

# From Online to Offline: Bridging Facebook Social Connectedness Index and 2020 Election Results

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## Highlights

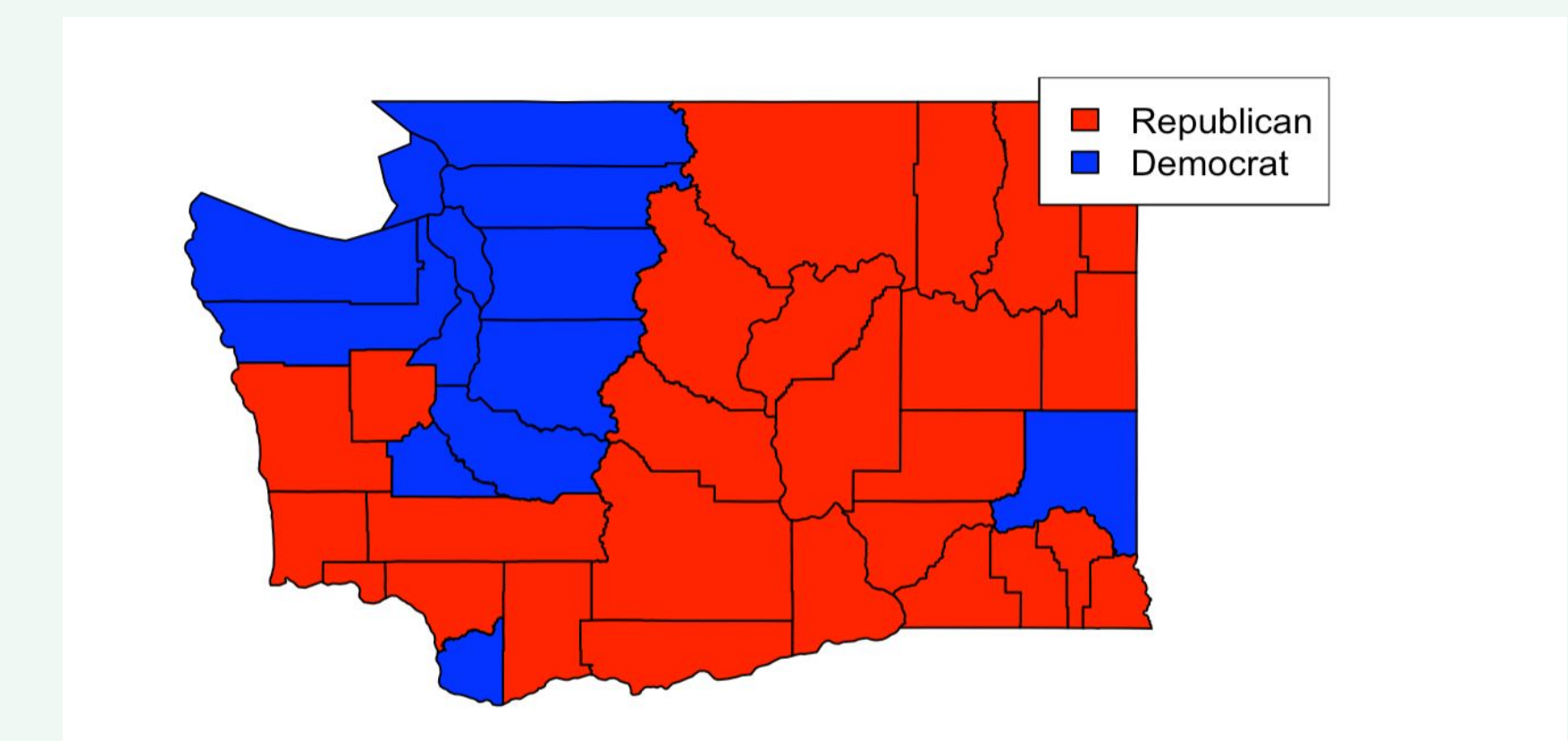
- SCI is a robust predictor of the level of similarity in political polarization
- Online connections sometimes reveal hidden phenomenon which are not obvious offline
- One caveat: endogeneity of SCI owing to population size and connection diversity

