

PLSC 597: “Modern Measurement”

Exercise Two

March 9, 2018

Introduction

This exercise is focused on item response theory.

Exercise

We’ll be working with the “wide” version of the Supreme Court Database (<http://scdb.wustl.edu/>). These are data on every U.S. Supreme Court decision (and the votes of the justices therein) for the 1946-2016 Terms;¹ each line of data is a single case (docket number), while columns record information about that case. The codebook with details about the data is available at the website. For our purposes, the key variables are:

- `voteZZZ` variables, indicating the vote of the justice. This variable has several different values; see the codebook for details.
- `directionZZZ` variables, indicating the ideological direction of each justice’s vote (0 for a “liberal” vote, 1 for a “conservative” vote).
- `majorityZZZ` variables, indicating whether (=1) or not (=0) a justice’s vote was with the majority in the decision.

For all three of these variable types, “ZZZ” denotes the name of the justice in question.

For nearly eighty years, researchers have used the votes of the justices to measure their ideological positions. The current state of the art in this area are the Martin and Quinn (2001) scores (<http://mqscores.berkeley.edu>). Those scores are conceived and estimated in a Bayesian framework, and use an autoregressive term to allow a justice’s scores to change over time. Here, we’re going to consider a couple alternative ideas, using an IRT approach.

Your assignment is as follows:

1. First, fit a standard two-parameter logistic IRT model to generate estimates of the ideological positions of the justices. Do so using the `direction` variables. Present and briefly discuss your results, including a discussion of any potential concerns.
2. Leaving ideology aside for the moment, consider the information contained in the `majority` variables. Suppose for a moment that this reflects the extent of “agreeableness” (or, perhaps, “conformity”) of a justice, in that a justice who appears in the majority often is more agreeable / conformist than one who is often in the minority. Fit one or more IRT model(s) of the degree of agreeableness/conformity, and briefly present and discuss those results.
3. In a 2009 paper, McGuire et al.² note the presence of “affirmance bias” on the Supreme Court: a situation where the association between justices’ ideologies and their votes is significantly stronger in cases where the Court reverses the lower court’s decision than in cases resulting in an affirmance. In this part, fit and compare separate measurement models of the justices’ ideology for cases where the Court affirmed the lower court decision and those where the Court reversed. Discuss the differences you find, both statistically and substantively, and speculate on the bases for those differences.

This homework is due *electronically* by 5:00 p.m. EST on **Monday, March 19, 2018**, and is worth 100 points.

¹SCOTUS terms run from October through June or July; so the 2016 term is the most recent “complete” term of the Court.

²McGuire, Kevin T., Georg Vanberg, Charles E. Smith, and Gregory A. Caldeira, “Measuring Policy Content on the U.S. Supreme Court.” *Journal of Politics* 71:1305-1321.