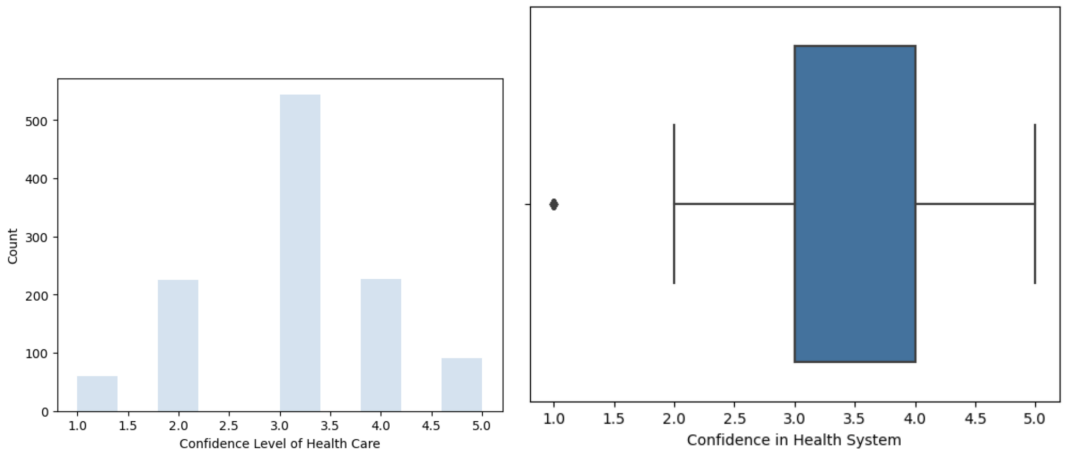
Exploratory stuff:

Graphs

1. Histogram and boxplot of “CONHLTH”

We wanted to first look at trends on how much confidence people had with the healthcare system in the United States. To do so, we created a histogram of CONHLTH, sorting the bars by confidence levels. It seemed like the majority of individuals had “some confidence” in the healthcare system



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count 1147.000000 mean 3.055798 std 0.958306 min 1.000000 25% 3.000000 50% 3.000000 75% 4.000000 max 5.000000
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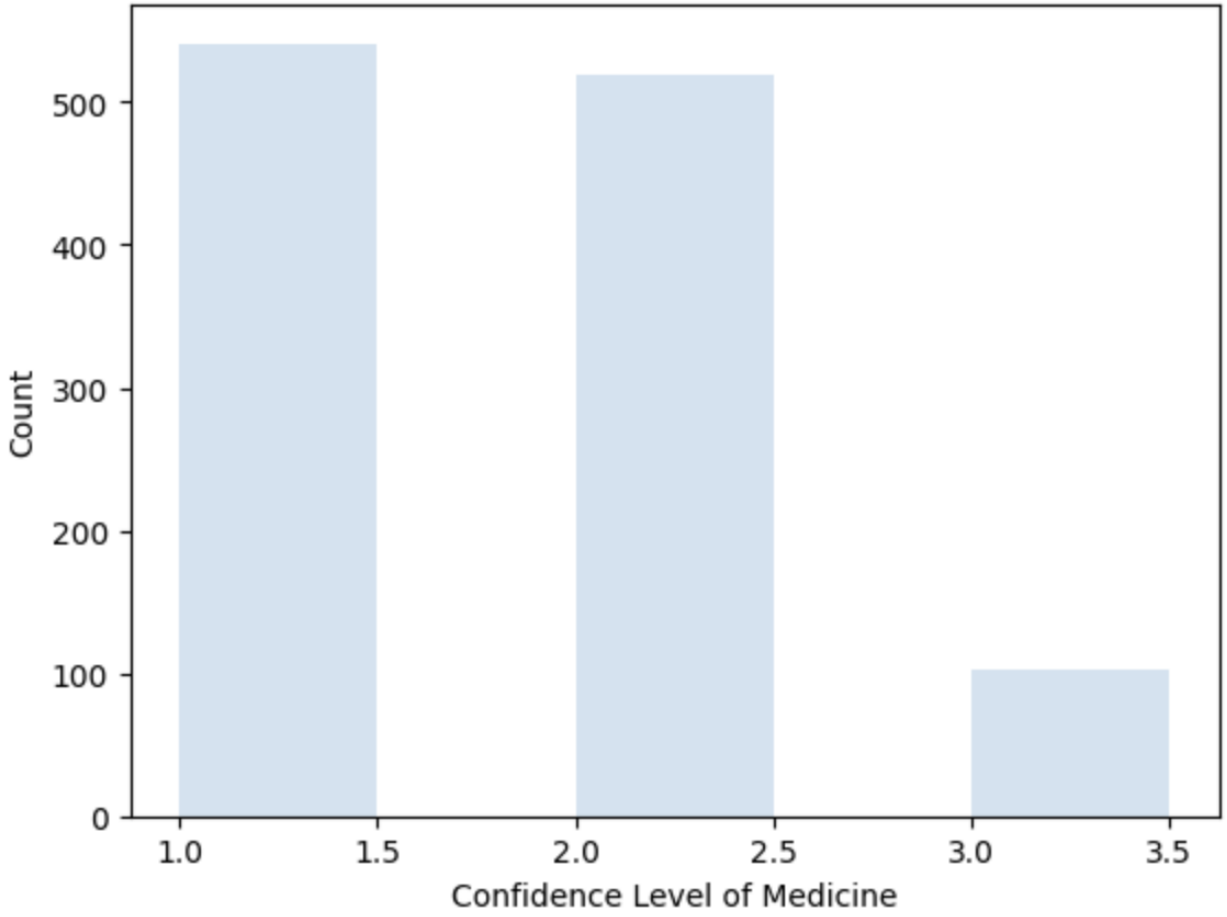
2. Histogram of “conmedic”

