Final Project - Draft Analysis

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##**Potential research question:** To what extend had the implementation of Fox News an effect on the US voting behavior during the presidential elections 1996 & 2000?

##**Short 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. 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 (1944)(**Lazarsfeld?**) 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 (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) (I wrote this down because maybe we could test if there is any relationship between the number of Fox news subscribers in states that are doing worse economically and those that have developed in the last few decades)

However, other authors argue that issue voting explains voters' party choice which is based on voters' preferences on salient political issues. This theory argues that short-term factors like media attention, campaigns, and current determinant issues in politics determine people's voting behavior. This theory is supported by DeMarzo, Vayanos, and Zwiebel's (2003) research analysis that persuasion bias (like propaganda, censorship, political spin, and marketing) plays an important role in the process of social opinion formation and as a consequence, it determines people's voting behavior.

##**Hypotheses** Write initial theoretical expectations and hypotheses - so that you know what kind of analyses you would like to run.

This paper will follow Lazarsfeld et al.'s (1944) approach and main Hypotheses: The act of voting is an individual act, affected mainly by the personality of the voter and his exposure to the media.In the case of our research and our available data, we categorize the variables about socioeconomic background of the people as personality trades and the exposure to media via the existence or non-existence of Fox News.

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

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

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

Rational expectation theories (Bray and Kreps 1987):Voters often filter out reporting bias without being influenced. The implementation of Fox News will not effect election results.

HP3: Neither the socioeconomic background of the electorate, nor Fox News influences the electorate

Behavioral Theories (De Marzo, Vayanos, and Zwiebel 2003): assert that media influence on voters exists.

HP4: Primarily Fox News effects the behavior of the electorate.

Load the data you have selected Run any preprocessing that you need to conduct to prepare your data for analysis (e.g. renaming, recoding of variables, creating new variables, merging files, tackling NAs etc.) Produces summary statistics (e.g. tables and plots) of the relevant dependent and independent variables Conduct the main regression of interest for the project. Discuss initial findings and problems.

##Load the data you have selected

```
data <- read.csv("foxnews.csv")
data$state <- factor(data$state)
```

Mean gop by states

```
gop2000_by_states <- tapply(data$gopvoteshare2000, data$state, mean, na.rm = TRUE)
gop2000_by_states
```

```
##        Ak        Al        Ar        Ca        Ct        Hi        Ia        Id
## 0.6168280 0.5633230 0.4947215 0.4471664 0.4390149 0.3866320 0.5268057 0.7337415
##        Ma        Me        Mi        Mn        Mo        Mt        Nd        Nh
## 0.3949739 0.5017892 0.5464333 0.5317263 0.5778050 0.6749542 0.6742668 0.5294599
##        Nj        Ny        Oh        Pa        Ri        Sc        Tn        Ut
## 0.4674222 0.5400148 0.5817919 0.5663298 0.3782243 0.5318809 0.5105959 0.7981762
##        Va        Vt        Wi        Wy
## 0.5649642 0.4708586 0.5291817 0.7495900
```

we could make this into a nice table

Other years

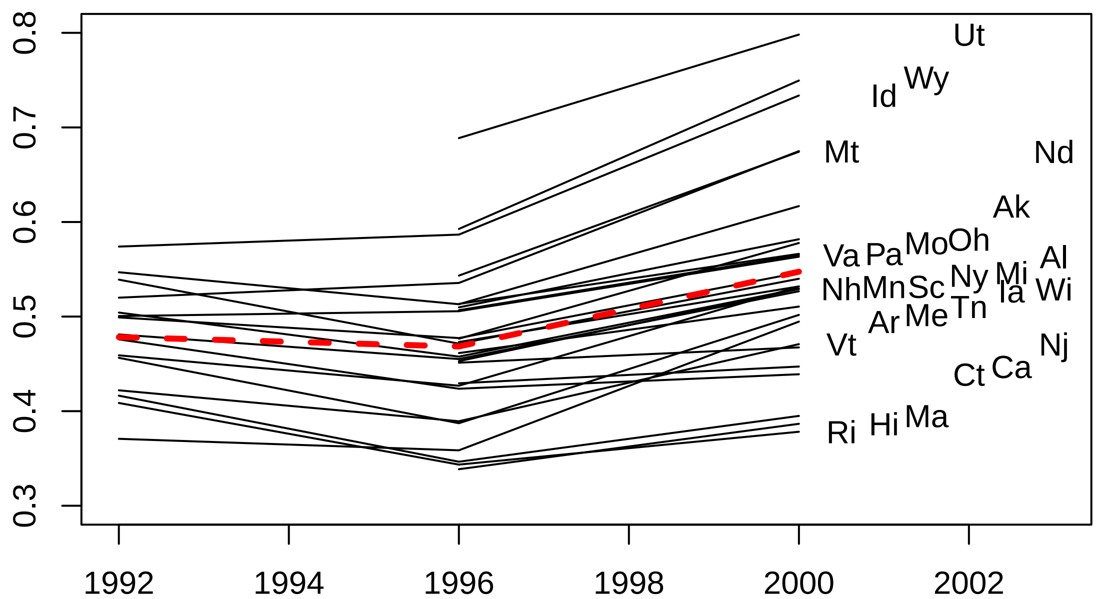
```
gop1996_by_states <- tapply(data$gopvoteshare1996, data$state, mean, na.rm = TRUE)
gop1992_by_states <- tapply(data$gopvoteshare1992, data$state, mean, na.rm = TRUE)

# this dataframe contains the mean gop for the three years (1992, 1996, 2000) by state
gop_by_states <- data.frame(gop1992_by_states, gop1996_by_states, gop2000_by_states)

#sort it for easier use
gop_by_states <- gop_by_states[order(gop_by_states$gop2000_by_states), ]

#plot the results
plot(1, type = "n", xlab = "",
     ylab = "", xlim = c(1992, 2003),
     ylim = c(0.3, 0.8))
for(x in 1:nrow(gop_by_states)){
  lines(as.numeric(gop_by_states[x, ]) ~ c(1992, 1996, 2000))
  text(2000.5+((x-1)%%6)/2, gop_by_states$gop2000_by_states[x], row.names(gop_by_states)[x])
}

lines(c(mean(gop1992_by_states, na.rm=T), mean(gop1996_by_states), mean(gop2000_by_states)) ~ c(1992, 19
      lty=2,
      col="red",
      lwd=3)
```

