Midterm

Jeff Milliman

September 21, 2021

Introducing RMarkdown

This is an RMarkdown document, which blends text and code into a single document. It's great for **reproducible research**, because it provides a complete step-by-step record of everything you did to generate your results!

Research Questions: What impact did the Covid 19 pandemic have on support for President Donald Trump among elderly (60 and older) Americans and across age groups? How do other factors, such as social media use, impact President Trump's approval ratings

The elderly population, especially among older white Americans, has disproportionately supported President Donald Trump(Hudson 2018). However, President Trump's poor handling of the 2020 Covid 19 pandemic is viewed as a key factor in his defeat in the 2020 election (Baccini, Brodeur, and Weymouth 2021).

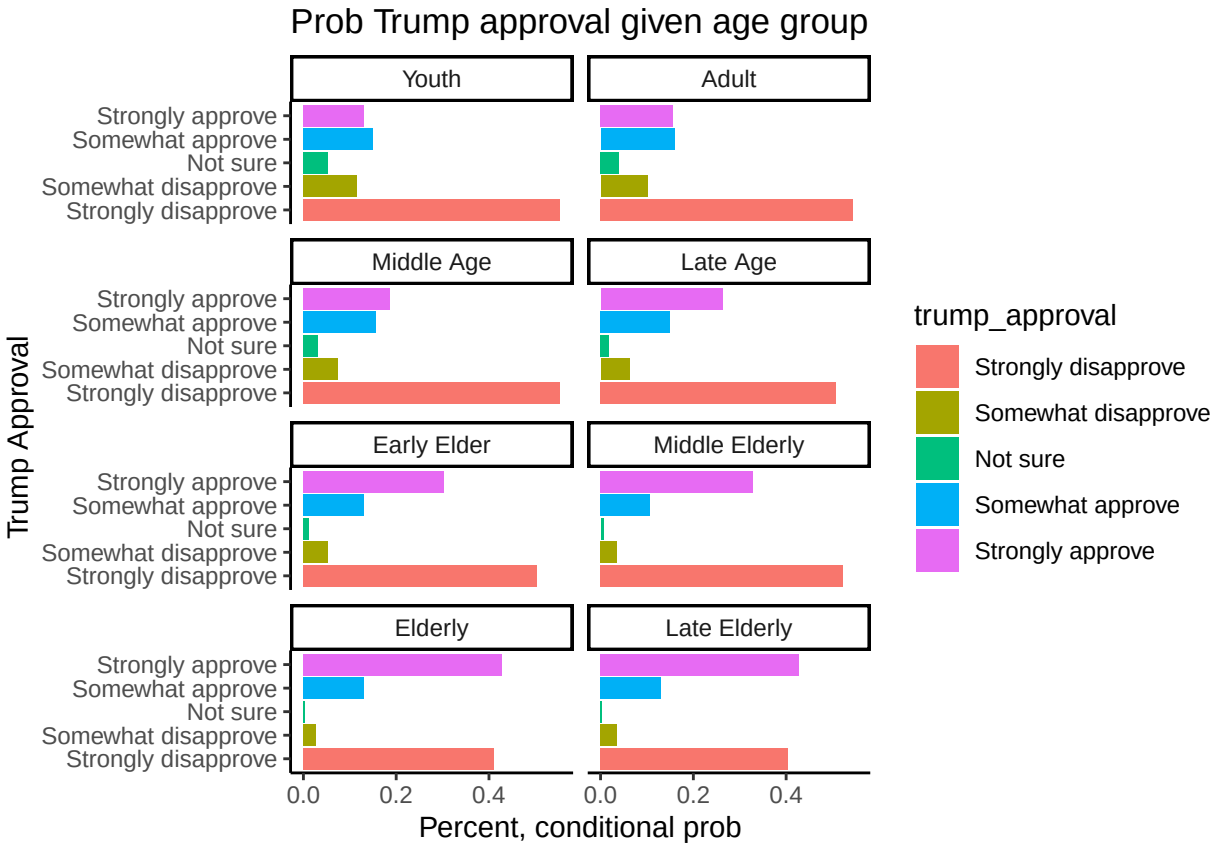
The Cooperative Election Survey from 2020, which asks questions about the impact of the Covid 19 Pandemic (job loss) and presidential support, provides relevant survey questions to illustrate the impact of the Covid 19 pandemic on elderly citizens' support for President Trump.

```
##
##          Adult    Early Elder        Elderly       Late Age   Late Elderly
##          12035          12306           3201           8986            358
##     Middle Age Middle Elderly          Youth
##           9853           8302           5959
```

In order to asses the possible impact of age on Trump approval, I calculated the conditional probability of Trump approval given your age group(P(Trump Approval | Age Group)).

