(2):311–331

- Slapin, J. B. and Proksch, S. O. (2008). A scaling model for estimating time-series party positions from texts. *American Journal of Political Science*, 52(3):705 – 22

- Benoit, K., Mikhaylov, S., and Laver, M. (2009). Treating words as data with error: Uncertainty in text statements of policy positions. *American Journal of Political Science*, 53(2):495 – 513

Application

- Proksch, S. O. and Slapin, J. B. (2009). Position taking in european parliament speeches. *British Journal of Political Science*, 40(3):587 – 611

- Replication data `EPDebates.RData`