How Much Social Influence Does Donald Trump Have on Perceptions of Himself and U.S. Democracy?: An Online Survey Experiment Through Lucid Theorem

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**Abstract**

Many people around the world have been developing negative feelings toward U.S. President Donald Trump and the U.S. being considered as a democracy due to his social behavior and controversial commentary during his presidential term. I examine the extent to which President Trump has influenced U.S. citizens’ perceptions of his image and the U.S. being a democracy due to his executive orders and comments on world leaders by conducting a survey experiment through Lucid Dream. Using average treatment effect (ATE) and linear regression models, I find that there is much evidence to suggest no relationship between U.S. citizens who were informed of President Trump’s Muslim travel ban in 2017 and praise of North Korean leader Kim-Jong Un during his meeting with President Jae-in in 2019 and their feelings toward President Trump and the U.S. as a democracy. Such a finding implicates that either public opinion toward President Trump and the U.S.’s democratic status may be misled or further research is required to ascertain support for such public opinion.

**Keywords**

Average treatment effect (ATE), linear regression, survey experiment, Donald Trump, democracy

**Introduction**

The United States (U.S.) has had many presidents since its founding – ranging from its founder George Washington, to the first Republican president Abraham Lincoln, to the Democratic John F. Kennedy, a president whose charisma and diplomacy is known to be unrivaled to this day. While the U.S. has had presidents on both the liberal and conservative scales, opposing and debating each other on what is best for the country, they all believed in maintaining and promoting the U.S. as a democracy. However, many people living in the U.S. – including regular U.S. citizens and U.S. politicians - worry about the country’s democratic status, as incumbent U.S. President Donald Trump has made political decisions and engaged in social behaviors that have made him be responsible for threatening the U.S.’s democratic status (*BBC News*, 2019). Indeed, many do not find President Trump to be competent or sensible in political decisions and affairs, as international public opinion suggests that approximately 64% of the world population have no confidence in President Trump’s ability to handle world affairs (Wike et al., 2020). Such negative qualities in a political leader would make people to believe that President Trump may not be running the U.S. as a democratic president should be. This growing negative perception of the U.S. being a democracy due to President Trump’s political ineffectiveness, then, indicates that many U.S. citizens will eventually stop seeing President Trump as a democratic president and, thus, stop seeing the country as a democracy – a notional treasure that the country has possessed and cherished since its founding.

In my research paper, I would like to investigate the extent to which President Trump influences U.S. public opinion on perceptions of his image and the U.S. as a democracy as a result of his political actions and social behavior. This investigation can be formalized as follows: I will first peruse some existing literature on this topic and connect the findings of the authors from said literature to my research. The literature will help to contextualize and develop my research question. Next, I will formulate and state my research question as a hypothesis, after which its null and alternative forms will be considered and analyzed in depth. This hypothesis will be tested using the average treatment effect (ATE) – used interchangeably with the difference in means – and linear regression – both univariate and multivariate - based on certain variables from the “Experimental+Omnibus+2020\_May+3,+2020\_07.19.csv” experimental dataset (hereafter referred to as the EMO dataset). Using R, I will evaluate my results by computing and examining the difference in means and the p-value of its t-statistic for the former. I will also compute and analyze the adjusted R-squared values, the p-values of the F-statistics, and the residuals for the latter – focusing more on univariate than multivariate. These regression models are intended to serve as robustness checks on the former. Then, I will tabulate my results and use the most important ones to explain how and why my hypothesis is supported or rejected. I will then end with a summary and synthesis of my R data-related research and the accompanying academic readings and their criticisms. With this research, I hope to fill in any potential knowledge gaps in how and why U.S. citizens adjust their opinion on President Trump and the U.S.’s democratic status based on what they know about his political past.

This process is entirely dedicated to analyzing and answering the following question: To what extent has President Trump influenced U.S. citizens’ perceptions of his image and the U.S. being a democracy due to his executive orders and comments on world leaders?

**Literature Review & Theory**

Existing Research

On November 8, 2016, the U.S. presidential election for the presidential term of 2016-2020 came down to two candidates, Donald Trump and Hilary Clinton. Polling firms throughout the elections suggested that Clinton would win the election; indeed, she won the popular vote with a 2% margin, about three million votes than Trump (Donovan and Bowler 125, 2018). Ultimately, however, confounding the expectations of many U.S. citizens and scholars of American politics, Trump won the election. He was then inaugurated as the 45th U.S. President on January 20, 2017.

The journey of Trump’s election and inauguration, however, is not one without both consensus and discord simultaneously. Indeed, throughout much of Trump’s election campaign, many U.S citizens – both regular and notable figures – boycotted any businesses that advertised Trump, ranging from refusing to stay at Trump hotels to buying anything from Amazon and Nordstorm, as denoted by online campaigns such as #GrabYourWallet at the time (Copeland and Becker 767, 2019). Many were continually dissatisfied with Trump as a potentially successful presidential candidate because Trump had exhibited many traits that are often deemed undesirable in a U.S. president. Indeed, on Twitter, Trump had manifested much racist and sexist language in a confrontational manner and unprofessional manner – albeit, his messages were intended to stir populism among his supporters at the time (Pain and Chen 1, 2019). In person, Trump had also (and still does) exhibited the same behavior, as well – insofar some scholars referring to him as a “clear and present danger to civility and democracy” (Birnbaum 695, 2018). Such a portension, some may argue, is further evidence by Trump’s signing of executive order 13769 in 2017, in which individuals from 7 Muslim-majority countries were banned from entering the U.S. for 90 days (Zoppo, Santos, and Hudgins, 2017), which led to massive political protests regarding the issue (Collingwood, Lajevardi, and Oskooii 1035, 2018). In more recent times, after his inauguration, Trump has also praised various authoritarian rulers, such as North Korean Chairman Kim Jon-un (Cillizza and Williams, *CNN*). Events following Trump’s actions, then, has led to many political protests about the issues surrounding said actions.

