

URP4273- Group 2

Sanders Campaign Donations Analysis

Austen Dole, Drew Boylson, Neisha Pierre, Adam Schebler
4-19-2017

Our group decided to analyze the states of Oklahoma (OK) and Massachusetts (MA). We chose these states because of their historically opposite political affiliations. Oklahoma has historically been a red state while Massachusetts has been predominately blue. The last time that Oklahoma was not a “red” state was in 1964 and the last time that Massachusetts was not a “blue” state was 1984.

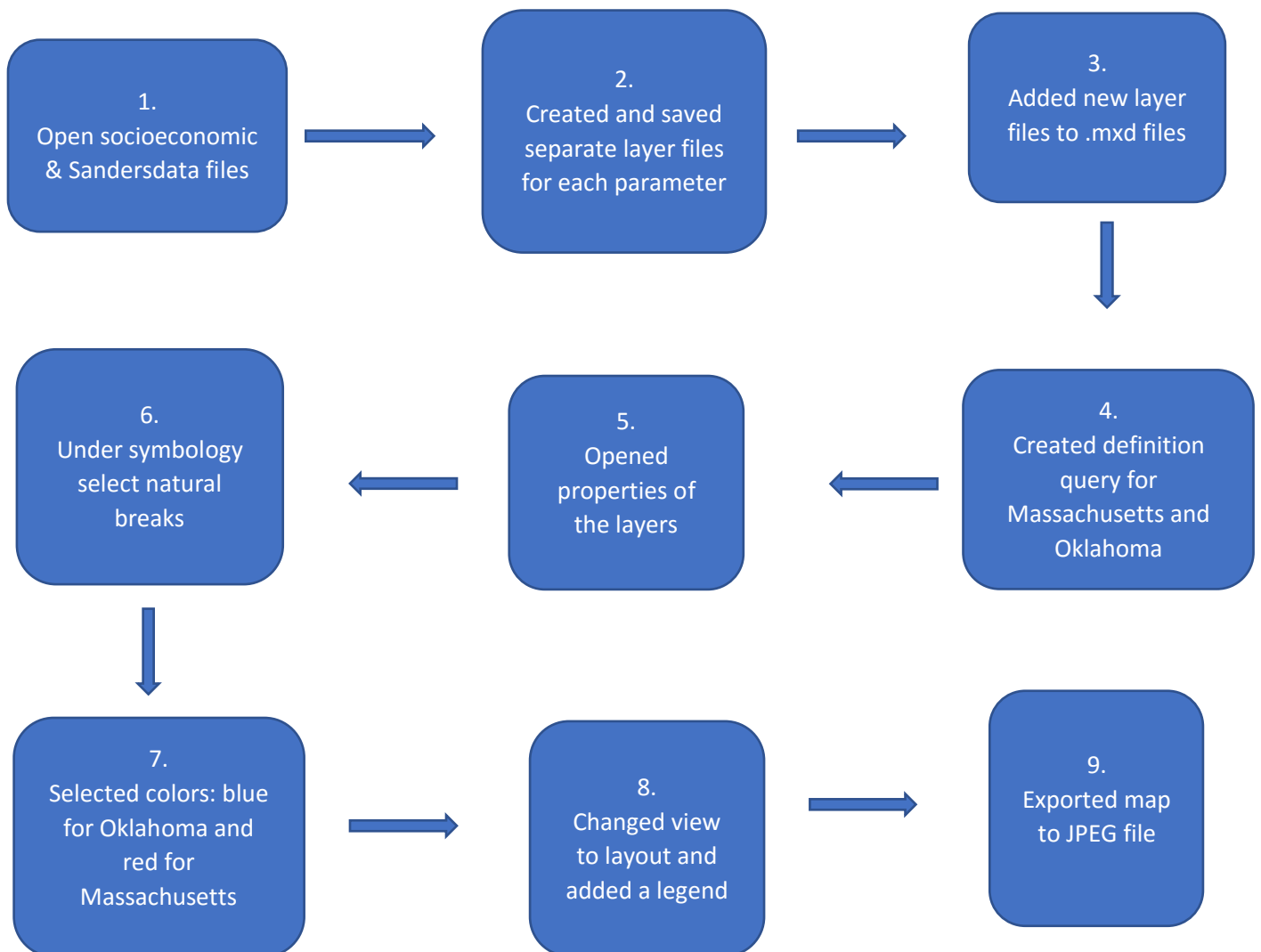
We chose three parameters to analyze – education, economic status and urbanization. More narrowly, we further broke our education parameter into individuals who earned a high school diploma, those who earned less than a high school diploma, some who completed part of high school, and those who earned a college degree. To examine economic status we collected data on income, disposable income, and net worth. Our last parameter was whether the area is considered to be an urban or rural community. “Urban clusters,” as defined by the U.S. Census Bureau contain between 2,500 and 50,000 people. “Urban areas” contain over 50,000 people. Rural communities are defined as populations that are not classified as urban.

