analyze_mturk_pap.R

kevin

Sun Mar 11 15:41:20 2018

```
##NOTE: we did a pilot of this experiment; results are analyzed here as they will be
##in the final version
setwd("C:/Users/kevin/Dropbox/clickbait/")

options(stringsAsFactors = FALSE)
library(foreign)

multiplot <- function(..., plotlist=NULL, file, cols=1, layout=NULL) {
  require(grid)

  # Make a list from the ... arguments and plotlist
  plots <- c(list(...), plotlist)

  numPlots = length(plots)

  # If layout is NULL, then use 'cols' to determine layout
  if (is.null(layout)) {
    # Make the panel
    # ncol: Number of columns of plots
    # nrow: Number of rows needed, calculated from # of cols
    layout <- matrix(seq(1, cols * ceiling(numPlots/cols)),
                     ncol = cols, nrow = ceiling(numPlots/cols))
  }

  if (numPlots==1) {
    print(plots[[1]])

  } else {
    # Set up the page
    grid.newpage()
    pushViewport(viewport(layout = grid.layout(nrow(layout), ncol(layout))))

    # Make each plot, in the correct location
    for (i in 1:numPlots) {
      # Get the i,j matrix positions of the regions that contain this subplot
      matchidx <- as.data.frame(which(layout == i, arr.ind = TRUE))

      print(plots[[i]], vp = viewport(layout.pos.row = matchidx$row,
                                      layout.pos.col = matchidx$col))
    }
  }
}
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(psych)
library(ggplot2)
```

```
##
## Attaching package: 'ggplot2'
```

```
## The following objects are masked from 'package:psych':
##
##     %+%, alpha
```

```
require(reshape2)
```

```
## Loading required package: reshape2
```

```
data1<-read.csv("mturk_data/mturk_final_batch_1.csv")
data2<-read.csv("mturk_data/mturk_final_batch_1_cons.csv")
data3<-read.csv("mturk_data/mturk_final_batch_2.csv")
data4<-read.csv("mturk_data/mturk_final_batch_2_cons.csv")


data_mt<-rbind(data1,data2,data3,data4)

q<-read.csv("mturk_data/qualtrics_final_batch_1.csv")

## delete the first tw0
q<-q[-1,]
q<-q[-1,]

total<-merge(q,data_mt,by.y="Answer.surveycode", by.x="MTurkCode")

## check that total only has distinct MTurkers
nrow(total)-length(unique(total$MTurkCode))
```

```
## [1] 0
```

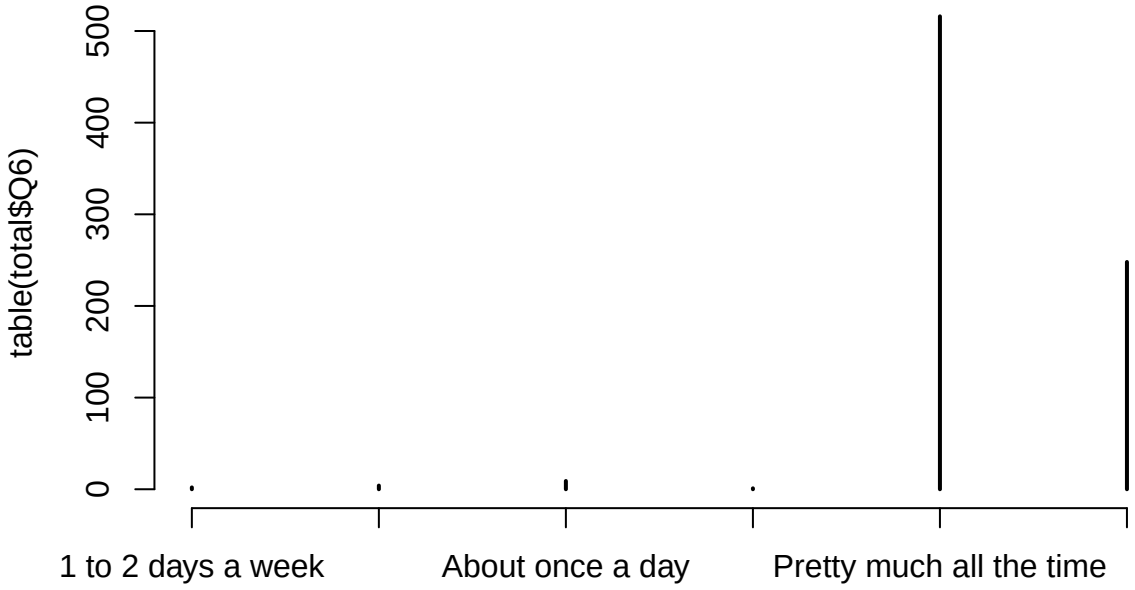
```
##subset to only those who passed the attention check
bad<-filter(total, Q22 != "Survey taker: always select this option, ignore the other three headlines")


##reject the bad ones
total<-filter(total, Q22 == "Survey taker: always select this option, ignore the other three headlines"
total<-filter(total, Duration..in.seconds. > 180)


######look at responses

##Q6 -- this is "how often do you use the internet" -- NICE they all use it all the time

plot(table(total$Q6))
```




```
##this is actually really annoying-- just create a new data frame

##annoying; have to update this every time

total$internet_use<-as.factor(total$Q6)
total$internet<- factor(total$internet_use,levels(total$internet_use)[c(4,1,2,3,6,5)])

pdf("results/internet_use.pdf", 7, 5)
ggplot(data.frame(total$internet),aes(total$internet)) + geom_bar(stat = "count")+

  scale_x_discrete("How often do you use the internet?",labels=c("0"="Less Often","1"="Every few weeks"

  theme(panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        panel.background = element_blank(), axis.text.x = element_text(angle = 300, hjust = 0))+
  ylab("Count")  + ggtitle("MTurkers use the internet 'Pretty much all the time'")
dev.off()
```

```
## pdf
##   2
```

```
#############################################################################3
###calculate demographics
#############################################################################3


total$pid<-as.factor(total$Q12)
```

```
total$pid<- factor(total$pid,levels(total$pid)[c(1, 3, 2, 4,5)])


pdf("results/pid.pdf", 7, 5)

ggplot(data.frame(total$pid),aes(total$pid)) + geom_bar(stat = "count")+ scale_x_discrete(drop=FALSE)+

  theme(panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        panel.background = element_blank(), axis.text.x = element_text(angle = 300, hjust = 0))+

  ylab("Count") +
  xlab("") + ggtitle("Subject partisan identification")

dev.off()
```

```
## pdf
##   2
```

```
##age

total$age <- as.numeric(total$Q3)
pdf("results/age.pdf", 7, 5)

hist(total$age)
dev.off()
```

```
## pdf
##   2
```

```
##education

total$educ<-as.factor(total$Q5)
total$educ<- factor(total$educ,levels(total$educ)[c(2, 3, 5, 1, 4)])

pdf("results/educ.pdf", 7, 5)

ggplot(data.frame(total$educ),aes(total$educ)) + geom_bar(stat = "count")+ scale_x_discrete(drop=FALSE)+

  theme(panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        panel.background = element_blank(), axis.text.x = element_text(angle = 300, hjust = 0))+

  ylab("Count") +
  xlab("") + ggtitle("Subject Education")

dev.off()
```

```
## pdf
##   2
```

```
##facebook use

total$fb<-as.factor(total$Q9)
total$fb<- factor(total$fb,levels(total$fb)[c(5,6,4, 1,2,3,8,7)])
```

```
pdf("results/fb.pdf", 7, 5)

ggplot(data.frame(total$fb),aes(total$fb)) + geom_bar(stat = "count")+ scale_x_discrete(drop=FALSE)+

  theme(panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        panel.background = element_blank(), axis.text.x = element_text(angle = 300, hjust = 0))+

  ylab("Count") +
  xlab("") + ggtitle("Subject Facebook Use")

dev.off()
```

```
## pdf
##   2
```

```
##twitter use

total$twitter<-as.factor(total$Q11)
total$twitter<- factor(total$twitter,levels(total$twitter)[c(5,6,4, 1,2,3,8,7)])


pdf("results/twitter.pdf", 7, 5)

ggplot(data.frame(total$twitter),aes(total$twitter)) + geom_bar(stat = "count")+ scale_x_discrete(drop=

  theme(panel.grid.major = element_blank(),
        panel.grid.minor = element_blank(),
        panel.background = element_blank(), axis.text.x = element_text(angle = 300, hjust = 0))+

  ylab("Count") +
  xlab("") + ggtitle("Subject Twitter Use")

dev.off()
```

```
## pdf
##   2
```

```
##measure which stories they looked at

##just count how often they clicked each kind of story
total$R_CB<-0
total$D_CB<-0
total$R_normal<-0
total$D_normal<-0


##going through and putting #'s for the ones that aren't emotional clickbait

#total$Q16.1

total$R_CB[total$Q16.1 =="People are loving this: President Trump dismisses mainstream media frenzy abou