Trump’s selection as the now-incumbent U.S. President can be concisely characterized as one that has polarized two-party presidentialism, divided political membership and socioeconomic status in U.S. civil society, and eroded the principles and norms of democracy (Lieberman et al. 470, 2018). Yet, despite all of the controversy surrounding Trump – during both his election campaign and ongoing presidency, many still support him to this day. Some do so because they believe in his populist promises, while others do so because of party loyalty **(**Barber and Pope 1, 2018), and others for different reasons. Because there are so many unexplained/varied factors in why some still support Trump – despite all of his recent past political history, it is my objective to investigate such a socio-political phenomenon in this paper. From this investigation, I hope to clarify and account for any such uncertainties, and perhaps be able to explain what implications this may have for U.S. public opinion on Trump and the U.S.’s democratic status.

Hypothesis

Now that I have searched for, presented, and explained the existing academic literature on the social effects of the behaviors and attitudes of presidential leaders – particularly, incumbent U.S. President Trump – on perceptions of their image and U.S. democracy, I will now state and formalize my hypothesis in relation to my research question, which is divided into its null and alternative forms. My hypothesis, based on certain variables from the EMO dataset and current academic literature on the topic of social influence engendered by U.S. presidential behavior and commentary, is as follows:

H0: In a comparison of individuals, those that were informed of President Trump initiating a travel ban on those coming from Muslim-majority countries and praising North Korean Chairman Kim Jong-un were not more likely to perceive him as less democratic and the U.S. as less of a democracy than those that were not.

HA: In a comparison of individuals, those that were informed of President Trump initiating a travel ban on those coming from Muslim-majority countries and praising North Korean Chairman Kim Jong-un were more likely to perceive him as less democratic and the U.S. as less of a democracy than those that were not.

This hypothesis will be tested using results from a survey experiment done through Lucid Theorem, an online survey sampling tool, on May 3, 2020, which was fielded as part of my “Experimental Methods” class. Thus, based on the information from my research question, the independent variable of interest (IVI) is whether someone received a vignette that informs them of President Trump’s infamous Muslim travel ban in 2017 and praise of North Korean leader Kim Jong-Un during his meeting with South Korean President Moon Jae-in in 2019. The dependent variable (DV) is the potential outcome of how someone rates their feelings toward President Trump on a 0-100 thermometer scale – where 0 and 100 represent one’s completely negative and completely positive feelings toward President Trump, respectively. Covariates (CVs) are also considered here but their use will be further explained in the next section.

Modeling this phenomenon in the framework of potential outcome: The vignette is the treatment. Yi(0) represents a U.S. citizen rating their feelings toward President Trump without receiving the vignette of Trump’s past, while Yi(1) represents a U.S. citizen rating their feelings toward President Trump with the receipt of the vignette of Trump’s past. Given what I know from the relevant literature and personal observation, I expect this treatment effect, Yi (1) - Yi (0), to be negative.

**Data & Methodology**

The data that I will be using to test and explain my hypotheses is the EMO dataset. As mentioned before, its file name is “Experimental+Omnibus+2020\_May+3,+2020\_07.19.csv”. The original dataset can be found by contacting Professor Katherine McCabe, who originally procured it through Lucid Theorem. Alternatively, a copy of this dataset can be found by contacting me or one of my peers who partook in the experiment.

The data span only one time period, May 3, 2020, and contain numerous variables. These variables include my survey questions (seen in Appendix B) and those of my peers. Note that some of my peers’ questions were shown before mine. Such an initiative, I believe, however, did not affect the subjects’ choices for my questions, as their questions are mostly those focusing on demographics and different political topics.

The data’s sample included only those who had access to a computer, is a U.S. citizen, and took the survey through Lucid Theorem on May 3, 2020. It contains 187 total subjects. However, subsetting the data in R (shown in Appendix C) such that it only includes subjects who agreed to the consent question of the survey yields 152 total subjects instead. In other words, 35 subjects were discarded from the experiment. Such a measure is necessary prior to using the data to test my hypothesis, as those who did not consent to taking the survey would not have seen any of the survey questions. This would then lead to missing data and potentially bias the results of my statistical models (which are further explained in the next section), further leading to false conclusions about my hypothesis.

One may ask to why my peers and I chose to use Lucid Theorem instead of other survey sampling platforms, such as Amazon Mechanical Turk (MTurk). After all, is it not better to use other – perhaps more reliable and accurate – platforms to obtain better survey data? There are a couple reasons as to why we had done this. The first reason is that we had originally planned to field our survey through MTurk, but due to the sudden occurrence of COVID-19, departmental funding for our survey experiment was halted. However, with Professor McCabe’s persistence, we were able to field the survey through Lucid Theorem instead – albeit with limited funding. This would also explain why the data’s sample size, 152, is particularly small. The second and final reason is that Lucid Theorem is still a valid survey sampling platform. Indeed, Lucid Theorem provides just as reliable and accurate results as MTurk and other platforms would, and is a useful alternative to such platforms (Coppock and Mcclellan 1, 2019).

Since the EMO dataset contains variables that represent both my peers’ and own survey questions, I shall, of course, be focusing on the latter, as the questions that I had written are intended to measure my hypothesis’s variables and test my hypothesis itself.

From my part, the data contains eight variables, each representing questions 1-8 of my survey instrument (the data’s variables and questions are used interchangeably here). The first seven questions consist of those asking one’s pre-existing beliefs of and attitudes toward President Trump. These are meant to help respondents think about President Trump and their current attitudes toward him on a variety of political and social matters. The eighth question, however, asks respondents as to how they feel toward President Trump being an upholder of the beliefs and values of democracy. Relating these questions to testing my hypothesis, questions 1-7 are my CVs, while question 8 is my DV/potential outcome.

