Using ACS data to study the 2016 election in the classroom: A case study from Bucknell University

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Outline

• Background
  • Bucknell University, Organization, Education Goals

• The Project / Classroom
  • Assignments, obtaining data, GIS

• Challenges and Reflections
Background
Bucknell University

• Small liberal arts college in central Pennsylvania

• Organization
  • Library and Information Technology are combined.
  • Digital Pedagogy & Scholarship Department and Research Services provide direct support to faculty and students

• Mission
  • To partner with faculty to drive the effective integration of technology to enhance teaching, learning and research.
Case study: Economics 258 – Intermediate Political Economy

• Student / faculty summer research project began 3 years ago to focus on income inequality
• Research project expanded into a classroom module on the topic
• Students, faculty, and staff worked together to develop the materials
  • Data – elections, ACS, other sources
  • Classroom materials – syllabi, exercises
• Both the research project and the classroom work have continued to evolve over the last 3 years
Multiple education goals

Topical
- income inequality within an economics classroom, both historical and political dimensions need to be addressed

Skill
- using geographic information systems to develop technical literacy and analytic abilities

Data
- information and statistical literacies

Subject expertise
- integration with the economics major
Inspirations

Contemporary events and journalism
Media visualizations and analysis of voting patterns, inequality, the rise of Trump

Politics and the election of 2016
National data for both primaries and the general election

The 10 Variables Most Closely Linked to a County’s Support for Donald Trump

A correlation of 1 means the variable is a perfect indicator of Trump support.* Negative correlations are shown in red.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CORRELATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>White, no high school diploma</td>
<td>0.61</td>
</tr>
<tr>
<td>“Americans” Percent reporting ancestry as “American” on the census</td>
<td>0.57</td>
</tr>
<tr>
<td>Mobile homes Percent living in a mobile home</td>
<td>0.54</td>
</tr>
<tr>
<td>“Old economy” jobs Includes agriculture, construction, manufacturing, trade</td>
<td>0.50</td>
</tr>
<tr>
<td>History of voting for segregationists Support for George Wallace (1968)</td>
<td>0.47</td>
</tr>
<tr>
<td>Labor participation rate</td>
<td>-0.43</td>
</tr>
<tr>
<td>Born in United States</td>
<td>0.43</td>
</tr>
<tr>
<td>Evangelical Christians</td>
<td>0.42</td>
</tr>
<tr>
<td>History of voting for liberal Republicans Support for John B. Anderson (1980)</td>
<td>-0.42</td>
</tr>
<tr>
<td>White Anglo-Saxon Protestants</td>
<td>-0.42</td>
</tr>
</tbody>
</table>

* Measuring Trump support as Mr. Trump’s percentage of the primary vote times the Republican share of the two-party vote in the 2012 presidential election.

Sources: 2016 election results from The Associated Press; the American Community Survey; Dave Leip’s Atlas of U.S. Presidential Elections; the Equality of Opportunity Project.
Methods

Teamwork with faculty
- Helping develop assignments
- Presenting material in classroom and labs

Working with students
- Individual and group sessions with students to help gather and clean data, prepare data for class

Cooperation among departments
- Collaboration between research services and pedagogy and scholarship department
- Sharing expertise in data, statistics, and GIS
To the classroom
The project interaction

• Developing the classroom prompt
• Background reading before class
• Working with GIS to map the data during class session
Gathering

- Multiple sources
- ACS
- State governments
- Research organizations
- Academics
Collating
Teaching
Challenges and reflections
Challenges

• Balancing technology instruction and subject area knowledge
• Preparing data layers and software for use in class
• Time limits – 1 lab session for the topic, creating the data dictionary
• Teaching data and information literacy
  • Evaluating data sources
  • Judging reliability
  • Dealing with statistics
• Too much or too little data
Using the ACS

• Finding data sources that are relevant to the topic
• And can be used in the classroom
• Manipulating data in order to put it in a form that can be easily mapped
• Pruning the level of detail for undergraduate instruction
Reactions and reflections

- Faculty have been pleased to receive help
  - Gathering data
  - Teaching GIS
  - Improving data and information literacy

- Students
  - Have an opportunity to work with GIS and faculty on current research topics
  - Address contemporary issues
  - Presenting on research at conferences

- Staff
  - Are able to teach about cool technologies and data resources
Lessons learned

• Working together across boundaries
  • Student, staff, and faculty
  • Building relationships over time

• Combining research and teaching (liberal arts)
  • Research projects become teaching examples with the right encouragement

• Clear expectations
  • Between faculty, staff, and students
  • Well-documented with regular interactions and meetings
Thanks

• Contact information
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  • @tsuomela
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