You Fundraised What? (Final Project with Code)

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Introduction

Every two years Michiganders elect 14 members to the House of Representatives. Each representative represents roughly 700,000 people. As members of the largest deliberation body of our bicameral legislative system, members have the power to introduce, pass, or reject legislation brought to the House floor. Recently, we have seen that individual members such as Representative Alexandria Ocasio-Cortez (NY-14) and Dan Crenshaw (TX-02) have harnessed the power of social media and the 24 hour news cycle to not only have substantial influence within the House, but over American culture and politics broadly. Thus, being an elected member of the House has the potential to be more important than any time in recent memory.

However, to get elected to the House of Representatives, candidates must campaign in their respective districts. The final, most important goal, is for candidates to reach 50% +1 of voters in the general election. How they go about doing that is a very interesting thing to analyze. Many campaigns and candidates agree that fundraising is one of the most important aspects of running a campaign. In fact, according to The Washingston Post, Congressional candidates who raise more money are more often than not more likely to win their races. According to strict rules set by the federal government, candidates usually solicit funds from individuals or Political Action Committees (PACS). PACS are usually owned by a corporation to promote and donate to candidates that share their viewpoints, or are issue based, such as the Planned Parenthood Action Fund, which seeks to promote and donate to candidates that share their vision.

Importantly, outside spending groups, or Super PACS are also entities that candidates must keep in mind while fundraising. While they are not allowed to donate directly to a candidate's campaign, they are allowed to spend virtually an unlimited amount of money in elections as long as they do not coordinate directly with campaigns. These Super PACS with large sums of money have the potential to sway elections and candidates are certainly aware of them. Through our analysis, we would like to answer the questions: 1. Does raising money correlate with negative outside spending towards the candidate 2. Which candidates have raised the most amount of money in the 2020 cycle 3. How frequently does the top fundraiser solicit donations and 4. From people with what occupations does the top fundraiser raise the most frequent amount of money from. Our discussion will be limited to members of the House of Representatives from Michigan. These are important questions to analyze because answering them can inform the strategy of future candidates who may pursue this office in Michigan (and because of aforementioned reasons).

Theory

We will try to explore the relationship between fundraising and outside spending in elections. We will then move to analyzing the top fundraiser of the Michigan members that are in the House of Representatives. We are going to look for a unknown relationship in the data by trying to find if there is a correlation between total fundraising and the amount of money spent negatively against candidates by outside groups (PACS and Super PACS). More specifically, we be looking to see if there is a kind of deterrence effect in regard to spending and fundraising. Will higher amounts of individual candidate fundraising lead to more or less outside expenditures in their election races? To do these analyses, we will have to find the total amount of

outside spending done in each congressional race in Michigan, as well as add up the total amount fundraised by each candidate who won their election to the House of Representatives on November 3, 2020. To view the total number of donations to each candidate in Michigan, we will have to add up all the individual donations that they have received over the 2020 cycle (January 2019-October 2020). To view the frequency of donations to the top fundraiser, we will have to create a temporal analysis of that candidates fundraising over the 2020 cycle time period, according for every individual contribution over that time period. To view which occupation contributes the most amount of money the most frequently to candidates, we will have to dig deep into the data and analyze every different profession category that donates to the top Michigan fundraiser. Hopefully, these analyses can be insightful for candidates who seek office in the future, giving them the guidelines (in regards to fundraising) on how to run a good campaign and how to run a bad campaign.

Hypotheses

We believe that we will find several things after analyzing our data. First, we believe that there will be a negative linear relationship between candidate fundraising and negative outside expenditure towards their campaign. Our intuition here, is that PACS and Super PACS will be more likely to spend negatively against a candidate who they perceive as weak (by not having a lot of money in their campaign coffers). We believe this because PACS and Super PACS are usually national organizations that have a lot of choice of where to spend their money. We suspect they will probably negatively spend in races where they can spend the least and gain the most (in this case a House seat). Spending money against a candidate who has a lot of money would be less effective because that candidate could counter the negative outside spending. We also suspect that top fundraiser in Michigan will frequently fundraise in the run up to the election (August-October before the election). We also think that the top fundraiser will raise frequently before this period. The intuition here is that in order to fundraise a lot of money, the candidate must be fundraising constantly and not taking any time before the election for granted. Lastly, we believe that the most frequent donors to the top preforming candidate will be CEOSs, actors, or executives. These occupations pay a lot of money and thus people in those professions might donate more frequently to top candidates (because they have more money to spend overall).

