

# What Alternative State Borders Would Consistently Put People Who Live Near Each Other In The Same State?

## How Would Quality of Life And Politics Vary In The New States?

States are the preeminent geopolitical units of the United States. Americans work within different public institutions and laws in each state. However, state boundaries are counterintuitive, given their importance. For example, in Kansas City, the Missouri-Kansas boundary cuts the metropolitan area in half. In Texas, El Paso is 285 miles from the nearest metropolitan area in Texas (Odessa) but only 45 miles from the closest one in New Mexico (Las Cruces).

What if the state boundaries of the United States matched where Americans live? This project applies machine learning to reimagine the borders of the contiguous United States. The algorithm groups people who live near each other, placing the new state borders in unpopulated expanses of land between groups. The algorithm suggests grouping the contiguous US population into 28 new states. The top map draws boundaries (blue lines) around population centers (brown dots) to illustrate how the new boundaries correspond to where people live.

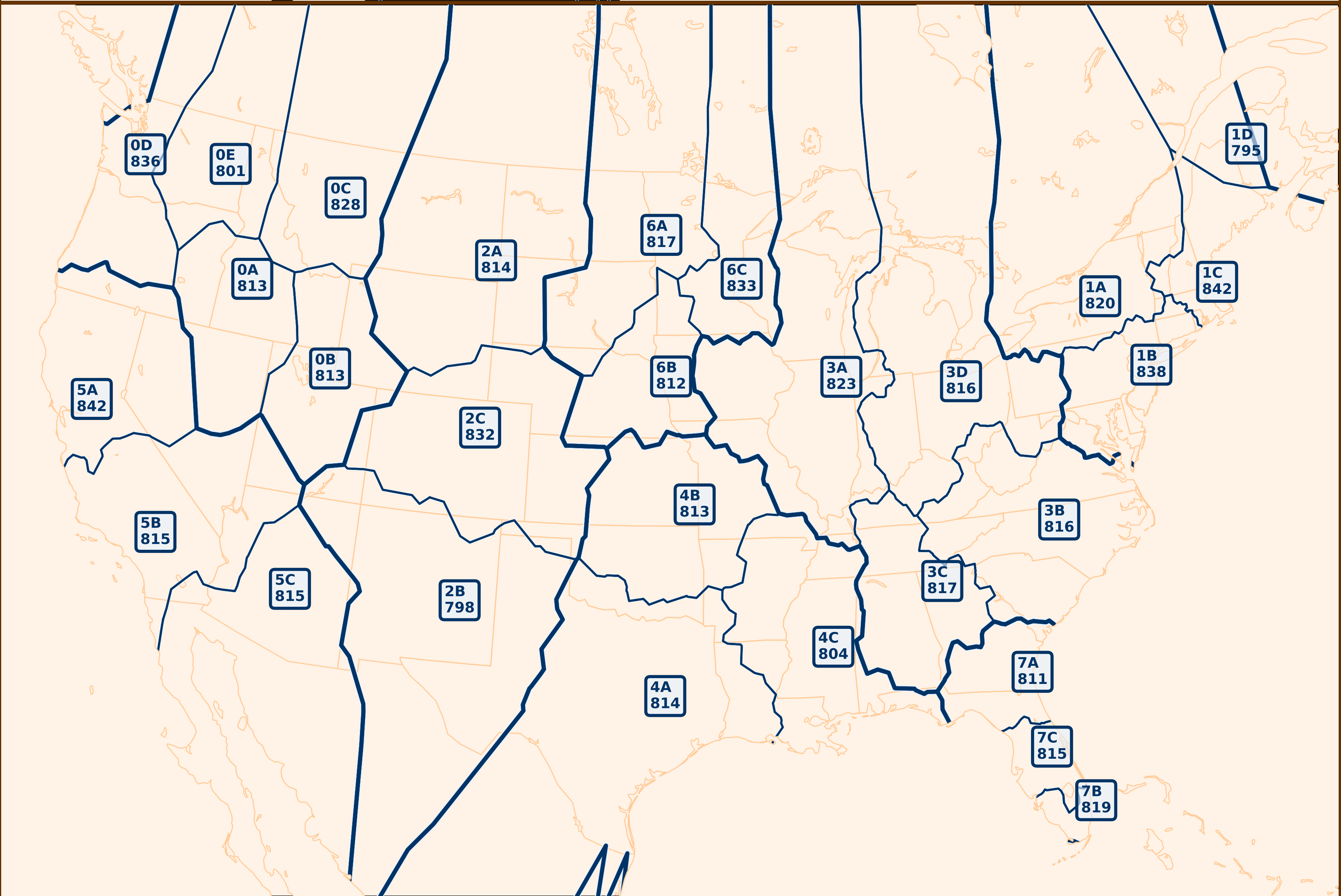
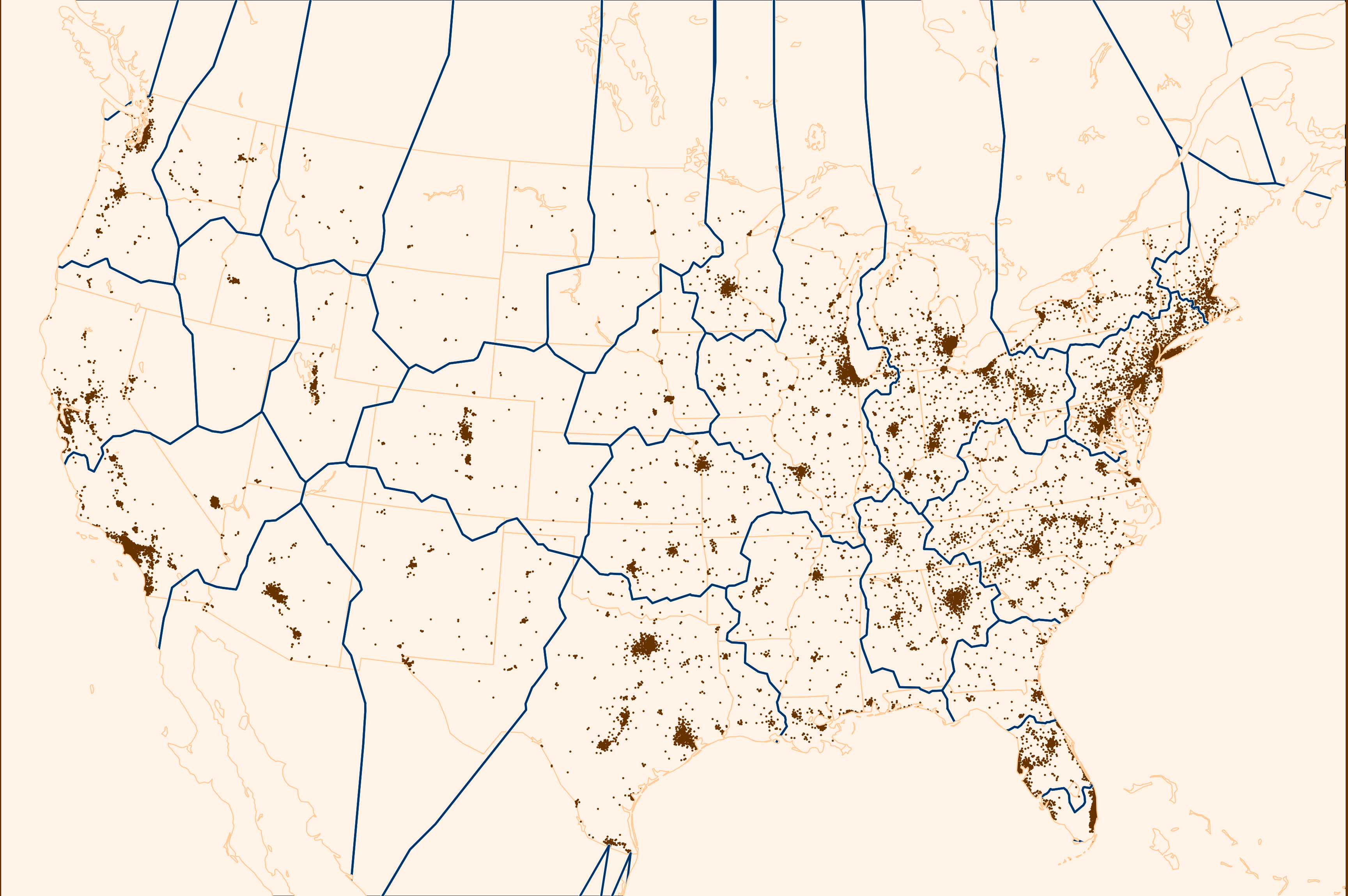
How would the new states differ in typical quality of life and politics? The bottom map labels each new state and scores them according to the United Nation's Human Development Index (HDI), a quality of life indicator. HDI scores each location according to the average lifespan, average income, and average years of education. The maximum score is 1,000. The side panels provide insights into the differences between the new states.