total$D_normal[total$Q16.1 =="Report shows that climate change is much worse than previously feared"]<-

#total$Q21
```

```
total$D_CB[total$Q21 =="This is why President Trump's plan for dealing with North Korea is a disaster"]+
total$R_normal[total$Q21 =="Planned Parenthood on the ropes as funding slashed"]<-1 + total$R_normal[to

#total$Q23

total$R_CB[total$Q23 =="This is what the Mexican border wall will empower local governments to do"]<-1 +
total$D_normal[total$Q23 =="Media investigations keep finding new information about Russia allegations"]


#total$Q20

total$D_CB[total$Q20 =="This will make you furious: new email evidence shows Donald Trump, Jr., conspir
total$R_normal[total$Q20 =="Supreme Court allows the popular travel ban to take effect"]<-1 + total$R_n

#total$Q24

total$R_CB[total$Q24 =="Democrats are freaking out: evidence from Seattle shows raising minimum wages c
total$D_normal[total$Q24 =="Mexican border wall to nearly bankrupt local government"]<-1 + total$D_norm

#total$Q19

total$D_CB[total$Q19 =="5 things you need to know about the Supreme Court's cowardly travel ban approva
total$R_normal[total$Q19 =="Donald Trump, Jr., under attack for doing nothing wrong"]<-1 + total$R_norm

#total$Q25

total$R_CB[total$Q25 =="10 reasons that climate change isn't a serious problem"]<-1 + total$R_CB[total$
total$D_normal[total$Q25 =="Seattle's minimum wage increase shows that paying people more actually work


#total$Q18

total$D_CB[total$Q18 =="Republicans are shocked to see that slashing funding to Planned Parenthood incr
total$R_normal[total$Q18 =="President Trump's bold new plan for dealing with North Korea"]<-1 + total$R_


##summary of preferences-----people preferred (slighlty) the non-clickbait

summary(total$D_CB)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   2.000   1.529   2.000   4.000
```

```
summary(total$R_CB)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   0.000   1.000   1.356   2.000   4.000
```

```
summary(total$D_normal)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   2.000   1.671   3.000   4.000
```

```
summary(total$R_normal)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   2.000   1.604   2.000   4.000
```

```
dems<-filter(total, pid == "Democrat" | pid == "Lean Democrat")
reps<-filter(total, pid == "Republican" | pid == "Lean Republican")
inds<-filter(total, pid == "Independent")


summary(dems$D_CB)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   2.000   1.931   3.000   4.000
```

```
summary(dems$R_CB)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##  0.0000  0.0000  1.0000  0.8229  1.0000  4.0000
```

```
summary(dems$D_normal)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.750   2.000   2.219   3.000   4.000
```

```
summary(dems$R_normal)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   1.000   1.205   2.000   4.000
```

```
summary(reps$D_CB)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   0.000   1.000   1.172   2.000   4.000
```

```
summary(reps$R_CB)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   2.000   1.955   3.000   4.000
```

```
summary(reps$D_normal)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   0.000   1.000   1.082   2.000   4.000
```

```
summary(reps$R_normal)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   0.000   1.000   2.000   2.037   3.000   4.000
```

```
##plotting density of news consumption --> people prefer like-minded and non-CB; republicans are slightl
pdf("results/choiceNews.pdf", 7, 5)
p1<-ggplot()+
  geom_density(data=total,aes(D_CB),colour="blue",adjust=2.4,size=1,linetype = 2) +
  geom_density(data=total,aes(D_normal),colour="blue",adjust=2.1,size=1)+
  geom_density(data=total,aes(R_CB),colour="red",adjust=2.3,size=1,linetype = 2)+
  geom_density(data=total,aes(R_normal),colour="red",adjust=2.4,size=1)+
  ggtitle("Choice of news") + xlab("Red=Republican, Dashed=Clickbait")

p2<-ggplot()+
  geom_density(data=dems,aes(D_CB),colour="blue",adjust=1.8,size=1,linetype = 2) +
  geom_density(data=dems,aes(D_normal),colour="blue",adjust=1.8,size=1)+
```

```
  geom_density(data=dems,aes(R_CB),colour="red",adjust=2,size=1,linetype = 2)+
  geom_density(data=dems,aes(R_normal),colour="red",adjust=2,size=1)+
  ggtitle("Choice of news for Democrats") + xlab("Red=Republican, Dashed=Clickbait")

p3<-ggplot()+
  geom_density(data=reps,aes(D_CB),colour="blue",adjust=1.8,size=1,linetype = 2) +
  geom_density(data=reps,aes(D_normal),colour="blue",adjust=1.8,size=1)+
  geom_density(data=reps,aes(R_CB),colour="red",adjust=2,size=1,linetype = 2)+
  geom_density(data=reps,aes(R_normal),colour="red",adjust=2,size=1)+
  ggtitle("Choice of news for Republicans") + xlab("Red=Republican, Dashed=Clickbait")

multiplot(p1,p2,p3,cols=2)
```

```
## Loading required package: grid
```

```
dev.off()
```

```
## pdf
##   2
```

```
total$CB<-total$D_CB + total$R_CB
total$normal<-total$D_normal + total$R_normal
total$political<-total$CB + total$normal
summary(total$political)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.00    5.00    7.00    6.16    8.00    8.00
```

```
total$pfc<-total$CB / total$political

summary(total$pfc)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##  0.0000  0.3333  0.5000  0.4583  0.5714  1.0000      12
```

```
##only 1 person chose 0 political stories
total$R<-total$R_normal + total$R_CB
total$D<-total$D_normal + total$D_CB
total$pfr<-total$R/total$political
total$pfd<-total$D/total$political


###so we have pfc , pfd , and pfr as the main choice variables

##let's check: pfd / pfc among partisans

dems<-filter(total, pid == "Democrat" | pid == "Lean Democrat")
reps<-filter(total, pid == "Republican" | pid == "Lean Republican")

summary(dems$pfd)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##  0.0000  0.5000  0.6667  0.6635  0.8333  1.0000       2
```

```
summary(reps$pfd)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
```

```
##  0.0000  0.1429  0.3750  0.3708  0.5357  1.0000       5
```

```
summary(dems$pfr)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##  0.0000  0.1667  0.3333  0.3365  0.5000  1.0000       2
```

```
summary(reps$pfr)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.    NA's
##  0.0000  0.4643  0.6250  0.6292  0.8571  1.0000       5
```

```
##that's plausible -- so let's check pfc along the major lines