Data

The data that we collected was from two websites. The first is FEC.gov. This official government website provides online copies of fundraising and expenditure records for every candidate that runs for election at the federal level. For our purposes, we looked at the individual campaign fundraising records for all 14 of the Michigan candidates for the House of Representatives that won their elections on November 3, 2020 (members who lost their races are excluded from this analyses). We also collected negative outside expenditure data against all 14 candidates from OpenSecrets.org. OpenSecrets.org is run by the Center for Responsive Politics which seeks to provide citizens with unbiased information on elections and lobbying. However, there are several limits to our data. First, the FEC data does not capture all people who donate to a candidate. The FEC only requires candidates to file individual contribution of $200 or more. However, many contributions under $200 are still recorded. Second, in regard to the OpenSecrets.com data, PAC and Super PAC spending is notoriously hard to track. OpenSecrets.com tracks as much as it can, but probably does not capture all spending.

Analyses

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag

## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
library(ggplot2)
library(forcats)
library(lubridate)
```

```
##
## Attaching package: 'lubridate'

## The following objects are masked from 'package:base':
##
##     date, intersect, setdiff, union
```

```
library(ggthemes)
```

```
mi01_raw <- read.csv("MI01.csv")
mi02_raw <- read.csv("MI02.csv")
mi03_raw <- read.csv("MI03.csv")
mi04_raw <- read.csv("MI04.csv")
mi05_raw <- read.csv("MI05.csv")
mi06_raw <- read.csv("MI06.csv")
mi07_raw <- read.csv("MI07.csv")
mi08_raw <- read.csv("MI08.csv")
mi09_raw <- read.csv("MI09.csv")
mi10_raw <- read.csv("MI10.csv")
mi11_raw <- read.csv("MI11.csv")
mi12_raw <- read.csv("MI12.csv")
mi13_raw <- read.csv("MI13.csv")
mi14_raw <- read.csv("MI14.csv")
```

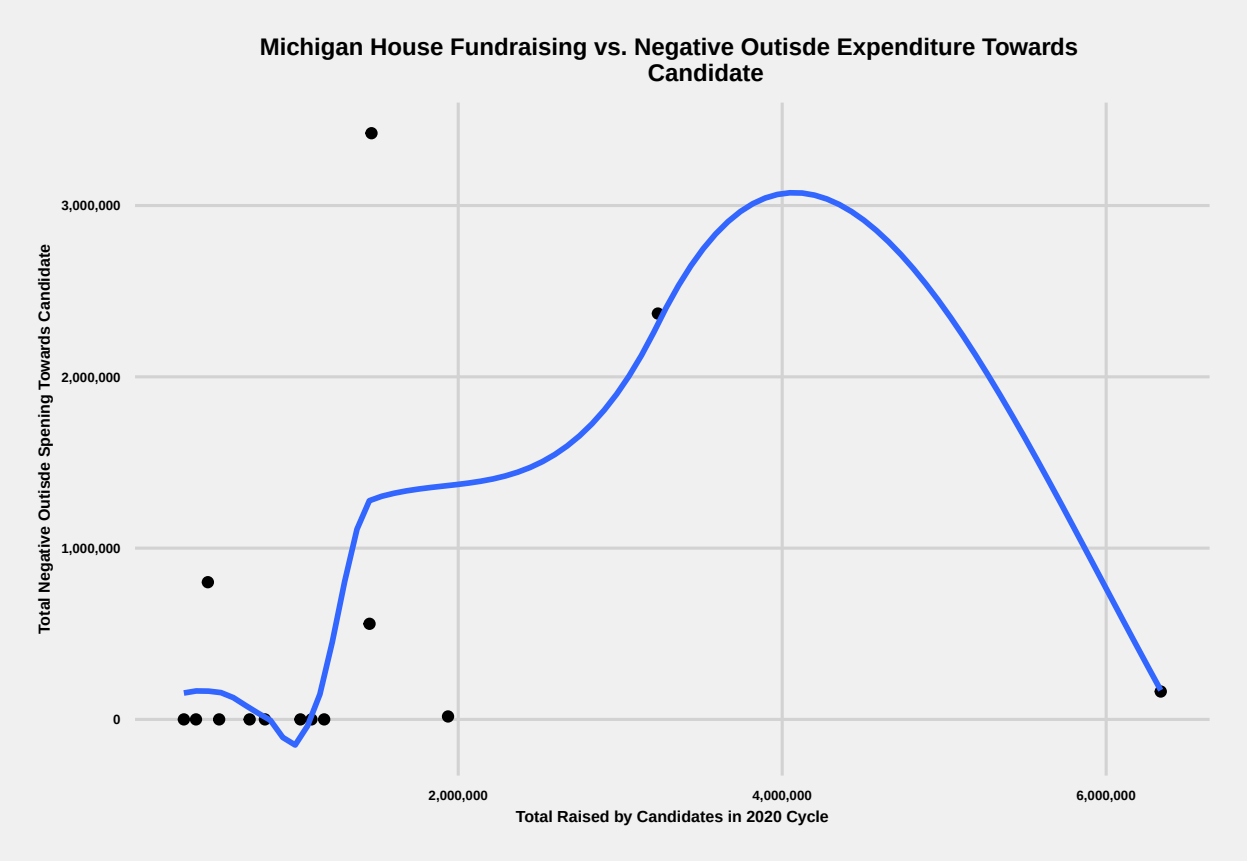
```
mi01_raw <- read.csv("MI01.csv")
mi02_raw <- read.csv("MI02.csv")
mi03_raw <- read.csv("MI03.csv")
mi04_raw <- read.csv("MI04.csv")
mi05_raw <- read.csv("MI05.csv")
mi06_raw <- read.csv("MI06.csv")
mi07_raw <- read.csv("MI07.csv")
mi08_raw <- read.csv("MI08.csv")
mi09_raw <- read.csv("MI09.csv")
mi10_raw <- read.csv("MI10.csv")
mi11_raw <- read.csv("MI11.csv")
mi12_raw <- read.csv("MI12.csv")
mi13_raw <- read.csv("MI13.csv")
mi14_raw <- read.csv("MI14.csv")
```

```
mi01_filter <- mi01_raw[,-c(1:26, 29:34,37:79)]
mi02_filter <- mi02_raw[,-c(1:26, 29:34,37:79)]
mi03_filter <- mi03_raw[,-c(1:26, 29:34,37:79)]
mi04_filter <- mi04_raw[,-c(1:26, 29:34,37:79)]
mi05_filter <- mi05_raw[,-c(1:26, 29:34,37:79)]
mi06_filter <- mi06_raw[,-c(1:26, 29:34,37:79)]
mi07_filter <- mi07_raw[,-c(1:26, 29:34,37:79)]
mi08_filter <- mi08_raw[,-c(1:26, 29:34,37:79)]
mi09_filter <- mi09_raw[,-c(1:26, 29:34,37:79)]
mi10_filter <- mi10_raw[,-c(1:26, 29:34,37:79)]
mi11_filter <- mi11_raw[,-c(1:26, 29:34,37:79)]
mi12_filter <- mi12_raw[,-c(1:26, 29:34,37:79)]
mi13_filter <- mi13_raw[,-c(1:26, 29:34,37:79)]
mi14_filter <- mi14_raw[,-c(1:26, 29:34,37:79)]