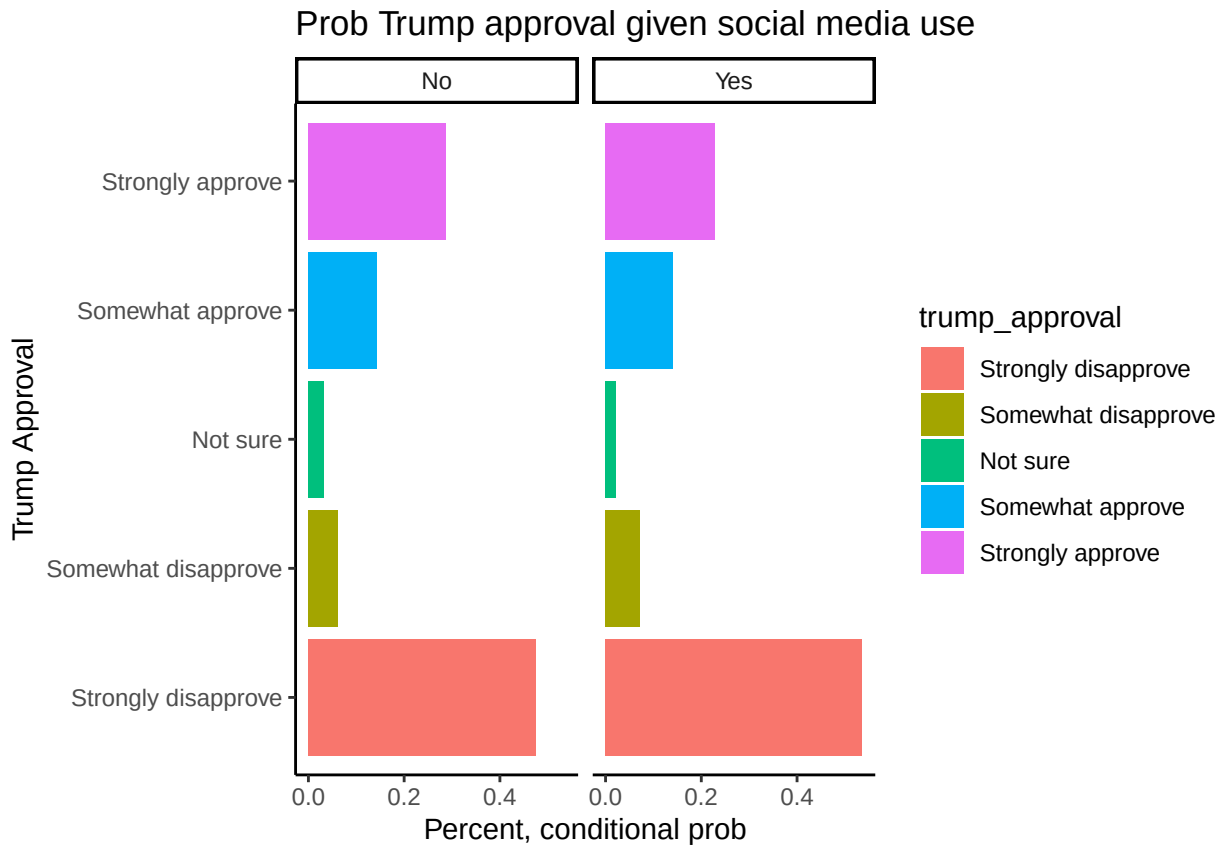
While the conditional probability table can be seen below, the plotted results (Prob Trump given age group) offer a better picture of the probabilities.

As the bar chart shows, we generally see that given a particular age group, elderly people, (Early Elderly and above) are more likely to strongly support Donald Trump but also are very likely to strongly disapprove of Trump as well. As you advance in age, it appears that your of opinion of former President Trump tends to cluster around strongly approve and strongly disapprove.