## only internet consumption is significant --> frequent users are more used to CB?
summary(lm(pfc ~ as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) + age + as.numeric(educ) +
```

```
##
## Call:
## lm(formula = pfc ~ as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) +
##     age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.52361 -0.10331  0.00848  0.11476  0.58871
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)            0.2805878  0.0810356   3.463 0.000565 ***
## as.numeric(fb)         0.0054289  0.0034172   1.589 0.112542
## as.numeric(twitter)    0.0031378  0.0030274   1.036 0.300312
## as.numeric(internet)   0.0137158  0.0118650   1.156 0.248047
## age                    0.0017164  0.0005839   2.940 0.003385 **
## as.numeric(educ)      -0.0051583  0.0081383  -0.634 0.526384
## pidLean Democrat      -0.0303052  0.0241761  -1.254 0.210404
## pidIndependent         0.0038461  0.0191328   0.201 0.840737
## pidLean Republican     0.0629778  0.0216124   2.914 0.003674 **
## pidRepublican          0.0201500  0.0222740   0.905 0.365944
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1912 on 758 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.04311,    Adjusted R-squared:  0.03175
## F-statistic: 3.795 on 9 and 758 DF,  p-value: 0.0001067
```

```
summary(lm(pfc ~ (fb) + (twitter) + (internet) + age + (educ) +pid, data = total))
```

```
##
## Call:
## lm(formula = pfc ~ (fb) + (twitter) + (internet) + age + (educ) +
##     pid, data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.53681 -0.10587  0.00437  0.11835  0.58217
##
```

```
## Coefficients:
##                                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)                     0.1361997  0.2265263   0.601  0.54786
## fbLess often                    0.0300232  0.0399213   0.752  0.45225
## fbEvery few weeks               0.0123622  0.0394768   0.313  0.75425
## fb1 to 2 days a week            0.0325966  0.0374760   0.870  0.38469
## fb3 to 6 days a week            0.0349630  0.0424061   0.824  0.40993
## fbAbout once a day              0.0462080  0.0291906   1.583  0.11386
## fbSeveral times a day           0.0423691  0.0266798   1.588  0.11270
## fbPretty much all the time      0.0371848  0.0355388   1.046  0.29576
## twitterLess often               0.0172521  0.0260630   0.662  0.50822
## twitterEvery few weeks          0.0334616  0.0274986   1.217  0.22405
## twitter1 to 2 days a week      -0.0040102  0.0246315  -0.163  0.87071
## twitter3 to 6 days a week      -0.0146018  0.0274409  -0.532  0.59480
## twitterAbout once a day         0.0541958  0.0240594   2.253  0.02458 *
## twitterSeveral times a day      0.0220960  0.0219731   1.006  0.31494
## twitterPretty much all the time 0.0223815  0.0418264   0.535  0.59274
## internet1 to 2 days a week     -0.0581829  0.2391097  -0.243  0.80782
## internet3 to 6 days a week      0.2872022  0.2170143   1.323  0.18610
## internetAbout once a day        0.2391132  0.2036272   1.174  0.24067
## internetSeveral times a day     0.2453519  0.1938509   1.266  0.20603
## internetPretty much all the time 0.2498989 0.1938603   1.289  0.19778
## age                             0.0017447  0.0005986   2.915  0.00367 **
## educHigh school                -0.0718478  0.1134703  -0.633  0.52681
## educSome college               -0.0248452  0.1123845  -0.221  0.82510
## educCollege                    -0.0619086  0.1125672  -0.550  0.58251
## educPostgraduate degree        -0.0576978  0.1136508  -0.508  0.61183
## pidLean Democrat               -0.0319791  0.0243426  -1.314  0.18935
## pidIndependent                 -0.0024847  0.0192723  -0.129  0.89745
## pidLean Republican              0.0599090  0.0218506   2.742  0.00626 **
## pidRepublican                   0.0222741  0.0224498   0.992  0.32144
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1911 on 739 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.06767,    Adjusted R-squared:  0.03235
## F-statistic: 1.916 on 28 and 739 DF,  p-value: 0.003195
```

```
summary(lm(pfc ~ as.numeric(fb) , data = total))
```

```
##
## Call:
## lm(formula = pfc ~ as.numeric(fb), data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.47348 -0.10770  0.03301  0.11092  0.56545
##
## Coefficients:
##                Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.421571   0.020355  20.711   <2e-16 ***
## as.numeric(fb) 0.006489   0.003375   1.922   0.0549 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## Residual standard error: 0.194 on 766 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.004801,   Adjusted R-squared:  0.003502
## F-statistic: 3.696 on 1 and 766 DF,  p-value: 0.05493
```

```
summary(lm(pfc ~ as.numeric(twitter) , data = total))
```

```
##
## Call:
## lm(formula = pfc ~ as.numeric(twitter), data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.46586 -0.11975  0.03596  0.11835  0.54692
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)         0.451254   0.013359  33.778   <2e-16 ***
## as.numeric(twitter) 0.001826   0.002940   0.621    0.535
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1944 on 766 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.0005034,  Adjusted R-squared:  -0.0008014
## F-statistic: 0.3858 on 1 and 766 DF,  p-value: 0.5347
```

```
summary(lm(pfc ~ (age) , data = total))
```

```
##
## Call:
## lm(formula = pfc ~ (age), data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.50283 -0.10872  0.00705  0.11900  0.57623
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) 0.3842400  0.0223745  17.173  < 2e-16 ***
## age         0.0019765  0.0005674   3.484 0.000523 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1929 on 766 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.0156, Adjusted R-squared:  0.01431
## F-statistic: 12.14 on 1 and 766 DF,  p-value: 0.0005228
```

```
summary(lm(pfc ~ (internet) , data = total))
```

```
##
## Call:
## lm(formula = pfc ~ (internet), data = total)
##
```

```
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.46023 -0.12518  0.03977  0.11291  0.54149
##
## Coefficients:
##                                 Estimate Std. Error t value Pr(>|t|)
## (Intercept)                       0.2500     0.1940   1.289    0.198
## internet1 to 2 days a week       -0.1250     0.2376  -0.526    0.599
## internet3 to 6 days a week        0.2333     0.2169   1.076    0.282
## internetAbout once a day          0.1806     0.2045   0.883    0.378
## internetSeveral times a day       0.2085     0.1944   1.073    0.284
## internetPretty much all the time  0.2102     0.1942   1.083    0.279
##
## Residual standard error: 0.194 on 762 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.009564,   Adjusted R-squared:  0.003065
## F-statistic: 1.472 on 5 and 762 DF,  p-value: 0.1967
```

```
summary(lm(pfc ~ (educ) , data = total))
```

```
##
## Call:
## lm(formula = pfc ~ (educ), data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.48304 -0.11314  0.01696  0.12495  0.55352
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)               0.476190   0.112021   4.251 2.39e-05 ***
## educHigh school          -0.038193   0.113980  -0.335    0.738
## educSome college          0.006849   0.112722   0.061    0.952
## educCollege              -0.029713   0.112512  -0.264    0.792
## educPostgraduate degree -0.019857   0.113689  -0.175    0.861
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.194 on 763 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.007955,   Adjusted R-squared:  0.002754
## F-statistic:  1.53 on 4 and 763 DF,  p-value: 0.1917
```

```
summary(lm(pfc ~ (pid) , data = total))