Mi01_sum <- sum(mi01_filter$contribution_receipt_amount)
Mi02_sum <- sum(mi02_filter$contribution_receipt_amount)
Mi03_sum <- sum(mi03_filter$contribution_receipt_amount)
Mi04_sum <- sum(mi04_filter$contribution_receipt_amount)
Mi05_sum <- sum(mi05_filter$contribution_receipt_amount)
Mi06_sum <- sum(mi06_filter$contribution_receipt_amount)
Mi07_sum <- sum(mi07_filter$contribution_receipt_amount)
Mi08_sum <- sum(mi08_filter$contribution_receipt_amount)
Mi09_sum <- sum(mi09_filter$contribution_receipt_amount)
Mi10_sum <- sum(mi10_filter$contribution_receipt_amount)
Mi11_sum <- sum(mi11_filter$contribution_receipt_amount)
Mi12_sum <- sum(mi12_filter$contribution_receipt_amount)
Mi13_sum <- sum(mi13_filter$contribution_receipt_amount)
Mi14_sum <- sum(mi14_filter$contribution_receipt_amount)

Representative <- c("Jack Bergman (MI-01)","Bill Huizenga (MI-02)",
                    "Peter Meijer (MI-03)",
                "John Moolenar (MI-04)",
  "Dan Kildee (MI-05)","Fred Upton (MI-06)", "Tim Walberg (MI-07)",
  "Elissa Slotkin (MI-08)",
  "Andy Levin (MI-09)", "Lisa McClain (MI-10)", "Haley Stevens (MI-11)",
  "Debbie Dingell (MI-12)",
  "Rashida Tlaib (MI-13)","Brenda Lawrence (MI-14)")

district_names <- c("MI-01","MI-02","MI-03","MI-04","MI-05","MI-06",
                    "MI-07","MI-08",
                    "MI-09","MI-10","MI-11","MI-12","MI-13","MI-14")



Total_Raised <- c(Mi01_sum,Mi02_sum,Mi03_sum,Mi04_sum,Mi05_sum,Mi06_sum,
                  Mi07_sum,Mi08_sum,
          Mi09_sum,Mi10_sum,Mi11_sum,Mi12_sum,Mi13_sum,Mi14_sum)

district_sums <- data.frame(Representative,district_names)

outside_spending_for <- c(52953,6211,371225,8436,8650,775065,5304,148176,
                          14711,131840,
```

```
                          95021,6505,103041,10)

outside_spending_against <- c(0,0,3422365,0,0,558155,0,162775,0,801095,
                              2369469,0,17157,0)

i <- data.frame(Total_Raised,outside_spending_against)
```

```
plot_1 <- i %>%
  ggplot(aes(Total_Raised,y=outside_spending_against,))+geom_point()+
  geom_smooth(se=FALSE)+
  scale_y_continuous(name= "Total Negative Outisde Spening Towards Candidate",
                     labels = scales::comma)+theme_fivethirtyeight()+
  theme(axis.title = element_text())+
  scale_x_continuous(name="Total Raised by Candidates in 2020 Cycle",
                     labels = scales::comma)+
  ggtitle("Michigan House Fundraising vs. Negative Outisde Expenditure Towards
          Candidate")+
  theme(text=element_text(color="#000000", face="bold", size=6))+
  theme(plot.title = element_text(hjust = 0.5, face = "bold"))

