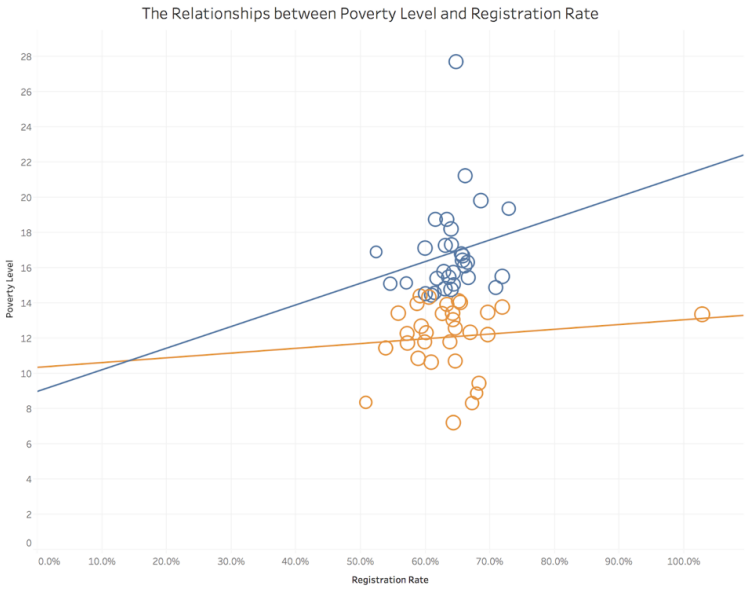


Figure 5 K-Means Cluster and linear trend lines with Poverty Level and Registration Rate

Figure 5 shows the two clusters that were created when exploring the relationship between poverty level and registration rate. Though there are two distinct groups, the counties in these groups are consistent with the counties that were grouped together and provide little new information to the overarching analysis. In addition, the linear trend lines that were created as a result of the two clusters are not statistically significant. As a result of this, and

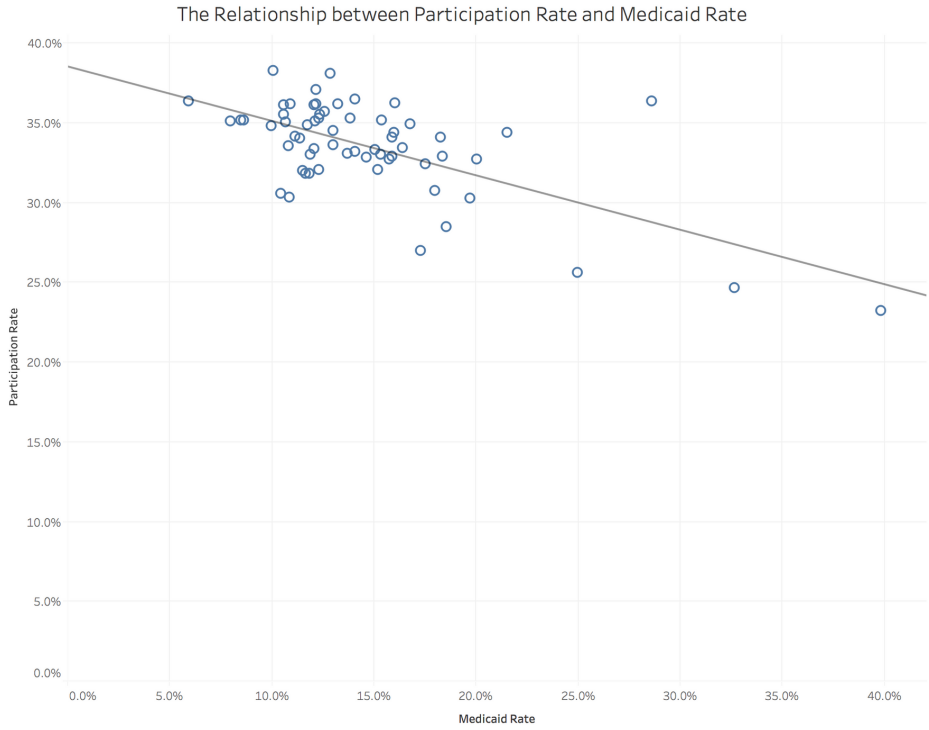


Figure 7 Linear Regression of Participation Rate and Medicaid Rate

The scatter plot shown in figure 7 is a visual representation of one of the linear regressions developed to determine the exact relationships between variables. This relationship is the significant relationship between participation rate and Medicaid rate. For every one percentage point increase in Medicaid rate for an individual county, we can expect the political participation rate to decrease by 0.66 percentage points.