```

```
##
## Call:
## lm(formula = pfc ~ (pid), data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.51345 -0.11317  0.02086  0.12381  0.59229
##
## Coefficients:
##                      Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)         0.446503   0.013915  32.088  < 2e-16 ***
## pidLean Democrat   -0.038797   0.024143  -1.607  0.10848
## pidIndependent      0.001116   0.019039   0.059  0.95329
## pidLean Republican  0.066951   0.021576   3.103  0.00199 **
## pidRepublican       0.026837   0.022019   1.219  0.22327
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.1923 on 763 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.02546,    Adjusted R-squared:  0.02035
## F-statistic: 4.983 on 4 and 763 DF,  p-value: 0.0005715
```

```
##plot means different conditions

dems_nl<-filter(total, pid == "Democrat" )
reps_nl<-filter(total, pid == "Republican" )
dems<-filter(total, pid == "Democrat" | pid == "Lean Democrat")
reps<-filter(total, pid == "Republican" | pid == "Lean Republican")
inds<-filter(total, pid == "Independent" )

mean(dems$pfc, na.rm = T)
```

```
## [1] 0.4336164
```

```
mean(reps$pfc, na.rm = T)
```

```
## [1] 0.4940838
```

```
mean(inds$pfc, na.rm = T)
```

```
## [1] 0.447619
```

```
mean(dems_nl$pfc, na.rm = T)
```

```
## [1] 0.4465034
```

```
mean(reps_nl$pfc, na.rm = T)
```

```
## [1] 0.4733408
```

```
#############now, let's look at the actual experiment

##create dummies for treatments

total$treatment_R_CB<-0
total$treatment_D_CB<-0

total$treatment_R_nonCB<-0
total$treatment_D_nonCB<-0

total$treatment_D_nonCB[total$QID29=="I've read the story carefully, and I'm ready to continue the surv
total$treatment_D_CB[total$QID30=="I've read the story carefully, and I'm ready to continue the survey"]
total$treatment_R_nonCB[total$Q31=="I've read the story carefully, and I'm ready to continue the survey
total$treatment_R_CB[total$Q32=="I've read the story carefully, and I'm ready to continue the survey"]<-

total$treatment_R<-total$treatment_R_CB+total$treatment_R_nonCB
total$treatment_CB<-total$treatment_R_CB+total$treatment_D_CB
```

```
total$treatment<-1
total$treatment[total$treatment_D_CB==1]<-2
total$treatment[total$treatment_R_nonCB==1]<-3
total$treatment[total$treatment_R_CB==1]<-4
total$treatment<-factor(total$treatment, labels=c("Dem_non","Dem_CB","Rep_non","Rep_CB"))


Tr_CB<-filter(total, total$treatment_CB=="1")
Tr_nonCB<-filter(total, total$treatment_CB=="0")

total$trust_offline<-0
total$trust_offline[total$QID13=="Not very much"]<-1
total$trust_offline[total$QID13=="A fair amount"]<-2
total$trust_offline[total$QID13=="A great deal"]<-3



## trust offline: mean and distribution are identical between treatments
summary(Tr_CB$trust_offline)
```

```
## Length  Class   Mode
##      0   NULL   NULL
```

```
summary(Tr_nonCB$trust_offline)
```

```
## Length  Class   Mode
##      0   NULL   NULL
```

```
pdf("results/Trust_offline_kernel.pdf", 7, 5)
ggplot(total,aes(x=trust_offline, colour=treatment)) + geom_density(adjust=2.1,size=1)+ggtitle("Trust in
dev.off()
```

```
## pdf
##   2
```

```
## analysis of trust online
total$trust_online<-0
total$trust_online[total$QID14=="Not very much"]<-1
total$trust_online[total$QID14=="A fair amount"]<-2
total$trust_online[total$QID14=="A great deal"]<-3


## interesting --> Trust Online higher under republican news treatment, CB does not influence the distri
pdf("results/trust_online_kernel.pdf", 7, 5)
ggplot(total,aes(x=trust_online, colour=treatment)) + geom_density(adjust=2.1,size=1) +ggtitle("Trust in
dev.off()
```

```
## pdf
##   2
```

```
dems<-filter(total, pid == "Democrat" | pid == "Lean Democrat")
reps<-filter(total, pid == "Republican" | pid == "Lean Republican")

###############3
####create graphs to compare averages
###############3
```

```
####Trust in offline media

## effect of treatments on means for general population
pd <- position_dodge(0.1) # move them .05 to the left and right

summ_trust_off<-total %>% group_by(treatment) %>%
  summarise(mean_PL = mean(trust_offline),
            sd_PL = sd(trust_offline),
            n_PL = n(),
            SE_PL = sd(trust_offline)/sqrt(n()))

pdf("results/trust_offline.pdf", 7, 5)
p1<-ggplot(summ_trust_off, aes(treatment, mean_PL)) +
  geom_errorbar(aes(ymin=mean_PL-SE_PL, ymax=mean_PL+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd)+ggtitle("trust in offline media, all")

#effects on Democrats
summ_trust_off_dems<-dems %>% group_by(treatment) %>%
  summarise(mean_PL = mean(trust_offline),
            sd_PL = sd(trust_offline),
            n_PL = n(),
            SE_PL = sd(trust_offline)/sqrt(n()))

p2<-ggplot(summ_trust_off_dems, aes(treatment, mean_PL)) +
  geom_errorbar(aes(ymin=mean_PL-SE_PL, ymax=mean_PL+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd)+ggtitle("trust in offline media, Democrats")

#effects on Republicans
summ_trust_off_reps<-reps %>% group_by(treatment) %>%
  summarise(mean_PL = mean(trust_offline),
            sd_PL = sd(trust_offline),
            n_PL = n(),
            SE_PL = sd(trust_offline)/sqrt(n()))

p3<-ggplot(summ_trust_off_reps, aes(treatment, mean_PL)) +
  geom_errorbar(aes(ymin=mean_PL-SE_PL, ymax=mean_PL+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("trust in offline media, Republicans")
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```r
##as a regression --> not significant
summary(lm(trust_offline ~ treatment, data = total))
```

```
##
## Call:
## lm(formula = trust_offline ~ treatment, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.5202 -0.4639 -0.4368  0.5606  1.5632
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       1.52020    0.05631  26.997   <2e-16 ***
## treatmentDem_CB  -0.08336    0.08047  -1.036    0.301
## treatmentRep_non -0.05628    0.08004  -0.703    0.482
## treatmentRep_CB  -0.08081    0.07963  -1.015    0.311
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7923 on 776 degrees of freedom
## Multiple R-squared:  0.001811,   Adjusted R-squared:  -0.002048
## F-statistic: 0.4693 on 3 and 776 DF,  p-value: 0.7038
```

```r
summary(lm(trust_offline ~ treatment + as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) + ag
```

```
##
## Call:
## lm(formula = trust_offline ~ treatment + as.numeric(fb) + as.numeric(twitter) +
##     as.numeric(internet) + age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.86547 -0.44572 -0.05491  0.56417  1.89820
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           2.578302   0.317693   8.116 1.92e-15 ***
## treatmentDem_CB      -0.072062   0.075084  -0.960 0.337481
## treatmentRep_non     -0.094839   0.074618  -1.271 0.204117
## treatmentRep_CB      -0.080688   0.074449  -1.084 0.278794
## as.numeric(fb)        0.013220   0.013070   1.011 0.312126
## as.numeric(twitter)   0.009086   0.011560   0.786 0.432132
## as.numeric(internet) -0.167964   0.045541  -3.688 0.000242 ***
## age                  -0.006482   0.002240  -2.894 0.003913 **
## as.numeric(educ)      0.107713   0.031217   3.450 0.000590 ***
## pidLean Democrat     -0.193751   0.092808  -2.088 0.037158 *
## pidIndependent       -0.487223   0.073271  -6.650 5.58e-11 ***
## pidLean Republican   -0.482203   0.082695  -5.831 8.11e-09 ***
## pidRepublican        -0.665650   0.085481  -7.787 2.22e-14 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7361 on 767 degrees of freedom
```

```
## Multiple R-squared:  0.1485, Adjusted R-squared:  0.1351
## F-statistic: 11.14 on 12 and 767 DF,  p-value: < 2.2e-16
```

```
####Trust in online media

## effect of treatments on means for general population

summ_trust<-total %>% group_by(treatment) %>%