Top Left - This bar chart depicts the HDI scores for each new state. The median new state HDI score is 815, and over half of the new states' scores are within 12 points of the median score. However, HDI scores are notably higher for the new states containing Seattle WA, San Francisco CA, and the urban corridor from Boston MA to Washington DC ("Bos-Wash").

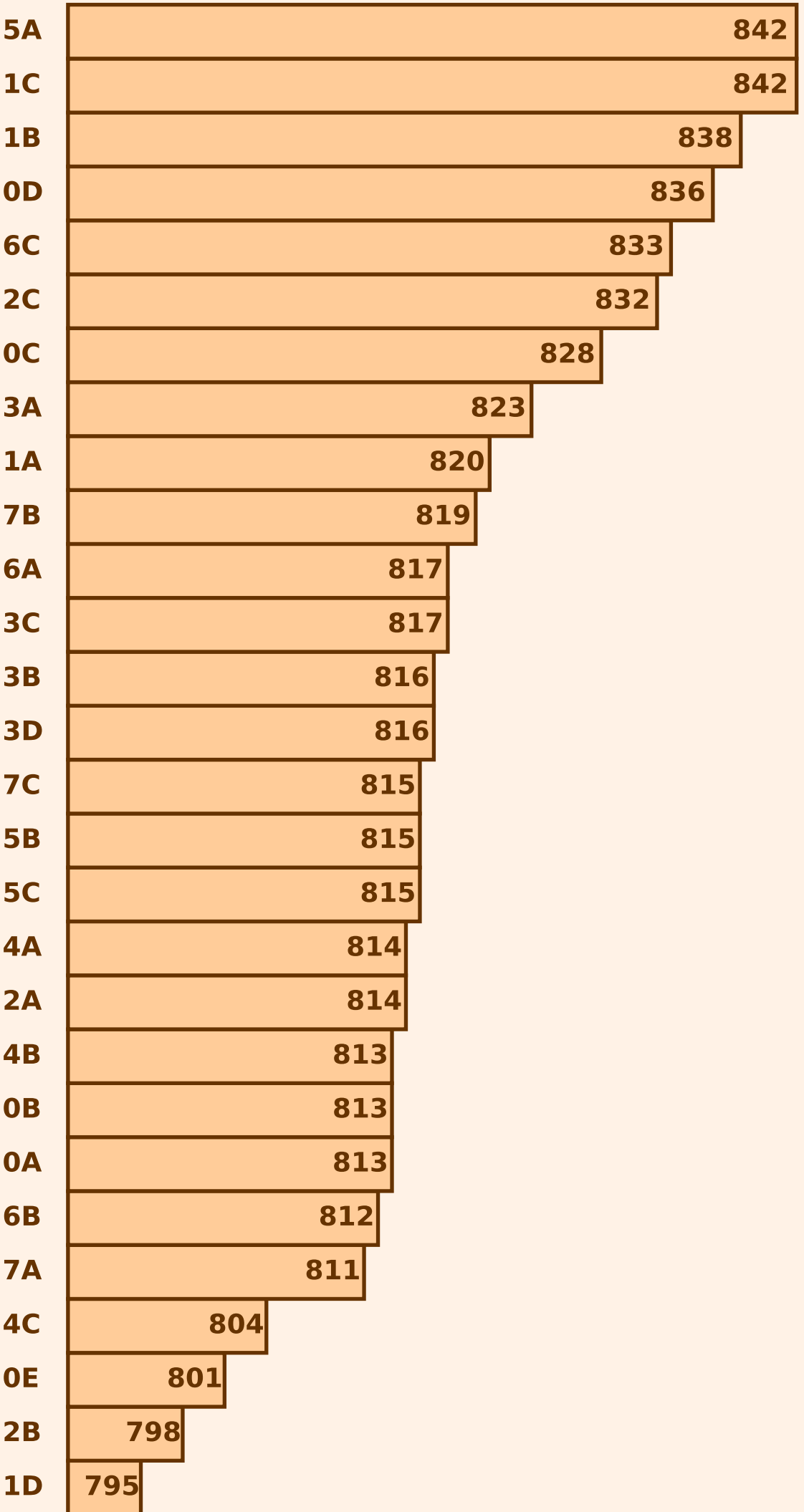
Top Right - This bar chart depicts the total population for each new state, sorted in the same order as the HDI scores in the Top Left chart. The US population is heavily concentrated in a small number of urban corridors. Consequently, the top five new states account for 148 million people, which is over 52 percent of the contiguous United States' population. While less populous new states vary widely in HDI scores, highly populous new states tend to have HDI scores higher than the median. The average HDI score among new states with populations greater than 18 million is 820, compared to 811 among new states with populations below 2 million.