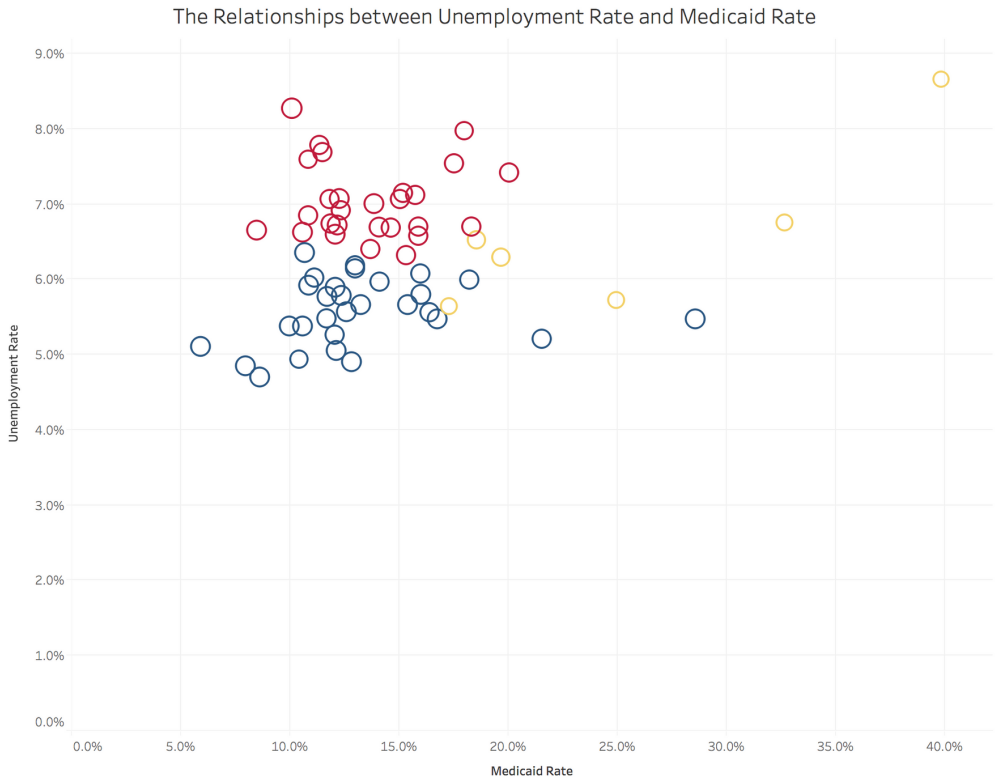


Figure 8 Clusters of New York Counties Based on Medicaid Rate, Unemployment Rate, and Political Participation Rate

In figure 8, there is an example of one of the multiple cluster analyses run throughout the study. It explores the relationship between unemployment rate, Medicaid rate, and political participation rate for each county for an average of all years of data. Through this, we found consistent outliers for the counties in the New York City metro area. These counties also break the significance of the relationship between the variables with very high p-values. The remaining 57 counties were nearly evenly distributed between two groups and created statistically significant trends. The two dominant groups split roughly along geographic lines between western and northern upstate New York and downstate and eastern New York.

Mitigating bias in policies and ensuring the voice of impoverished individuals in the state of New York is a key initiative for state government officials. To understand the problem of low political participation and identify potential solutions, this study focuses on economic and healthcare data. Through contextual analysis in the form of relevant research and articles, exploratory data analysis, linear regression, and clustering analysis, a statistically significant relationship was identified between unemployment rate, political participation rate in elections, and Medicaid enrollment rate. Specifically, as the unemployment rate goes up, Medicaid rate increases, and political participation rate decreases.