print(plot_1)
```

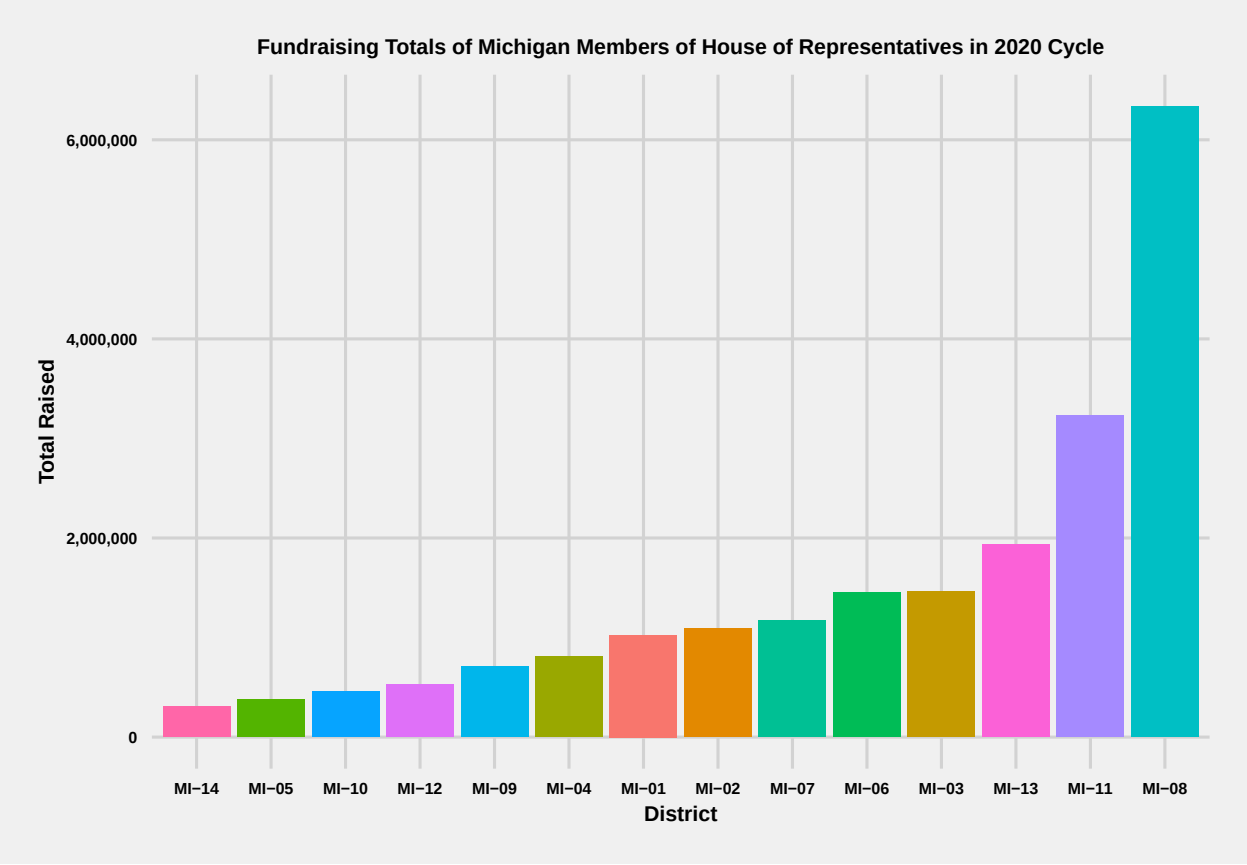
```
## `geom_smooth()` using method = 'loess' and formula 'y ~ x'
```



This figure contains total 2020 cycle fundraising (from January 2019-October 2020) of all Michigan . We then smooth the points to show a general trend line. The curve shows a parabolic relationship between

fundraising and outside opposition expenditure. We visualized these elements to explore the relationship between fundraising and outside opposition expenditure. According to the trend line, we see that campaigns that raise very little have little outside money spent against them. This refutes our hypothesis and probably is the case because districts where very little money is raised are usually noncompetitive due to gerrymandering. The middle of the graph shows that campaigns that have received a moderate amount of money have a lot of outside money spent against them. This is probably because these campaigns are in competitive districts, but have not