Final Project

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Abstract

The conservative news channel Fox News was founded in 1996 and gradually implemented in various US cities. This led to the situation that in the year 2000 there was a presidential election in which a significant proportion of the US population already had access to this TV channel for several years and other cities had no access at all at the time of the election. The used dataset includes among controlvaribles the vote shares for the Republicans of the Presidential election in 1992, 1996 and 2000. Futhermore the share of Fox News subscribers in 2000 among cities. The available data make it possible to ask the question to which extent had the implementation of Fox News affected the US voting behavior in the presidential elections between 1996 and 2000? The analysis yields revealing results, but the idea of the highly influential TV channel, the so-called 'FOX NEWS EFFECT', had to be revised, as the analysis showed no significance in this area.

Contents

1 Introduction

The media landscape has changed dramatically in the last few decades. Media have an increasingly important role in our modern society where access to information is not a privilege anymore. As a consequence of media's constant presence in citizen's life, the effects of media and to what extent media bias can influence people's party choices have also become a crucial question. This research paper aims to focus on the potential influence of media on people's party choices. To examine the problem the research paper will focus on the presence of Fox News in cities in the US and how it influenced people's support for the Republican party. Therefore, the research question will be the following: to what extent had the implementation of Fox News affected the US voting behavior in the presidential elections between 1996 and 2000? In the case of our research and our available data, we categorize the variables about the socioeconomic background of the people as personality trades and the exposure to media via the existence or non-existence of Fox News. Therefore, the research question will be answered through two hypotheses: H1:Fox news and the socioeconomic background effect the behavior of the electorate. H2: Just socioeconomic background affects the behavior of the electorate.

2 Literature Review

In recent decades, there has been increasing attention on the role of media during political campaigns and its effects on the actual outcomes of elections. It is more widespread to include factors beyond the traditional social and economical models. However, it is still debated within academia to what extent news media influence the behavior of the electorate. A potential answer to the question is that news media does not have an actual effect on people's voting behavior. It is called the sociological model of voting behavior which states that people's voting behavior is determined by long-term factors.

This theory is supported by Lazarsfeld, Berelson, and Gaudet's (Lazarsfeld, Berelson, and Gaudet 1968) research analysis whose results show that the effect of media on electoral decisions is minimal but people belonging to different social groups is what determines their voting behavior. Kriesi, Grande, and Lachat (Kriesi et al. 2008) also argue people's voting behavior is determined by their belonging to different cleavages. However, instead of the old cleavages, there is a new social division within society that defines people's voting behavior which is the distinction between the winners and losers of globalization (Kriesi et al. 2008). Losers of globalization feel that their social status is protected by the nation-state and therefore they are strongly connected and identify themselves with the national community and that is what determines their voting behavior (Kriesi et al. 2008). In contrast, the winners of globalization benefit from open borders, they have more opportunities and therefore they vote differently (Kriesi et al. 2008). However, some scholars argue that media has a relatively insignificant, but not at all inherent effect on voting behavior (Alotaibi 2013).

3 Hypotheses

Therefore, based on the existing literature the two hypotheses of the analysis, as mentioned above, will be the following:

HP1: Fox news and the socioeconomic background affects the behavior of the electorate.

Sociological model of voting Kriesi's (Kriesi et al. 2008): People's voting behavior is just shaped by long-term factors (socialization).

HP2: Just socioeconomic background affects the behavior of the electorate.

4 General Overview Over the Data

This paper uses data that was collected in 1992, 1996 and 2000. The dataset (DellaVigna and Kaplan 2007) contains town-based data on two-party vote share for the Republicans, socio-cultural details and share of

Fox news subscribers.

In order to have a rough overview of the vote share among states, the *state* variable is converted into a factor variable. With this modification the average two-party vote share for the Republicans at last of the observed presidential elections in the different states could be calculated as shown in Figure 1.

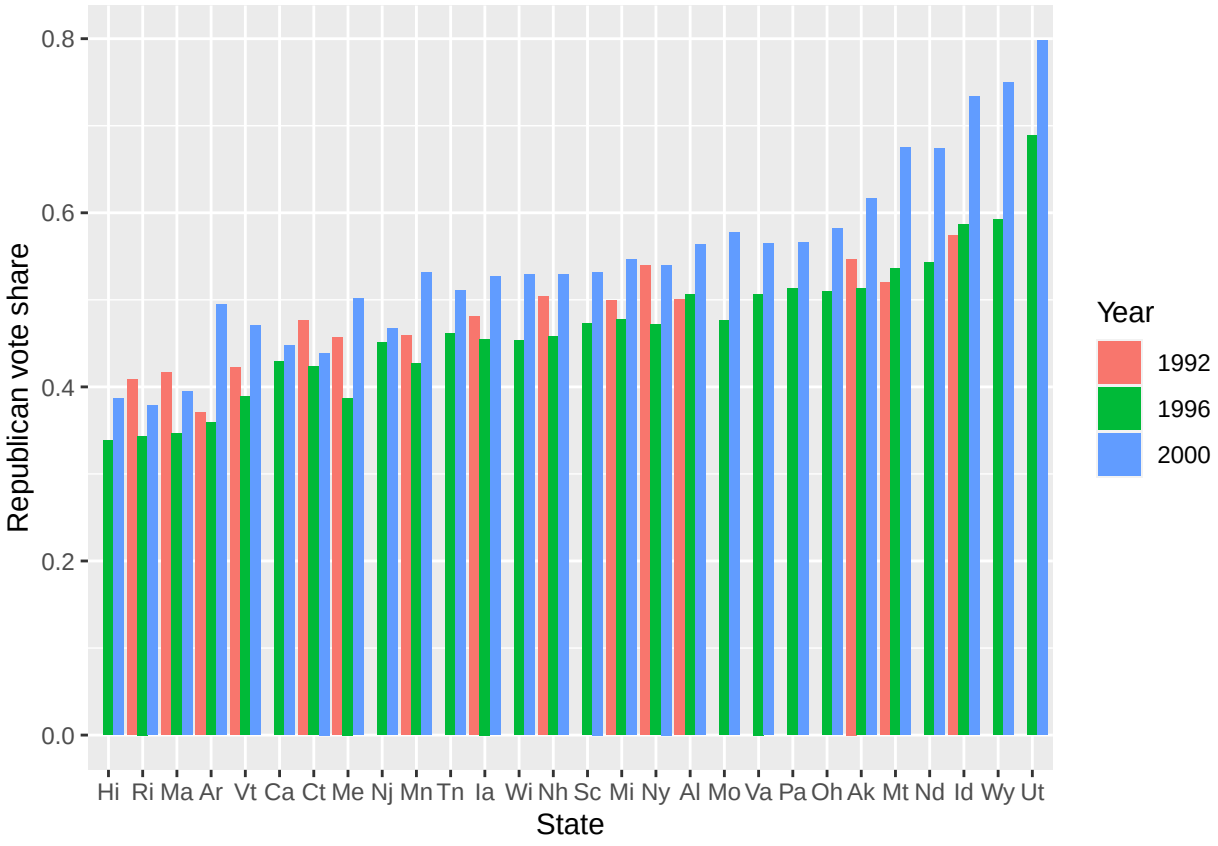


Figure 1: Average two-party vote share for the Republicans in 2000 in the different states.

From these values it is already obvious that there is quite a big variation between the two-party vote share for the Republicans in different states. Highest and lowest vote share is measured in Utah (0.7981762) and Rhode Island (0.3782243) respectively.

The plot also shows general trends in the different states over time. On average there has been a slight decrease in republican vote share in the period of 1992 and 1996, however there has been differences in different region. For example Main experienced a huge drop while in Idaho a slight increase is visible.

On the other hand in the time period of 1996 and 2000 there has been a strong increase (on average from 0.468436 to 0.5474526). An important note is that there has been no single state where the republican vote share has decreased in this time period.

4.1 Socio-Cultural Descriptors of the Data Set

As an initial step, since most descriptive values are measured in the range of [0, 1], the *income1990* variable is normalized in the same region as well. In our hypotheses the independent variables are the different socio-cultural descriptors such as the education level, the ethnic composition and the income share.