This study found that there is a direct relationship between increased unemployment rate, high levels of medicaid enrollment, and low voter registration and participation rate. Government officials looking to increase political participation in the state of New York should create programs that stabilize job security and augment job opportunities to decrease the unemployment rate and dependency on Medicaid. This effort should see an increase in political participation across all demographics and counties on average. In addition, increasing an individual's access to healthcare at all (Medicaid or private insurance) is an avenue to explore as this has a positive impact on political participation.

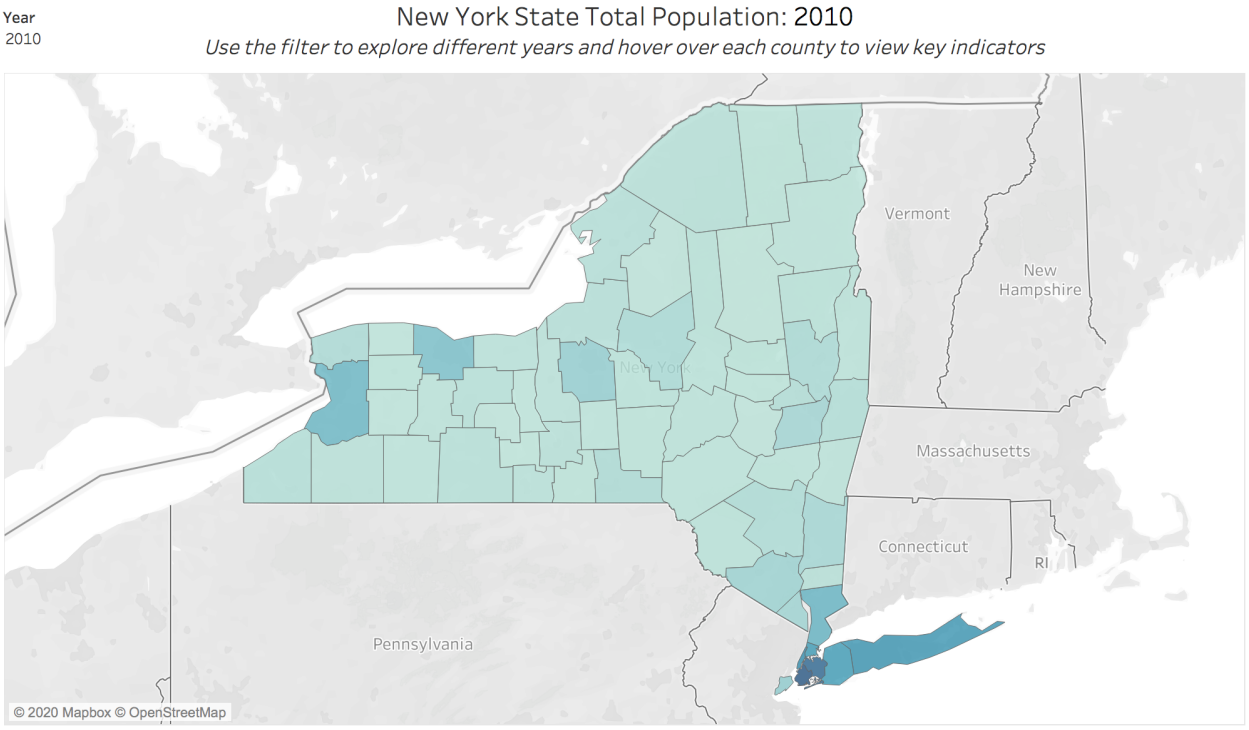
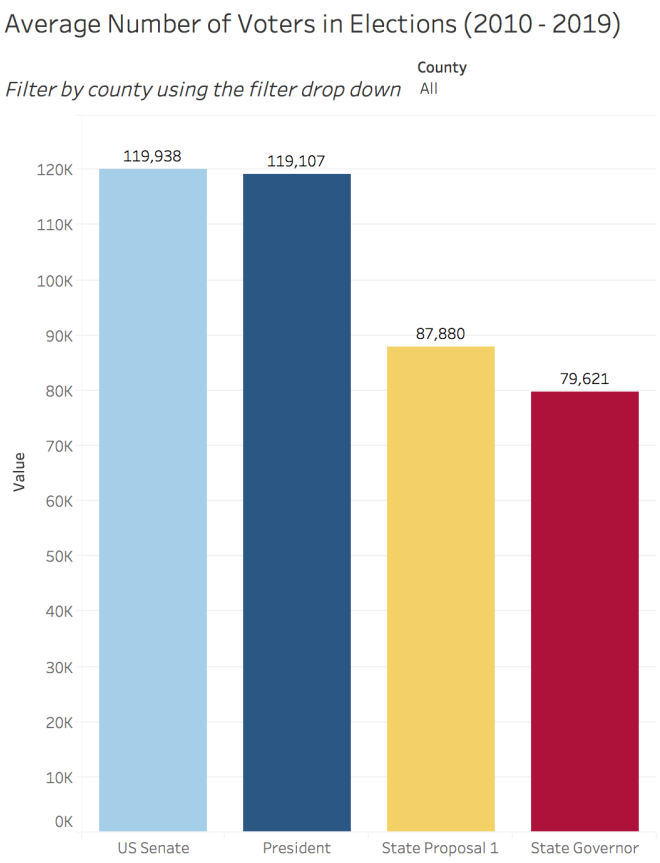