  summarise(mean_PL = mean(trust_online),
            sd_PL = sd(trust_online),
            n_PL = n(),
            SE_PL = sd(trust_online)/sqrt(n()))

pdf("results/trust_online.pdf", 7, 5)
p1<-ggplot(summ_trust, aes(treatment, mean_PL)) +
  geom_errorbar(aes(ymin=mean_PL-SE_PL, ymax=mean_PL+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd)+ggtitle("trust in online media for the whole population")

#effects on Democrats
summ_trust_dems<-dems %>% group_by(treatment) %>%
  summarise(mean_PL = mean(trust_online),
            sd_PL = sd(trust_online),
            n_PL = n(),
            SE_PL = sd(trust_online)/sqrt(n()))

p2<-ggplot(summ_trust_dems, aes(treatment, mean_PL)) +
  geom_errorbar(aes(ymin=mean_PL-SE_PL, ymax=mean_PL+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd)+ggtitle("trust in online media for Democrats")

#effects on Republicans
summ_trust_reps<-reps %>% group_by(treatment) %>%
  summarise(mean_PL = mean(trust_online),
            sd_PL = sd(trust_online),
            n_PL = n(),
            SE_PL = sd(trust_online)/sqrt(n()))

p3<-ggplot(summ_trust_reps, aes(treatment, mean_PL)) +
  geom_errorbar(aes(ymin=mean_PL-SE_PL, ymax=mean_PL+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("trust in online media for Republicans")
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```r
##as a regression --> not significant
summary(lm(trust_online ~ treatment, data = total))
```

```
##
## Call:
## lm(formula = trust_online ~ treatment, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.4040 -0.3263 -0.2879  0.6737  1.7121
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)       1.28788    0.04714  27.318   <2e-16 ***
## treatmentDem_CB   0.03844    0.06737   0.571   0.5685
## treatmentRep_non  0.02140    0.06701   0.319   0.7496
## treatmentRep_CB   0.11616    0.06667   1.742   0.0818 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6634 on 776 degrees of freedom
## Multiple R-squared:  0.00443,    Adjusted R-squared:  0.0005807
## F-statistic: 1.151 on 3 and 776 DF,  p-value: 0.3277
```

```r
summary(lm(trust_online ~ treatment + as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) + age
```

```
##
## Call:
## lm(formula = trust_online ~ treatment + as.numeric(fb) + as.numeric(twitter) +
##     as.numeric(internet) + age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.6097 -0.3944 -0.1791  0.5677  1.8648
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)           1.5067742  0.2796890   5.387 9.52e-08 ***
## treatmentDem_CB       0.0407182  0.0661021   0.616  0.53808
## treatmentRep_non     -0.0006198  0.0656920  -0.009  0.99248
## treatmentRep_CB       0.1151676  0.0655432   1.757  0.07930 .
## as.numeric(fb)        0.0173320  0.0115066   1.506  0.13241
## as.numeric(twitter)   0.0433328  0.0101772   4.258 2.32e-05 ***
## as.numeric(internet) -0.0567040  0.0400935  -1.414  0.15768
## age                  -0.0030145  0.0019718  -1.529  0.12672
## as.numeric(educ)      0.0218641  0.0274830   0.796  0.42654
## pidLean Democrat     -0.1005404  0.0817056  -1.231  0.21888
## pidIndependent       -0.1710337  0.0645059  -2.651  0.00818 **
## pidLean Republican   -0.2046589  0.0728021  -2.811  0.00506 **
## pidRepublican        -0.1715184  0.0752550  -2.279  0.02293 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.6481 on 767 degrees of freedom
```

```
## Multiple R-squared:  0.06087,    Adjusted R-squared:  0.04618
## F-statistic: 4.143 on 12 and 767 DF,  p-value: 2.577e-06
```

```
harddems<-filter(total, pid == "Democrat")
hardreps<-filter(total, pid == "Republican")
inds<-filter(total, pid == "Independent")


###############3
#### feelings analysis
########3
## towards Dem
########3
##general pop
summ_feeldem<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))


##dems
summ_feeldem_dem<-dems %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))
##reps
summ_feeldem_rep<-reps %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))
##harddems
summ_feeldem_hdem<-harddems %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))

##Hardreps
summ_feeldem_hrep<-hardreps %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))

##Indipendents
summ_feeldem_inds<-inds %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))
```

```
pdf("results/feeldem.pdf", 7, 5)
p1<-ggplot(summ_feeldem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, all")
p2<-ggplot(summ_feeldem_dem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, Democrats")
p3<-ggplot(summ_feeldem_rep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, Republicans")
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
pdf("results/feeldem_bis.pdf", 7, 5)
p4<-ggplot(summ_feeldem_hdem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, HardDemocrats")
p5<-ggplot(summ_feeldem_hrep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, HardRepublicans")
multiplot(p1,p2,p3,p4,p5,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
##t-tests. Dem_CB makes Republicans significantly more pro-Dems, while the effect on Dems is insignifica
t.test(as.numeric(total$Q15_1)[total$treatment=="Dem_CB"],as.numeric(total$Q15_1)[total$treatment!="Dem_
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(total$Q15_1)[total$treatment == "Dem_CB"] and as.numeric(total$Q15_1)[total$treatme
## t = 0.34842, df = 322.28, p-value = 0.7278
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -4.163673  5.955823
## sample estimates:
## mean of x mean of y
##  46.98421  46.08814
```

```
t.test(as.numeric(dems$Q15_1)[dems$treatment=="Dem_CB"],as.numeric(dems$Q15_1)[dems$treatment!="Dem_CB"]
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(dems$Q15_1)[dems$treatment == "Dem_CB"] and as.numeric(dems$Q15_1)[dems$treatment
## t = 1.264, df = 112.45, p-value = 0.2089
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.826632  8.264132
## sample estimates:
## mean of x mean of y
##  75.56250  72.34375
```

```
t.test(as.numeric(reps$Q15_1)[reps$treatment=="Dem_CB"],as.numeric(reps$Q15_1)[reps$treatment!="Dem_CB"]
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(reps$Q15_1)[reps$treatment == "Dem_CB"] and as.numeric(reps$Q15_1)[reps$treatment
## t = 1.8653, df = 130.21, p-value = 0.06438
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.3410052 11.5979309
## sample estimates:
## mean of x mean of y
##  27.05333  21.42487
```

```
### regression analysis
summary(lm(as.numeric(Q15_1) ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.nu
```

```
##
## Call:
## lm(formula = as.numeric(Q15_1) ~ treatment + as.numeric(fb) +
##     as.numeric(CB) + as.numeric(twitter) + as.numeric(internet) +
##     age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -76.416 -13.687   0.848  12.619  78.623
##
```

```
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           98.47025    9.37628  10.502  < 2e-16 ***
## treatmentDem_CB        1.97439    2.21047   0.893 0.372030
## treatmentRep_non      -2.17033    2.19633  -0.988 0.323386
## treatmentRep_CB       -1.53780    2.19113  -0.702 0.482997
## as.numeric(fb)         0.89635    0.38468   2.330 0.020057 *
## as.numeric(CB)        -0.54907    0.55248  -0.994 0.320618
## as.numeric(twitter)   -0.81604    0.34023  -2.398 0.016702 *
## as.numeric(internet)  -3.39905    1.34264  -2.532 0.011552 *
## age                   -0.21162    0.06734  -3.143 0.001739 **
## as.numeric(educ)       1.37533    0.91905   1.496 0.134945
## pidLean Democrat      -9.75944    2.73843  -3.564 0.000388 ***
## pidIndependent       -36.57881    2.15737 -16.955  < 2e-16 ***
## pidLean Republican   -48.29986    2.43440 -19.841  < 2e-16 ***
## pidRepublican        -58.02960    2.51698 -23.055  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21.66 on 766 degrees of freedom
## Multiple R-squared:  0.5187, Adjusted R-squared:  0.5105
## F-statistic: 63.49 on 13 and 766 DF,  p-value: < 2.2e-16
```