The histogram in (Figure 2) shows the general quality of the independent variables of the data set. It is visible that the mean of male population in the towns are around 0.5, however there are more towns where

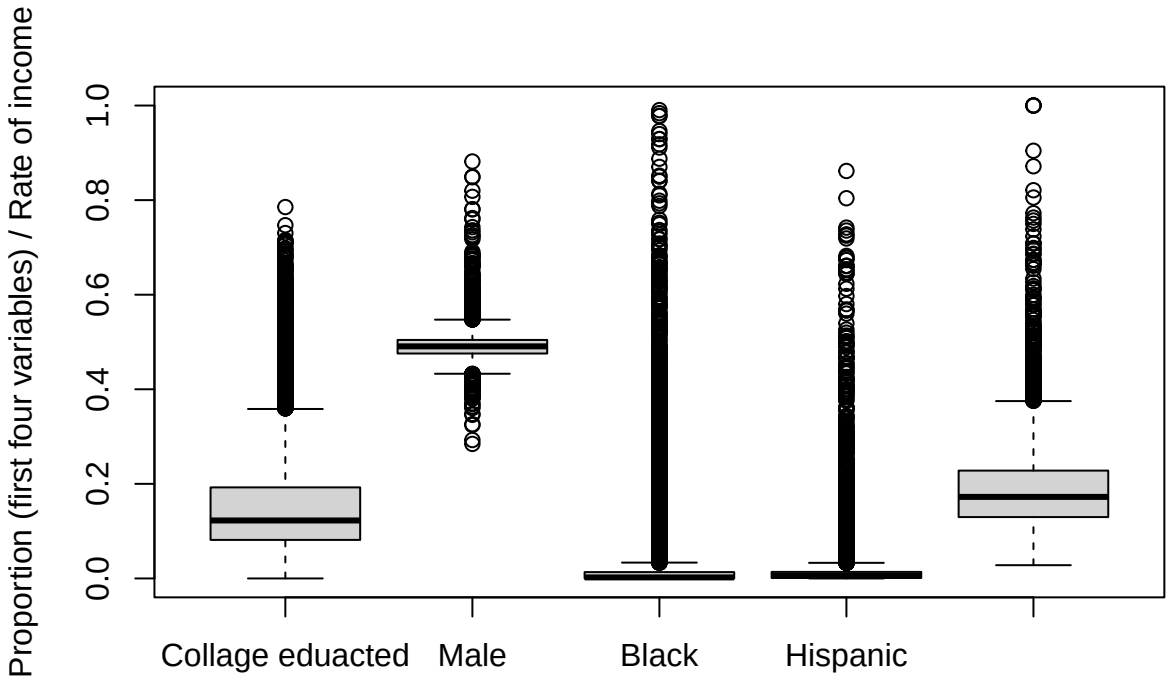


Figure 2: Independent variables in the study.

Table 1: Correlation between Republican vote share and different independent variables.

	Collage eduacted	Male	Black	Hispanic	Average income
Republican vote share	-0.0991	0.1813	-0.3313	-0.229	0.0193

there are an extremity towards a high male population share than to women. The black and Hispanic population of the towns in the study is generally low, but there are cases with especially high rate from both ethnic groups. The mean of education and the income is below 0.2 and the later one has a higher expansion.

4.2 Change of Vote-Share Over Time

To have a more detailed overview, the differences in the two-party vote share for Republicans between the observed election is calculated. The histograms in Figure 3 indicate that there has been a slight decrease of Republican vote share between 1992 and 1996 which was replaced by a much higher increase between 1996 and 2000. It again shows that while in the first period the decrease was rather moderate, the increase in the later period was exclusive to all observed states.

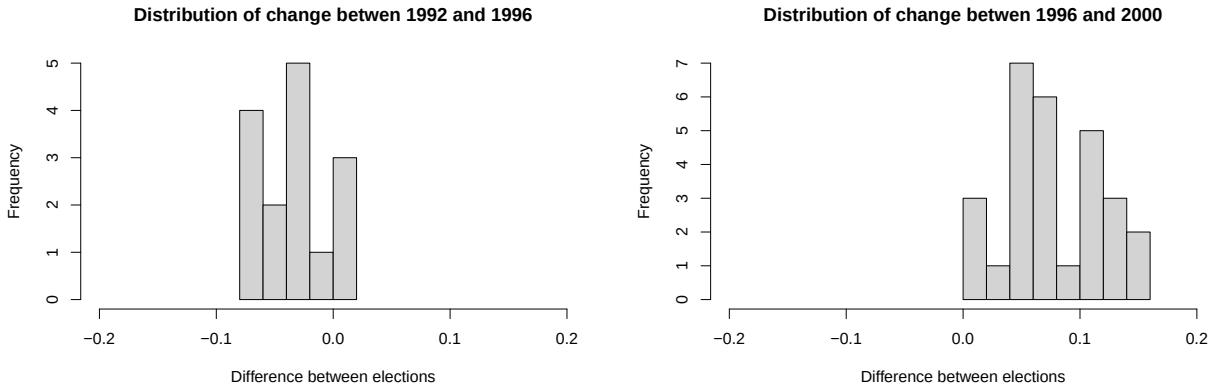


Figure 3: Change in Republican vote share between the three observed elections.

The dataframe holds data from 6288 towns across 28 American states.

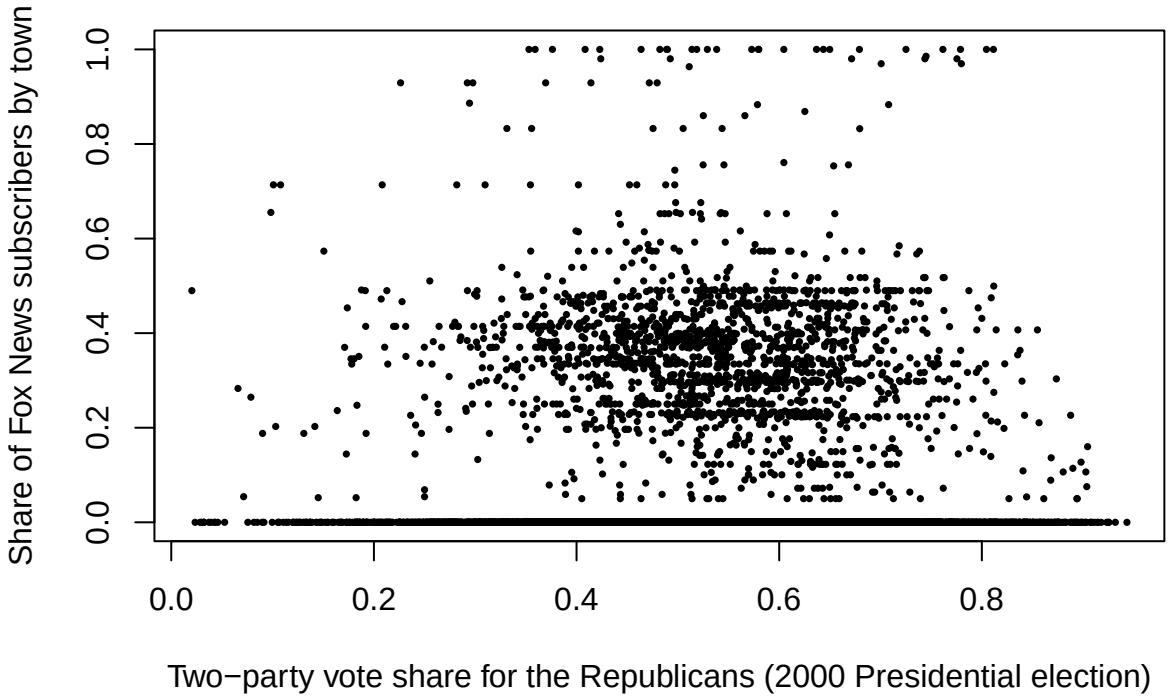
4.3 Correlation Analysis

The dataset contains various measures of the towns in question. In order to get a sense what could influence the vote share a the correlation of these factors and the vote share is calculated.

The correlation analysis suggest that there are a few factors that have an insignificant connection to the two-party vote share for the Republicans, such as the income or the education level. The share of males in the population has a direct relationship and the share of different ethnic categories (Hispanic or black) in the population has an inverse relationship to the vote share. The most meaningful correlation is between the black population and the vote share (-0.331).