Bottom Left -This bar chart depicts the percentage of voters in each new state that voted for the Republican candidate in the 2020 US presidential election (henceforth called "Republican voters"). This is a strong indicator of the possible political tendencies of each new state. The bar order matches the HDI score order in the Top Left chart. The median state contains 50 percent Republican voters. No state has more than 70 percent or less than 31 percent. There is some correspondence between HDI scores and Republican voter percentages. Of the new states with the top ten HDI scores, 0 have a Republican voter majority. Of the new states with the bottom ten HDI scores, 8 have a Republican voter majority.

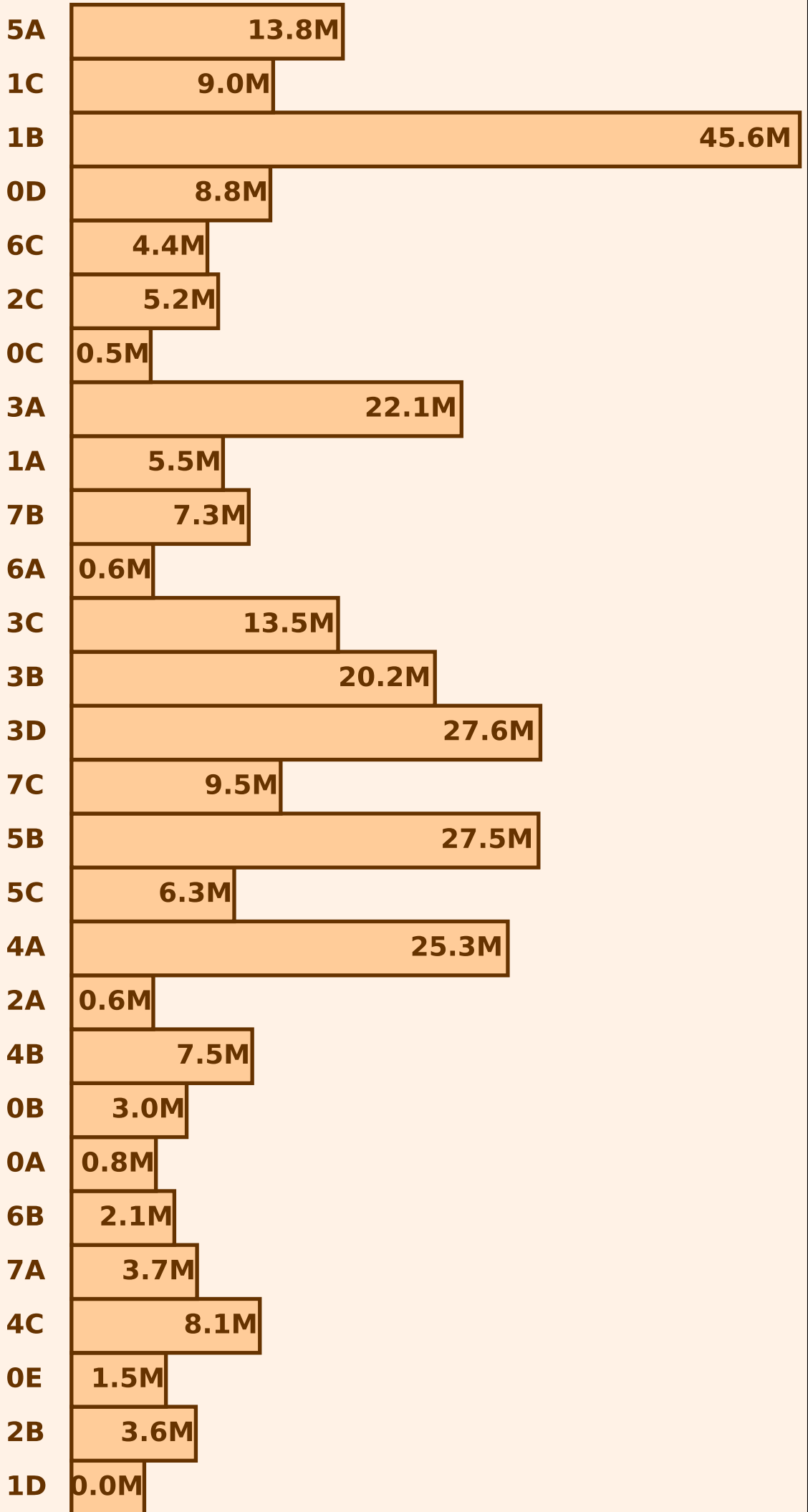
Bottom Right - These two scatterplots show how different aspects of the new states correspond to each other. The top scatterplot indicates that new states with a low total population also tend to have a high percentage of Republican voters. The bottom scatterplot shows that new states with high life expectancies also tend to have higher average years of education. However, a few new states have high life expectancies and low average years of schooling. These states tend to be rural and less populous. Income per capita, life expectancy, and average years of education are the three components of HDI scores.