```
## on Dems
summary(lm(as.numeric(Q15_1) ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.nu
```

```
##
## Call:
## lm(formula = as.numeric(Q15_1) ~ treatment + as.numeric(fb) +
##     as.numeric(CB) + as.numeric(twitter) + as.numeric(internet) +
##     age + as.numeric(educ) + pid, data = dems)
##
## Residuals:
##    Min     1Q Median     3Q    Max
## -76.04  -6.43   2.21  11.33  34.49
##
## Coefficients:
##                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)          60.39930   13.02586   4.637 5.46e-06 ***
## treatmentDem_CB       1.69996    3.19181   0.533  0.59474
## treatmentRep_non      1.27097    3.06660   0.414  0.67886
## treatmentRep_CB      -1.33249    3.06939  -0.434  0.66454
## as.numeric(fb)        1.17070    0.53504   2.188  0.02950 *
## as.numeric(CB)        0.26404    0.80396   0.328  0.74284
## as.numeric(twitter)  -0.16245    0.47875  -0.339  0.73463
## as.numeric(internet) -1.46065    1.91643  -0.762  0.44661
## age                   0.06843    0.09874   0.693  0.48889
## as.numeric(educ)      3.81749    1.30368   2.928  0.00369 **
## pidLean Democrat     -7.66368    2.39737  -3.197  0.00155 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 18.51 on 277 degrees of freedom
## Multiple R-squared:  0.1003, Adjusted R-squared:  0.06783
## F-statistic: 3.088 on 10 and 277 DF,  p-value: 0.0009602
```

```r
## on Reps --> likes CB more, likes Dems less
summary(lm(as.numeric(Q15_1) ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.nu
```

```
##
## Call:
## lm(formula = as.numeric(Q15_1) ~ treatment + as.numeric(fb) +
##     as.numeric(CB) + as.numeric(twitter) + as.numeric(internet) +
##     age + as.numeric(educ) + pid, data = reps)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -30.831 -14.336  -3.623   9.167  73.767
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)            76.1488    14.1826   5.369 1.77e-07 ***
## treatmentDem_CB         5.0467     3.5613   1.417 0.157666
## treatmentRep_non       -1.0402     3.6681  -0.284 0.776951
## treatmentRep_CB        -2.8115     3.6244  -0.776 0.438622
## as.numeric(fb)          0.1666     0.6443   0.259 0.796192
## as.numeric(CB)         -2.1562     0.8709  -2.476 0.013935 *
## as.numeric(twitter)    -1.5767     0.5630  -2.800 0.005493 **
## as.numeric(internet)   -5.0587     2.0706  -2.443 0.015237 *
## age                    -0.2829     0.1066  -2.654 0.008445 **
## as.numeric(educ)        0.6158     1.5417   0.399 0.689903
## pidRepublican          -9.5691     2.5216  -3.795 0.000184 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 20.36 on 257 degrees of freedom
## Multiple R-squared:  0.1681, Adjusted R-squared:  0.1357
## F-statistic: 5.193 on 10 and 257 DF,  p-value: 6.144e-07
```

```r
########3
## towards reps
########3
##general pop
summ_feelrep<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))

p1<-ggplot(summ_feelrep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, all")

##dems
summ_feelrep_dem<-dems %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))
```

```
p2<-ggplot(summ_feelrep_dem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, Democrats")

##reps
summ_feelrep_rep<-reps %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))

p3<-ggplot(summ_feelrep_rep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, Republicans")

##hardDems
summ_feelrep_hdem<-harddems %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))
p4<-ggplot(summ_feelrep_hdem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, HardDemocrats")

##Hardreps
summ_feelrep_hrep<-hardreps %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))
p5<-ggplot(summ_feelrep_hrep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, HardRepublicans")

pdf("results/feelrep.pdf", 7, 5)
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```r
pdf("results/feelrep_bis.pdf", 7, 5)
multiplot(p1,p2,p3,p4,p5,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```r
dev.off()
```

```
## pdf
##   2
```

```r
## t-tests --> significantively higher sentiment for republicans on Dems and Reps with Rep_CB (not on g
t.test(as.numeric(total$Q15_2)[total$treatment=="Rep_CB"],as.numeric(total$Q15_2)[total$treatment!="Rep
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(total$Q15_2)[total$treatment == "Rep_CB"] and as.numeric(total$Q15_2)[total$treatm
## t = 0.53907, df = 325.93, p-value = 0.5902
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.662345  6.427002
## sample estimates:
## mean of x mean of y
##  41.87374  40.49141
```

```r
t.test(as.numeric(dems$Q15_2)[dems$treatment=="Rep_CB"],as.numeric(dems$Q15_2)[dems$treatment!="Rep_CB"
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(dems$Q15_2)[dems$treatment == "Rep_CB"] and as.numeric(dems$Q15_2)[dems$treatment
## t = 2.01, df = 117.1, p-value = 0.04673
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   0.09438844 12.72631692
## sample estimates:
## mean of x mean of y
##  27.22078  20.81043
```

```r
t.test(as.numeric(reps$Q15_2)[reps$treatment=="Rep_CB"],as.numeric(reps$Q15_2)[reps$treatment!="Rep_CB"
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(reps$Q15_2)[reps$treatment == "Rep_CB"] and as.numeric(reps$Q15_2)[reps$treatment
## t = 1.6092, df = 101.3, p-value = 0.1107
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
```

```
##  -1.166318 11.191999
## sample estimates:
## mean of x mean of y
##  71.53226  66.51942
```

```
### regression analysis
summary(lm(as.numeric(Q15_2) ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.nu
```

```
##
## Call:
## lm(formula = as.numeric(Q15_2) ~ treatment + as.numeric(fb) +
##     as.numeric(CB) + as.numeric(twitter) + as.numeric(internet) +
##     age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -74.775 -15.992  -0.521  14.995  74.124
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           36.88058    9.60633   3.839 0.000134 ***
## treatmentDem_CB        1.89396    2.26470   0.836 0.403251
## treatmentRep_non      -0.18064    2.25022  -0.080 0.936037
## treatmentRep_CB        2.46092    2.24489   1.096 0.273321
## as.numeric(fb)         1.54133    0.39412   3.911 0.000100 ***
## as.numeric(CB)         0.50654    0.56604   0.895 0.371127
## as.numeric(twitter)    0.11135    0.34858   0.319 0.749471
## as.numeric(internet) -4.80864    1.37558  -3.496 0.000500 ***
## age                    0.01798    0.06899   0.261 0.794415
## as.numeric(educ)      -0.80344    0.94160  -0.853 0.393776
## pidLean Democrat      10.95817    2.80562   3.906 0.000102 ***
## pidIndependent        13.01302    2.21031   5.887 5.87e-09 ***
## pidLean Republican    41.53772    2.49413  16.654  < 2e-16 ***
## pidRepublican         54.80430    2.57873  21.252  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 22.2 on 766 degrees of freedom
## Multiple R-squared:  0.4747, Adjusted R-squared:  0.4657
## F-statistic: 53.24 on 13 and 766 DF,  p-value: < 2.2e-16
```

```
## on Dems
summary(lm(as.numeric(Q15_2) ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.nu
```

```
##
## Call:
## lm(formula = as.numeric(Q15_2) ~ treatment + as.numeric(fb) +
##     as.numeric(CB) + as.numeric(twitter) + as.numeric(internet) +
##     age + as.numeric(educ) + pid, data = dems)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -39.682 -15.676  -6.764  12.548  55.099
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)          45.907640  15.005712   3.059 0.002436 **