Figure 9 Overview Tab of Tableau Dashboard: Overall Population in New York State

The Political data displays the amount of voters who participated in a selection of elections over the years of 2010-2019 and the participation rate within the counties of New York State. There are significantly more voters who participate within the Presidential and Senate elections than the State Government and State proposal elections. The registration rate was determined by dividing the amount of registered voters by the population of each county. The top 5 and bottom 5 counties for registration rate are dispersed amongst the state and are not all located within one particular area. The participation rate was determined through dividing the number of votes casted in the election by the amount of registered voters in each county in the years 2010-2019. The lowest 5 participation rate average comes from all 5 counties within the New York City metro area. The highest 5 participation counties are all within suburbs just outside of New York City.



Top 5 and Bottom 5 Counties: Registration Rate

Nassau	72.9%
Columbia	72.0%
Saratoga	71.9%
Essex	70.9%
Warren	69.7%
Allegany	55.9%
Jefferson	54.6%
Franklin	53.9%
Bronx	52.5%
Queens	50.8%

Top 5 and Bottom 5 Counties: Participation Rate

Columbia	38.1%
Schoharie	37.1%
Greene	36.5%
Putnam	36.4%
Rensselaer	36.4%
Richmond	28.5%
New York	27.0%
Queens	25.6%
Kings	24.6%
Bronx	23.2%

Figure 10 Political Tab of Tableau Dashboard: Descriptive Analysis for Political Indicators