4.4 Fox News Subscribers in Different Towns

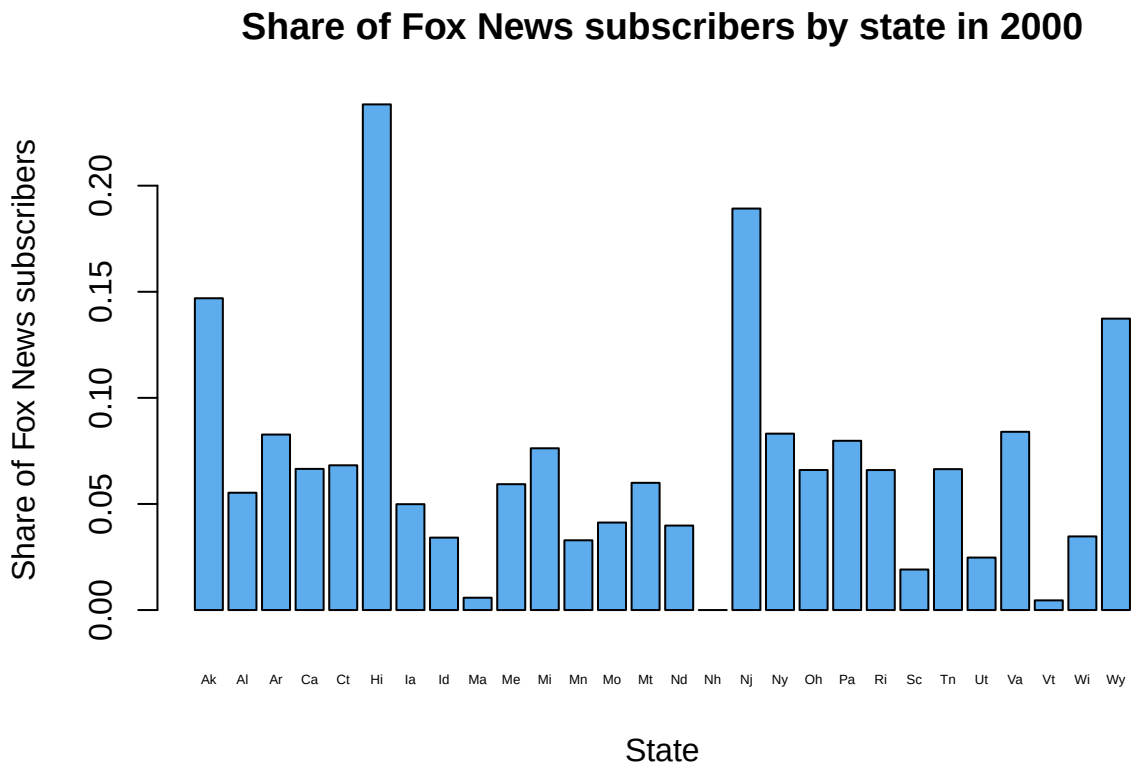
```
gop1992_df<- data[ , c("state","town","college1990", "male1990", "black1990", "hisp1990", "income1990",
gop1996_df<- data[ , c("state","town","college1990", "male1990", "black1990", "hisp1990", "income1990",
gop2000_df<- data[ , c("state","town","college1990", "male1990", "black1990", "hisp1990", "income1990",

plot(gop2000_df$gopvoteshare2000, gop2000_df$subrf2000,
     pch = 16, col = "black",cex=0.5,
      xlab = "Two-party vote share for the Republicans (2000 Presidential election)",
      ylab = "Share of Fox News subscribers by town")
```



This scatter plot gives an first overview between the share of Fox News subscribers by town and the share for republicans in the presidential election in 2000.Three fundamental things, which are a basis for further analysis, can be read from the scatterplot: (1) no clear direction of the data is discernible at first glance; (2) cities that did not have access to Fox News in 2000 range across the spectrum of Republican support, from no Fox News and low support for Republicans to no Fox News and very high vote share for Republicans. (3) it looks like (purely visual 'first analysis') the majority of cities are around the cut point (0.5/0.4), which means there are a lot of cities that are relatively split between Democrats and Republicans and between having or not having Fox News. Since most of the data is expressed in proportions, this also means that there will be many values in the middle.

```
gop_by_s92<- data.frame(gop1992_by_states)
gop_by_s96<- data.frame(gop1996_by_states)
gop_by_s20<- data.frame(gop2000_by_states)


subrf2000_by_states <- tapply(data$subrf2000, data$state, mean, na.rm = TRUE)
```

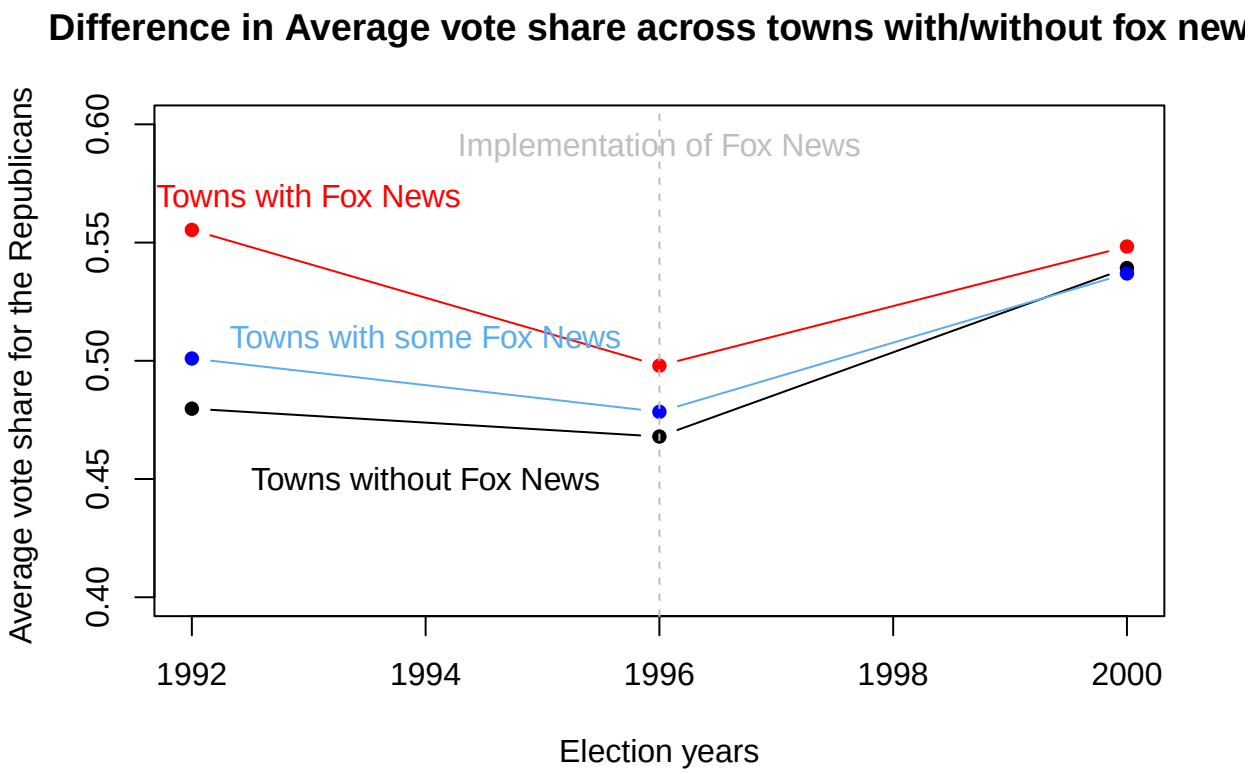
```r
# this dataframe contains the mean gop for the three years (1992, 1996, 2000) by state
subrf2000_by_states_df <- data.frame(subrf2000_by_states)


states<- c("Ak","Al","Ar","Ca","Ct","Hi","Ia","Id","Ma","Me","Mi","Mn","Mo","Mt","Nd","Nh","Nj","Ny","O


barplot(subrf2000_by_states_df$subrf2000_by_states ~states,
      col="steelblue2",cex.names = 0.4,
      xlab = "State",
      ylab = "Share of Fox News subscribers",
      main= "Share of Fox News subscribers by state in 2000",
      )
```



To get a better picture of the implementation of Fox News in the USA, the share of Fox News subscribers by state in 2000 got plotted. The differences are immense. New Hampshire does not have any access to Fox News in 2000 yet, also in Vermont, Massachusetts and South Carolina is the access ratio to the Fox News Channel almost non existence. On the other hand is the channel already very accessible in states like New Jersey,Wyoming and Alaska. According to the bar plot has the biggest proportion of Fox News subscribers. However, due to the fact, that the bar plot does not represents the number of Fox News subscribers, only the the proportion of citizens with a subscription per town it does not mean that Hawii does have the highest amount in a quantitative sense.