Wanted to look at trends for confidence towards medicine and compare it with that of the healthcare system. We’d assume that the confidence levels will be similar since they go hand in hand. It was surprising to then see the histogram show that people had slightly more confidence in pharmaceutical companies than the healthcare system in general, which causes us to believe

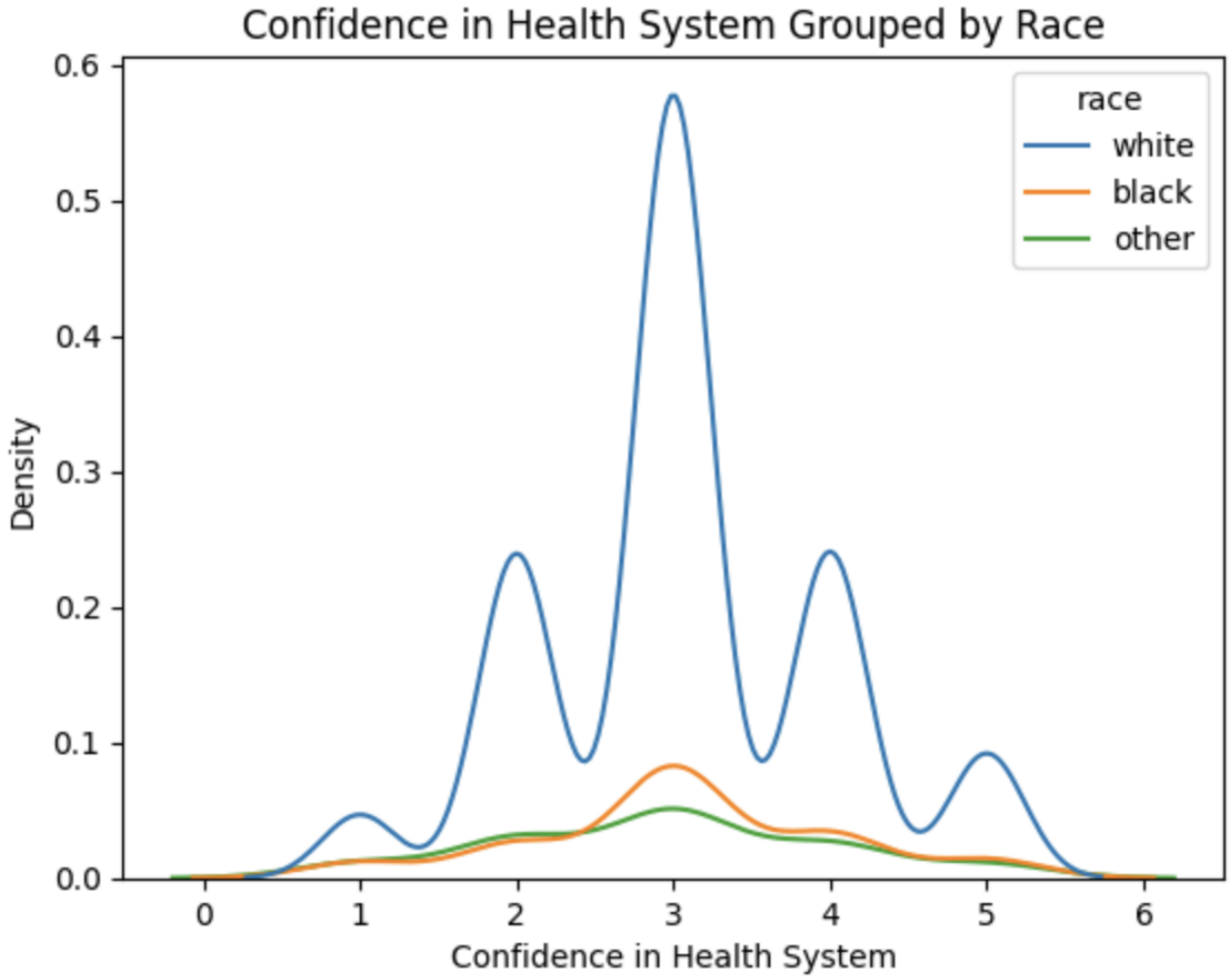
that this discrepancy may be due to other factors such as demographics of the individuals.