Since this was an online survey experiment, a treatment(s) was needed to complete it. In this case, there was only one treatment. The treatment was a vignette that provided information regarding President Trump’s infamous Muslim travel ban in 2017 and praise of North Korean leader Kim Jong-Un during his meeting with South Korean President Moon Jae-in in 2019. This vignette was presented to subjects prior to seeing and answering question 8 of the survey. However, this only occurred for subjects assigned to the treatment group. Subjects in the control group were not presented this vignette and thus answered question 8 without any knowledge of it. The vignette, then, is my IV/parameter of interest.

The assignment of subjects to the treatment and control groups was done at random via blocking, by which subjects are partitioned into blocks (subgroups) and random assignment occurs within each block. Blocking was done on the "AB..LibCon.Scale” variable in the EMO dataset, which measures which type of political ideology a respondent self-identified with (e.g. liberal, conservative, moderate, etc.). This was done to allow for stronger unbiased estimates of the parameter of interest, higher internal validity, and improved external validity for this study, especially since the sample size is only 152.

There were 80 and 70 subjects randomly assigned to the control and treatment groups (or conditions), respectively, totaling to 152 subjects who had partaken in the online survey experiment. Both the control and treatment condition are essential to testing my hypothesis. This is because my hypothesis measures the association between those who were informed of President Trump’s Muslim travel ban in 2017 and praise of North Korean leader Kim-Jong Un during his meeting with President Jae-in in 2019 and their feelings toward President Trump and the U.S. as a democracy. The treatment condition is needed to see if it causes an upward or downward biased on the latter. The control condition, however, is needed to see what would one’s feelings toward Trump and the U.S. normally be without being reminded of Trump’s past.

My hypothesis will be tested using two types of statistical models (illustrated formally at the end of this section), which are as follows: average treatment effect (ATE) and linear regression – both univariate and multivariate.

The first is intended to explore and analyze the raw causal effect of U.S. citizens being informed of President Trump’s most controversial moments on their perceptions of Trump’s image and the U.S. being a democracy. This will then be illustrated with a box plot graph of the 95% confidence interval of the difference in means between those who had received the vignette and those who had not received the vignette. These results will also be tabulated.

The second can be explained in two parts. For univariate linear regression, it is intended to see the correlation between a U.S. citizen being informed of President Trump’s most controversial moments and their perceptions of Trump’s image and the U.S. being a democracy. This relationship will then be illustrated with a fitted line plot and a residual plot. For multivariate regression, the same relationship is examined, but with CVs consecutively added to the original regression model. The results of both of these types of models will also be tabulated. Table 1 shows a summary of the variables used in these models.

There are two reasons as to why I am using these two types of statistical models for investigating my research question. The first is that I would like to see which one is the best at predicting U.S. citizens’ perceptions of Trump’s image and the U.S. being a democracy when they are informed of President Trump’s most controversial moments. The second is that the regression models are intended to serve as robustness checks on the ATE model. If one doubts about the treatment effect examined in the ATE model, one can look at the regression models to ensure that the treatment does, indeed, has an effect on U.S. citizens’ perceptions on Trump’s image and the U.S. being a democracy.

In terms of testing these models, ATE will be assessed based on the p-value of its t-statistic and box plot. The univariate regression model will be assessed based on its R-squared value, the p-value of its F-statistic, and its residuals. The multivariate regression model, however, will be assessed based on its adjusted R-squared value and the p-value of its F-statistic – focusing on its variation in which all seven CVs are added.

One may wonder as to why I am using multivariate linear regression model to test my hypothesis, especially if it includes many CVs. After all, shouldn’t univariate regression be sufficient since the treatment is randomly assigned and thus it does not depend on other factors? My answer to this is that multivariate regression is intended to be used as CV balancing (CB). CB not only serves as a further robustness check on the ATE model, but also can possibly increase the precision of the parameter of interest, leading to more accurate conclusions about my hypothesis. Table 1 has further information about these CVs.

There are a multitude of matters worth addressing in relation to gathering, analyzing, and interpreting the data. These matters are worth considering prior to examining the results of my statistical methods.

The first is that the data is not perfect for my research question, as it does not fully capture the most completely accurate demographic information or have the perfect pool of survey respondents. Some would not be comfortable with sharing their demographic information, or not everybody could have partaken in the survey due to a lack of computer access. Not to mention, the sample size is small, which is not ideal.

The second is that my data is based on online survey results, rather than in-person ones, which could have adverse effects on the respondent pool and statistical results. However, given online surveying is very much validated and utilized by social science research, I do not see this as much of a problem.

The third is that my statistical models may not be ideal in analyzing said data, as there may be other models that can accomplish a better job at doing as such (e.g. nonparametric methods, advanced sampling techniques, etc.).

The fourth and final one is that some assumptions had been made prior to even designing the survey experiment. Firstly, I had assumed ignorability – the treatment is independent of the potential outcome. This was fully satisfied, however, via blocking (random assignment). Secondly, I had assumed non-interference – the potential outcome is affected solely by the treatment condition administered to subjects, not by treatment conditions administered to other subjects. Because the online survey split subjects into the treatment and control groups without their knowledge, and that it is extremely unlikely that a subject would have more than one computer in taking the survey, I believe this assumption to be fully satisfied. Thirdly, I had assumed excludability – random assignment affects the potential outcome through the treatment. While there are many other factors that could have affected the potential outcome (even with random assignment), I believe that I am able to still able obtain accurate estimates of my parameters. Random assignment does eliminate much of omitted variable bias (OVB), after all. Thus, this assumption is sufficiently satisfied. The fourth and final assumption is that the mean of the estimated ATE parameter is equal to the true population ATE parameter. Given that the data has a very small sample size, this assumption may have been violated. But, it may have not, which is sufficient for the purposes of this paper.

Despite the shortcomings of my data and models, however, I have compromised with them, I believe that perhaps others could use them to better answer my research question in the future.