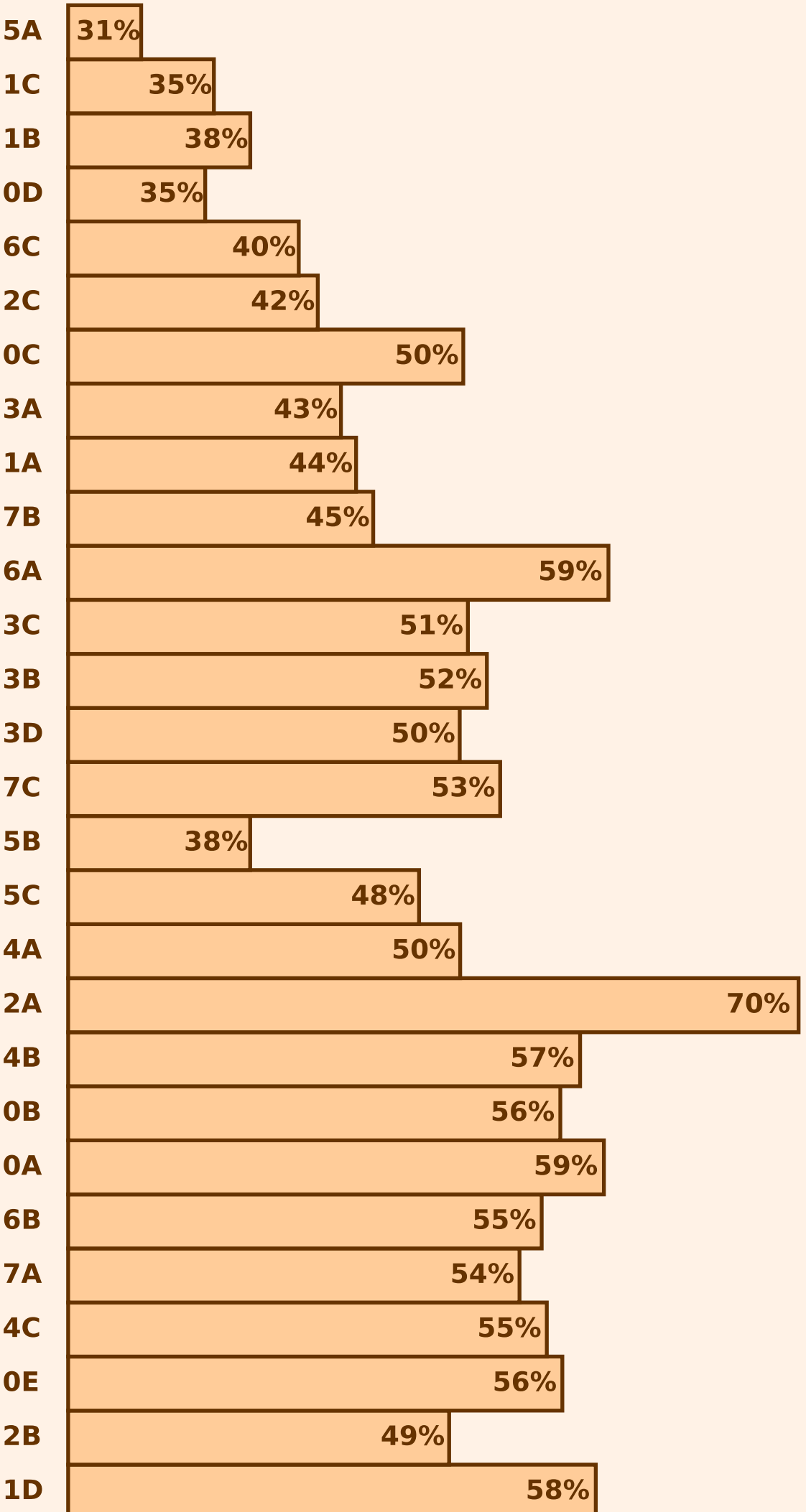
HDI Score For Each Cluster



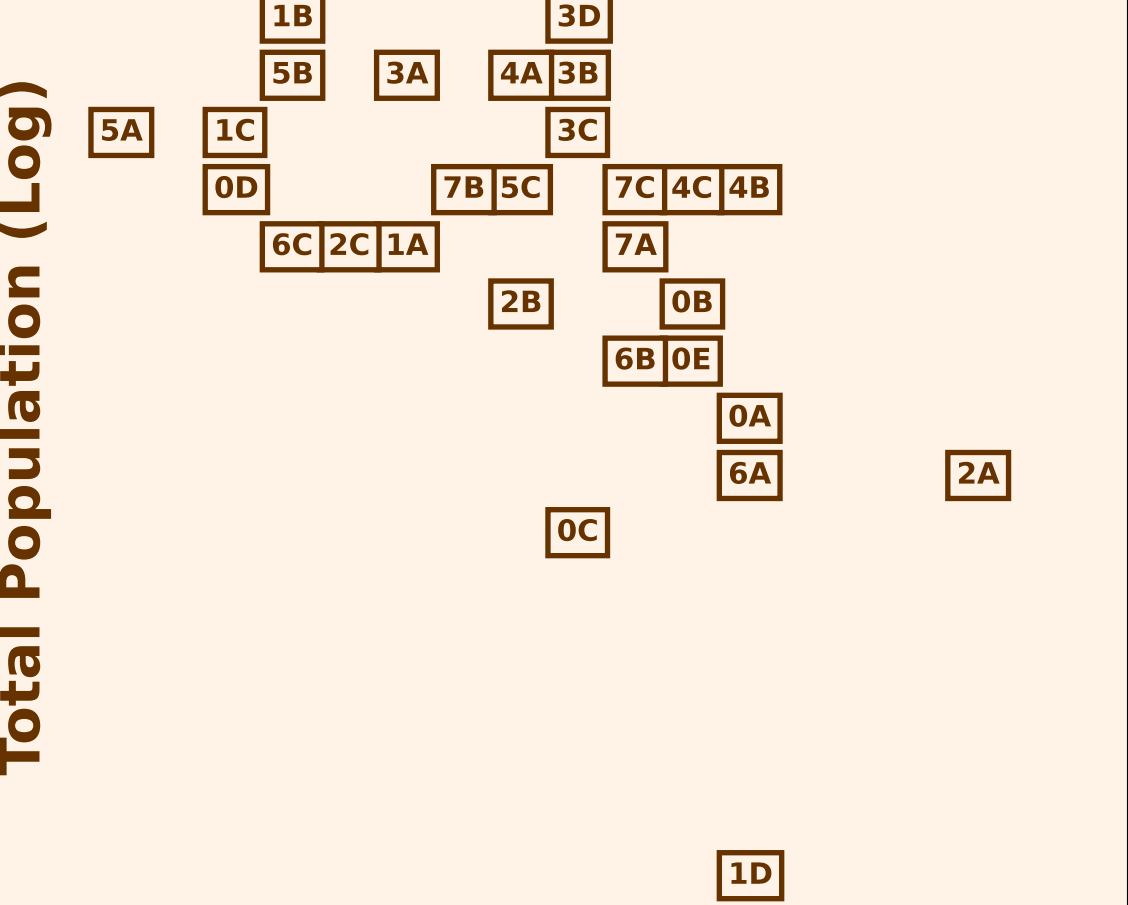
Population Totals For Each Cluster



Percent Voting For The Republican Presidential Candidate in 2020



Correspondence Of Republican Voters (%) And Total Population



Percentage Voting Republican

Correspondence Of Education And Life Expectancy