raised enough to deter outside spending. The last portion of the graph shows that campaigns that fundraise massive amounts of money have little outside opposition expenditure in their races. This shows a deterrence effect, in which candidates in competitive districts may want to raise more money to discourage outside opposition expenditure.

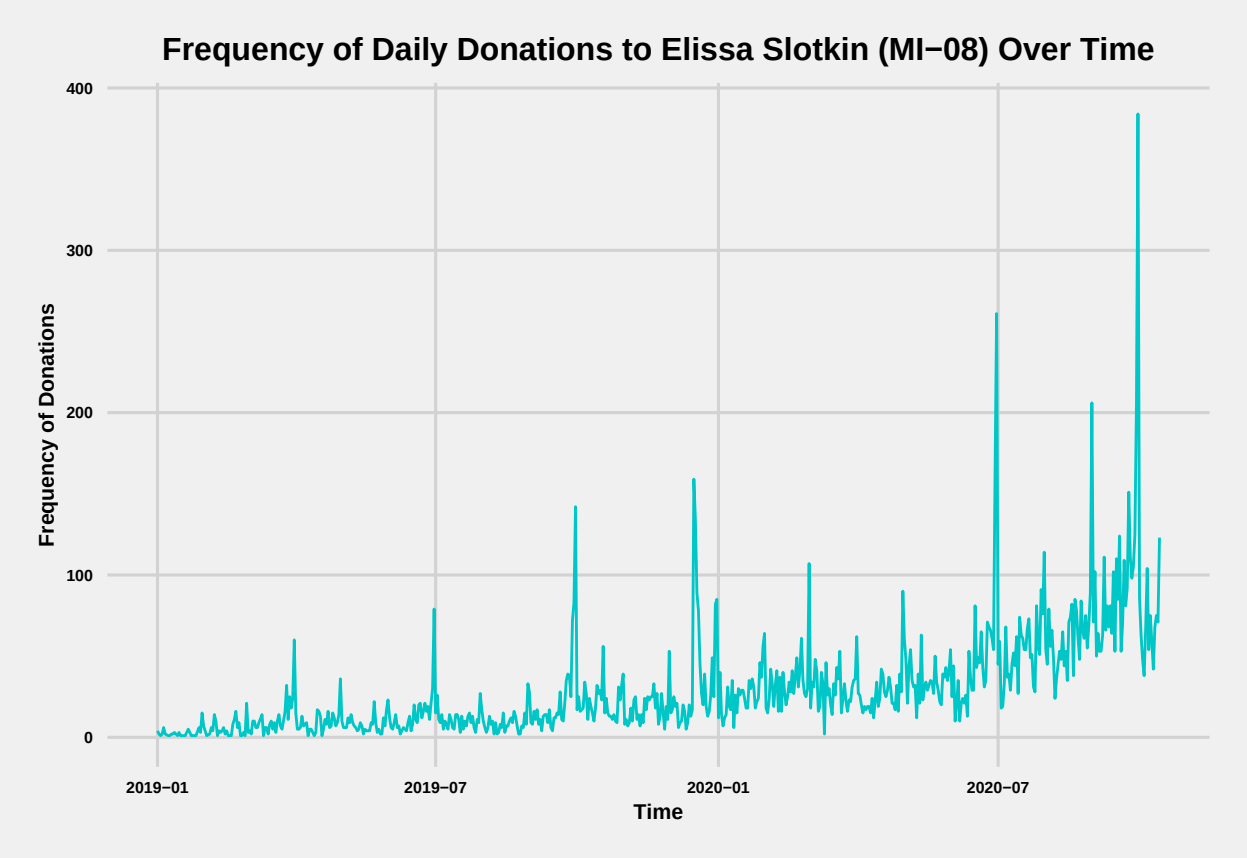
```
plot_2 <- district_sums %>%
  ggplot(aes(fct_reorder(district_names,Total_Raised),y=Total_Raised,
  fill=district_names))+geom_bar(stat = "identity")+
  ggtitle("Fundraising Totals of Michigan Members of House of Representatives in 2020 Cycle")+xlab("Dis
  theme_fivethirtyeight()+theme(axis.title = element_text())+
  scale_y_continuous(name="Total Raised", labels = scales::comma)+
  theme(legend.position = 'none')+
  theme(plot.title = element_text(hjust=0.5,size = 8))+
  theme(text=element_text(color="#000000", face="bold", size=8))+
  theme(plot.title = element_text(hjust = 0.5, face = "bold"))
print(plot_2)