## treatmentDem_CB       1.720701   3.676947   0.468 0.640174
## treatmentRep_non      1.202801   3.532706   0.340 0.733756
## treatmentRep_CB       5.312339   3.535917   1.502 0.134135
## as.numeric(fb)        1.171686   0.616367   1.901 0.058346 .
## as.numeric(CB)        0.504037   0.926160   0.544 0.586726
## as.numeric(twitter)   0.471282   0.551518   0.855 0.393557
## as.numeric(internet) -6.450152   2.207720  -2.922 0.003769 **
## age                   0.003982   0.113753   0.035 0.972100
## as.numeric(educ)     -0.697350   1.501832  -0.464 0.642774
## pidLean Democrat     10.508191   2.761760   3.805 0.000175 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21.33 on 277 degrees of freedom
## Multiple R-squared:  0.1098, Adjusted R-squared:  0.07763
## F-statistic: 3.416 on 10 and 277 DF,  p-value: 0.0003098
```

```
## on Reps --> likes CB more, likes Dems less
summary(lm(as.numeric(Q15_2) ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.nu
```

```
##
## Call:
## lm(formula = as.numeric(Q15_2) ~ treatment + as.numeric(fb) +
##     as.numeric(CB) + as.numeric(twitter) + as.numeric(internet) +
##     age + as.numeric(educ) + pid, data = reps)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -75.967  -9.846   3.118  13.725  47.964
##
## Coefficients:
##                      Estimate Std. Error t value Pr(>|t|)
## (Intercept)          78.48494   14.22282   5.518 8.35e-08 ***
## treatmentDem_CB       2.54217    3.57137   0.712   0.4772
## treatmentRep_non      2.50993    3.67845   0.682   0.4956
## treatmentRep_CB       4.77592    3.63463   1.314   0.1900
## as.numeric(fb)        1.17073    0.64614   1.812   0.0712 .
## as.numeric(CB)       -0.11200    0.87335  -0.128   0.8981
## as.numeric(twitter)  -0.24794    0.56464  -0.439   0.6610
## as.numeric(internet) -2.38156    2.07651  -1.147   0.2525
## age                   0.02569    0.10689   0.240   0.8102
## as.numeric(educ)     -3.55574    1.54611  -2.300   0.0223 *
## pidRepublican        13.04492    2.52875   5.159 4.98e-07 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 20.41 on 257 degrees of freedom
## Multiple R-squared:  0.1461, Adjusted R-squared:  0.1129
## F-statistic: 4.398 on 10 and 257 DF,  p-value: 1.031e-05
```

```
########3
## towards online media
########3
##general pop
```

```
summ_feelonl<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_3)),
            sd_PL = sd(as.numeric(Q15_3)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_3))/sqrt(n()))

p1<-ggplot(summ_feelonl, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Online Media, all")

##dems
summ_feelonl_dem<-dems %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_3)),
            sd_PL = sd(as.numeric(Q15_3)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_3))/sqrt(n()))

p2<-ggplot(summ_feelonl_dem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Online Media, Democrats")

##reps
summ_feelonl_rep<-reps %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_3)),
            sd_PL = sd(as.numeric(Q15_3)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_3))/sqrt(n()))

p3<-ggplot(summ_feelonl_rep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Online Media, Republicans")
pdf("results/feelonl.pdf", 7, 5)
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
########3
## towards traditional media
########3
##general pop
summ_feeloff<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_4)),
```

```
            sd_PL = sd(as.numeric(Q15_4)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_4))/sqrt(n()))

p1<-ggplot(summ_feeloff, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Traditional Media, all")

##dems
summ_feeloff_dem<-dems %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_4)),
            sd_PL = sd(as.numeric(Q15_4)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_4))/sqrt(n()))

p2<-ggplot(summ_feeloff_dem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Traditional Media, Democrats")

##reps
summ_feeloff_rep<-reps %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_4)),
            sd_PL = sd(as.numeric(Q15_4)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_4))/sqrt(n()))

p3<-ggplot(summ_feeloff_rep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Traditional Media, Republicans")
pdf("results/feeloff.pdf", 7, 5)
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
## feeling Vs Democrats
summary(lm(Q15_1 ~ treatment + pfc +as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) + age +
```

```
##
## Call:
## lm(formula = Q15_1 ~ treatment + pfc + as.numeric(fb) + as.numeric(twitter) +
##     as.numeric(internet) + age + as.numeric(educ) + pid, data = total)
##
```

```
## Residuals:
##     Min      1Q  Median      3Q     Max
## -76.435 -13.913   0.981  12.897  78.378
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           99.12370    9.50367  10.430  < 2e-16 ***
## treatmentDem_CB        2.26230    2.24310   1.009  0.31351
## treatmentRep_non      -2.46582    2.21990  -1.111  0.26702
## treatmentRep_CB       -1.75535    2.20879  -0.795  0.42703
## pfc                   -3.80805    4.13148  -0.922  0.35697
## as.numeric(fb)         0.88966    0.38953   2.284  0.02265 *
## as.numeric(twitter)   -0.84406    0.34447  -2.450  0.01450 *
## as.numeric(internet)  -3.52291    1.35238  -2.605  0.00937 **
## age                   -0.21915    0.06681  -3.280  0.00109 **
## as.numeric(educ)       1.54655    0.92960   1.664  0.09659 .
## pidLean Democrat      -9.07489    2.76444  -3.283  0.00108 **
## pidIndependent       -36.44817    2.17679 -16.744  < 2e-16 ***
## pidLean Republican   -48.23432    2.47217 -19.511  < 2e-16 ***
## pidRepublican        -57.84022    2.53682 -22.800  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 21.74 on 754 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.5196, Adjusted R-squared:  0.5113
## F-statistic: 62.72 on 13 and 754 DF,  p-value: < 2.2e-16
```

```
## feeling Vs Rep
## republican news with no CB decreases sentiment against Rep (people who chose many CB news like Reps r
summary(lm(Q15_2 ~ treatment + pfc + as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) + age +
```

```
##
## Call:
## lm(formula = Q15_2 ~ treatment + pfc + as.numeric(fb) + as.numeric(twitter) +
##     as.numeric(internet) + age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -75.757 -15.995  -0.822  15.089  72.873
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           35.92764    9.71670   3.698 0.000234 ***