Statistical Models

1. ATE Model:

Note: *TrumpFeelings*i (1) is the potential outcome that a U.S. citizen rates their feelings toward President Trump when given the vignette of President Trump’s most controversial moments, while *TrumpFeelings*i (0) is the potential outcome that a U.S. citizen rates their feelings toward President Trump when not given the vignette of President Trump’s most controversial moments.

2a. Univariate Linear Regression

i = 0 + 1\*(*Vignette*i) +

Note: I, the dependent variable, represents a U.S. citizen’s rating of their feelings toward President Trump, while *Vignette*i, the independent variable, represents whether a subject was given the vignette of President Trump’s most controversial moments. By this fact, it is also a binary variable, where 0 represents one not receiving the vignette and 1 represents one receiving the vignette.

2b. Multivariate Linear Regression

i = 0 + 1\*(*Vignette*i) + 2\*(*Vote*i) + 3\*(*Satisfaction*i) + 4\*(*Control*i)+ 5\*(*Diplomacy*i) + 6\*(*Trade*i) + 7\*(*Rights*i) + 8\*(*Liberties*i) +

Note: The seven pre-treatment covariates, those beyond *Vignette*i, represent a respondent’s answers to questions 2, 3, 4, 5, 6, and 7 of the questionnaire, respectively. This regression model is done eight times in R, with each adding one more covariate until the last one. For more information regarding each covariate, please consult Table 1.

**Table 1: Summary Details on Survey Instrument Questions Used As Variables**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Type of Variable? | Referred to As What in Regression Models? | Correspond to Which Survey Questions in Dataset? |
| **Independent Variables** |  |  |  |
| Exposure to Vignette  (IVI) | Binary | *Vignette*i | jctreat |
| Voted for Trump in 2016 Presidential Election  (CV) | Binary | *Vote*i | jc\_q1 |
| Satisfied with Trump Administration  (CV) | Ordinal | *Satisfaction*i | jc\_q2 |
| Control  (CV) | Ordinal | *Control*i | jc\_q3 |
| Believes Trump Does Good Diplomacy with Other Countries  (CV) | Binary | *Diplomacy*i | jc\_q4 |
| Believes Trump Does Good Trade with Other Countries  (CV) | Binary | *Trade*i | jc\_q5 |
| Believes Trump Has Improved Civil Rights  (CV) | Binary | *Rights*i | jc\_q6 |
| Believes Trump Has Improved Civil Liberties  (CV) | Binary | *Liberties*i | jc\_q7 |
| **Dependent Variable** |  |  |  |
| Rating/Score of One’s Overall Feelings Toward Trump  (DV) | Continuous | i | jc\_q8outcome\_1 |

**Note:** IVI = independent variable of interest. CV = covariate. DV = dependent/outcome variable. *Vignette*i takes on 1 = if respondent received the vignette, 0 = otherwise. i takes a on value from 0-100 - where 0 = a respondent’s belief that Trump is completely not a president who upholds the beliefs and values of democracy, 100 = otherwise. Ordinal variables are on a scale from 1-3 or 1-4. Mean of DV is 53.10, rounded to two digits. Upcoming regression analyses of ordinal variables include only a few of their value labels in order to simplify space and interpretation.

**Results & Discussion**

Using R, I first computed the means of 70 U.S. citizens’ feelings toward Trump and the U.S. as a democracy with the receipt of the vignette and 82 U.S. citizens’ feelings toward Trump and the U.S. as a democracy without the receipt of the vignette. Coded as “treat\_group” and “control\_group” in R, these represent the potential outcomes, as shown and explained earlier, respectively. Both are valid measures of the concepts in my research question and hypothesis because they measure and assess the relationship between U.S. citizens who were informed of President Trump’s Muslim travel ban in 2017 and praise of North Korean leader Kim-Jong Un during his meeting with President Jae-in in 2019 (the vignette) and their feelings toward President Trump and the U.S. as a democracy. Below is Table 2, which provides a summary of the computational results for ATE.

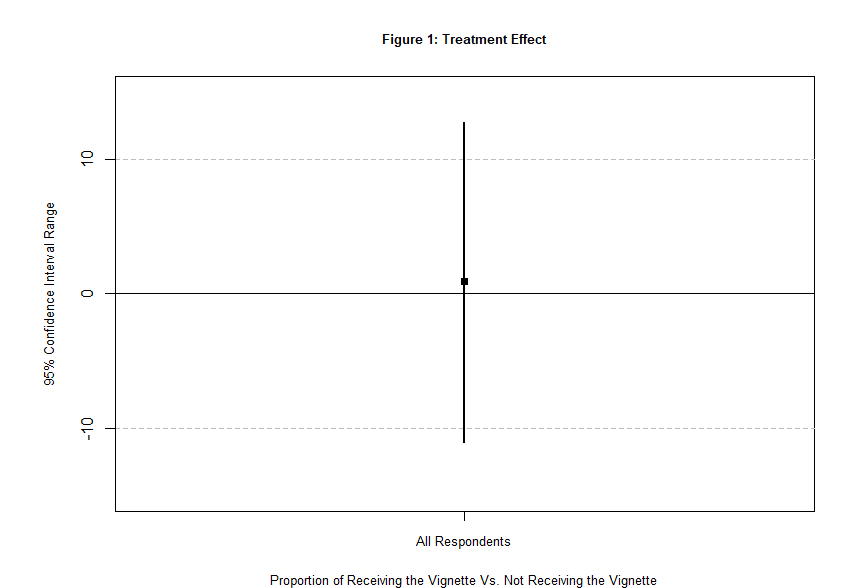
**Table 2: Treatment Effect of Exposure to Vignette on Feelings Toward Trump and U.S as Democracy**

|  |  |  |
| --- | --- | --- |
|  | N | Mean Score on Feelings Toward Trump and U.S. as Democracy |
| Respondents Who Were Exposed to Vignette (Treatment Condition) | 70 | 53.57 |
| Respondents Who Were Not Exposed to Vignette (Control Condition) | 82 | 52.70 |
| Difference in Means Between Scores of Respondents |  | 0.88  (6.04) |
| Student’s t-Test |  | 0.15  [0.88] |

**Note:** Standard errors are in parentheses. All numbers are rounded to 2 digits. P-value of Student’s t-test is located below the t-statistic in brackets. 5% significance level is used. Data is from the updated Experimental+Omnibus+2020\_May+3,+2020\_07.19.csv dataset.