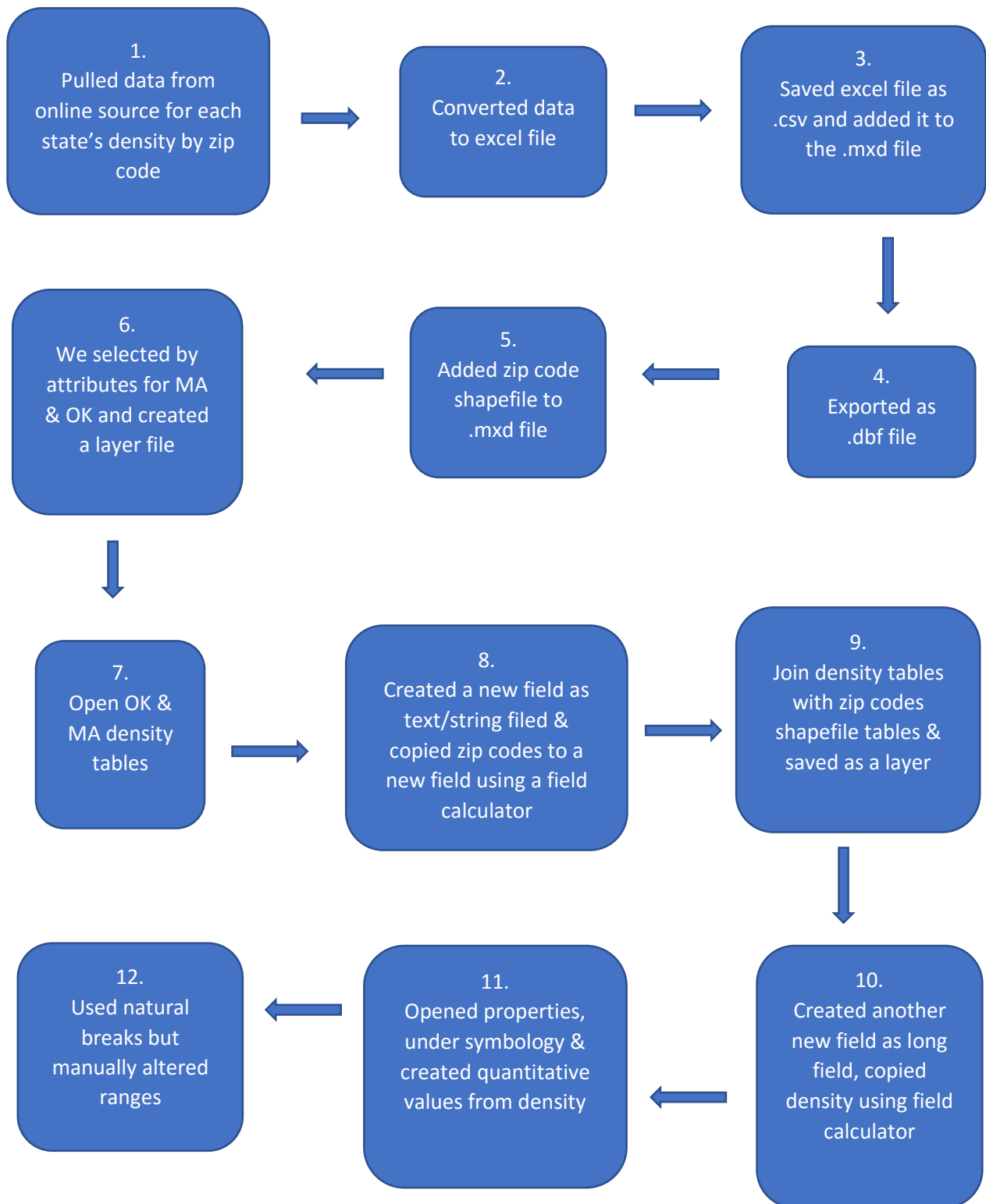
At the start of our analysis our group chose not to state a hypothesis. Our goal was to look at the correlation between education, economic status, and living in urban vs. rural areas, and the amount that was contributed to the Bernie Sanders Campaign.