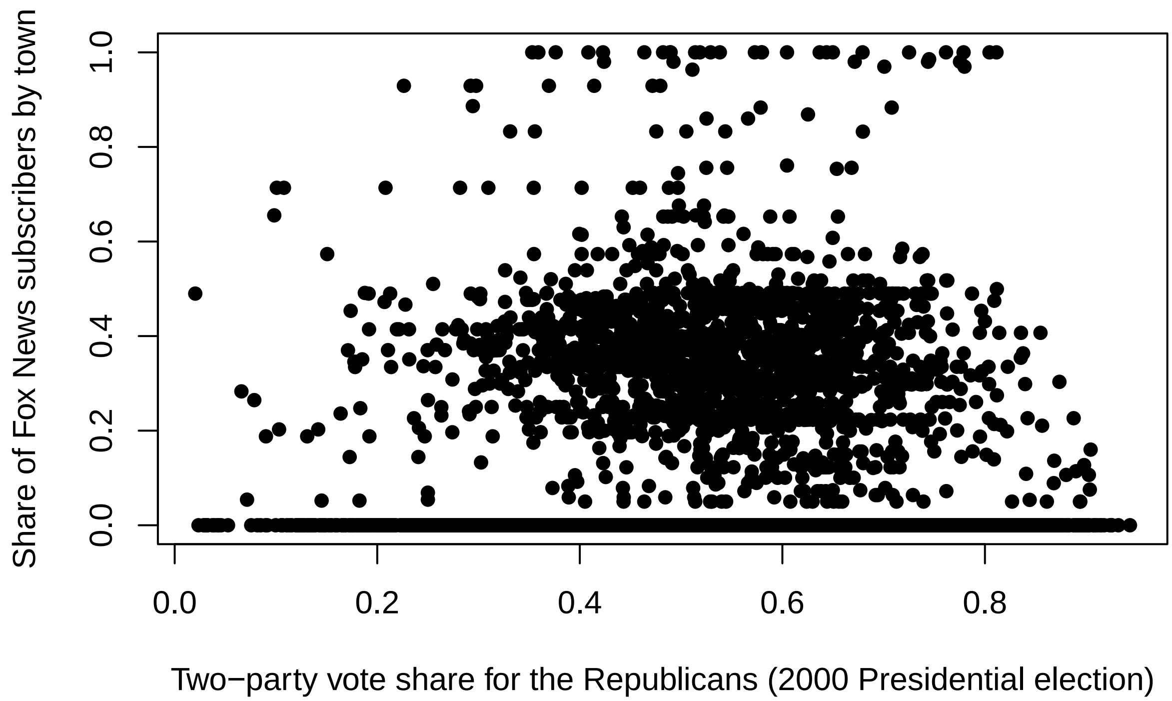



```r
cor(data[,c(3, 4, 5, 6, 7, 12)])
```

```
##                    college1990    male1990   black1990    hisp1990  income1990
## college1990         1.00000000 -0.02564961 -0.04951600  0.01102930  0.67344439
## male1990           -0.02564961  1.00000000 -0.08323473  0.10585356  0.15350228
## black1990          -0.04951600 -0.08323473  1.00000000  0.06078667 -0.13253234
## hisp1990            0.01102930  0.10585356  0.06078667  1.00000000  0.01149702
## income1990          0.67344439  0.15350228 -0.13253234  0.01149702  1.00000000
## gopvoteshare2000 -0.09908543  0.18130369 -0.33131949 -0.22898806  0.01933208
##                  gopvoteshare2000
## college1990           -0.09908543
## male1990               0.18130369
## black1990             -0.33131949
## hisp1990              -0.22898806
## income1990             0.01933208
## gopvoteshare2000       1.00000000
```

```r
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",
      xlab = "Two-party vote share for the Republicans (2000 Presidential election)",
      ylab = "Share of Fox News subscribers by town")
```




```
tapply(gop2000_df$gopvoteshare2000, gop2000_df$subrf2000, mean,na.rm=T)
```

```
##                  0 0.0500000007450581 0.0520643517374992 0.0536635704338551
##          0.5392109          0.6366205          0.1637436          0.8441558
## 0.0541385859251022 0.0589936375617981 0.0590207874774933 0.0638030841946602
##          0.1607113          0.3890845          0.5081695          0.7060595
## 0.0688695684075356 0.0720589607954025 0.0740825161337852 0.0753911808133125
##          0.2500000          0.6399730          0.6633561          0.9035785
## 0.0788345783948898 0.0829605311155319 0.0862447917461395 0.0890014469623566
##          0.5072569          0.4284538          0.5341276          0.8679707
## 0.0895130336284637  0.091968908905983  0.100323617458344  0.100549928843975
##          0.5591316          0.3974592          0.6217725          0.5904004
##  0.102046422660351  0.105475880205631  0.105713538825512  0.106446780264378
##          0.4256259          0.5624005          0.3952321          0.8914241
##  0.108771935105324  0.113510467112064  0.114180482923985  0.116289548575878
##          0.8406285          0.5697758          0.8898305          0.6329502
##  0.121189139783382    0.1224694699049  0.122588261961937  0.122627317905426
##          0.6895806          0.4460154          0.6440519          0.6211788
##  0.127177700400352  0.128672987222672  0.130654335021973  0.131381511688232
##          0.8978979          0.6212318          0.6223822          0.5312972
##  0.132803708314896  0.136380881071091  0.139265760779381  0.141539826989174
##          0.4708939          0.8684211          0.8088608          0.5555657
##  0.142235711216927   0.14431557059288  0.144477188587189  0.144631519913673
##          0.5394314          0.2066917          0.4852768          0.7402808
##  0.146110191941261  0.146953403949738  0.147063747048378  0.148989886045456
```

```
##           0.7182131          0.5862928          0.5179407          0.8015398
##   0.149467602372169  0.155888840556145  0.156111925840378  0.158471927046776
##           0.6102979          0.6895102          0.7401245          0.7020530
##   0.159956902265549  0.159959927201271  0.163186192512512  0.163383826613426
##           0.9043543          0.5635119          0.4994638          0.5657742
##   0.163719698786736  0.167161017656326   0.17249721288681  0.174626871943474
##           0.5516812          0.5336027          0.4970568          0.5044845
##     0.1749437302351  0.176656141877174   0.17965367436409  0.184311330318451