## Research Question

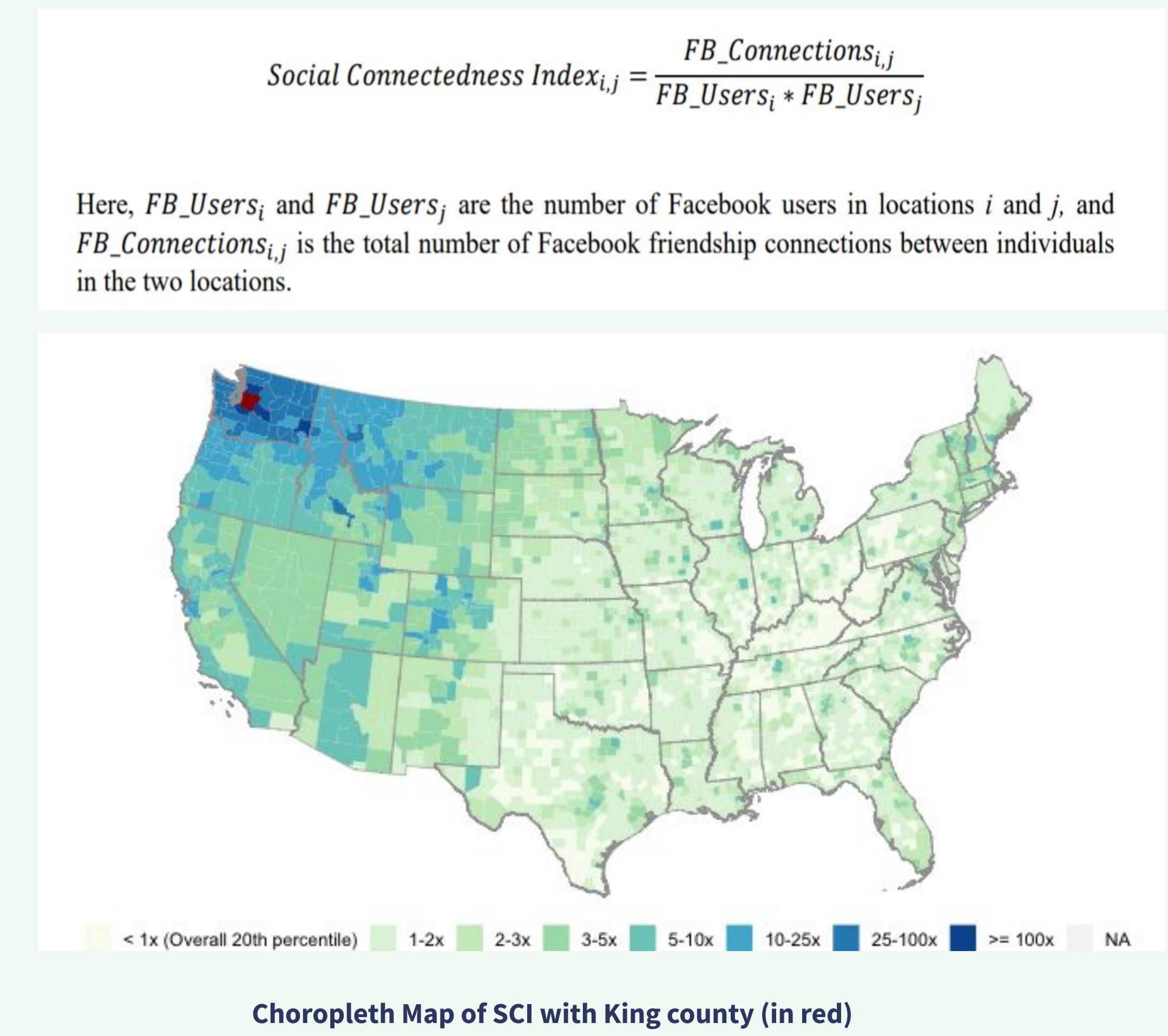
What impacts the level of similarity in political polarization? Our project aims to investigate this question by zooming into 2020 US election results in Washington State. Narrowly speaking, our research examines the extent to which similarities in demographic features and social connectedness impact the similarity in political polarization across pairs of Washington counties.