5 The Fox News Effect

```
towns_w_foxnews<- subset(data, (subset = subrf2000 >= 0.75))
towns_some_foxnews<- subset(data, (subset = subrf2000 > 0  & subrf2000 < 0.75))
towns_no_foxnews<-subset(data, (subset = subrf2000 ==0))

means.all.elections.wFN<-colMeans(towns_w_foxnews[c('gopvoteshare1992','gopvoteshare1996','gopvoteshare

means.all.elections.someFN<-colMeans(towns_some_foxnews[c('gopvoteshare1992','gopvoteshare1996','gopvot

means.all.elections.noFN<-colMeans(towns_no_foxnews[c('gopvoteshare1992','gopvoteshare1996','gopvotesha

years<- c(1992, 1996, 2000)

plot(years, means.all.elections.noFN, pch = 16, col = "black",
  xlim = c(1992, 2000), ylim = c(0.4, 0.6), xlab = "Election years",
  ylab = "Average vote share for the Republicans ",
  main = "Difference in Average vote share across towns with/without fox news")

points(years, means.all.elections.wFN,pch = 16, col = "red")
points(years, means.all.elections.someFN,pch = 16, col = "blue")

abline(v=1996, lty= 2, col= "grey")

lines(years, means.all.elections.noFN, type = "c")
lines(years, means.all.elections.someFN, type = "c", col= "steelblue2")
lines(years, means.all.elections.wFN, type = "c", col="red")

text(1993,0.57, "Towns with Fox News", col="red")
text(1994,0.51, "Towns with some Fox News", col="steelblue2")
text(1994,0.45, "Towns without Fox News")
text(1996, 0.59,"Implementation of Fox News", col="grey")
```



To Test the hypotheses of the research and to measure the effect of the treatment, it is crucial to define the independent variable of the paper: the access to Fox News by the year 2000.As mentioned above Fox News got implemented in 1996. Therefore, the cities without any access to Fox News in 2000 got characterized as 'Towns without Fox News'. Cities who have a share of Fox News subscribers over 0.75 got defines as 'Towns with Fox News', due to the fact, that 75% of the inhabitants is a clear majority, especially when we consider that people live in households with other persons. The data set does not elaborate the information whether children or other people who are not allowed to vote in the states (like prisoners) are included or not,however a threshold of 0.75 this circumstance cushions instead a threshold of 1. The third subset will be 'Towns with some Fox News', in particular all towns between the 0 and 0.75 will be part of it.

The graph illustrates that in all cities, no matter how much access to Fox News the various cities had, there was an increase in Republican voters in 2000, compared to the 1996 presidential election. Nevertheless, a staggered effect of the different groups can be seen, even if it is small.Cities with Fox News voted for the Republican president by a larger percentage in both 1996 (the year Fox News was implemented in some cities) and the 2000 presidential election. Cities without any Fox News access were the least likely to vote in favor of Republicans, even though the percentage of Republican voters nevertheless increased in 2000.

5.1 Sample average treatment effect ('Fox News Effect') among socioeconomic variables

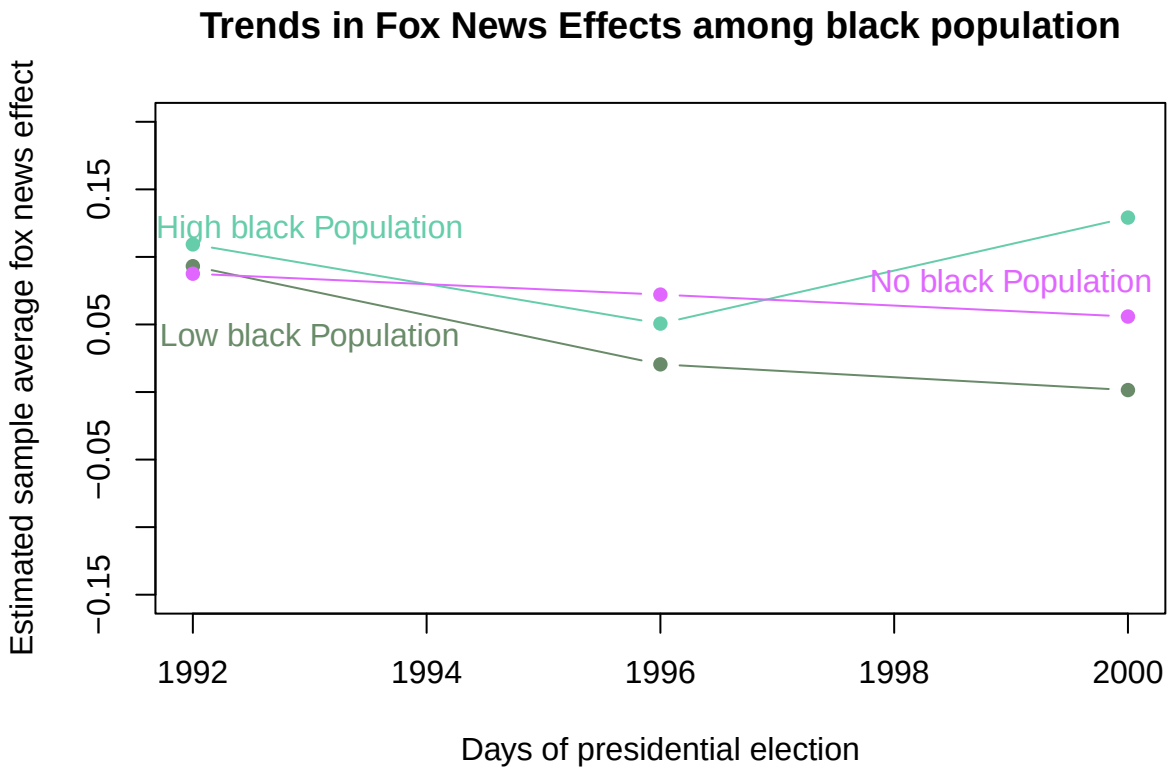
Our hypotheses stating, that it might be possible that socioeconomic backgrouds like education and race of people influence a potential 'Fox News Effect' differently . It could be also possible that voters with different incomes get effected differently by the input of Fox News.

We will evaluate whether these hypotheses are supported by finding the differences in sample average treatment effects by education, race and income in towns with access to Fox News and towns without access to Fox News.

Furthermore,the average change of votes for republican (during presidential elections) among towns before and after the availability of Fox News could be an crucial indicator to understand the effect, therefore is computed.

```
##SATE town with high proportion of a black population

high_black_pop.t_w_foxnews<- subset(towns_w_foxnews, subset = black1990 >= 0.4)

high_black_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = black1990 >= 0.4)


means_high_black_pop.t_w_foxnews<-colMeans(high_black_pop.t_w_foxnews[c('gopvoteshare1992','gopvoteshar

means_high_black_pop.t_no_foxnews<-colMeans(high_black_pop.t_no_foxnews[c('gopvoteshare1992','gopvotesha


sate_high_black_pop_t_w_fn<-  means_high_black_pop.t_w_foxnews- means_high_black_pop.t_no_foxnews



####SATE town with low proportion of a black population

low_black_pop.t_w_foxnews<- subset(towns_w_foxnews, subset = black1990 > 0 & black1990 < 0.4)

low_black_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = black1990 > 0 & black1990 < 0.4)


means_low_black_pop.t_w_foxnews<-colMeans(low_black_pop.t_w_foxnews[c('gopvoteshare1992','gopvoteshare19

means_low_black_pop.t_no_foxnews<-colMeans(low_black_pop.t_no_foxnews[c('gopvoteshare1992','gopvoteshar

sate_low_black_pop_t_w_fn<- means_low_black_pop.t_w_foxnews- means_low_black_pop.t_no_foxnews

####SATE town with no proportion of a black population

no_black_pop.t_w_foxnews<- subset(towns_w_foxnews, subset = black1990 == 0)

no_black_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = black1990 == 0)


means_no_black_pop.t_w_foxnews<-colMeans(no_black_pop.t_w_foxnews[c('gopvoteshare1992','gopvoteshare199

means_no_black_pop.t_no_foxnews<-colMeans(no_black_pop.t_no_foxnews[c('gopvoteshare1992','gopvoteshare19


sate_no_black_pop_t_w_fn<-means_no_black_pop.t_w_foxnews- means_no_black_pop.t_no_foxnews



plot(years,sate_high_black_pop_t_w_fn, pch = 16, col = "aquamarine3",
xlim = c(1992, 2000), ylim = c(-0.15, 0.2), xlab = "Days of presidential election",
ylab = "Estimated sample average fox news effect",
main = "Trends in Fox News Effects among black population")
```