##           0.6515175          0.6463116          0.5572289          0.5229443
##   0.187394946813583  0.188007637858391  0.188418865203857  0.189808577299118
##           0.7951613          0.1948264          0.4745814          0.4928910
##   0.192889556288719  0.193782031536102  0.193796068429947  0.196537375450134
##           0.7554348          0.4380937          0.6440717          0.3910624
##   0.196705892682076  0.198570907115936   0.19989287853241  0.200479224324226
##           0.4419961          0.8218475          0.5684981          0.7726052
##   0.202627271413803  0.203210890293121  0.204534247517586  0.205380246043205
##           0.1981703          0.4331984          0.6826265          0.6392857
##   0.205773323774338  0.207019627094269  0.207442104816437  0.207811087369919
##           0.2411566          0.5692324          0.5426327          0.4101761
##   0.210565343499184  0.210835501551628  0.212110474705696  0.213036566972733
##           0.8564650          0.6067416          0.8154808          0.4341463
##   0.213308453559875  0.214132100343704  0.215816274285316  0.216241747140884
##           0.4599212          0.8091483          0.6257116          0.5560976
##   0.216911762952805  0.217025265097618  0.218978106975555  0.220140725374222
##           0.5848485          0.4519851          0.5988506          0.6876679
##   0.220338985323906  0.220519289374352  0.222096189856529  0.222449839115143
##           0.5785340          0.5556979          0.5385834          0.6877645
##   0.222672820091248  0.223060861229897  0.223320096731186  0.224394783377647
##           0.6217079          0.6247333          0.6845554          0.5494943
##   0.225008994340897  0.225741773843765  0.226240143179893   0.22634445130825
##           0.5635982          0.7606925          0.2362637          0.8445392
##   0.227969020605087  0.229936257004738  0.230514511466026  0.230816766619682
##           0.5018218          0.5275665          0.5740971          0.5394770
##   0.231235027313232  0.232144445180893  0.232267916202545  0.233162924647331
##           0.5093796          0.4353816          0.5849129          0.5831967
##   0.233473598957062  0.234679669141769  0.235462710261345  0.236203372478485
##           0.5566823          0.4690990          0.5628679          0.1638405
##   0.236365213990211  0.238625511527061  0.240955576300621  0.247474074363708
##           0.6347324          0.4034355          0.3504591          0.1832814
##    0.24762162566185  0.248205080628395  0.249626308679581  0.249738439917564
##           0.4856232          0.5581918          0.4902439          0.2632688
##                0.25  0.250067919492722  0.252699792385101  0.253139644861221
##           0.7475248          0.4889276          0.5298037          0.5135630
##   0.254216402769089  0.256126254796982  0.257487148046494  0.257828652858734
##           0.6323848          0.6249256          0.5832797          0.5592674
##   0.257997959852219     0.258340716362  0.260451465845108  0.260510265827179
##           0.6006288          0.4917659          0.3862292          0.7452210
##   0.261956512928009  0.263494610786438  0.263996720314026  0.264577269554138
##           0.5036546          0.5315963          0.7150259          0.3101019
##   0.267191916704178  0.272181868553162  0.272601306438446   0.27475443482399
##           0.5061973          0.5331828          0.6647059          0.8118196
##   0.274912357330322  0.275548428297043  0.276611238718033  0.277875334024429
##           0.5464632          0.7006303          0.5878713          0.7144670
##   0.281903624534607  0.282375872135162  0.282479703426361  0.282485872507095
```