```



This graph shows who raised the most money out of . The x axis represents the different candidates who won their elections (denoted by the district they won in) and the y axis represents the dollars raised. We can clearly see that the politicians who won MI-08, Representative Elissa Slotkin, raised the most money in the

2020 election cycle. In regard to the previous graph, this shows that Representative Slotkin both raised the most amount of money and had the least opposition expenditures against her. This is even more impressive, as Representative Slotkin, a Democrat, ran in MI-8 which is a swing district that voted for Trump in 2016 and 2020. We visualized this graph to give a clearer picture of who raised the most money compared to our previous graph, and to serve a launching pad for our deeper analysis of Representative Slotkin's fundraising in our next few graphs.

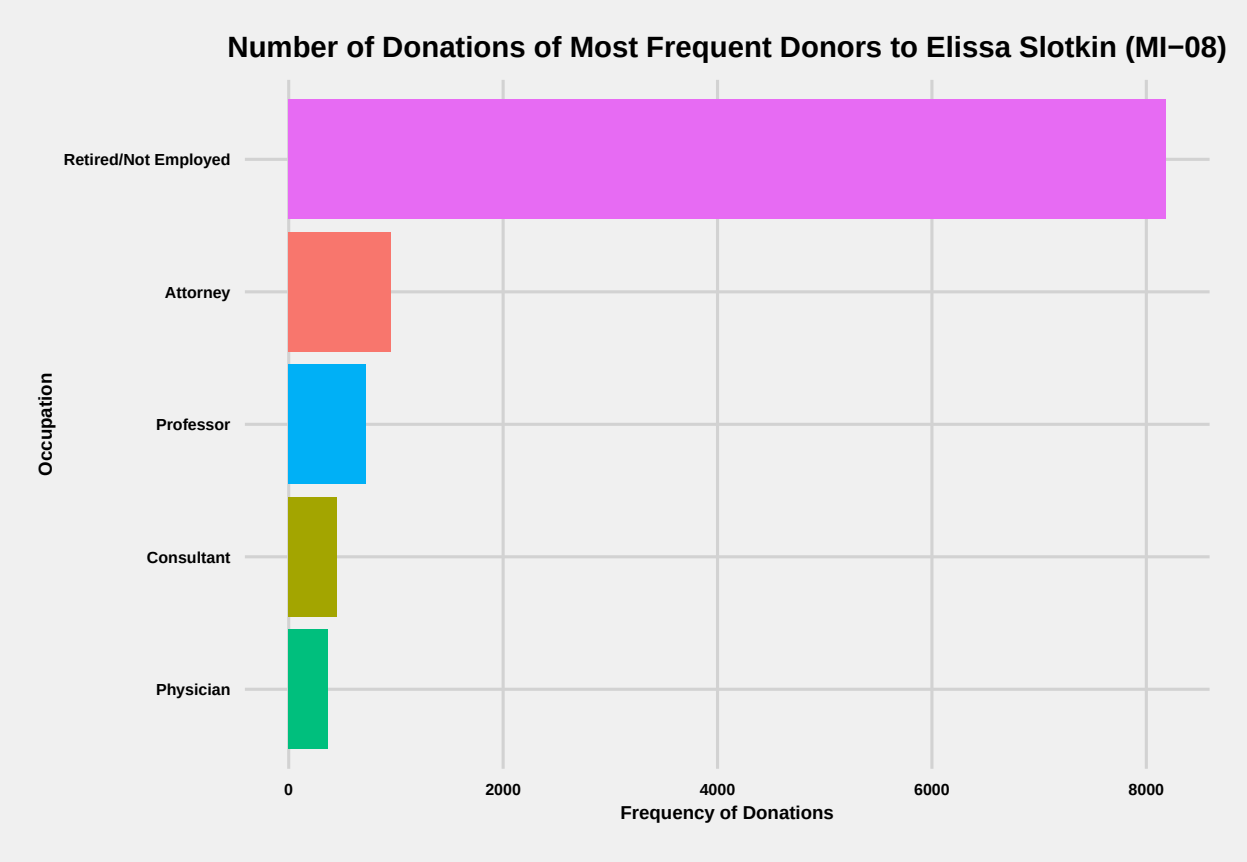
```
t <- lubridate::date(mi08_filter$contribution_receipt_date)