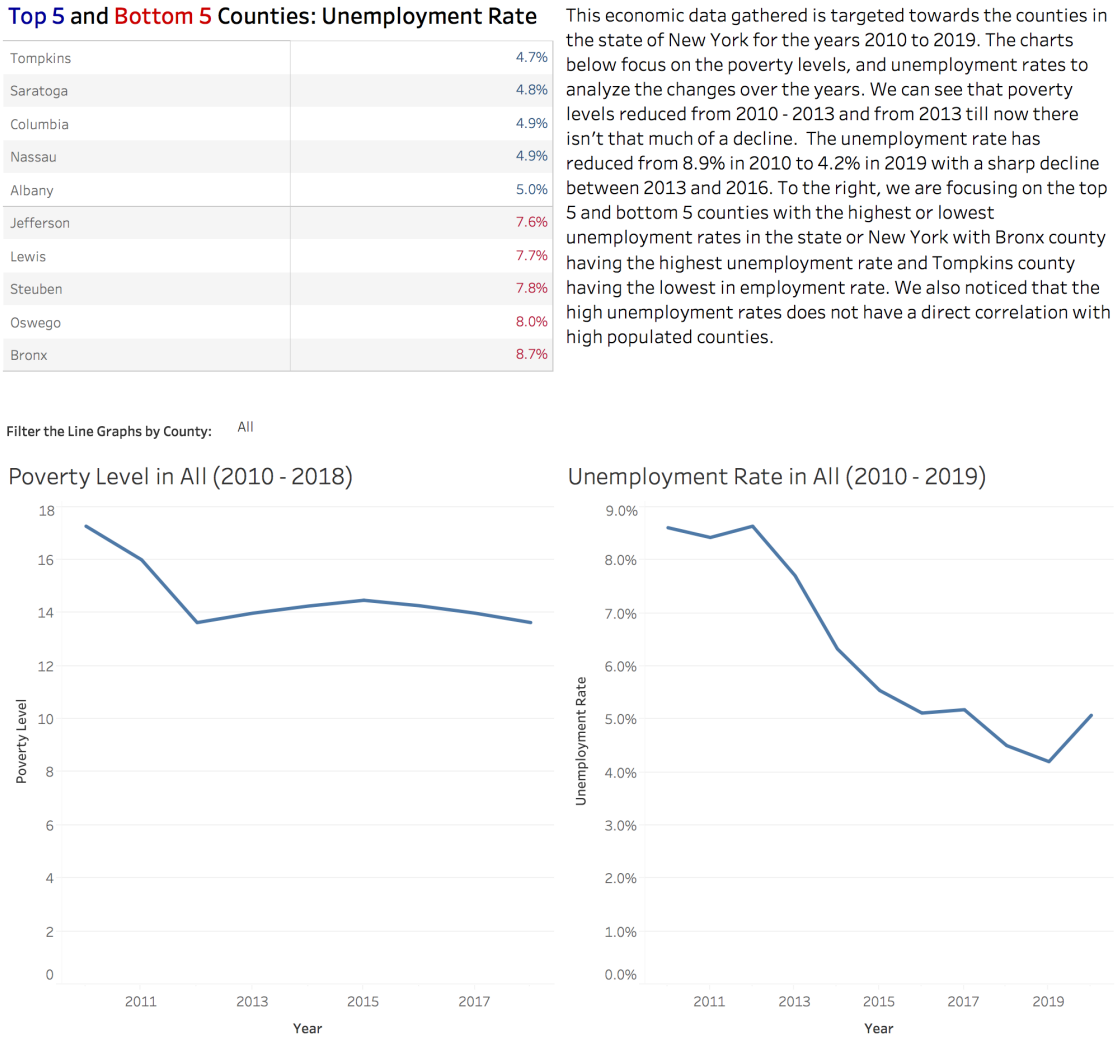


Figure 11 Economy Tab of Tableau Dashboard: Descriptive Analysis for Economic Indicators