## Data Sources

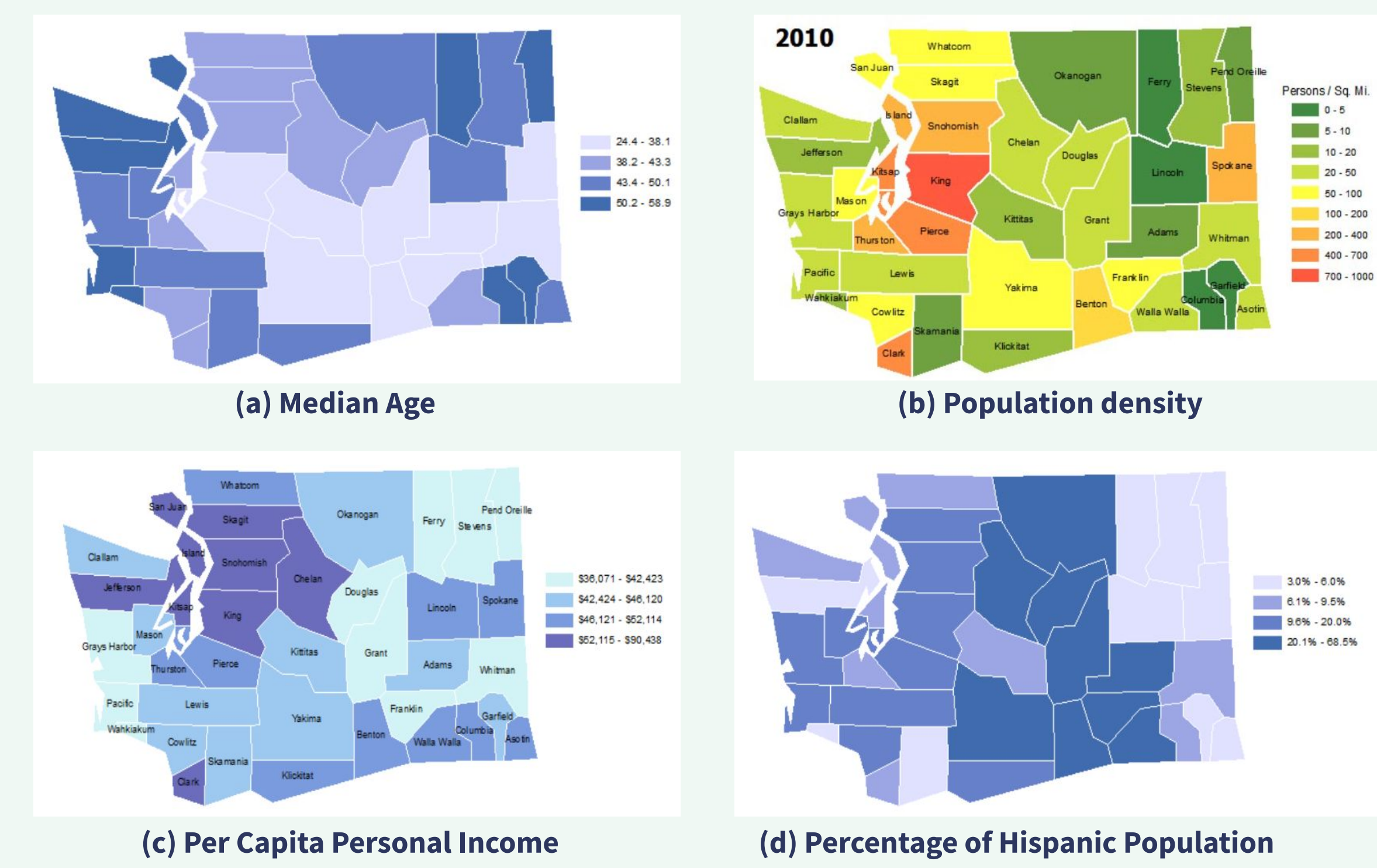
2020 US election data in Washington State