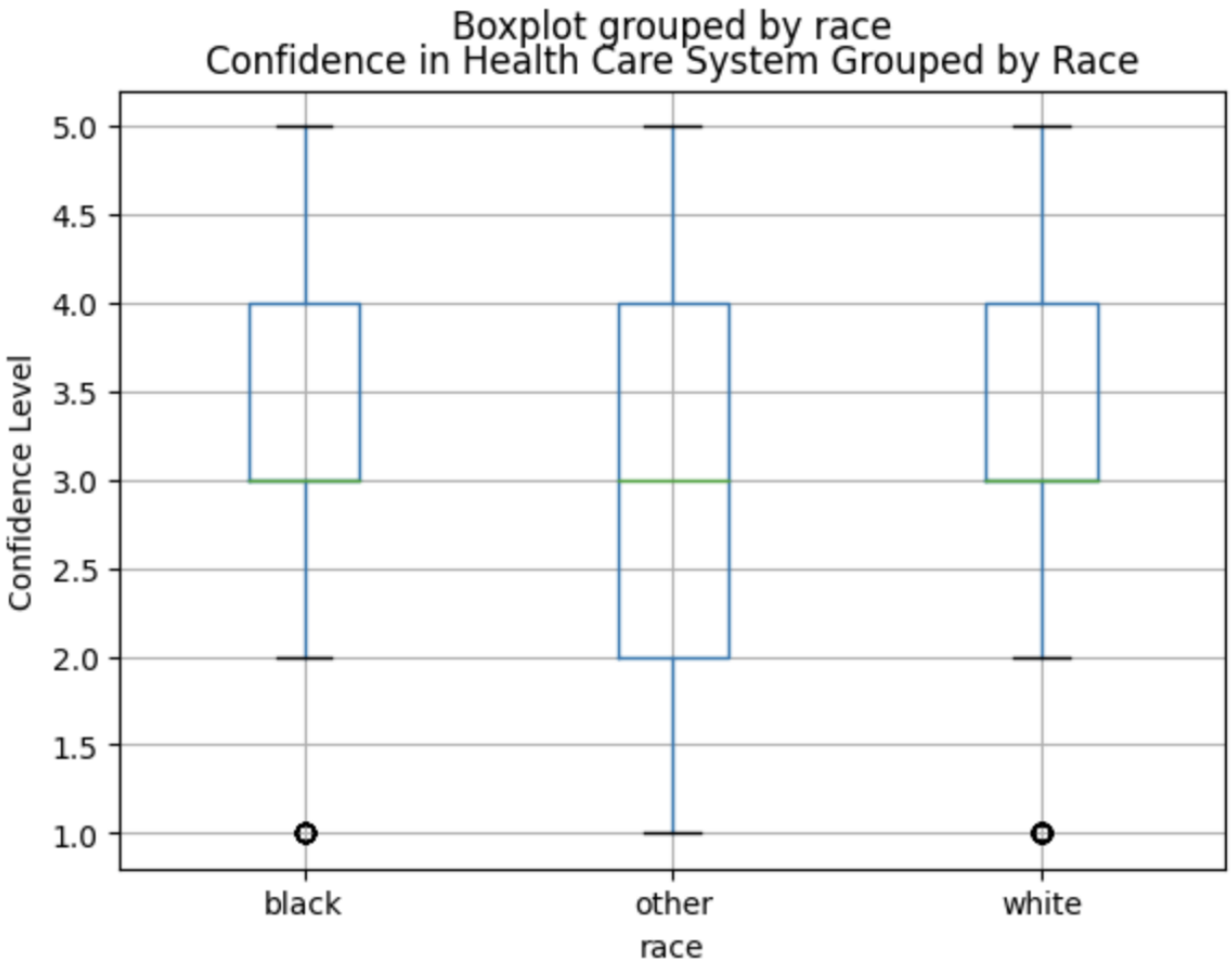
3. Density plot for conhlth between race