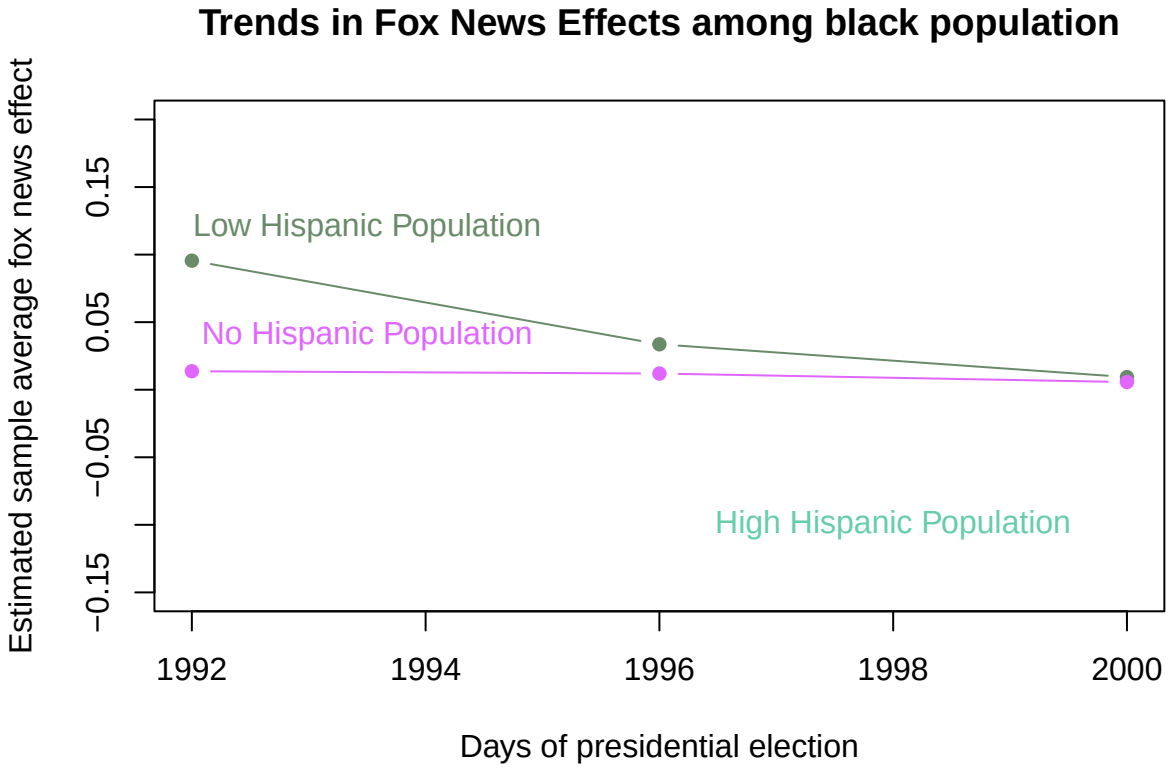
```
points(years, sate_low_black_pop_t_w_fn,pch=16, col = "darkseagreen4")
points(years, sate_no_black_pop_t_w_fn,pch = 16, col = "mediumorchid1")


lines(years,sate_high_black_pop_t_w_fn, type="c", col="aquamarine3")
lines(years, sate_low_black_pop_t_w_fn,type="c", col = "darkseagreen4")
lines(years, sate_no_black_pop_t_w_fn,type="c", col = "mediumorchid1")


text(1993, 0.12,"High black Population", col="aquamarine3")
text(1993,0.04,"Low black Population", col="darkseagreen4")
text(1999,0.08, "No black Population", col="mediumorchid1")
```



The first thing we looked at was whether the introduction of Fox News had a bigger/smaller impact on black people in the USA. The cities were divided into subsets, to take into account different proportions of black people in the cities. For the subdivision of cities and their black population, the different quantiles were not looked at, which is the case in the following SATE calculations. Due to the white majority population in the states, the third quantile of the proportion of black people would have been 0.013411 but the maximum would have been 0.990427. The difference between 1% and 99% would have been too serious to categorize all cities in between as having a high black population. That's why cities with a percentage above 0.40 were considered to have a high black population. As can be seen in the plot, only the line from the cities with a high black population share has a similar shape to the lines in the plot with the general trend effect. In the cities with a low proportion or none at all, the estimated treatment effect goes in a negative direction.

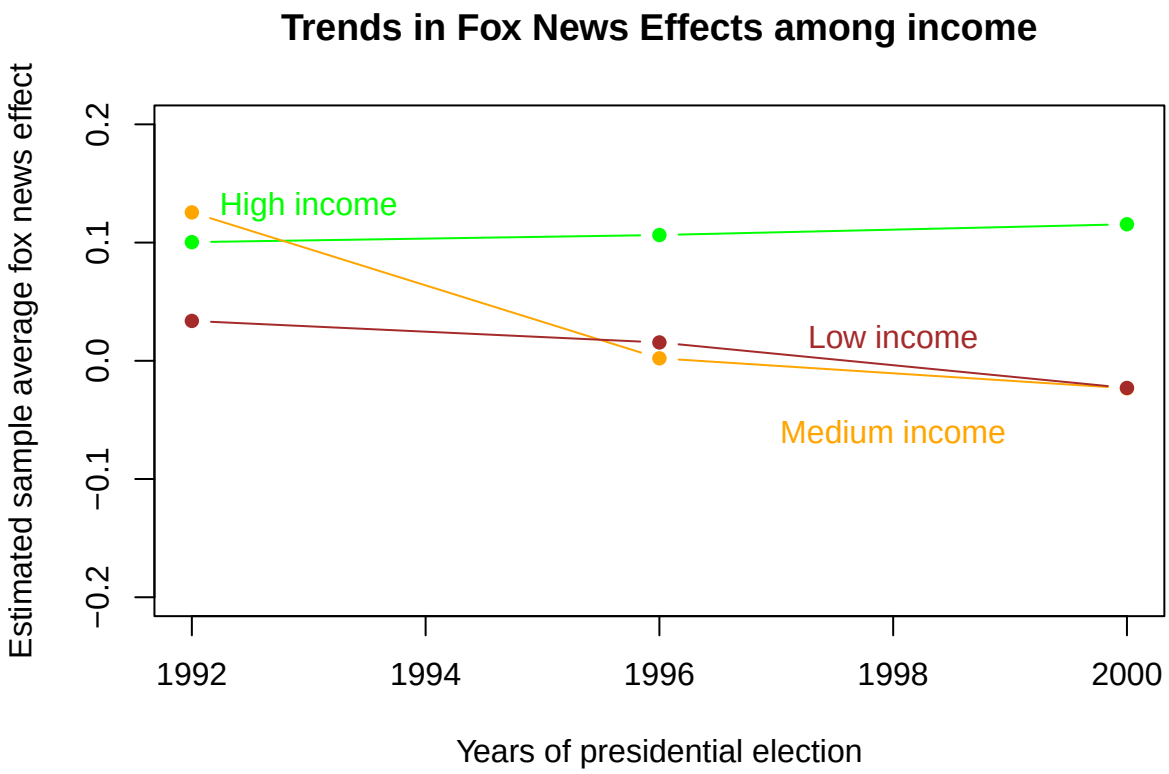
```r
high_hisp_pop.t_w_foxnews <- subset(towns_w_foxnews, subset = hisp1990 >= 0.2)

high_hisp_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = hisp1990 >= 0.2)


means_high_hisp_pop.t_w_foxnews<-colMeans(high_hisp_pop.t_w_foxnews[c('gopvoteshare1992','gopvoteshare19

means_high_hisp_pop.t_no_foxnews<-colMeans(high_hisp_pop.t_no_foxnews[c('gopvoteshare1992','gopvoteshare

sate_high_hisp_pop_t_w_fn<-  means_high_hisp_pop.t_w_foxnews- means_high_hisp_pop.t_no_foxnews


####SATE town with low proportion of a black population

low_hisp_pop.t_w_foxnews<- subset(towns_w_foxnews, subset = hisp1990 > 0 & hisp1990 < 0.4)

low_hisp_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = hisp1990 > 0 & hisp1990 < 0.4)


means_low_hisp_pop.t_w_foxnews<-colMeans(low_hisp_pop.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1990

means_low_hisp_pop.t_no_foxnews<-colMeans(low_hisp_pop.t_no_foxnews[c('gopvoteshare1992','gopvoteshare19

sate_low_hisp_pop_t_w_fn<- means_low_hisp_pop.t_w_foxnews- means_low_hisp_pop.t_no_foxnews


####SATE town with no proportion of a black population

no_hisp_pop.t_w_foxnews<- subset(towns_w_foxnews, subset = hisp1990 == 0)

no_hisp_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = hisp1990 == 0)


means_no_hisp_pop.t_w_foxnews<-colMeans(no_hisp_pop.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1996'

means_no_hisp_pop.t_no_foxnews<-colMeans(no_hisp_pop.t_no_foxnews[c('gopvoteshare1992','gopvoteshare1990

sate_no_hisp_pop_t_w_fn<-means_no_hisp_pop.t_w_foxnews- means_no_hisp_pop.t_no_foxnews



plot(years,sate_high_hisp_pop_t_w_fn, pch = 16, col = "aquamarine3",
xlim = c(1992, 2000), ylim = c(-0.15, 0.2), xlab = "Days of presidential election",
ylab = "Estimated sample average fox news effect",
main = "Trends in Fox News Effects among black population")

points(years, sate_low_hisp_pop_t_w_fn,pch=16, col = "darkseagreen4")
points(years, sate_no_hisp_pop_t_w_fn,pch = 16, col = "mediumorchid1")


lines(years,sate_high_hisp_pop_t_w_fn, type="c", col="aquamarine3")
```

```
lines(years, sate_low_hisp_pop_t_w_fn,type="c", col = "darkseagreen4")
lines(years, sate_no_hisp_pop_t_w_fn,type="c", col = "mediumorchid1")


text(1998,-0.1,"High Hispanic Population", col="aquamarine3")
text(1993.5,0.12,"Low Hispanic Population", col="darkseagreen4")
text(1993.5, 0.04, "No Hispanic Population", col="mediumorchid1")
```




```
##SATE town with high proportion of rich people

high_income.t_w_foxnews<- subset(towns_w_foxnews, subset = income1990 >= 0.228)
high_income.t_no_foxnews<- subset(towns_no_foxnews, subset = income1990 >= 0.228)

means_high_income.t_w_foxnews<-colMeans(high_income.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1996'

means_high_income.t_no_foxnews<-colMeans(high_income.t_no_foxnews[c('gopvoteshare1992','gopvoteshare199

sate_high_income.t_w_foxnews<-means_high_income.t_w_foxnews- means_high_income.t_no_foxnews



##SATE town with medium income

medium_income.t_w_foxnews<- subset(towns_w_foxnews, subset = income1990 >0.13093333333 & income1990 <0.
```