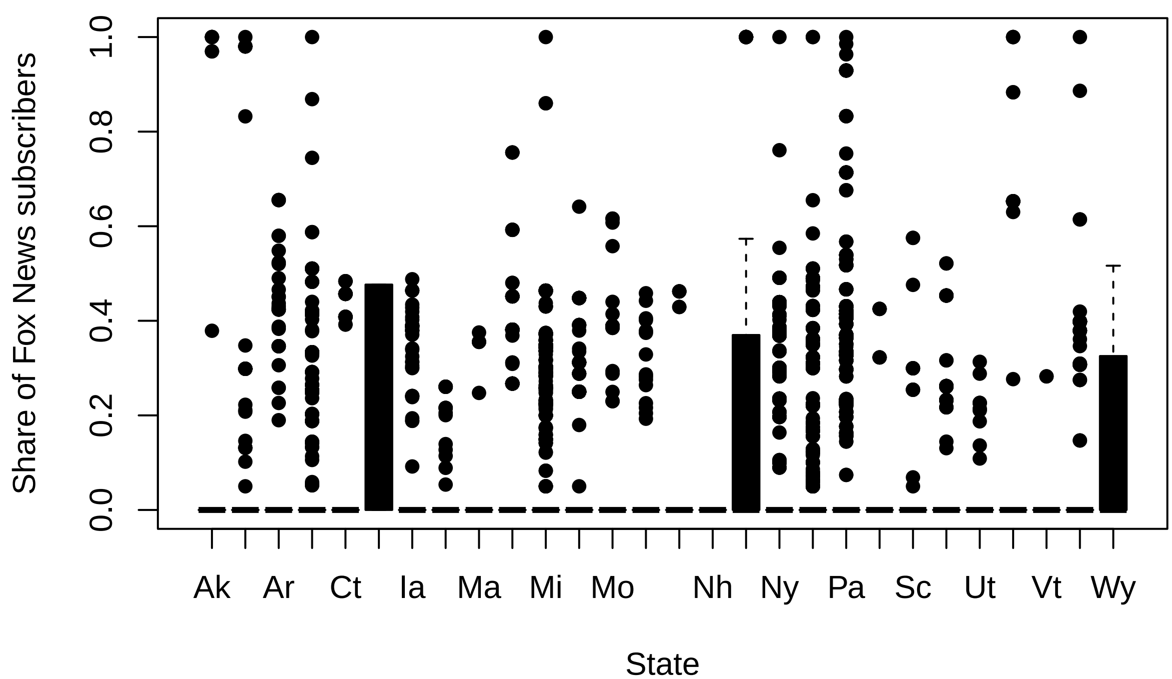
```
##         0.6272307         0.5079128         0.5306566         0.5899149
## 0.283079653978348 0.286630660295486 0.288192003965378 0.288231283426285
##         0.5038594         0.7126623         0.6168155         0.4580382
## 0.288282126188278 0.288300067186356 0.289313644170761 0.291665703058243
##         0.7760779         0.4330177         0.5228536         0.5837929
## 0.292167007923126 0.293145418167114 0.293710827827454 0.295802533626556
##         0.4473033         0.5892756         0.6593592         0.5611365
## 0.295850515365601 0.297012388706207 0.297536015510559 0.298522800207138
##         0.3824860         0.5484048         0.7118156         0.7472044
## 0.298714160919189 0.299594670534134 0.299787372350693 0.299832075834274
##         0.5716259         0.3692519         0.6335188         0.5718941
## 0.299908012151718 0.300581693649292 0.300810903310776 0.301852643489838
##         0.4915014         0.5885913         0.5028868         0.5830890
## 0.303223878145218 0.303375035524368 0.304845333099365 0.306082516908646
##         0.7013650         0.5531865         0.3871967         0.4812287
## 0.307096064090729 0.308187067508698  0.30893537402153 0.309337854385376
##         0.4277361         0.3954434         0.4794165         0.5688804
## 0.310367494821548 0.311765998601913 0.311787992715836 0.312031656503677
##         0.6119887         0.7013415         0.4743419         0.5559457
## 0.312965720891953 0.313309252262115  0.31622177362442  0.31632524728775
##         0.4457928         0.6010733         0.5923358         0.5785958
## 0.316943854093552 0.322613686323166 0.322872251272202 0.324510812759399
##         0.6633684         0.3765003         0.6446019         0.4663623
## 0.325453788042068 0.326466292142868 0.326767653226852 0.328846722841263
##         0.7971347         0.6075650         0.4382020         0.7530973
## 0.329017996788025 0.330564677715302 0.333464622497559 0.334591001272202
##         0.7192817         0.3641074         0.5967061         0.4866473
## 0.334957391023636 0.335085779428482 0.335137575864792 0.335634022951126
##         0.7360441         0.7186398         0.4976435         0.6285394
## 0.335897445678711 0.336291134357452 0.337344169616699 0.338808476924896
##         0.6569310         0.4625435         0.6869436         0.5042159
## 0.341147631406784 0.341296941041946 0.342777848243713 0.343810141086578
##         0.6229607         0.4920925         0.6104162         0.4710841
## 0.345329344272614 0.345754861831665 0.346248835325241 0.346486210823059
##         0.5282922         0.4343596         0.5814060         0.6598463
## 0.347454220056534 0.347818911075592 0.347976624965668 0.349253743886948
##         0.6692863         0.7290503         0.7465681         0.5495772
## 0.349272549152374 0.349436402320862  0.3498874604702 0.349890828132629
##         0.5545296         0.4985299         0.5742643         0.4558200
## 0.350805521011353 0.354196101427078 0.355425268411636  0.35549333691597
##         0.3912821         0.8353870         0.3837783         0.4823529
## 0.358507752418518 0.360465109348297 0.361147314310074  0.36162006855011
##         0.4973253         0.4735632         0.4671533         0.4972564
## 0.363522559404373 0.368566155433655 0.368734270334244 0.369409769773483
##         0.6815402         0.5330454         0.3673757         0.4509809
## 0.369963318109512 0.370234042406082 0.370754957199097 0.371489465236664
##         0.3607318         0.4501135         0.4828872         0.6216082
## 0.372654736042023 0.374305576086044 0.374587267637253 0.375238448381424
##         0.5595064         0.5188602         0.5684460         0.3950814
## 0.375972867012024  0.37806710600853 0.378663539886475 0.378905028104782
##         0.5845152         0.5392670         0.6598131         0.5683891
## 0.379260301589966 0.379491478204727  0.38083353638649 0.381188362836838
##         0.5318269         0.4221772         0.3728740         0.4839138
## 0.381966292858124 0.383066713809967 0.383630514144897 0.384447574615479
```

```