To first take a look at how representative the dataset is for the races, we created a kernel density plot for the three races described in the codebook. From there we saw that the majority of the data for conllth was representative of white people, indicating to us that the data we've analyzed for the confidence levels of healthcare is mainly of white individuals. This means that in order for us to understand what the best way to create health equity for all would be to first

get data that is representative of all races.

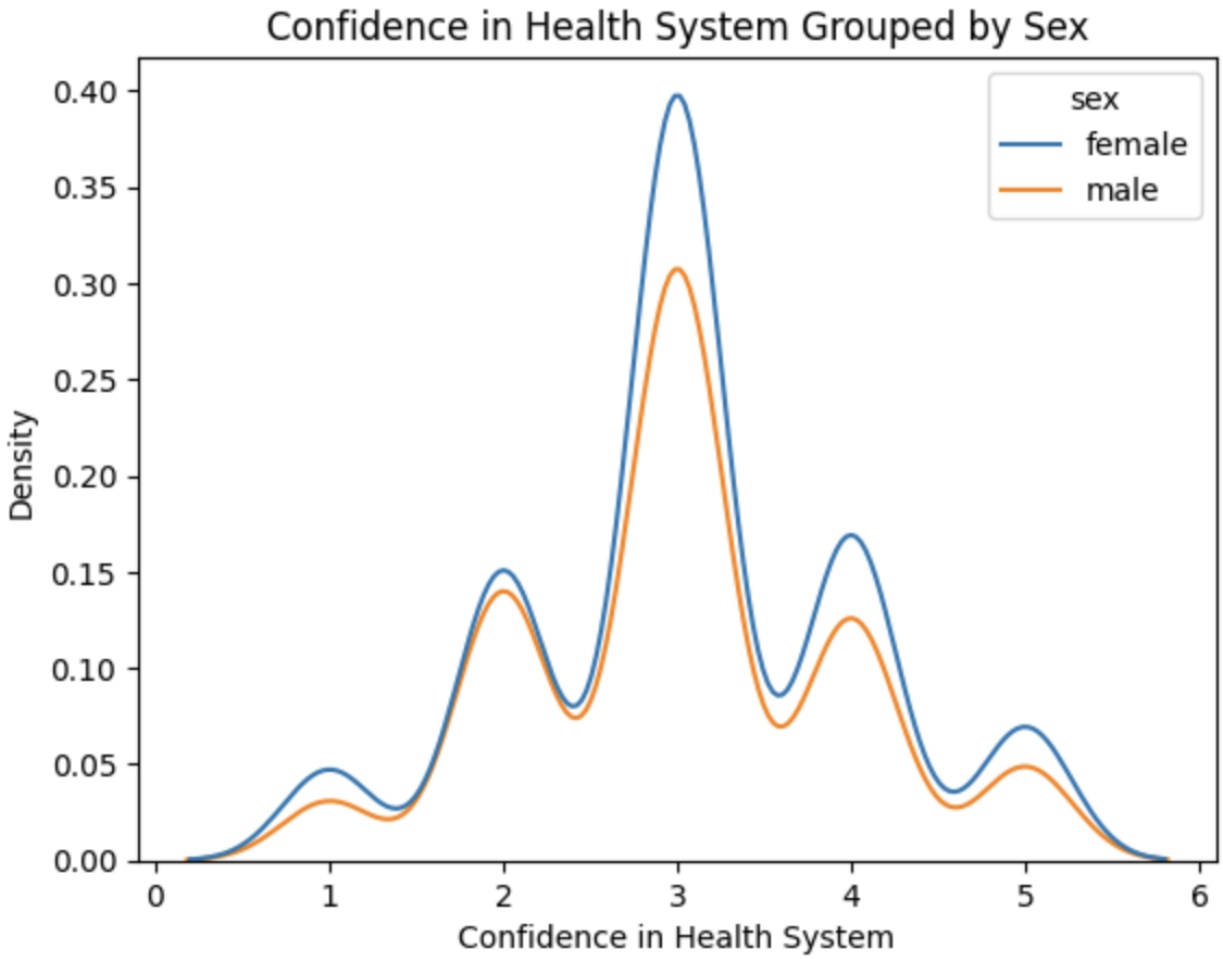


4. Boxplot to show statistics between race



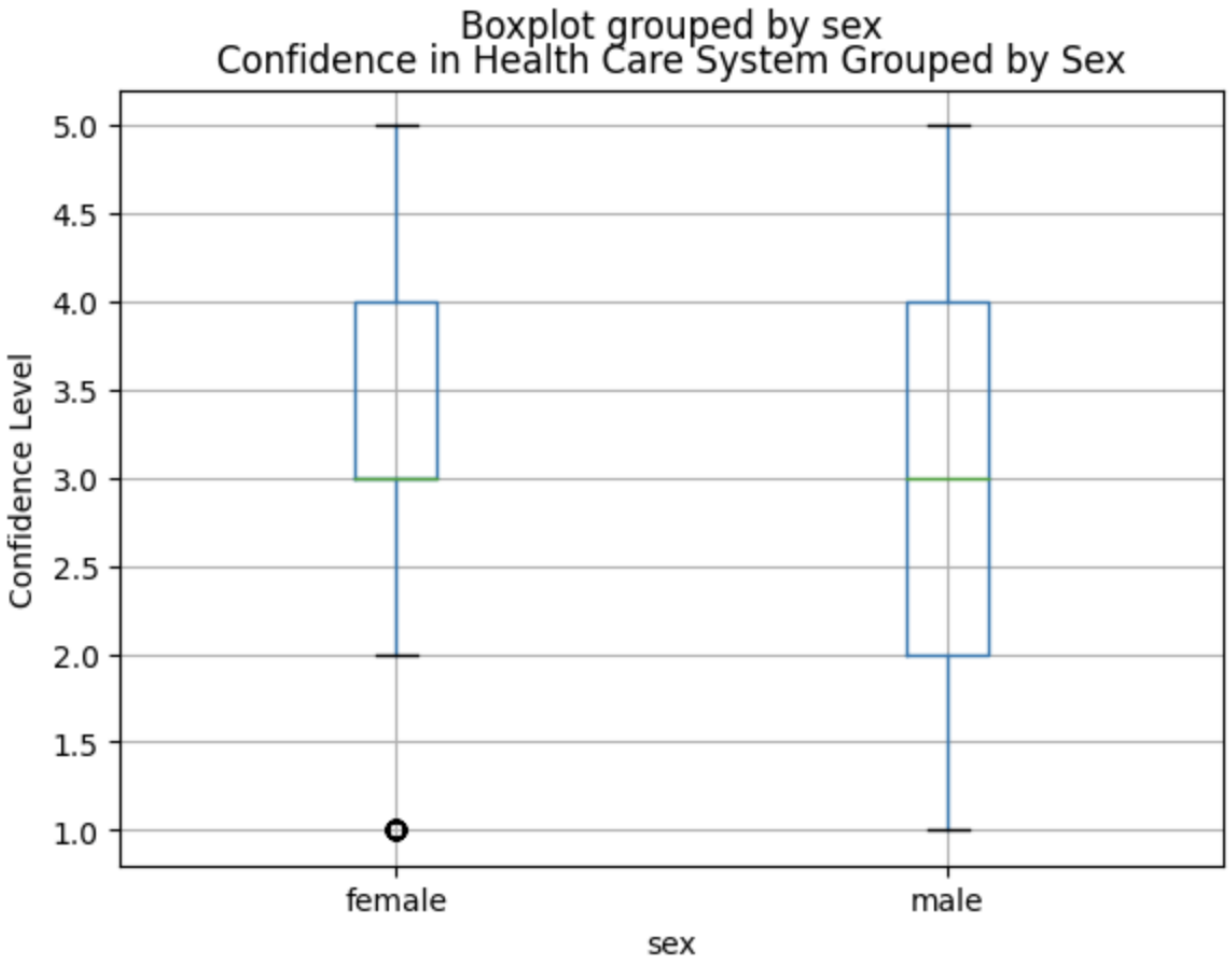
The boxplot then showcases the statistics for each race and their confidence towards the healthcare system. We found this to be pretty interesting as the first thing we noticed was that the other races in comparison to black and white had a pretty symmetric data distribution with fewer extreme values and outliers than black or white individuals. On the other hand, both black and white individuals were skewed more towards the right tail, telling us that more individuals in the groups felt less confident about the healthcare system than the median. This means that although there were more white individuals surveyed than black individuals, their confidence in the healthcare system remained relatively the same, with extreme outliers of very confident individuals being observable.