Facebook Social Connectedness Index (SCI)



Demographic and socioeconomic data in Washington State

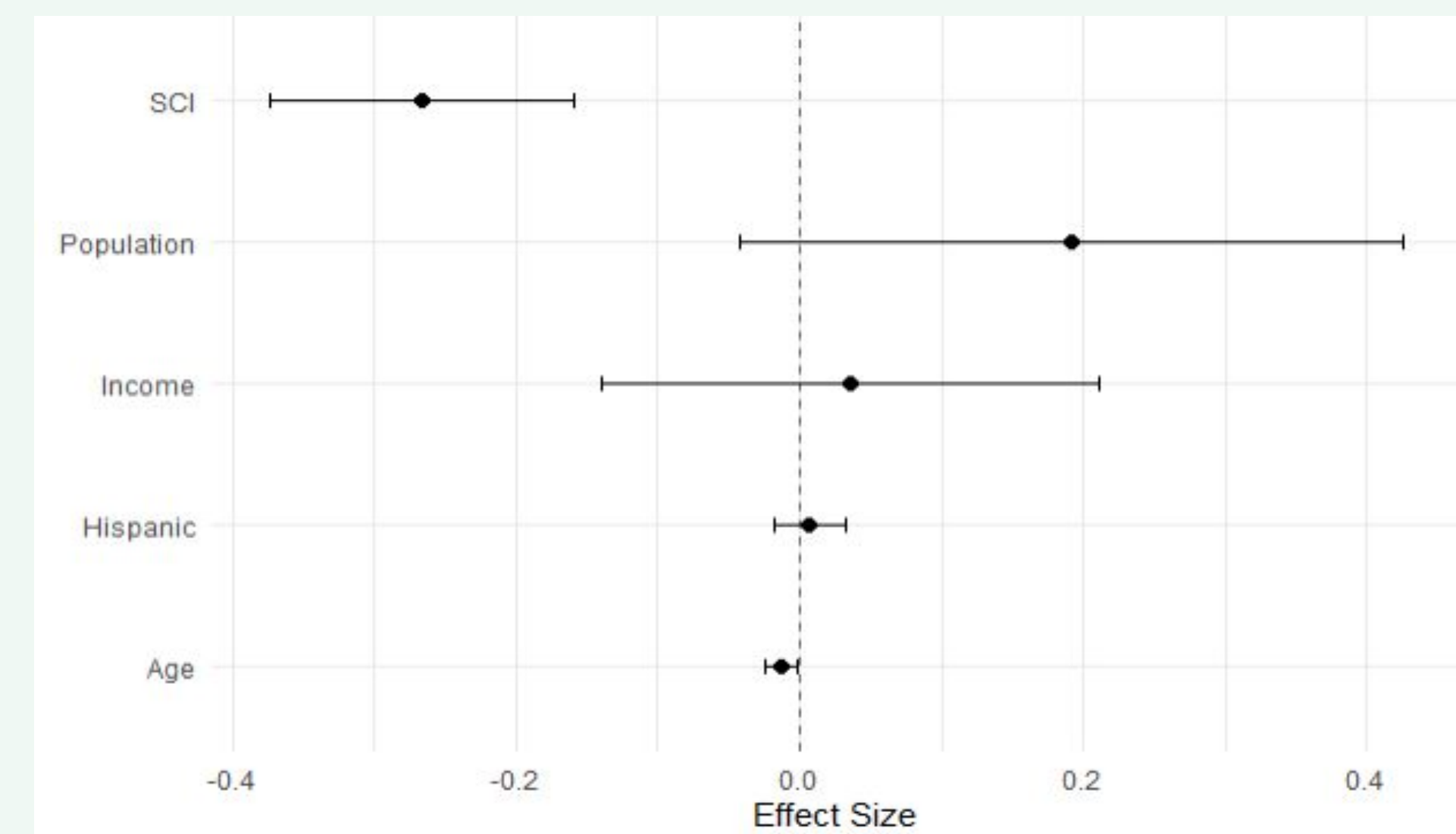


## Predictors of Similarity

$$Difference_{dem-gop} = \beta_0 + \beta_1 log(SCI_{ij}) + X_{ij} + \epsilon_{ij}$$

