The Ashcroft Model

Methodology note – May 2017

The Ashcroft Model analyses survey data using a binomial multilevel logistic regression. Data are split between Scotland and England/Wales to allow us to use Scotland specific variables in the model.

Splitting Scotland and England/Wales meant using less complex models for Scotland due to the reduced sample size. However, the more focused model led to better performance despite the fewer predictor variables. This is because a lot of the variation is captured by 2015 vote choice. Not all models used all the variables listed below. For instance, the UKIP model in Scotland used only a few variables because the number of observations was so small.

Variables we use in Scotland include:

- Vote choice in the 2015 general election
- Vote choice in the 2016 EU referendum
- The interaction of 2015 party vote choice and vote choice in the EU referendum
- Age
- National identity
- Marital Status
- Gender
- Housing tenure
- Westminster Constituency
- Constituency vote share of each party in the 2015 general election
- Percentage of people who voted for independence or not in the Scottish independence referendum
- The proportion of people who signed the anti another independence referendum petition

Variables we use in England/Wales include:

- Vote choice in the 2015 general election
- Vote choice in the 2016 EU referendum
- The interaction of 2015 party vote choice and vote choice in the EU referendum
- Age
- The interaction of age and your 2015 vote choice
- National identity
- Marital Status
- Gender
- Education
- Housing tenure
- Nuts 1 Region
- Nuts 2 Region
- Westminster Constituency

The Ashcroft Model then uses three different turnout scenarios to produce three different electoral estimates.

Scenario 1 – Turnout 2015

This turnout model is based on data obtained from the British Election Study (BES), a poll of 3000 respondents obtained through face to face interviews.

The question we model is not actually the response to a question, but data the BES has obtained from the marked register. The BES has retrospectively checked whether respondents actually voted by looking them up on the electoral register and recorded this in its poll. This data is not available for the entire sample, so we have a final dataset of 1650 respondents.

We call this variable validated turnout. The variables we use to predict validated turnout are:

- Age
- Education
- Housing Tenure
- The interaction of age and education
- Marital Status
- Westminster Constituency
- The turnout of the Westminster constituency in the 2015 election

The model gives the most accurate picture of differential turnout amongst demographic groups at the 2015 General Election due to the dependent variable (validated turnout) being based on recorded data rather than recall.

Scenario 2 – Turnout 2016

This turnout model is based on the question in the Ashcroft project surveys "How did you vote in the EU referendum last June?". We classify everyone who says they voted Leave or Remain as having voted, people who say they didn't vote as not voting, and drop everyone else.

We are able to build a more complex model than for validated turnout because the sample size is larger. The model we use is based on:

- Age
- Education
- Housing Tenure
- The interaction of age and education
- Marital Status
- Gender
- National Identity
- Westminster Constituency
- The turnout of the Westminster constituency in the EU referendum

Scenario 3 – Turnout 2017

This turnout model is based on the question in the Ashcroft project surveys "A new UK General Election has been called for Thursday 8th June. How likely are to vote in that election?". We classify respondents who say they will definitely vote (10) as a 1 (in other words voting), and everyone else, i.e. respondents who say 0-9 or "don't know" as a 0 (i.e. not voting).

The model we use is based on:

- Age
- Education
- Housing Tenure
- The interaction of age and education
- Marital Status
- Gender
- National Identity
- Westminster Constituency
- The turnout of the Westminster constituency in the 2015 general election