Interpreting the difference in means result: Respondents who were exposed to the vignette scored, on average, 0.88 points higher on the feeling thermometer than respondents who were not exposed to the vignette. This would mean that, in the context of the survey, U.S. citizens who had received the vignette were more likely to still believe that Trump is a president who upholds the beliefs and values of democracy than those who had not received it. Interestingly, and surprisingly, this result would be contrary to both my expectation of the ATE estimate being negative and my hypothesis (and instead support the null hypothesis). Indeed, this is further supported by the p-value of the t-statistic for the ATE estimate, which is 0.88. Because the p-value is greater than 0.05, the t-statistic is statistically significant. Because of this, we say that we fail to reject the null hypothesis of the ATE. For my hypothesis, this would mean U.S. citizens who were informed of Trump initiating a travel ban on those coming from Muslim-majority countries and praising North Korean Chairman Kim Jon-un were not more likely to perceive him as less democratic and the U.S. as less of a democracy than those that were not. This is shown as seemingly true by the positive ATE estimate, as well.

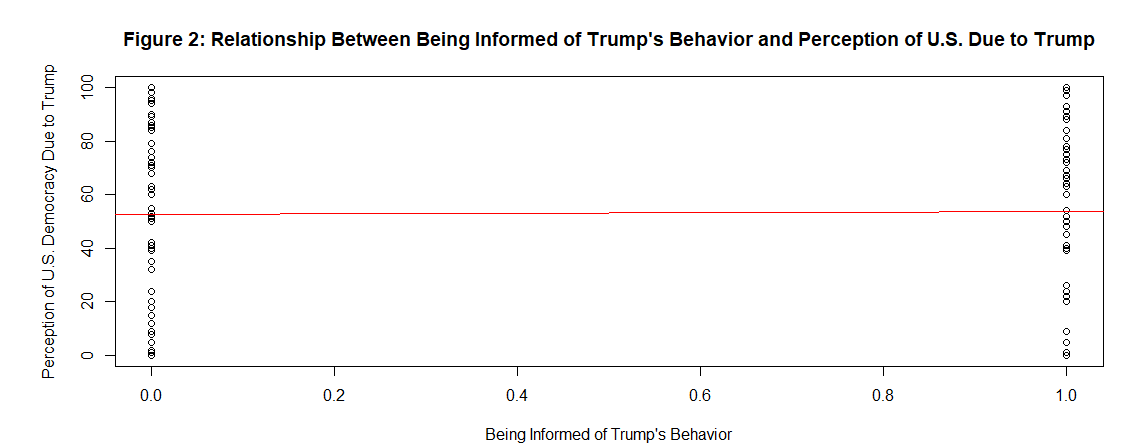
To further test the validity of the statistical significance of the ATE, I display the 95% confidence interval of the ATE estimate in the form of a box plot in R. Below is Figure 1, which describes such a plot.



From this box plot, we see that the 95% confidence interval of the ATE estimate crosses the 0% line. Because of this, we can say that such an estimate is, indeed, not statistically significant at the 5% level. Such additional confirmation, then, would further support the null counterpart of my hypothesis.

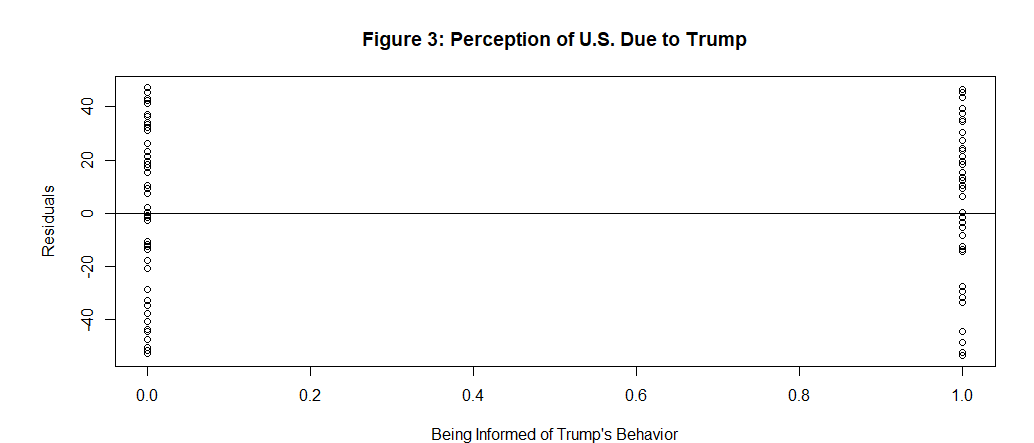
Serving robustness checks on my ATE estimate, I then performed univariate and multivariate linear regression in R. I first regressed the respondents’ feelings toward Trump and the U.S. as a democracy on whether said respondents had received the vignette of Trump’s political past. Then, I regressed the respondents’ feelings toward Trump and the U.S. as a democracy on whether said respondents had received the vignette of Trump’s political past, controlling for the respondents’ answer choices to questions 1-7 of the survey. Remember that multivariate regression was done for the purposes of CB. The results of these regressions are shown in Table 3 in Appendix A (too large to be showed directly below).