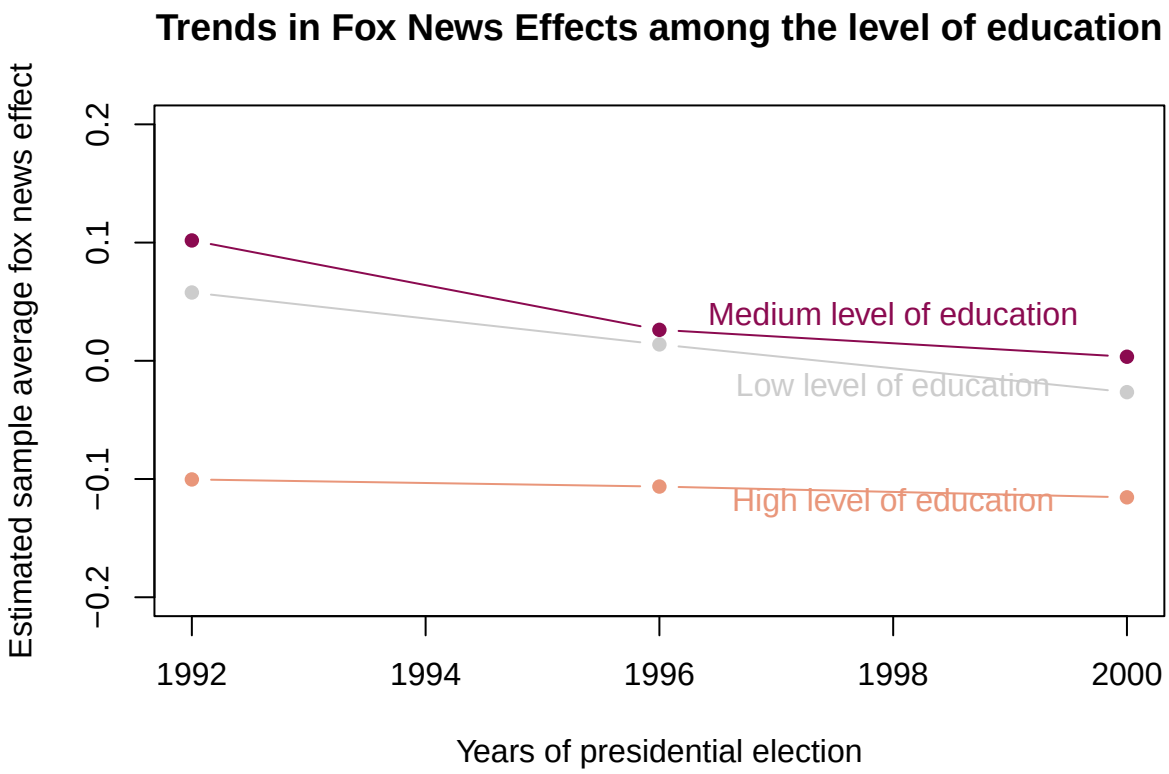
```r
medium_income.t_no_foxnews<- subset(towns_no_foxnews, subset =income1990 >0.13093333333 & income1990 <0

means_medium_income.t_w_foxnews<-colMeans(medium_income.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1

means_medium_income.t_no_foxnews<-colMeans(medium_income.t_no_foxnews[c('gopvoteshare1992','gopvoteshar

sate_medium_income.t_w_foxnews<-means_medium_income.t_w_foxnews - means_medium_income.t_no_foxnews


##SATE town with high proportion of poor people

low_income.t_w_foxnews<- subset(towns_w_foxnews, subset = income1990 <= 0.13093333333)
low_income.t_no_foxnews<- subset(towns_no_foxnews, subset = income1990 <= 0.13093333333)


means_low_income.t_w_foxnews<-colMeans(low_income.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1996','g

means_low_income.t_no_foxnews<-colMeans(low_income.t_no_foxnews[c('gopvoteshare1992','gopvoteshare1996'

sate_low_income.t_w_foxnews<- means_low_income.t_w_foxnews- means_low_income.t_no_foxnews



plot(years,sate_high_income.t_w_foxnews, pch = 16, col = "green",
xlim = c(1992, 2000), ylim = c(-0.2, 0.2), xlab = "Years of presidential election",
ylab = "Estimated sample average fox news effect",
main = "Trends in Fox News Effects among income")

points(years, sate_medium_income.t_w_foxnews,pch = 16, col = "orange")
points(years, sate_low_income.t_w_foxnews,pch = 16, col = "brown")


lines(years,sate_high_income.t_w_foxnews, type="c", col="green")
lines(years, sate_medium_income.t_w_foxnews,type="c", col = "orange")
lines(years, sate_low_income.t_w_foxnews,type="c", col = "brown")

text(1993,0.13,"High income", col="green")
text(1998,-0.06,"Medium income", col="orange")
text(1998, 0.02, "Low income", col="brown")
```