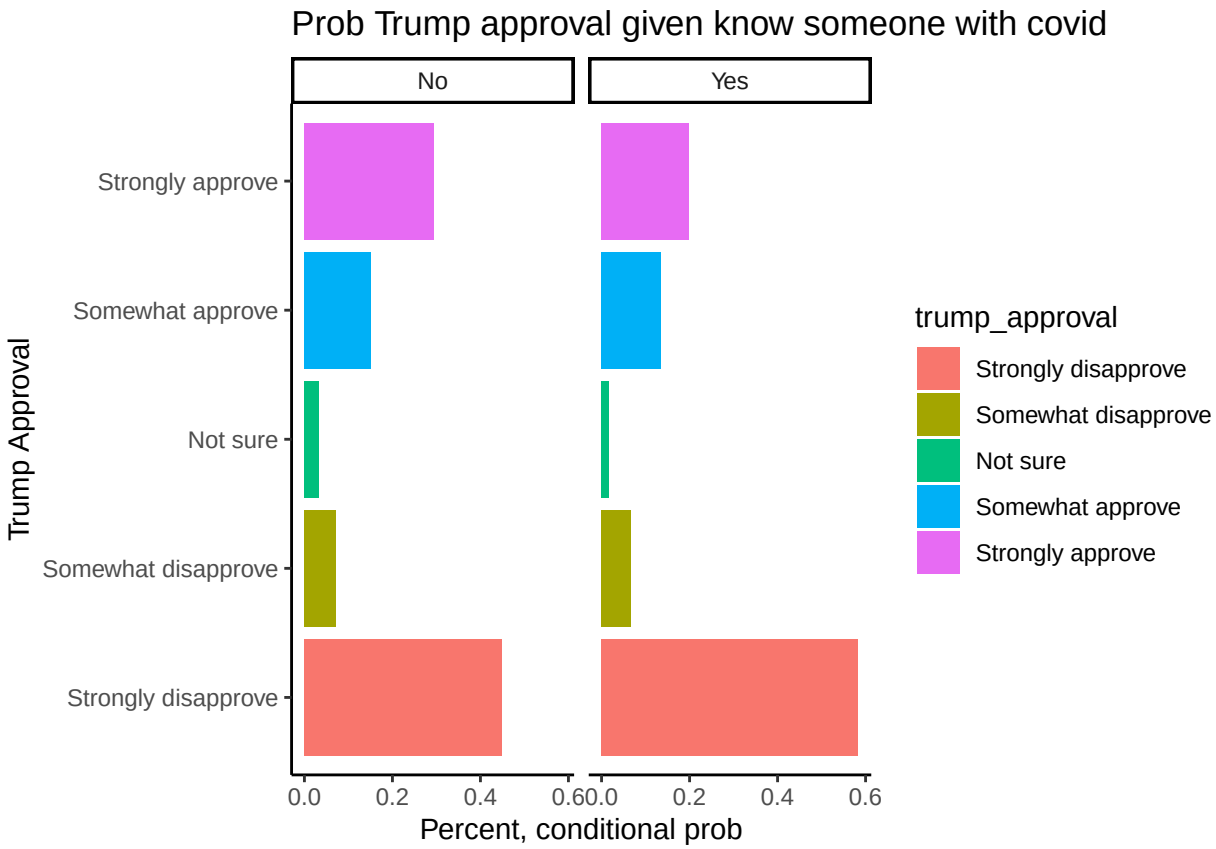


The impact of social media use on approval for former President Trump is calculated using a similar conditional probability: P(trump approval | social media use (24h)) = probability of Trump Approval given social media use in past 24 hours. While social media is often seen as a prerequisite for Trump approval -as social media networks and disinformation are seen as a key factor in raising his support - the conditional probabilities do not necessarily support this.