Interpreting the coefficient on the treatment estimate in the 1st Column of Table 3: Being shown the vignette of Trump’s political past is associated with a 0.876 point increase in the respondent’s feelings toward Trump and the U.S. as a democracy on the feeling thermometer. Such a coefficient is identical to the ATE estimate shown previously; the ATE estimate of 0.88 is due to rounding to the nearest two digits. This coefficient indicates that, in terms of both correlation and causal effects, a U.S. citizen who takes the survey and is shown the vignette of Trump’s political past is expected to increase his or her feelings toward Trump and the U.S. as a democracy on the feeling thermometer by approximately 0.88 points. Figure 2 below indicates this result – albeit, very roughly.



However, like in the analysis of the ATE estimate done before, such another result would further support the null counterpart of my hypothesis. As shown in Column 1 of Table 3, the R-squared value and p-value of the F-statistic are 0.000 and 0.885, respectively. The former would mean that 0% of the variation in the respondent’s feelings toward Trump and the U.S. as a democracy is explained by the vignette of Trump’s political past. This is due to the random assignment of the treatment to the subjects, which, in theory, eliminates much of (systematic) variation in potential outcomes. The latter indicates that the F-statistic is statistically significant at the 5% level, which would mean that I fail to reject the null hypothesis. Because of this, this would also mean that there is no association between U.S. citizens who were informed of President Trump’s Muslim travel ban in 2017 and praise of North Korean leader Kim-Jong Un during his meeting with President Jae-in in 2019 and their feelings toward President Trump and the U.S. as a democracy. Such a result is confirmed by that of the ATE estimate, which confounded my expectations.

To further evaluate the validity and reliability of the univariate linear regression model for the ATE estimate, I display the residuals of the model in a plot in R. Figure 3 below depicts such a plot.



As we can see above, the residuals are all gathered in two sides of the plot. There are many congregated at the values of 0 and 1 on the x-axis. This is due to the fact that the vignette is a binary variable, taking on a value of 0 or 1. In any case, such a pattern of the residuals indicates that it is not random and not even remotely clustered around the mean zero line. This would mean, then, that a non-linear model is more appropriate for this type of regression instead. This is not to say, however, that the results for the null hypothesis from the univariate regression model are invalidated, but rather, to suggest that there are more ideal models to reach the same results.

Interpreting the coefficient on the treatment estimate in the 8th Column of Table 3: Being shown the vignette of Trump’s political past is associated with a 7.401 point increase in the respondent’s feelings toward Trump and the U.S. as a democracy on the feeling thermometer, controlling for the respondent’s answer choices for questions 1-7 of the survey. Such a result is completely different from the ATE estimate and is to be further examined with much skepticism.

Indeed, examining the p-value of the F-statistic of the model in Column 8 indicates that it is statistically significant at the 5% level. Because of this, we say that we reject the null hypothesis – that there is an association between U.S. citizens who were informed of President Trump’s Muslim travel ban in 2017 and praise of North Korean leader Kim-Jong Un during his meeting with President Jae-in in 2019 and their feelings toward President Trump and the U.S. as a democracy. While this may seem like promising news for my hypothesis (and a confirmation for my expectations), one must be cognizant of the fact that the model’s adjusted R-squared value is 0.633. This would mean that 63.3% of the variation in the respondent’s feelings toward Trump and the U.S. as a democracy is explained by all the IVs in the model. We know that this cannot be the case since random assignment had eliminated much of the (systematic) variation in the data. Thus, we have reason to believe that a conclusion about my hypothesis based on these results is false. The same analysis and conclusion are true for all other multivariate regressions shown in Table 3, especially since their coefficients on the treatment, adjusted R-squared values, and standard errors (in part due to a very small sample size) seem to have increased seismically compared to those in Column 1, the univariate regression’s results.

**Conclusion**

This research was motivated by my intellectual curiosity regarding to what extent has President Trump influenced U.S. citizens’ perceptions of his image and the U.S. being a democracy due to his executive orders and comments on world leaders. I stated and formalized this research into a hypothesis, which was later tested using ATE and linear regression – both univariate and multivariate – models on survey experimental data. Ultimately, my hypothesis was not supported. The ATE model indicated that there was no relationship between U.S. citizens who were informed of President Trump’s Muslim travel ban in 2017 and praise of North Korean leader Kim-Jong Un during his meeting with President Jae-in in 2019 and their feelings toward President Trump and the U.S. as a democracy. The univariate linear regression model seemed to further support this claim. The multivariate linear regression model, initially indicating otherwise, falls short when examined more critically, even when serving for CB purposes. Collectively, the results from these models confounded my expectations of U.S. citizens having negative feelings toward Trump and the U.S. perceived as a democracy. Such an investigation of this political phenomenon leads me to believe that public opinion toward President Trump and the U.S.’s democratic status may be misled, despite much observations by people and research done by polling firms. However, we should not be quick to accept this conclusion, as my potential outcomes framework, treatment condition, and models could all be improved upon and lead to different results, and thus, different conclusions about my hypothesis.

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**Appendix A – Table 3: Regression Results**