##         0.5431709         0.3800000         0.6603670         0.3740014
## 0.384960889816284  0.38517102599144 0.385570526123047 0.386660218238831
##         0.5825547         0.5069615         0.4820493         0.6081594
## 0.387563496828079 0.387564063072205 0.388699501752853  0.38873365521431
##         0.6369760         0.4421488         0.4976464         0.5479577
##  0.38955095410347 0.390175551176071   0.3910031914711 0.392087131738663
##         0.6741793         0.4544973         0.4998621         0.3029801
## 0.393029451370239 0.398379534482956 0.399632215499878 0.401474982500076
##         0.4903851         0.5641542         0.4803722         0.5397843
## 0.402131319046021  0.40234711766243 0.402763903141022 0.405161798000336
##         0.4795994         0.6188184         0.5436877         0.7176625
## 0.405674189329147 0.406886070966721 0.407826513051987 0.408293873071671
##         0.4863100         0.7111671         0.4089069         0.5105345
## 0.412557423114777 0.413030385971069 0.413380146026611 0.413719326257706
##         0.6068054         0.4662572         0.4631148         0.7681197
##  0.41434720158577 0.414364635944366  0.41679722070694 0.419378936290741
##         0.3657540         0.6082687         0.4685614         0.6415501
## 0.419463753700256 0.421019464731216 0.421209931373596 0.421801567077637
##         0.5361842         0.5809699         0.4235102         0.5362162
## 0.423163443803787 0.423816919326782 0.425180107355118 0.426724135875702
##         0.4221036         0.6788441         0.4347393         0.4720630
## 0.427931904792786 0.429210871458054 0.429246932268143 0.430346965789795
##         0.3864307         0.5462125         0.7220157         0.4790230
## 0.430856823921204 0.430919051170349 0.431238681077957 0.431481689214706
##         0.4908061         0.3591629         0.7276132         0.6477302
##  0.43424317240715 0.436845511198044 0.437311172485352  0.43936887383461
##         0.4750958         0.6681922         0.5559105         0.4634993
## 0.440043210983276 0.440081119537354 0.441027045249939  0.44239130616188
##         0.6479401         0.5546933         0.6120444         0.4864603
## 0.447855323553085 0.448143392801285 0.450825959444046 0.451651513576508
##         0.7346383         0.5389791         0.6444316         0.4756359
## 0.453429371118546   0.4569051861763 0.457402914762497 0.458289355039597
##         0.6123891         0.4459565         0.6211456         0.7063310
## 0.459141194820404 0.462137699127197 0.462505221366882 0.463054180145264
##         0.6141764         0.6597414         0.7394508         0.5114878
## 0.463700473308563 0.463966071605682 0.464091002941132 0.464345842599869
##         0.5873337         0.5340314         0.5702813         0.6102834
## 0.465924799442291 0.466560035943985 0.472219556570053 0.474683523178101
##         0.7325383         0.4013797         0.4656170         0.8092399
## 0.475969344377518 0.476609438657761 0.478062212467194 0.480129271745682
##         0.4816815         0.4327071         0.5096221         0.4110846
## 0.482440680265427 0.483656018972397 0.485136747360229 0.487891435623169
##         0.4976509         0.4301382         0.6666667         0.4689962
## 0.489403188228607 0.489851415157318 0.490078806877136 0.490954160690308
##         0.6243221         0.5881696         0.6306306         0.5598358
## 0.491258770227432 0.499464333057404 0.510346949100494 0.510463058948517
##         0.5213177         0.6292902         0.4953866         0.5063417
## 0.516448199748993    0.517558157444 0.520266175270081 0.521328091621399
##         0.5479082         0.6906844         0.3714689         0.5546531
## 0.523506999015808 0.530230581760406  0.53913289308548 0.548274040222168
##         0.3413174         0.5510016         0.4440201         0.4545455
## 0.554283320903778 0.557857155799866 0.567338287830353 0.573411881923676
##         0.4668753         0.6464789         0.6921880         0.5210236
## 0.575334668159485 0.579721450805664 0.584762692451477 0.587519884109497
```

```
##          0.4715058          0.4791269          0.7183771          0.5233741
##  0.592390179634094  0.607692956924438  0.614366710186005  0.616058051586151
##          0.4987767          0.6496958          0.4343581          0.4805707
##  0.630079030990601  0.641348659992218  0.652668833732605  0.654961287975311
##          0.4432231          0.5233645          0.5331821          0.5426908
##  0.655275642871857  0.676033437252045  0.713625907897949  0.744621276855469
##          0.3703068          0.5102186          0.3328478          0.4969660
##  0.753681421279907  0.755886971950531  0.760725617408752  0.832339286804199
##          0.6537530          0.5795711          0.6045802          0.6794731
##  0.832746267318726   0.85995626449585  0.868728697299957  0.883227825164795
##          0.4422358          0.5456175          0.6253061          0.6432451
##  0.886317133903503  0.929291486740112   0.96340548992157  0.969715058803558
##          0.2943457          0.3644520          0.5111826          0.7402226
##  0.980178356170654  0.985493779182434                  1
##          0.6214041          0.7449275          0.5681401
```