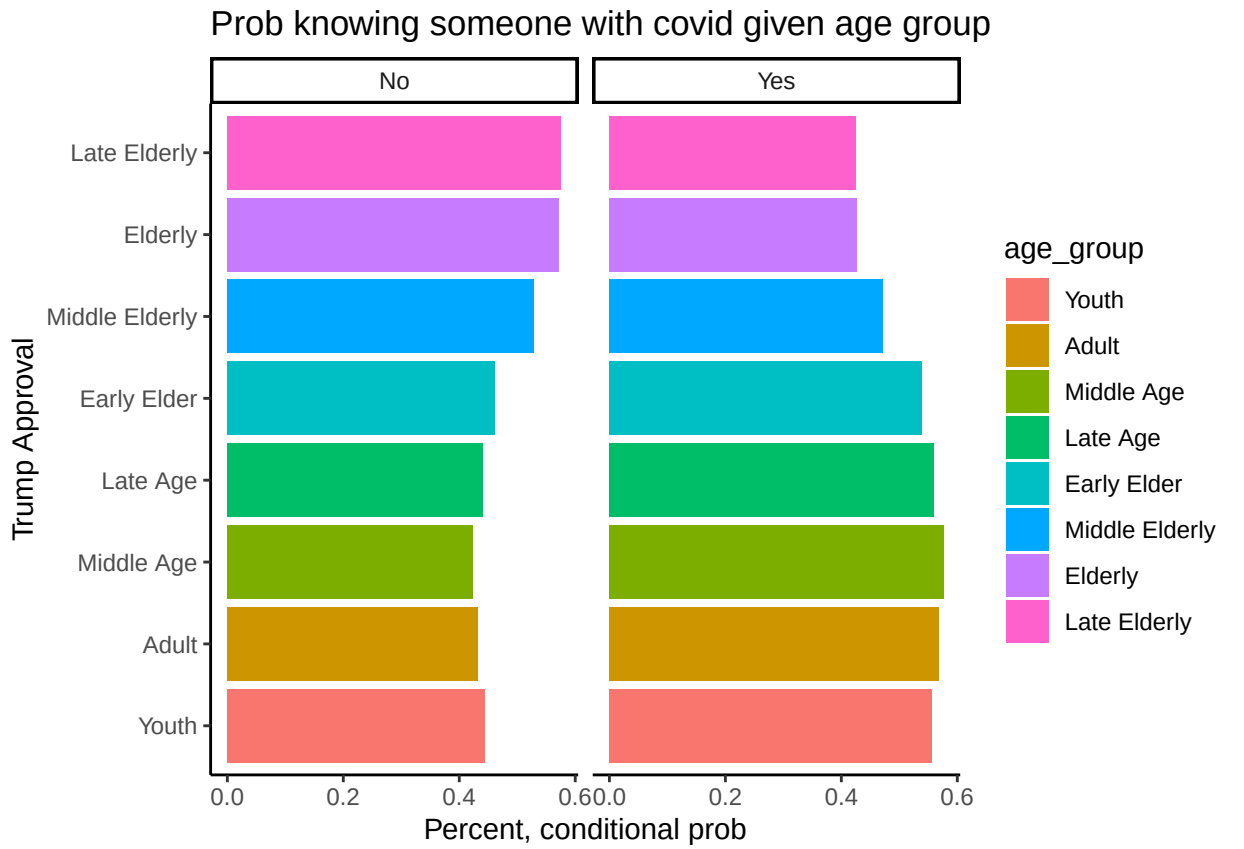
Based on the bar chart (Prob Trump approval given social media use), you are more likely to support Donald trump if you did not you use social media within the last 24hrs than if you did. Although, both non social media and social media users (uese within last 24 hrs) strongly disapproved of President Trump. It may also be the case that more elderly voters, who are more likely to support Donald Trump, are less active on social media on a daily basis.



The survey also provides interesting, albeit limited, insights into the impact of the pandemic on President Trump's approval. The barplot ('Prob Trump approval given know covid') details the conditional probability of Trump support given the respondent knew someone diagnosed with covid. Respondents were much more likely, given they knew someone diagnosed with covid, to strongly disapprove of President Trump than if they did not.



Although, it does not appear that there is a strong relationship between knowing someone with covid given your age group. The probability of knowing someone with covid, given your age group, is fairly flat. Given your age group, the probability of knowing someone diagnosed with covid (Yes), is relatively unifrom across age groups and there is no discernible connection between your age and whether you know someone diagnosed with covid, although this trend may not hold if broken down into subsets, such as by state or gender.



Note that the `echo = FALSE` parameter was added to the code chunk to prevent printing the R code that generated the plot.

Conclusion

Using conditional probability plots by age group and trump approval, support for President Trump was found to cluster around strongly approve and disapprove as respondents became more elderly. While there were strong disapproval rates for President Trump across all age groups, respondents were more likely to strongly approve of President Trump given they were older and less likely to report responses that indicated less strong support (somewhat approve and disapprove).

Respondents were also much more likely, given they knew someone diagnosed with covid, to strongly disapprove of President Trump than if they did not. A finding which supports other research that indicates that the pandemic may have lowered President Trump's chances of reelection. Curiously social media use did not appear to be strongly related with approval for President Trump. Given social media use within the last 24hours, respondents were more likely to disapprove of President Trump that approve. Finally, given age group, the probability of knowing someone with covid does not appear to increase as you become older and is relatively uniform across age groups. Indicating that the pandemic may have had a relatively equal impact. Rather than impacting a specific age group, the pandemic may have hurt President Trump's approval ratings across all groups. However, more sophisticated statistical tools would be needed to fully determine the effects of the pandemic on the 2020 election and on specific age groups in the electorate.

References

Baccini, Leonardo, Abel Brodeur, and Stephen Weymouth. 2021. "The COVID-19 Pandemic and the 2020 US Presidential Election." *Journal of Population Economics* 34 (2): 739–67. https://doi.org/10.1007/s00148-020-00820-3.

Hudson, Robert B. 2018. "Draining the Swamp While Making America Great Again: Senior Dissonance in the Age of Trump." *Journal of Aging & Social Policy* 30 (3-4): 357–71. https://doi.org/10.1080/08959420.2018.1462676.