5. Density plot for conhlth between sex



This density plot showed a more even distribution between males and females compared to race which means the data was more representative of sexes.

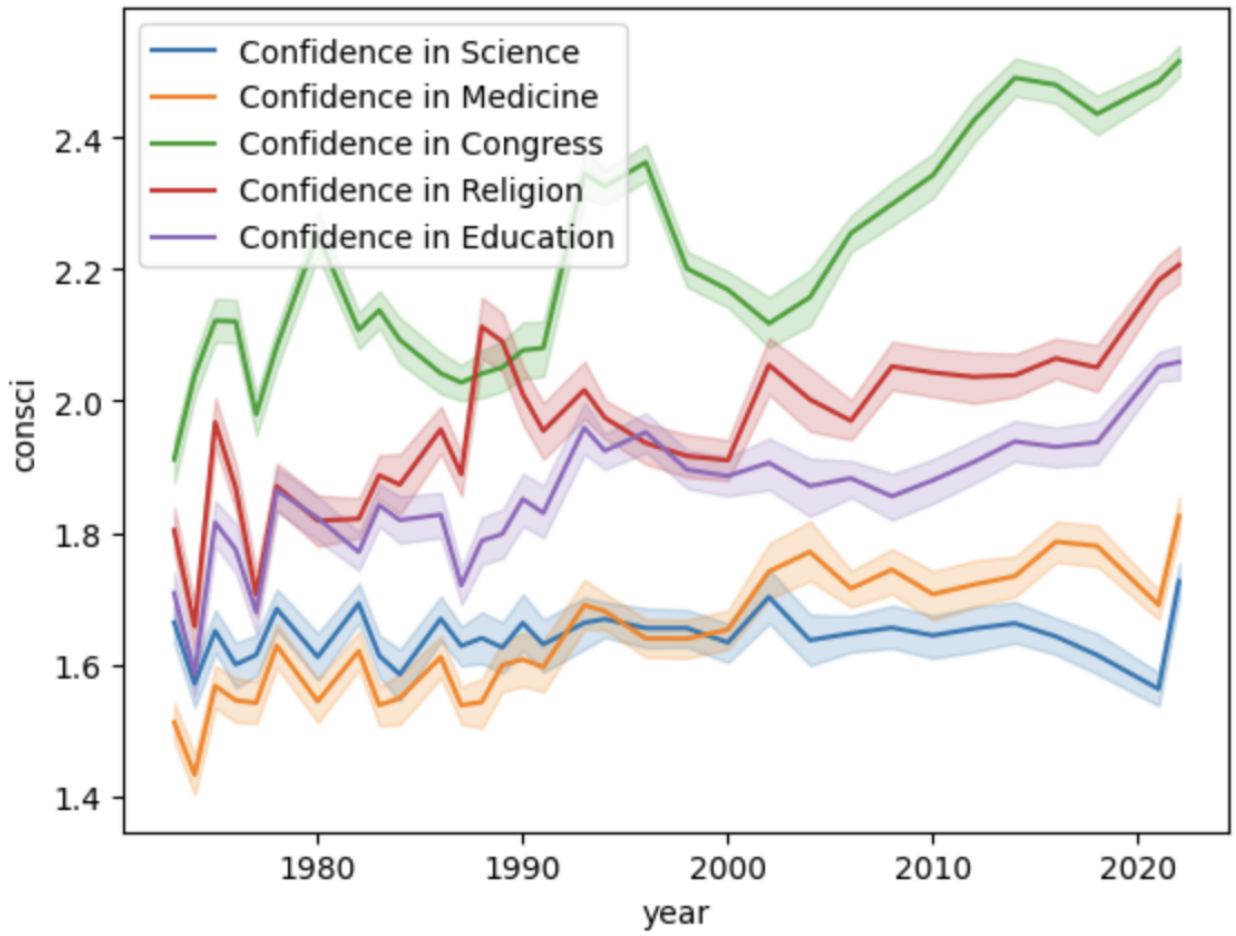
6. Boxplot for statistics between sex



Same median, males are more symmetric while females have more individuals who don't have confidence in the healthcare system and outliers that aren't present in male group.

***Upon analyzing the data for the healthcare system, we wanted to focus on a more specific aspect of this institution, so we decided to look more into confidence in medicine. This would make comparing confidence in healthcare a little easier because it's difficult to categorize a complex institution such as the healthcare system especially if we do have access to data regarding a subcategory, or medicine.

7. Line plot of different institutions in comparison to medicine confidence



Overall, we see that confidence in medicine is overall one of the institutions that individuals tend to have the most confidence in. all institutions that we look at seemed to have an overall decrease in confidence over the last 50 years.

For medicine specifically, we noticed that confidence in science and medicine seemed to correlate fairly well with one another, having similar confidence levels over the years. It seems like there was an increase in confidence throughout the covid-19 years which meant that individuals trusted medicine and science more throughout that period.

On the other hand, the confidence in congress has decreased more than medicine, meaning that while people still had confidence in medicine, they didn't have congress. When we look at the covid years, individuals actually had a decrease in confidence for the government. This discrepancy is honestly quite interesting because we'd assume that, to some extent, science, medicine, and government would go hand in hand because they do intersect with one another in terms of policies and regulations (one can't really exist without the other so we'd think that confidence levels should be similar).

Between medicine and religion, there wasn't much correlation in terms of trends or confidence level.

Between medicine and education, there also wasn't anything too exciting that stood out to us.

Conclusion:

- Defending it from criticism: you can mention that we wanted to focus on the validity of the dataset first before we looked more into it (making sure we got a very representative measure of people's confidence)
- Future things that can be done that's outside the scope of the project: we'd want to use a dataset that is more specific to what we're looking at, rather than a general survey, because that way, we'd get better and hopefully more accurate data. For example, having datasets that don't just categorize race into "black", "white", and "other races" so we can actually look at trends between races and the similarities or differences between them
    - It'd be interesting to see confidence levels in certain health policies because then we can cross reference the year in which the health policy was enacted with the time periods we've utilized in this project

Difficulties in visualization:

- Difficulties in determining which graph to use and misinterpreted the data at the beginning. We treated the data as a continuous numeric variable instead of a categorical variable being represented by three or five integers as part of a scale
- We had difficulties in understanding certain box plots due to the data spread being very close to each other in groups (sex and race)