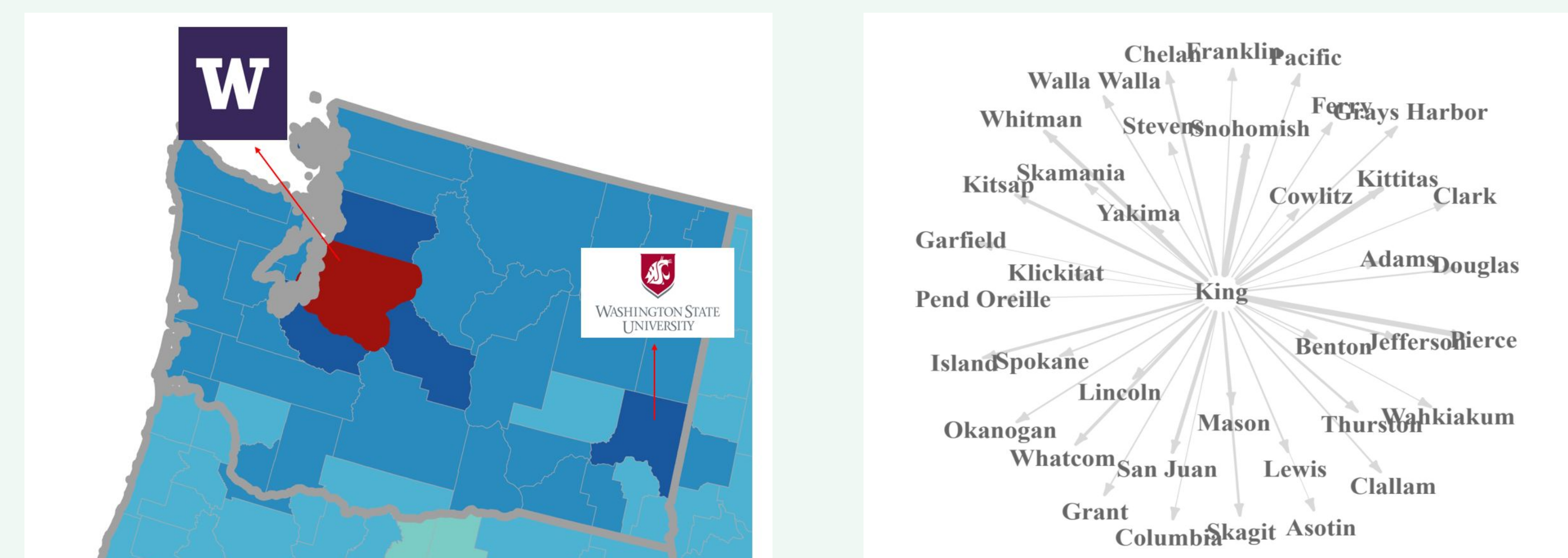
The unit of analysis is a pair of counties with King County as a reference group. The dependent variable is the level of similarity in political polarization between two counties, measured by the difference in the difference of vote share between Democratic Party and Republican Party. The smaller the value, the more similar in political polarization these two counties are.

Our key indicator variable is the social connectedness index (SCI) between two counties.  $X_{ij}$  includes measures of similarities and dissimilarities in terms of demographic and socioeconomic features, including (1) age (difference in median age), (2) population (difference in population density), (3) economic conditions (difference in average per capita personal income), and (4) minority status (difference in percentage of Hispanic population).



The more socially connected the two counties are, the more similar in political polarization of the two counties.