Our basic methodology was the same across the board for educational level, economic status, and donation data. We started by opening the SocioEconomic and SandersData files. From there we created and saved separate layer files for each of the parameters we needed. We added our new layer files to a new .mxd file and then created a definition query for Oklahoma and Massachusetts. We then opened the properties for each of the layers, entered the symbology tab, selected natural breaks. We used six (6) breaks for the data. We chose color for the map - blue for Oklahoma and red for Massachusetts and then clicked “apply” to the map. Changing the view to layout was next, and for reader convenience we added a legend and exported the map as a JPEG file.

The methodology to determine urban versus rural areas was similar but did require more steps and was a much more complicated process than our other parameters. We had to pull data for each states density by zip code from an online database. We translated that data into an Excel document. We had to resave this Excel document as a .csv and then we added it

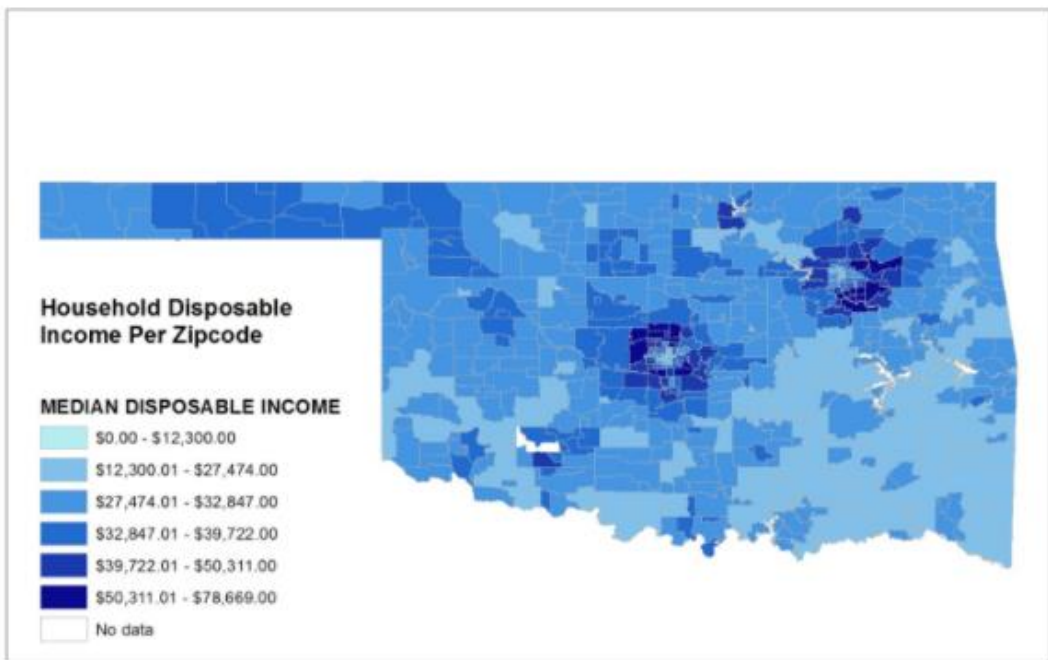
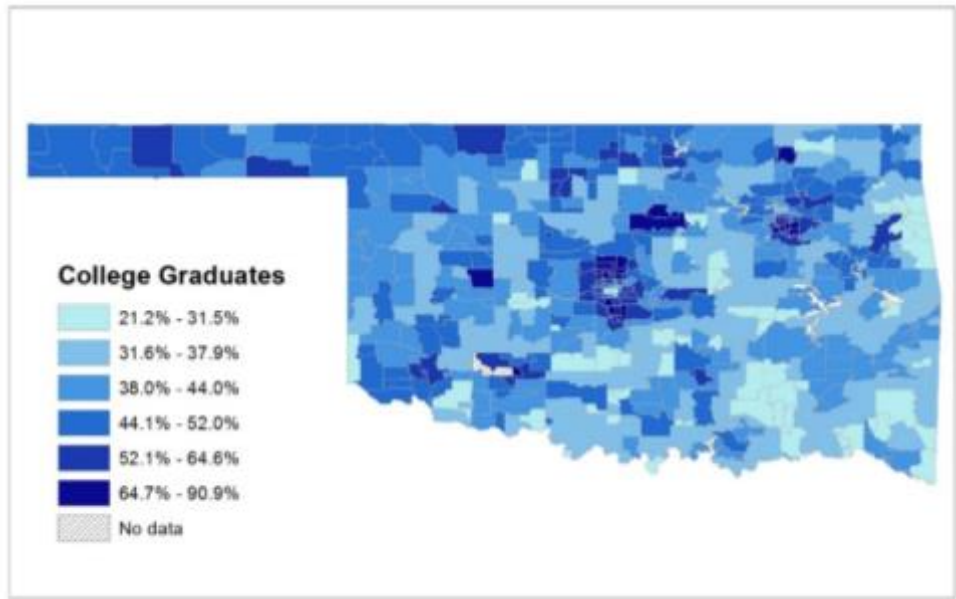
into the .mxd file and then it was finally exported as a .bdf file. The zip code shapefile was added to the .mxd file. We used the “select by attributes” function for Massachusetts and Oklahoma and created a new layer file. The OK and MA density tables were then opened and a new field was created as a text/string field. Finally the zip codes were copied using the field calculator. The density tables and zip code shapefiles were joined and saved as a layer. A new field was created and the density numbers were copied using the field calculator. Under the properties tab, symbology was accessed and we created quantitative values for the density. We used natural breaks but we had to manually alter the ranges to better fit the data. Once each map was completed the view was changed to layout, a legend was added, and the maps were exported to JPEG. Below is our flow chart that outlines our basic methodology. A second flow chart was made to show the more detailed work required for creating our density maps.