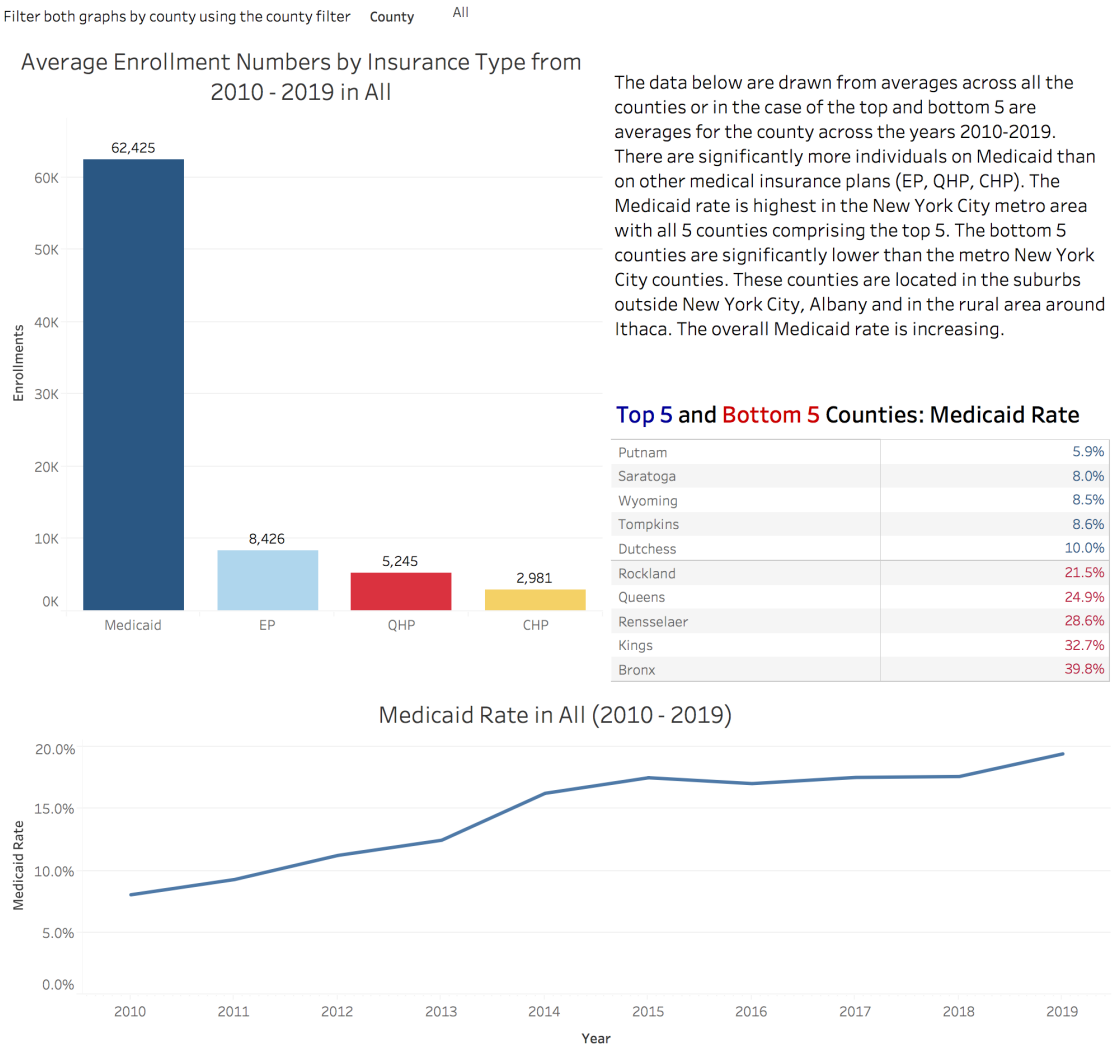


Figure 12 Healthcare Tab of Tableau Dashboard: Descriptive Analysis of Health Indicators

Figures 9 through 12 show some of the exploratory analysis and descriptive statistics used in this study. The tableau dashboard provides dynamic capabilities for further exploration to look into any specific county to answer additional questions. The dashboard has a landing page with overview information for the project as well as three individual tabs for each of the main three sectors of analysis. These three tabs (Political, Economy, and Healthcare) have overarching statistics that show the highest performing and lowest performing counties in New York for key indicators in addition to trends over time and comparative bar charts for different categories.

Figure 13 Comparative Analysis Tab of Tableau Dashboard: Correlation Matrix, Linear Regression, and Cluster Analysis

Figure 13 shows a static version of the interactive tab for the comparative analysis from which much of the observations and conclusions for this study originated. The tab shows the combination of figures 6 through 8 (a correlation matrix, a linear regression between political participation rate and medicaid rate, and a cluster chart for unemployment rate, medicaid rate, participation rate, and registration rate). The tab can be filtered by year to identify differences between years and highlight counties or metro areas for more in depth exploration when viewed on the interactive tool.