**Table 3: Determinants of U.S. Citizen’s Feelings Toward Trump**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Exposed to Trump Vignette | 0.876  (6.060) | 2.493  (5.319) | 2.604  (3.845) | 3.203  (3.824) | 5.337  (3.880) | 6.621\*  (3.905) | 7.208\*  (3.917) | 7.401\*  (3.927) |
| Did Vote for Trump in 2016  (1a) |  | 24.614\*\*  (9.160) | 0.461  (7.041) | 1.359  (7.080) | 3.461  (7.157) | 2.266  (7.108) | 2.039  (7.186) | 1.965  (7.216) |
| Did Not Vote for Trump in 2016  (1b) |  | -16.086\*  (8.721) | -3.870  (6.382) | -4.363  (6.381) | -1.928  (6.416) | -0.399  (6.425) | -0.806  (6.423) | -1.195  (6.484) |
| (Very) Satisfied with Trump Administration  (2a) |  |  | 23.265\*\*  (7.758) | 24.811\*\*  (8.328) | 21.069\*  (9.097) | 21.212\*  (9.303) | 20.644\*  (9.408) | 20.653\*  (9.427) |
| (Very) Unsatisfied with Trump Administration  (2b) |  |  | -43.340\*\*\*  (6.581) | -40.618\*\*\*  (6.832) | -37.618\*\*\*  (6.851) | -32.611\*\*\*  (7.188) | -29.025\*\*\*  (7.623) | -29.594\*\*\*  (7.691) |
| Trump Should Have (Complete) Control Over News Media  (3) |  |  |  | -4.514  (6.603) | -6.149  (6.574) | -7.280  (6.609) | -6.593  (6.649) | -6.384  (6.759) |
| Trump Has Good Diplomacy  (4a) |  |  |  |  | -3.348  (7.207) | -6.367  (8.130) | -3.955  (8.437) | -5.643  (8.629) |
| Trump Does Not Have Good Diplomacy  (4b) |  |  |  |  | -14.096\*  (6.159) | -11.918\*  (6.999) | -6.892  (7.842) | -8.372  (7.995) |
| Trump Does Good Trade with Other Countries  (5a) |  |  |  |  |  | 5.367  (8.345) | 5.314  (8.350) | 5.511  (8.399) |
| Trump Does Bad Trade with Other Countries  (5b) |  |  |  |  |  | -9.915  (6.957) | -8.458  (7.018) | -9.765  (7.119) |
| Trump Has Improved Civil Rights  (6a) |  |  |  |  |  |  | -2.049  (6.683) | -4.882  (7.538) |
| Trump Has Not Improved Civil Rights  (6b) |  |  |  |  |  |  | -10.693  (7.313) | -14.276\*  (8.034) |
| Trump Has Improved Civil Liberties  (7a) |  |  |  |  |  |  |  | 6.633  (7.766) |
| Trump Has Not Improved Civil Liberties  (7b) |  |  |  |  |  |  |  | 9.545  (7.968) |
| Intercept | 52.695\*\*\*  (4.113) | 51.709\*\*\*  (8.298) | 62.138\*\*\*  (7.705) | 59.135\*\*\*  (7.963) | 64.765\*\*\*  (8.281) | 64.402\*\*\*  (8.592) | 64.921\*\*\*  (8.598) | 62.603\*\*\*  (8.857) |
|  |  |  |  |  |  |  |  |  |
| Number of Observations | 152 | 152 | 152 | 152 | 152 | 152 | 152 | 152 |
| R2 | 0.000 | 0.228 | 0.606 | 0.615 | 0.626 | 0.633 | 0.634 | 0.633 |
| P-Value | 0.885 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

**Note:** Heteroskedasticity-robust standard errors in parentheses. \*\*\* indicates p < 0.01. \*\* indicates p < 0.05. \* indicates p < 0.10. Numbers are rounded to 3 digits. Vignette is the treatment condition and thus a binary variable (1 = respondent was shown the vignette, 0 = otherwise). Coefficients on third control variable, measuring a respondent’s satisfaction with Trump’s administration, only show the two extreme values for said variable. Fourth control variable, measuring a respondent’s opinion on whether Trump should have control over news media, also only shows one extreme value for said variable. Numbers below the IVs indicate their corresponding question numbers – with (a) and (b) representing a given value label. R2 is based on adjusted R-squared computed results for columns 2 and beyond. P-Value shows the p-value for the F-statistic for each regression. Data is from the updated Experimental+Omnibus+2020\_May+3,+2020\_07.19.csv dataset.

**Appendix B – Survey Draft Instrument for Qualtrics**

**Purpose/Aim:** This study seeks to understand how U.S. citizens being informed of President Trump’s most controversial moments can affect their perceptions of the U.S. being a democracy.

**Hypothesis/Research Question:** To what extent has President Trump influenced U.S. citizens’ perceptions of the U.S. being a democracy due to his executive orders and comments on world leaders?

**Questions:**

1. Did you vote for Donald Trump for the presidential term of 2016-2020?

1 ----- Yes

2 ----- No

88 ----- I don’t know

2. Overall, how satisfied are you with President Trump’s administration?

1 ----- Very satisfied

2 ----- Somewhat satisfied

3 ----- Neither satisfied nor unsatisfied

4 ----- Somewhat unsatisfied

5 ----- Very unsatisfied

3. Do you think that President Trump should be allowed to have control over mainstream news media in your country?

1. ----- Yes, he should have complete control

2 ----- Yes, but he should have some control

3 ----- Yes, but he should have little control

4 ----- No, he should have no control

4. Do you believe that President Trump does a good job at dealing with diplomacy with other countries?

1 ----- Yes

2 ----- No

88 ----- I don’t know

5. Do you believe that President Trump does a good job at dealing with trade with other countries?

1 ----- Yes

2 ----- No

88 ----- I don’t know

6. In the last 12 months, do you think President Trump has improved the American people’s civil rights (e.g. freedoms of speech, religion, press, etc.)?

1 ----- Yes

2 ----- No

88 ----- I don’t know

7. In the last 12 months, do you think President Trump has improved the American people’s civil liberties (e.g. protection from employee discrimination, right to marry, right to privacy, etc.)?

1 ----- Yes

2 ----- No

88 ----- I don’t know

The text below describes two of President Trump's actions while in office.

**Vignette:**

On January 27, 2017, President Trump signed an executive order that suspended the entry of immigrants from 7 Muslim-majority countries — Syria, Iran, Iraq, Libya, Sudan, Yemen and Somalia — for 90 days and stopped all refugees from entering the country for 120 days. President Trump tweeted about this on Twitter 2 days later: “Our country needs strong borders and extreme vetting, NOW. Look what is happening all over Europe and, indeed, the world - a horrible mess!”