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

plot(gop2000_df$state, gop2000_df$subrf2000,
     pch = 16, col="black",
      xlab = "State",
      ylab = "Share of Fox News subscribers")
```



```r
towns_w_foxnews<- subset(data, (subset = subrf2000 >0))
towns_no_foxnews<-subset(data, (subset = subrf2000 ==0))

means.all.elections.wFN<-colMeans(towns_w_foxnews[c('gopvoteshare1992','gopvoteshare1996','gopvoteshare2
means.all.elections.wFN
```

```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##        0.5026492        0.4790478        0.5373097
```

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

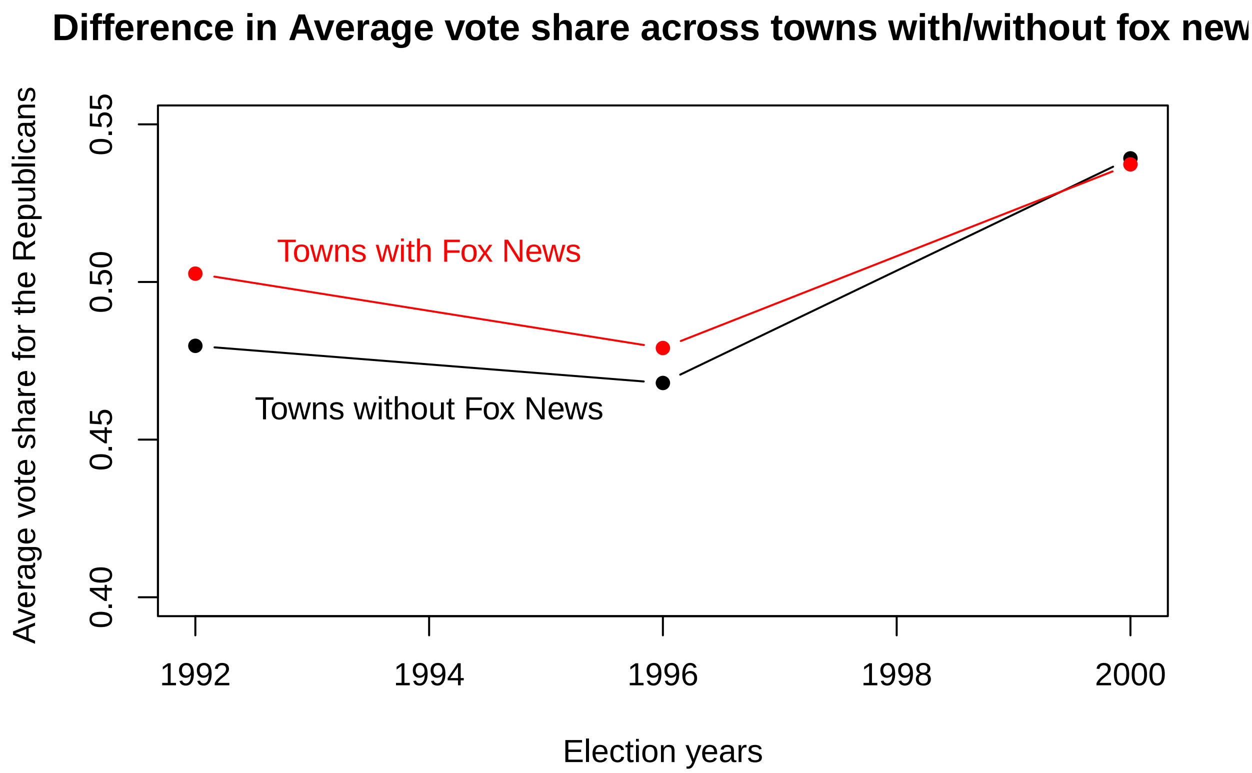
```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##        0.4797481        0.4679651        0.5392109
```

```r
years<- c(1992, 1996, 2000)

plot(years, means.all.elections.noFN, pch = 16, col = "black",
xlim = c(1992, 2000), ylim = c(0.4, 0.55), 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")


lines(years, means.all.elections.noFN, type = "c")
lines(years, means.all.elections.wFN, type = "c", col="red")
text(1994,0.51, "Towns with Fox News", col="red")
text(1994,0.46, "Towns without Fox News")
```



##A Question I (Thea) would like to do for final assignment

Our hypotheses stating, that it might be possible that education, gender, and people with different race reacting differently to the implementation of Fox News. 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, gender, race and income in towns with access to Fox News and towns without access to Fox News.

Furthermore,Computeing 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.