df1 <- data.frame(t)

o <- df1 %>%
  count(t)

plot_3 <- o %>%
  ggplot(aes(x=t,y=n))+geom_line(color="#00c7c7")+
  ggtitle("Frequency of Daily Donations to Elissa Slotkin (MI-08) Over Time")+
  theme_fivethirtyeight()+theme(axis.title = element_text())+
  xlab("Time")+ylab("Frequency of Donations")+
  theme(plot.title = element_text(hjust=0.5))+
  theme(text=element_text(color="#000000", face="bold", size=8))+
  theme(plot.title = element_text(hjust = 0.5, face = "bold"))
print(plot_3)
```



This graph shows the frequency of donations to the top political fundraiser in the 2020 cycle, Elissa Slotkin (MI-08). On the x axis is the 2020 time period (January 2019 to October 2020) and the frequency of

individual donations on the y axis. Like we hypothesized, Rep. Slotkin seems to be raising more and more money as the election approaches. However, she does not keep the same level of fundraising before the last few months before the election. Importantly, she does have many spikes of fundraising before the couple of months running up to the election. This could indicate that the candidate is capitalizing on certain media events or dates for fundraising. In fact, many of the spikes in fundraising match with FEC fundraising deadlines, indicating that the Representative might be encouraging her supporters to donate on those days. We visualized this graph to give a temporal perspective on a top Michigan representative's fundraising. This could show future candidates when and when not to fundraise before an election.

```
x <- mi08_filter %>%
  count(contributor_occupation)

x2 <- x[order(x$n),]

x2[nrow(x2) + 1,] = c("Retired/Not Employed",8181)

plot4names <- c("Retired/Not Employed","Attorney","Professor","Consultant",
                "Physician")

plot4y <- c(8181,955,722,449,366)

plot4df <- data.frame(plot4names,plot4y)

plot_4 <- plot4df %>%
  ggplot(aes(fct_reorder(plot4names,plot4y),y=plot4y,fill=plot4names))+
  geom_bar(stat = "identity")+coord_flip()+
  ggtitle("Number of Donations of Most Frequent Donors to Elissa Slotkin (MI-08)")+
  theme_fivethirtyeight()+theme(axis.title = element_text())+xlab("Occupation")+
  ylab("Frequency of Donations")+theme(legend.position = 'none')+
  theme(text=element_text(color="#000000", face="bold", size=7))+
  theme(plot.title = element_text(hjust = 0.5, face = "bold"))
print(plot_4)
```



This graph shows an occupation breakdown of people who have donated to Representative Elissa Slotkin (MI-08). The x axis shows the frequency of donations. The y axis shows the top five occupations that donate most frequently. The graphs shows that the most frequent donors to Rep. Slotkin are retired/unemployed. It is followed by attorneys, professors, consultants, and physicians. Thus, if one wants to have a high frequency of donations, they should probably appeal to retired/unemployed people to solicit donations. We visualized this group to show who donates the most to a Michigan politicians that raises a lot of money. This could inform future candidates on who to appeal to so that they can raise money more frequently.

Conclusion

Besides the aforementioned caveats with the data, we should consider several more. First, there are probably other factors that affect negative outside spending on elections. For example, if a politician takes a particularly strong take against an interest group, that group may be willing to spend more money against that candidate irregardless of how much the candidate raises. Second, opposition spending might depend on the quality of the opposition candidate. While we do not believe that this shows a causal relationship, we do believe that there is probably a correlation between increased fundraising and less opposition outside spending. With this in mind, candidates in Michigan can appeal to people of the same occupations and with the same frequency that Representative Slotkin did to raise the most money and decrease position outside spending. However, we acknowledge that Rep. Slotkin may appeal to certain donors more because of the district she is in as compared to other donors. This matters to the decision maker because it shows that raising a lot of money matters as a form of deterrence and shows a potential candidate how to raise money in future refuses.