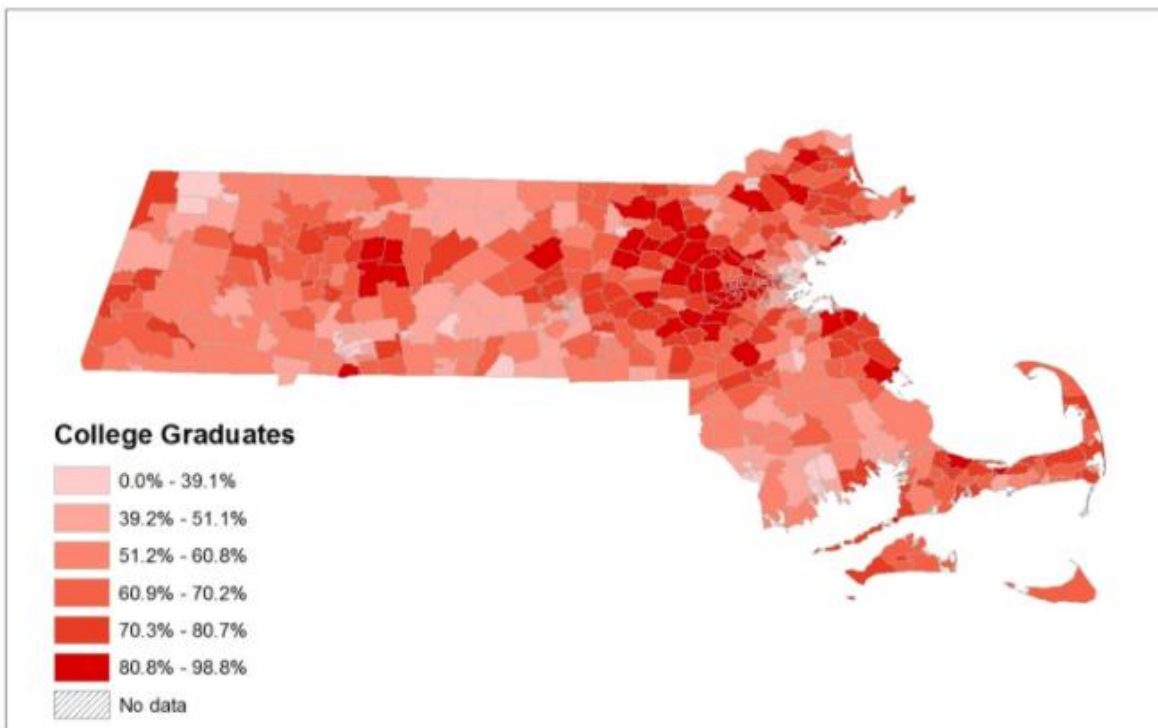
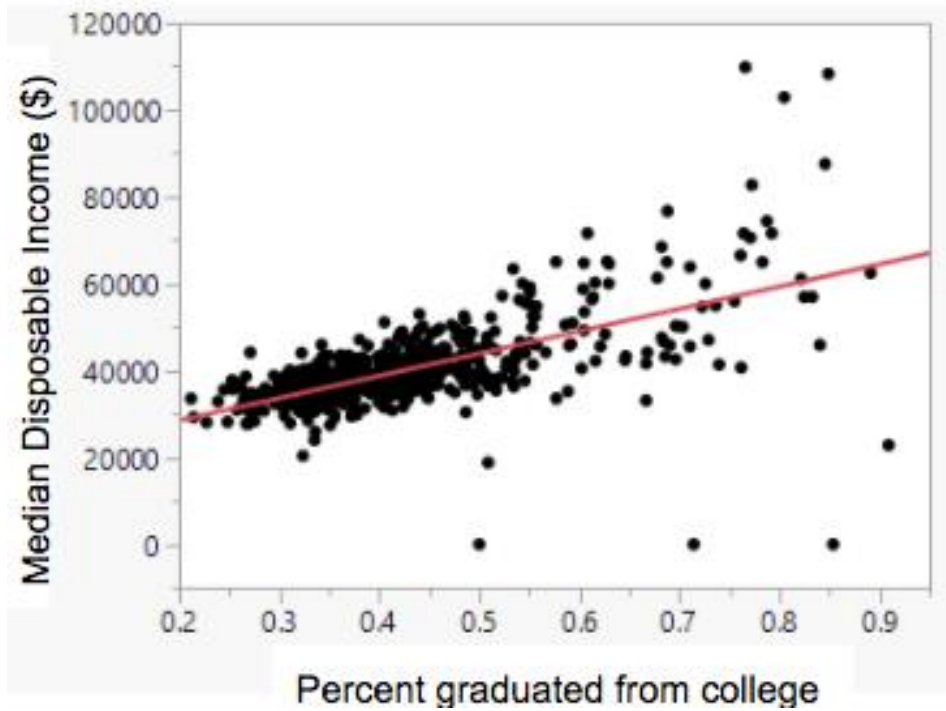
When we crossed-referenced our parameters to find any correlation to a higher donation level we did not find a strong correlation or anything that was statistically significant. Below you will find our map for Oklahoma's population who completed a college degree and a map for their median disposable income. The areas with the highest percent of college