On April 11, 2019, President Trump met with South Korean President Moon Jae-in in the Oval Office of the White House. One of the remarks he made throughout his talk with President Jae-in was this: "Kim Jong Un has been, really, somebody that I've gotten to know very well and respect, and hopefully -- and I really believe that, over a period of time, a lot of tremendous things will happen."

**Outcome:**

8. On a scale from 0-100, how would you rate your overall feelings toward President Trump based on the following statement: He is still a president that upholds the beliefs and values of democracy?

0 100

Strongly disagree Strongly agree

**Appendix C – R Code**

# Joel Cabrera

# Experimental Methods

# Professor McCabe

# May 11, 2020

### 1. Subsetting and loading data preliminaries

library(ggplot2)

data = read.csv("Experimental+Omnibus+2020\_May+3,+2020\_07.19 (updated).csv")

data = subset(data, consent == "I Agree")

### 2. Checking variables

# Dependent (outcome) variable

table(data$jc\_q8outcome\_1) # question 8, "TrumpFeelings" variable (continuous)

# Independent (treatment) variable

table(data$jctreat) # vignette given before shown question 8, "vignette" variable (binary)

# Covariates (CVs)

table(data$jc\_q1) # question 1, "vote" variable (binary)

table(data$jc\_q2) # question 2 "satisfication" variable (ordinal)

table(data$jc\_q3) # question 3 "control" variable (ordinal)

table(data$jc\_q4) # question 4 "diplomacy" variable (binary)

table(data$jc\_q5) # question 5 "trade" variable (binary)

table(data$jc\_q6) # question 6 "rights" variable (binary)

table(data$jc\_q7) # question 7 "liberties" variable (binary)

### 3. Average Treatment Effect (ATE)

# Creating new variable

data$new[data$jctreat == 1] <- data$jc\_q8outcome\_1[data$jctreat == 1]

data$new[data$jctreat == 0] <- data$jc\_q8outcome\_1[data$jctreat == 0]

# Checking new variable

table(data$new[data$jctreat == 1])

table(data$new[data$jctreat == 0])

# Means of groups

treat\_group = mean(data$new[data$jctreat == 1], na.rm = TRUE) # mean of scores of respondents who received vignette

control\_group = mean(data$new[data$jctreat == 0], na.rm = TRUE) # mean of scores of respondents who did not receive vignette

treat\_group

control\_group

# Difference in means

diff.data = treat\_group - control\_group

diff.data

# Student's t-test

data.t = t.test(data$new[data$jctreat == 1], data$new[data$jctreat == 0])

data.t # p-value = 0.8848

t = 0.14515

# Standard error

se.data = diff.data/t

se.data

# 95% confidence interval

data.t$conf.int

# Box plot

par(mar = c(4, 6, 4, 2))

plot(c(1), c(diff.data),

xlim = c(.5, 1.5),

ylim = c(-15, 15),

main = "Figure 1: Treatment Effect",

xlab = "Proportion of Receiving the Vignette Vs. Not Receiving the Vignette",

ylab = "95% Confidence Interval Range",

cex.lab = .8, cex.main = .8,

pch = c(15, 1),

xaxt="n",

yaxt="n")

abline(h=seq(-40, 40, 10), col = "gray", lty = 20)

abline(h=0)

axis(1, c(1), c("All Respondents"), cex.axis = .8)

axis(2, seq(-40, 40, 10), seq(-40, 40, 10), las = 3)

lines(c(1,1), data.t$conf.int, lwd=2) # should come from t-test of data

### 4. Linear regression models

# Univariate

reg1 = lm(jc\_q8outcome\_1 ~ jctreat, data = data) # regressing outcome on treatment condition

summary(reg1)

# Fitted line plot

plot(x = data$jctreat, #x-values

y = data$jc\_q8outcome\_1, # y-values

main = "Figure 2: Relationship Between Being Informed of Trump's Behavior and Perception of U.S. Due to Trump", # label for main title

ylab = "Perception of U.S. Democracy Due to Trump", #y-axis label

xlab = "Being Informed of Trump's Behavior", #x-axis label

pch = 1) # point type

abline(reg1, col = "red") #adds reg. line

# Residual plot

reg1.res = resid(reg1)

plot(data$jctreat, reg1.res,

ylab = "Residuals", xlab = "Being Informed of Trump's Behavior",

main = "Figure 3: Perception of U.S. Due to Trump")

abline(0, 0) # adds line at 0

# Multivariate (for robustness checks)

# 1 CV

reg2 = lm(jc\_q8outcome\_1 ~ jctreat + jc\_q1, data = data)

summary(reg2)

# 2 CVs

reg3 = lm(jc\_q8outcome\_1 ~ jctreat + jc\_q1 + jc\_q2, data = data)

summary(reg3)

# 3 CVs

reg4 = lm(jc\_q8outcome\_1 ~ jctreat + jc\_q1 + jc\_q2 + jc\_q3, data = data)

summary(reg4)

# 4 CVs

reg5 = lm(jc\_q8outcome\_1 ~ jctreat + jc\_q1 + jc\_q2 + jc\_q3 + jc\_q4, data = data)

summary(reg5)

# 5 CVs

reg6 = lm(jc\_q8outcome\_1 ~ jctreat + jc\_q1 + jc\_q2 + jc\_q3 + jc\_q4 + jc\_q5, data = data)

summary(reg6)

# 6 CVs

reg7 = lm(jc\_q8outcome\_1 ~ jctreat + jc\_q1 + jc\_q2 + jc\_q3 + jc\_q4 + jc\_q5 + jc\_q6, data = data)

summary(reg7)

# 7 CVs

reg8 = lm(jc\_q8outcome\_1 ~ jctreat + jc\_q1 + jc\_q2 + jc\_q3 + jc\_q4 + jc\_q5 + jc\_q6 + jc\_q7, data = data)

summary(reg8)