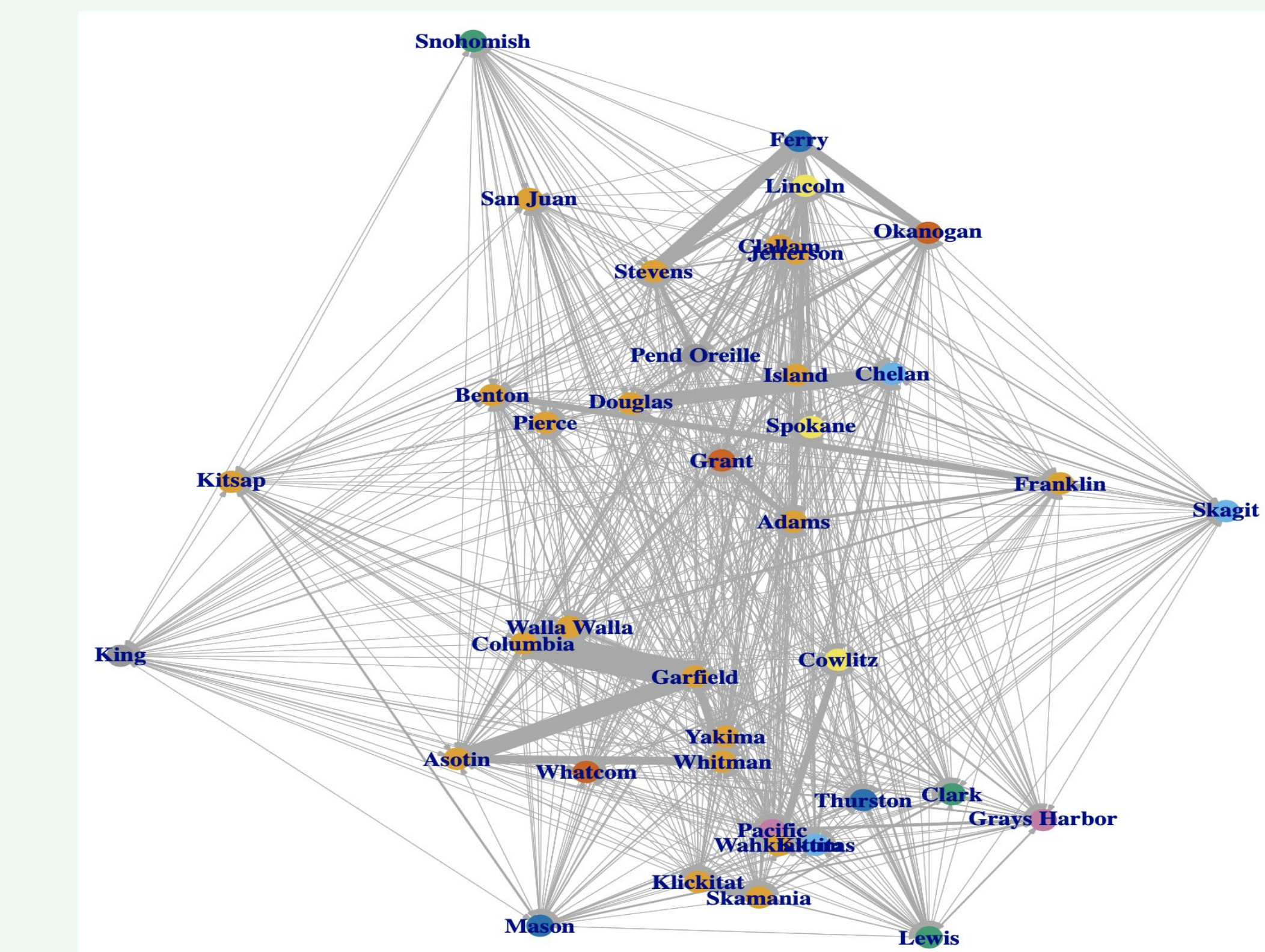
## Zooming into SCI



The high social connectedness between King County and Whitman County shows that geographical proximity may not well predict social connectedness.

One of the factors that may complicate the linkage is educational connection. For example, educational activities between WSU (in Whitman County) and UW (in King County) may explain their high social connectedness.

## Caveat



SCI measures the probability of two people from different counties becoming facebook friends, which may be endogenous to population size and connection diversity. For example, King County tends to be more cosmopolitan than Walla Walla County, which renders more diverse connections between King County and others (thinner edges); in contrast, the connections of Walla Walla County are more concentrated in rural counties (thicker edges).