graduates are in the state's biggest cities (Tulsa and Oklahoma City) where two large universities are located. The same held true for the population with the largest disposable income. However when we looked for a correlation college education level and median disposable income there was not a strong correlation, only an R-squared of .39.

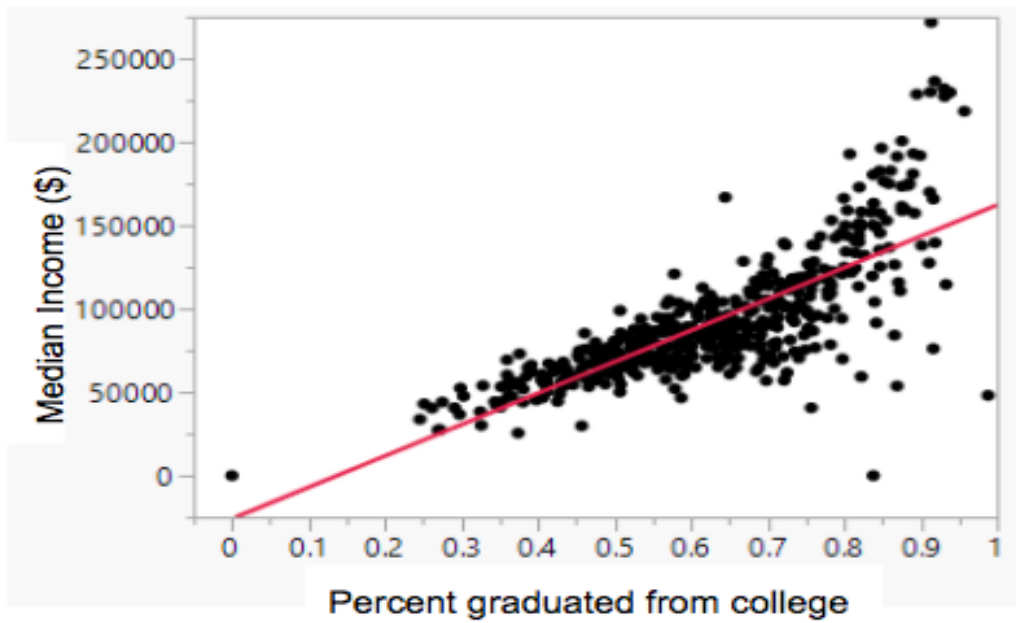
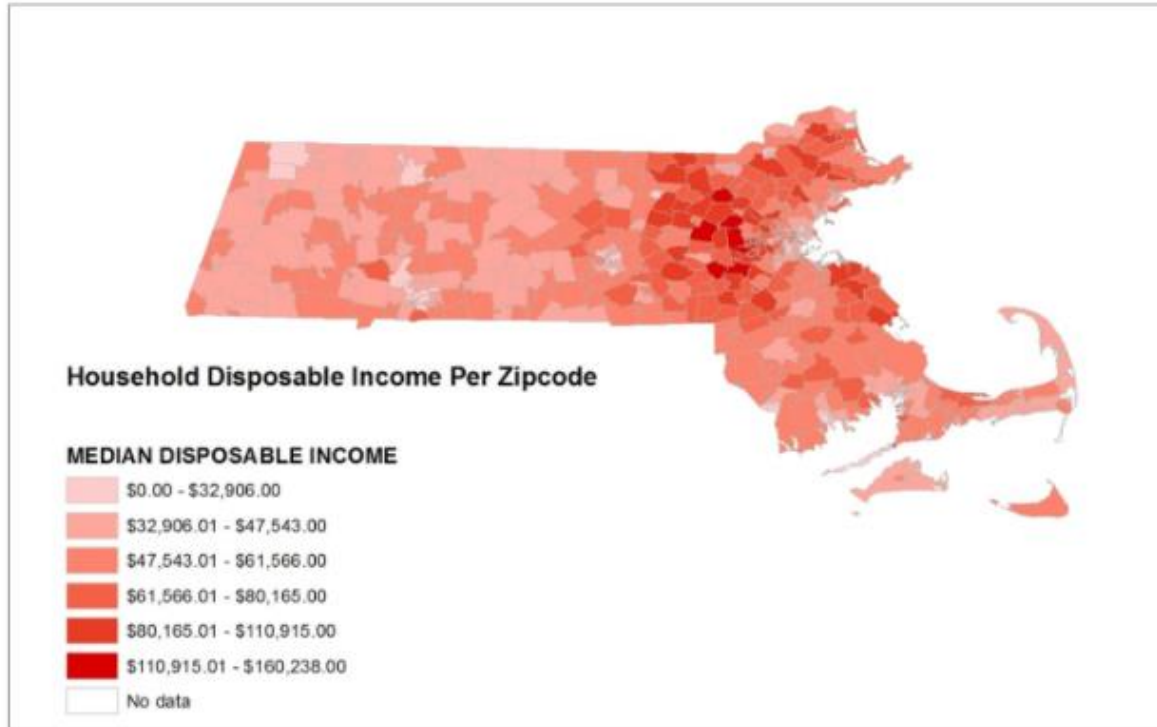


Because no donation data existed for Massachusetts, we could not calculate any potential correlation between our parameters and Bernie Sander's donations. Below are maps depicting

Massachusetts's population and also the disposable median income per zip code. Similar to Oklahoma, the zip codes with the greatest amount of college degrees are around the Boston area where there are numerous colleges and universities and where many corporations are located. The largest percent of disposable income occurs in Boston's surrounding areas.



The correlation between college education and median disposable income is the highest statistical significance that we found among parameters. This correlation has an R-squared of .59.



In conclusion we found no significant correlation between any of our variables. If we could alter anything from our project we would have chosen a second state with donation data so we could properly compare our data. Through this work though we learned how to turn an Excel file in to a Shp. File on a Mac. And we also learned to work with a glitch in the ArcGIS where are data source would not connect when we would open our maps. It was interesting to see how we could manipulate our parameters and how other groups chose different parameters to find correlations with Bernie Sanders campaign donations.