

Researchers find evidence of growing polarization in US

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An Iowa State University study of ballot data shows evidence of the growing polarization among voters in America. Credit: Bob Elbert

(Phys.org) —Personal values, race, as well as social and economic inequality, all contribute to the growing political divide in America. To better understand the impact of this division, Iowa State University researchers developed a technique to determine if election results truly represent the "will of the people." Their study of ballot data from the Cambridge, Massachusetts, City Council elections provides new evidence of the growing polarization of U.S. voters.

Sunanda Roy, a lecturer of economics at Iowa State, and colleagues Abhijit Chandra, a professor of mechanical engineering, and Kuan Chuen Wu, a graduate student of mechanical engineering, analyzed eight years of election results dating back to 1997. Roy says the Cambridge council elections are unique in that [voters](#) are asked to rank the candidates by preference. To fill the nine seats on the council, there are often as many as 18 to 25 candidates on the ballot. With the voters' rankings, the candidates with first-place votes greater than or equal to a specific number or quota are elected.

The problem is the process based on first-place votes is somewhat arbitrary, Roy said. For example, some voters may rank candidates in the order of A, B and C. However, an equal number of voters may rank candidates C, B and A. Equal groups of voters with opposite preferences, as in this example, demonstrates voter polarization. Any process that focuses only on first place votes fails to consider the fact that an equal number of voters may have placed the candidate last. That is to say, the process does not treat all rankings impartially.

"If we are only going to count the first-place votes, then the candidate with the most first place votes gets elected. However, he may not be the best choice if there are an equal number of people who hate him. Unfortunately, with many elections, including the U.S. presidential election, that's what we do; we count only the first place votes," Roy said.

Using linear algebraic techniques, ISU researchers developed a method to measure the level of polarization and applied the method for each election year. Researchers found less evidence of polarization during the period from 1997 to 2003, but it steadily increased from 2005 to 2011.

"From the anecdotal evidence we know there is increasing polarization. We developed our methodology to try to understand how much

polarization is there, and what we found is that it has been increasing steadily," Roy said. "The more voters we have whose preferences are directly reverse of each other, then we have more [polarization](#)."

Roy presented the findings at the French Economic Association meeting in June. Wu shared the research results at the Spring 2014 Midwest Economic Theory meetings in May.

Implication for governance

The research raises a larger question about how government officials should be elected – a question the ISU team is not attempting to answer with this research. However, since most elections require voters to select one candidate and not rank them by preference, Roy says they are working to develop the technique to apply it to any style of election. For now, their technique only works in elections in which voters must rank the candidates.

"What we're addressing with our methodology is whether the electorate is divided or not," Roy said. "If it's very divided or very polarized, then using the plurality method, under which the candidate with the most first-place votes wins, is not the right thing to do. You can have a candidate who is elected, but it is not reasonable to say that the people want him, or that the election outcome is the will of the people."

Researchers hope to work with election officials in Australia, which like the Cambridge City Council requires voters to rank candidates, to collect data for a future study. They are interested in finding other communities around the world that use a similar ranking system to further test their methodology. They are also working to extend the technique to apply to other [election](#) styles which do not require voters to rank [candidates](#).

More information: The study results are available online:

www.econ.iastate.edu/sites/def...17330-2014-02-26.pdf

Provided by Iowa State University

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