Looking at income and the potential sample average treatment effect we can see, that only for persons with high income (towns where the average income is over or equals 3.420$) the estimated sample average Fox News effect is increasing and more rich people voted for republicans but an the other hand the vote share for Republicans among rich people normally quite high anyways. Therefore it is hard to argue, that the implementation of Fox News is the main reason. Towns with a medium income or low income have decreasing sample average treatment effect.

```
##SATE towns with high proportion of people who went to college

high_edu.t_w_foxnews <- subset(towns_w_foxnews, subset = college1990 >= 0.19255)
high_edu.t_no_foxnews<- subset(towns_no_foxnews, subset = college1990 >= 0.19255)


means_high_edu.t_w_foxnews<-colMeans(high_edu.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1996','gopv

means_high_edu.t_no_foxnews<-colMeans(high_edu.t_no_foxnews[c('gopvoteshare1992','gopvoteshare1996','go


sate_high_edu.t_w_foxnews<- means_high_income.t_no_foxnews -means_high_income.t_w_foxnews



##SATE town with medium education

medium_edu.t_w_foxnews<- subset(towns_w_foxnews, subset = college1990 >0.08145 & college1990 <0.19255)
medium_edu.t_no_foxnews<- subset(towns_no_foxnews, subset =college1990 >0.08145 & college1990 <0.19255)
```

```
medium_edu.t_some_foxnews<- subset(towns_some_foxnews, subset =college1990 >0.08145 & college1990 <0.19

means_medium_edu.t_w_foxnews<-colMeans(medium_edu.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1996','g

means_medium_edu.t_no_foxnews<-colMeans(medium_edu.t_no_foxnews[c('gopvoteshare1992','gopvoteshare1996'


sate_medium_edu.t_w_foxnews<- means_medium_edu.t_w_foxnews - means_medium_edu.t_no_foxnews



##SATE town with high proportion of poor people

low_edu.t_w_foxnews<- subset(towns_w_foxnews, subset = college1990 <= 0.08145)
low_edu.t_no_foxnews<- subset(towns_no_foxnews, subset = college1990 <= 0.08145)


means_low_edu.t_w_foxnews<-colMeans(low_edu.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1996','gopvote

means_low_edu.t_no_foxnews<-colMeans(low_edu.t_no_foxnews[c('gopvoteshare1992','gopvoteshare1996','gopve


sate_low_edu.t_w_foxnews<- means_low_edu.t_w_foxnews - means_low_edu.t_no_foxnews


plot(years,sate_high_edu.t_w_foxnews, pch = 16, col = "darksalmon",
xlim = c(1992, 2000), ylim = c(-0.2, 0.2), xlab = "Years of presidential election",
ylab = "Estimated sample average fox news effect",
main = "Trends in Fox News Effects among the level of education")


points(years, sate_medium_edu.t_w_foxnews,pch = 16, col = "deeppink4")
points(years, sate_low_edu.t_w_foxnews,pch = 16, col = "grey80")


lines(years,sate_high_edu.t_w_foxnews, type="c", col="darksalmon")
lines(years, sate_medium_edu.t_w_foxnews,type="c", col = "deeppink4")
lines(years, sate_low_edu.t_w_foxnews,type="c", col = "grey80")


text(1998,-0.12,"High level of education", col="darksalmon")
text(1998,0.04,"Medium level of education", col="deeppink4")
text(1998, -0.02, "Low level of education", col="grey80")
```



The last measurement of finding the differences in sample average treatment effects by socioeconomic backgrounds is SATE for different levels of education. Here is it visible, that high educated regions are less likely to vote for republicans and have lower starting position. Looking at a medium or low level of education a decrease of the potential effect is visible, even though is a very small one.

In summary, a sample average treatment effect was not found to be salient and decisive on the basis of various socio-economic criteria and thus no 'Fox News effect' was found. There have been changes that seem reasonable and appropriate, but it would be presumptuous to relate these to a Fox News effect, as the changes have always been marginal.

6 Regression analysis

6.1 Linear models

We already tested above the influence of different socioeconomic factors effects on people's support for the republican party and how the presence of Fox News in some cities changed people's party choices. However, we are also interested in to what extent socioeconomic factors or the potential effect of Fox News' presence in some cities influence people's vote for the Republican party. To answer this questions we will test H1 (Fox news and the socioeconomic background affects the behavior of the electorate) and H2 (just socioeconomic background affects the behavior of the electorate) through regression analysis. First, we will test to what extent socioeconomic factors affect people's vote for the Republican party. We included in the analysis the proportion of inhabitants who have a college degree, the median income, and the proportion of black or Hispanic people in every city. Black and Hispanic people stand for minorities in the analysis because these are the two most significant minorities and only these two minorities were included in the data set.

```r
#effect of social background

data$hisp_or_black <- data$black1990 + data$hisp1990

socio_economic <- lm(gopvoteshare2000 ~ income1990 + hisp_or_black + college1990, data = data)

library(stargazer)
```

```
##
## Please cite as:

##  Hlavac, Marek (2022). stargazer: Well-Formatted Regression and Summary Statistics Tables.

##  R package version 5.2.3. https://CRAN.R-project.org/package=stargazer
```

```r
stargazer::stargazer(socio_economic,
## Title of the table
title = "Effect of socio-economic factors on voting",
## Specify whether to list the intercept coefficient as first or last
intercept.top = T, intercept.bottom = F,
## Informative names of the predictors,
## Be careful here the first covariate will be the intercept alpha
covariate.labels = c("Intercept", "Income", "Share of Hispanic or black people", "Education level"),
dep.var.labels = c("Two party vote share for Republicans"),
header = FALSE,
type = "latex")
```

Table 2: Effect of socio-economic factors on voting

	Dependent variable:
	Two party vote share for Republicans
Intercept	0.566^{***}
	(0.003)
Income	0.151^{***}
	(0.019)
Share of Hispanic or black people	-0.442^{***}
	(0.010)
Education level	-0.206^{***}
	(0.014)
Observations	10,126
R^2	0.172
Adjusted R^2	0.171
Residual Std. Error	0.118 (df = 10122)
F Statistic	699.144^{***} (df = 3; 10122)
Note:	*p<0.1; **p<0.05; ***p<0.01

The results of the analysis show that in cities where the proportion of minorities (Hispanic and Black people) is higher the support for the Republican party is lower than in other cities. Therefore, from the socioeconomic factors that were included in the regression analysis race (-0.4418) has the strongest effect on support for the Republican party in American cities. The proportion of people who have a college degree is also an important explanatory factor to explain vote for the Republican party in a city. In cities where the proportion of those who have a college degree is higher citizens -0.20627 are less likely to vote for the Republican party. Moreover, the median income in cities does not seem to have an effect on support for the Republican party.

In the following, we will test the influence of Fox News subscribers (in cities) on people's support for the Republican party. First, we will only test only the effect of Fox News subscribers on people's proportion who voted for the Republican party. Second, the proportion of Fox News subscribers will be added to the socio-economic factors to check what explains better people's vote for the Republican party.

```
foxnews_2000 <- lm(gopvoteshare2000 ~ subrf2000, data = data)
foxnews_2000
```

```
##
## Call:
## lm(formula = gopvoteshare2000 ~ subrf2000, data = data)
##
## Coefficients:
## (Intercept)    subrf2000
##     0.54012     -0.01888
```

```
summary(foxnews_2000)$adj.r.squared
```

```
## [1] 0.0004145752
```

```
socio_foxnews <- lm(gopvoteshare2000 ~ income1990 + hisp_or_black + college1990 + subrf2000, data = data
socio_foxnews
```

```
##
## Call:
## lm(formula = gopvoteshare2000 ~ income1990 + hisp_or_black +
##     college1990 + subrf2000, data = data)
##
## Coefficients:
##   (Intercept)     income1990  hisp_or_black    college1990      subrf2000
##      0.567277       0.143589      -0.440242      -0.206280      -0.008145
```

```
summary(socio_foxnews)$adj.r.squared
```

```
## [1] 0.171275
```

The analysis shows that there is no real correlation (-0.019) between Fox News subscribers and the support for the Republican party. Therefore, the proportion of Fox News subscribers does not explain citizens' support for the Republican party. Furthermore, when the proportion of Fox News subscribers was added to the regression the influence of Fox News subscribers on people's support for the republican party became even weaker which means that socioeconomic factors better explain their support for the Republican party than Fox News subscribers.

However, the results can be misleading because there are much more towns in the data set where there is no access to Fox News or it is very limited. The over-representation of these cities can have an effect on the results. Therefore, we created two subgroups. The first group includes cities where more than half of the inhabitants have access to Fox News and the second group includes those towns where less than half of the population have access to Fox news. The cities were divided into two groups based on where less than 50% and more than 50% of the people because in towns where more than half of the population have access to Fox News that means that the channel is well known by more than half of the population.

```
foxnews_present <- subset(data, (subset = subrf2000 >= 0.5))
foxnews_not_present <- subset(data, (subset = subrf2000 < 0.5))

foxnews_present_effect <- lm(gopvoteshare2000 ~ subrf2000, data = foxnews_present)
foxnews_present_effect
```

```
##
## Call:
## lm(formula = gopvoteshare2000 ~ subrf2000, data = foxnews_present)
##
## Coefficients:
## (Intercept)    subrf2000
##     0.49679      0.03746
```

```
foxnews_not_present_effect <- lm(gopvoteshare2000 ~ subrf2000, data = foxnews_not_present)
foxnews_not_present_effect
```

```
##
## Call:
## lm(formula = gopvoteshare2000 ~ subrf2000, data = foxnews_not_present)
##
## Coefficients:
## (Intercept)    subrf2000
##      0.5402      -0.0186
```

The regression analysis shows that the effect of access to Fox News is still very marginal 0.037. In cities where more than half of the population have access to Fox News people are more likely to support the republican party compare to those towns where less than half of the population have access to Fox News. Therefore, the results show that socioeconomic factors are the important drivers that define people's party choice and the effect of the presence of Fox News is minimal compared to people's socioeconomic background.

