Is the internet causing political polarization? Evidence from demographics

Persp-Research PS2 - Critical Review

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This paper *Is the internet causing political polarization? Evidence from demographics* (Boxell, Gentzkow, and Shapiro 2017) combines nine previously proposed measures to construct an index of political polarization among US adults to answer the question: whether the internet is a primary driver of rising political polarization? Is the hypothesis rised from previous literature supported by demographic information of US adults, in a way that the group of adults who are more exposed to Internet would show stronger intendence of political polarization?

The primary source of this paper's data are the American National Election Studies' (ANES) 1948-2012 Time Series Cumulative (American National Election Study 2016), 2008 Time Series Study (2015a), and 2012 Time Series Study data sets (2015b). The authors used these data sets mainly because the ANES is a nationally representative, face-to-face survey of the voting-age population that is conducted in both pre- and post-election rounds and contains numerous demographic variables, internet access/usage, and political measures. To include information on adults' social media usage, the authors also used microdata from the Pew Research Center to plot trends in social media use from 2005 to 2012 (Pew Research Center 2005).

To interpret the data, authors of this paper referred to quite a few literature since they applied nine previous measures of political polarization on the data sets. These measures include: the ANES thermometer ratings of parties, **Partisan affect polarization**, and ideologies, **Ideological affect polarization**, for peoples feelings towards those on the other side of the political spectrum have changed over time (Iyengar, Sood, and Lelkes 2012, Gentzkow (2016)), the degree of partisan sorting, **Partisan sorting**, which measures the extent to which partisan identity is correlated with self-reported ideology (Mason 2015, Davis and Dunaway (2016)), **Straight-ticket**, which is the frequency with which individuals split their votes across parties in an election (Hetherington 2001), **Perceived partisan-ideology polarization** from Davis and Dunaway (2016), the extent to which individuals perceive there

to be ideological differences between the Republican and Democrat parties, four measures from Abramowitz and Saunders (2008), **Issue consistency**, the similarity of ideological positions across issues, **Issue divergence**, the average correlation between seven questions and party affiliation for respondents who are not strictly independents, **Partisan-ideology polarization**, the extent which the self-reported ideological affiliation of Republicans and Democrats differ, and **Religious polarization**.

This paper constructs an overall index of polarization using these nine measures:

$$Index_t = \frac{1}{|M|} \sum_{m \in M} \frac{m_t}{m_{1996}}$$

where M is the set of all nine polarization measures and m_{1996} is for normalization. Together with the nine measures, authors of this paper did both descriptive analysis and an identification exercise by showing the trends in polarization index by demographic groups and the results from a statistical inference using a nonparametric bootstrap. The results show that among different age groups, polarization for those aged 75+ grows by 0.38 index points between 1996 and 2012, and polarization for those aged 65+ grows by 0.32 index points over the same period, while polarization among those aged 18–39 only increased by 0.05 index points between 1996 and 2012. Bootstrap standard errors show that at the five percent level, one can reject the hypotheses that the increase for those aged 18–39 is equal to the increase for those aged 65+ and that the increase for those aged 18–39 is equal to the increase for those aged 75+. The results are robust to using cohorts instead of age groups, which shows that the demographic groups least likely to use the internet and social media show largest growth in polarization.

To include internet access, this paper also shows trends in polarization according to a broad index of predicted and actual internet access. For predicted values, they suppose that

$$Pr(internet_i = 1|X_i) = X_i^{'}\beta$$

where β is a vector of parameters and X_i is a vector of demographic chracteristics. They then estimate the value of this variable on the sample of year 1996. For predicted internet access, they show that respondents with greater likelihood of having access to the internet experienced slower growth in polarization between 1996 and 2012. With actual internet access, respondents with internet access have greater polarization in 2012 than those without internet access, but the trends are parallel between the two groups between 1996 and 2012.

To sum up, using descriptive analysis and bootstrap, authors of this paper find it difficult to

conclude that the access to internet serves as a major driver for the recent rise of polarization, especially social media access. However, they're not saying internet/social media access is not important, they imply that it may have certain level of influence which haven't been captured by current data.

My suggestions for this paper would be:

First, based on current results of this paper, authors could control the age and see if the internet access between respondents in the same age group would have any influence on the increase of polarization. Authors admit that social media increases polarization among the young while some other factor increases it among the old. Age, while could serve as a signal for internet access, still might include other factors affect polarization. Thus when authors have the predicted and actual value for internet/media access, I would suggest them focusing on these two variables.

Second, the construction of the overall index seems a little general. Based on the definition of these polarization measures, some of them seem to be more similar to each other than to the others. When averaging them all together, the value of index might have a tendency of being more similar to those highly-related measures. I would suggest include the covariance of these measures in the computation of the index, and maybe do a weighted average over them.

References:

Abramowitz, Alan I, and Kyle L Saunders. 2008. "Is Polarization a Myth?" *The Journal of Politics* 70 (2). Cambridge University Press New York, USA: 542–55.

American National Election Study. 2015a. "The Anes 2008 Time Series Study." http://www.electionstudies.org/studypages/anes_timeseries_2008/anes_timeseries_2008.htm.

———. 2015b. "The Anes 2012 Time Series Study." http://www.electionstudies.org/studypages/anes_timeseries_2012/anes_timeseries_2012.htm.

———. 2016. "The Anes 1948-2012 Time Series Cumulative Data File." http://www.electionstudies.org/studypages/anes_timeseries_cdf/anes_timeseries_cdf.htm.

Boxell, Levi, Matthew Gentzkow, and Jesse M Shapiro. 2017. "Is the Internet Causing Political Polarization? Evidence from Demographics." National Bureau of Economic Research.

Davis, Nicholas T, and Johanna L Dunaway. 2016. "Party Polarization, Media Choice, and Mass Partisan-Ideological Sorting." *Public Opinion Quarterly*. AAPOR, nfw002.

Gentzkow, Matthew. 2016. "Polarization in 2016." *Toulouse Network of Information Technology White Paper*.

Hetherington, Marc J. 2001. "Resurgent Mass Partisanship: The Role of Elite Polarization." In *American Political Science Association*, 95:619–31. 03. Cambridge Univ Press.

Iyengar, Shanto, Gaurav Sood, and Yphtach Lelkes. 2012. "Affect, Not Ideology a Social Identity Perspective on Polarization." *Public Opinion Quarterly* 76 (3). AAPOR: 405–31.

Mason, Lilliana. 2015. "'I Disrespectfully Agree': The Differential Effects of Partisan Sorting on Social and Issue Polarization." *American Journal of Political Science* 59 (1). Wiley Online Library: 128–45.

Pew Research Center. 2005. "The Pew Research Center's Inter Project." http://www.pewinternet.org/datasets/.