```
##SATE town with high proportion of a black population
summary(data$black1990)
```

```
##     Min.  1st Qu.   Median     Mean  3rd Qu.     Max.
## 0.000000 0.000000 0.002165 0.031380 0.013411 0.990427
```

```
high_black_pop.t_w_foxnews<- subset(towns_w_foxnews, subset = black1990 >= 0.031380)
high_black_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = black1990 >= 0.031380)

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<- means_high_black_pop.t_w_foxnews - means_high_black_pop.t_no_foxnews
sate_high_black_pop
```

```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##       0.05143725      -0.01580532      -0.02403391
```

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

low_black_pop.t_w_foxnews<- subset(towns_w_foxnews, subset = black1990 > 0 & black1990 < 0.013411)

low_black_pop.t_no_foxnews<- subset(towns_no_foxnews, subset = black1990 > 0 & black1990 < 0.013411)

means_low_black_pop.t_w_foxnews<-colMeans(low_black_pop.t_w_foxnews[c('gopvoteshare1992','gopvoteshare1

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

sate_low_black_pop<- means_low_black_pop.t_w_foxnews - means_low_black_pop.t_no_foxnews
sate_low_black_pop
```

```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##      0.029511110      0.017182925      0.008770301
```

```r
####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','gopvoteshare1

sate_no_black_pop<- means_no_black_pop.t_w_foxnews - means_no_black_pop.t_no_foxnews
sate_no_black_pop
```

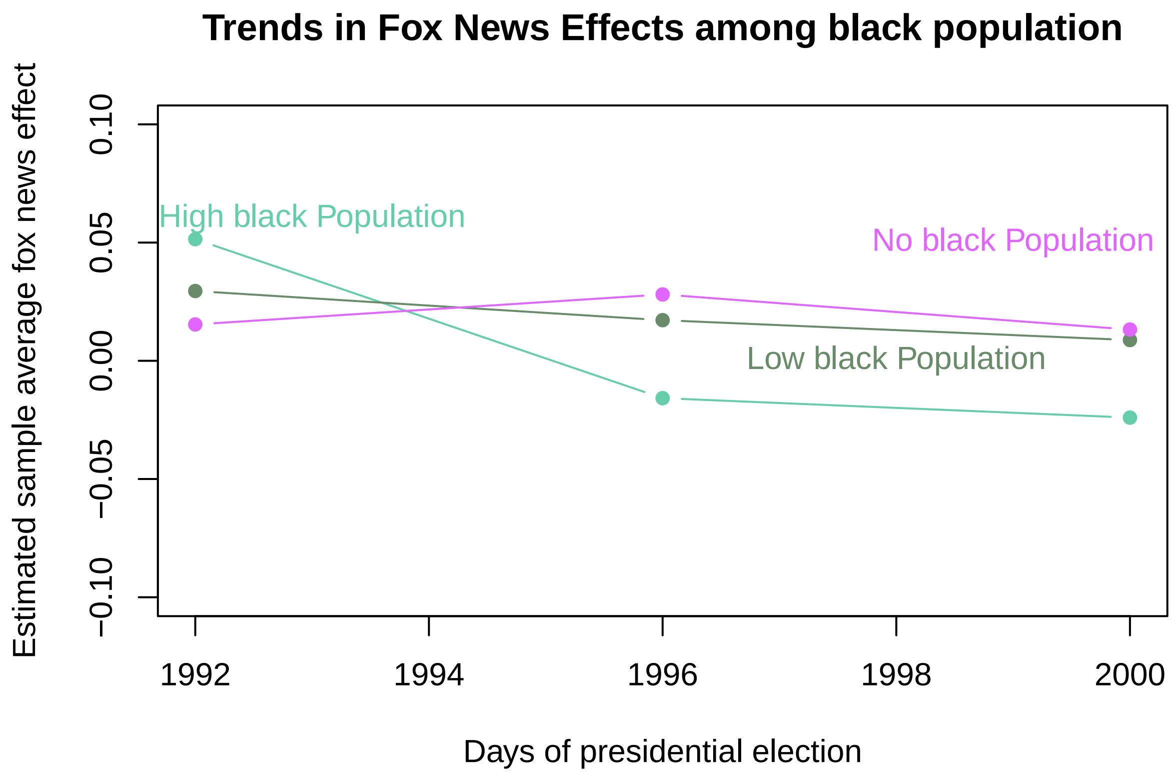
```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##       0.01537377       0.02805453       0.01320826
```

```r
plot(years,sate_high_black_pop, pch = 16, col = "aquamarine3",
xlim = c(1992, 2000), ylim = c(-0.1, 0.1), 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,pch = 16, col = "darkseagreen4")
points(years, sate_no_black_pop,pch = 16, col = "mediumorchid1")

lines(years,sate_high_black_pop, type="c", col="aquamarine3")
lines(years, sate_low_black_pop,type="c", col = "darkseagreen4")
lines(years, sate_no_black_pop,type="c", col = "mediumorchid1")

text(1993,0.06,"High black Population", col="aquamarine3")
text(1998,0,"Low black Population", col="darkseagreen4")
text(1999, 0.05, "No black Population", col="mediumorchid1")
```




```
summary(data$income1990)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.420   1.946   2.586   2.808   3.420  15.000
```