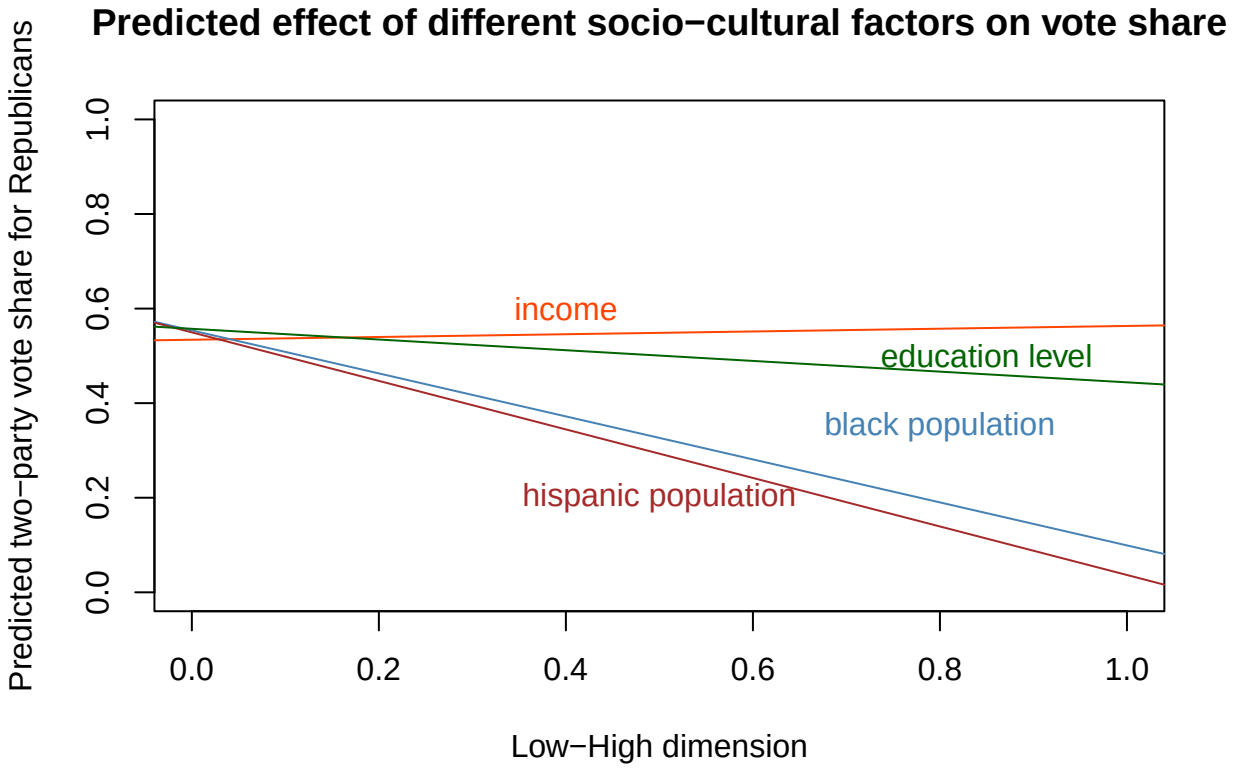
6.2 Prediction

Using similar models to the ones in the previous section, predictions are made on vote share on different hypothetical setups in 2000. The varying dimension is the so-called "low-high dimension" which describes that 0 - 100 per cent of the population is black or Hispanic, the the whole population has low or high income or education level. To all values along this dimension a two-party vote share is predicted and the results are plotted below.

```
#income

fit_income <- lm(gopvoteshare2000 ~ income1990, data = data)
```

```r
fit_income_max <- predict(fit_income, data.frame(income1990 = 1))
fit_income_min <- predict(fit_income, data.frame(income1990 = 0))
fun_income <- fit_income_max - fit_income_min

#black population
fit_black_1990 <- lm(gopvoteshare2000 ~ black1990, data = data)
fit_black_max <- predict(fit_black_1990, data.frame(black1990 = 1))
fit_black_min <- predict(fit_black_1990, data.frame(black1990 = 0))
fun_black_1990 <- fit_black_max - fit_black_min

#hispanic population
fit_hisp_1990 <- lm(gopvoteshare2000 ~ hisp1990, data = data)
fit_hisp_max <- predict(fit_hisp_1990, data.frame(hisp1990 = 1))
fit_hisp_min <- predict(fit_hisp_1990, data.frame(hisp1990 = 0))
fun_hisp_1990 <- fit_hisp_max - fit_hisp_min

#education level
fit_college_1990 <- lm(gopvoteshare2000 ~ college1990, data = data)
fit_college_max <- predict(fit_college_1990, data.frame(college1990 = 1))
fit_college_min <- predict(fit_college_1990, data.frame(college1990 = 0))
fun_college_1990 <- fit_college_max - fit_college_min

plot(1,
type = "n",
  xlim = c(0, 1),
  ylim = c(0,1),
  main = "Predicted effect of different socio-cultural factors on vote share",
  xlab="Low-High dimension",
  ylab="Predicted two-party vote share for Republicans")

abline(a= fit_income_min,
  b= fun_income,
  col= "orangered",
  )
abline(a= fit_black_min,
  b= fun_black_1990,
  col= "steelblue",
  )
abline(a= fit_hisp_min,
  b= fun_hisp_1990,
  col= "brown",
  )
abline(a= fit_college_min,
  b= fun_college_1990,
  col= "darkgreen",
  )

text(0.4, 0.6,
     "income",
     col="orangered")
text(0.85, 0.5,
     "education level",
     col="darkgreen")
```

```
text(0.8, 0.35,
     "black population",
     col="steelblue")
text(0.5, 0.2,
     "hispanic population",
     col="brown")
```



The results show a slight positive relationship between income and vote share for Republicans. With the increasing share of the ethic groups within the population has a negative effect on Republican vote share and education level has generally a low impact.

7 Discussion & Conclusion

After the analysis, it can be summarized that 'a Fox News Effect' is not clearly visible and verifiable. Thus, the first hypothesis of the paper must also be refuted, as there is no clear evidence that Fox News together with socioeconomic background affects the behavior of the electorate in 2000. This was evident from the results of the regressions 'foxnews_2000' and 'foxnews_present_effect' which showed no significance or clear correlation. It was also evident from the sample average treatment affect studies that all of the effects shown can only be described as minimal.

The reasons why an effect is only so minimally visible can be manifold. First of all, it must be mentioned that a new channel may take a while to be added to a cable provider's lineup because of the talks negotiations during the implementation. Due of this, contrary to popular belief, Fox News was unable to establish itself as the first player in conservative media markets. this means that people who live in cities without fox news are still influenced by conservative TV channels, but are not recorded as such in this data set because they

watch a different conservative channel. Furthermore, it is important to note that while there is a small effect, covering the external and internal variables that influence an election is extremely difficult. Third, the heavily conservative states of New Jersey and Wyoming would be the perfect example of this, ranking second and third, respectively, among the states with the largest vote share. This would mean that the effect could be weakened, since people have already voted conservatively anyway.

This would mean that the effect could be weakened, since people have already voted conservatively anyway. However, even if the aforementioned external problems were not present and the internal validity is flawless, it is possible that the Fox News effect would only play a minor role. As the theories and also the regression results have shown, socioeconomic factors play an important role. Thus, the second hypothesis of the paper can be confirmed, namely that socioeconomic factors are crucial for voting in the American two-party system. In particular, the factors of race and the level of education were the most decisive influences. Lastly, another potential explanation to the the general increase of support for the Republican party in most of the states is that the US had a democratic president (Bill Clinton) during this time period who had an impeachment. These external factors could have a more important positive effect on people's support for the Republican party than the influence of watching Fox News.

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