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

high_income.t_w_foxnews<- subset(towns_w_foxnews, subset = income1990 >= 3.420)
high_income.t_no_foxnews<- subset(towns_no_foxnews, subset = income1990 >= 3.420)

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

```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##       0.03359662       0.02498114       0.01709393
```

```
##SATE town with medium income

medium_income.t_w_foxnews<- subset(towns_w_foxnews, subset = income1990 >1.946 & income1990 <3.420 )
medium_income.t_no_foxnews<- subset(towns_no_foxnews, subset =income1990 >1.946 & income1990 <3.420 )
```

```r
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','gopvoteshare

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

```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##     0.0130079946     0.0006340113    -0.0081789829
```

```r
##SATE town with high proportion of poor people

low_income.t_w_foxnews<- subset(towns_w_foxnews, subset = income1990 <= 1.946)
low_income.t_no_foxnews<- subset(towns_no_foxnews, subset = income1990 <= 1.946)

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

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

sate_low_income<- means_low_income.t_w_foxnews - means_low_income.t_no_foxnews
sate_high_income
```

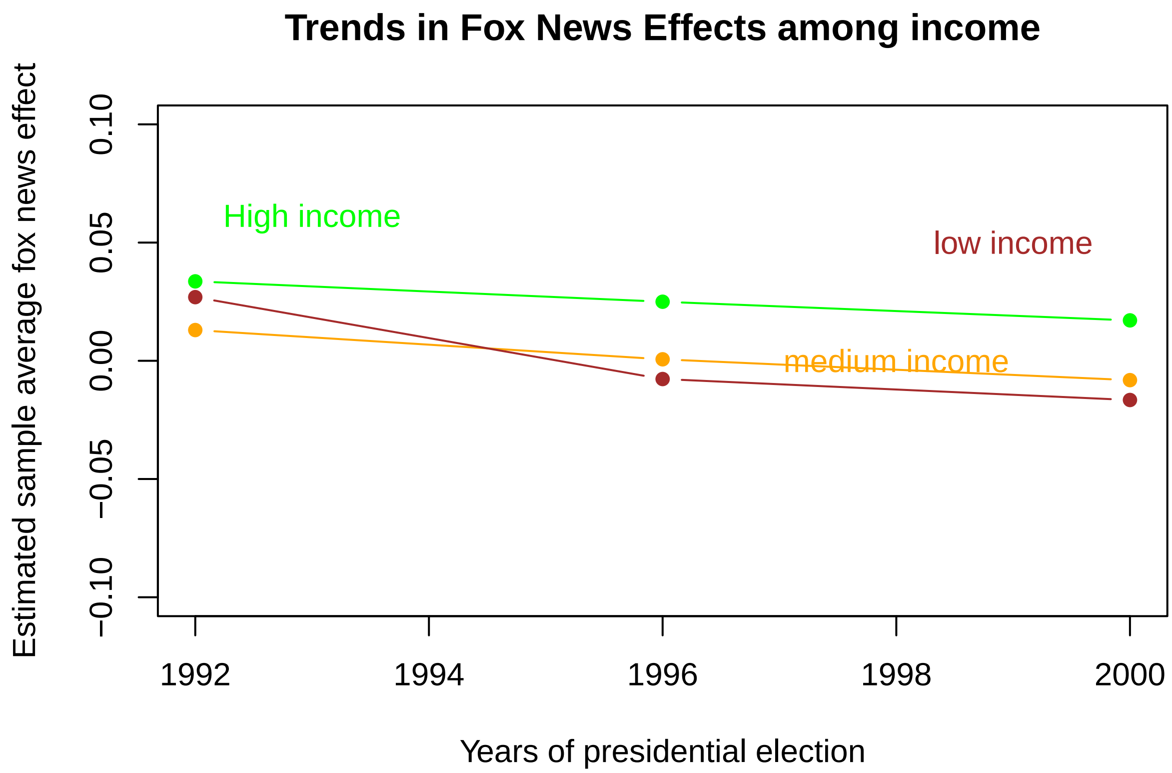
```
## gopvoteshare1992 gopvoteshare1996 gopvoteshare2000
##       0.03359662       0.02498114       0.01709393
```

```r
plot(years,sate_high_income, pch = 16, col = "green",
xlim = c(1992, 2000), ylim = c(-0.1, 0.1), 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,pch = 16, col = "orange")
points(years, sate_low_income,pch = 16, col = "brown")

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

text(1993,0.06,"High income", col="green")
text(1998,0,"medium income", col="orange")
text(1999, 0.05, "low income", col="brown")
```


Trends in Fox News Effects among income
Estimated sample average fox news effect
0.10
0.05
0.00
−0.05
−0.10
High income
low income
medium income
1992
1994
1996
1998
2000
Years of presidential election

1 References