## treatmentDem_CB        1.93069    2.29338   0.842 0.400138
## treatmentRep_non      -0.24970    2.26966  -0.110 0.912425
## treatmentRep_CB        2.19308    2.25830   0.971 0.331801
## pfc                    7.74554    4.22409   1.834 0.067099 .
## as.numeric(fb)         1.48814    0.39826   3.737 0.000201 ***
## as.numeric(twitter)    0.07232    0.35220   0.205 0.837351
## as.numeric(internet) -4.89058    1.38270  -3.537 0.000429 ***
## age                    0.01205    0.06831   0.176 0.859998
## as.numeric(educ)      -0.75273    0.95044  -0.792 0.428619
## pidLean Democrat      11.49818    2.82640   4.068 5.24e-05 ***
## pidIndependent        13.03736    2.22559   5.858 7.00e-09 ***
```

```
## pidLean Republican   41.09668    2.52759  16.259  < 2e-16 ***
## pidRepublican        54.79139    2.59369  21.125  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 22.22 on 754 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.4751, Adjusted R-squared:  0.4661
## F-statistic:  52.5 on 13 and 754 DF,  p-value: < 2.2e-16
```

```
## feeling towards online and traditional media (Republicans dislike traditional media but not online)
summary(lm(Q15_3 ~ treatment + pfc + as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) + age +
```

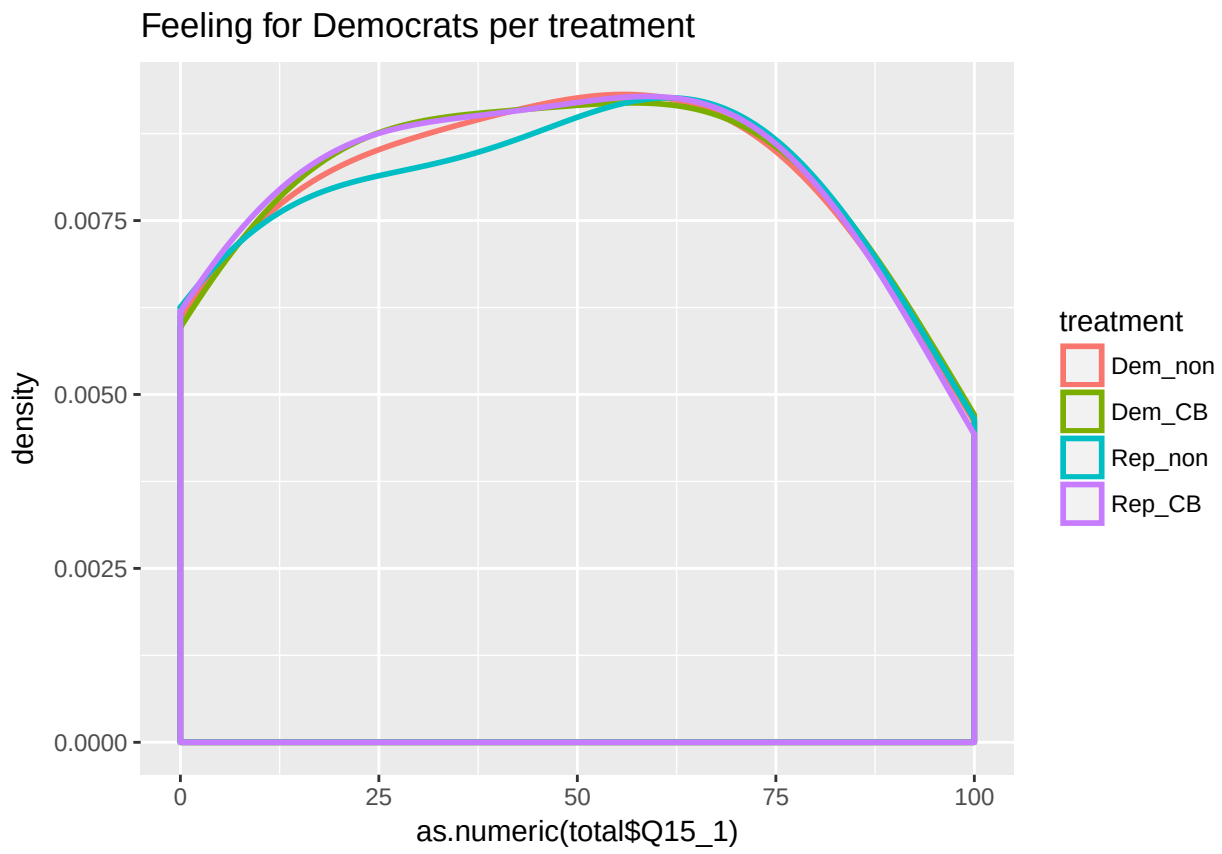
```
##
## Call:
## lm(formula = Q15_3 ~ treatment + pfc + as.numeric(fb) + as.numeric(twitter) +
##     as.numeric(internet) + age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -54.167 -16.890   1.862  17.068  61.119
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           57.84048   10.23481   5.651 2.26e-08 ***
## treatmentDem_CB       -1.74831    2.41567  -0.724 0.469452
## treatmentRep_non      -2.89766    2.39068  -1.212 0.225867
## treatmentRep_CB       -2.95705    2.37872  -1.243 0.214208
## pfc                    7.11255    4.44933   1.599 0.110335
## as.numeric(fb)         0.50444    0.41950   1.202 0.229561
## as.numeric(twitter)    0.91042    0.37097   2.454 0.014348 *
## as.numeric(internet)  -0.56672    1.45642  -0.389 0.697301
## age                   -0.19406    0.07195  -2.697 0.007152 **
## as.numeric(educ)      -0.30429    1.00112  -0.304 0.761247
## pidLean Democrat      -5.15656    2.97711  -1.732 0.083671 .
## pidIndependent        -8.14719    2.34426  -3.475 0.000539 ***
## pidLean Republican   -10.43805    2.66237  -3.921 9.64e-05 ***
## pidRepublican         -8.44435    2.73199  -3.091 0.002069 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 23.41 on 754 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.05769,    Adjusted R-squared:  0.04144
## F-statistic: 3.551 on 13 and 754 DF,  p-value: 1.992e-05
```

```
summary(lm(Q15_4 ~ treatment + pfc + as.numeric(fb) + as.numeric(twitter) + as.numeric(internet) + age +
```

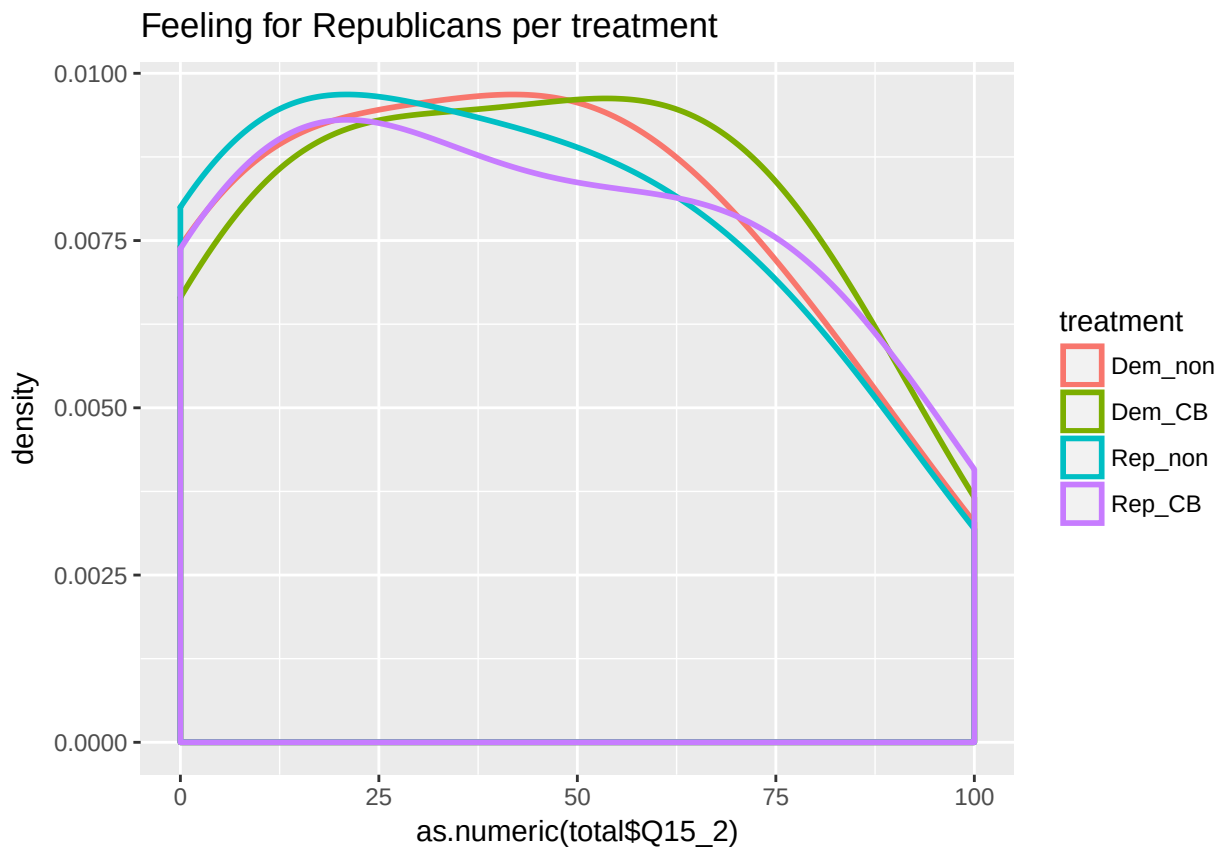
```
##
## Call:
## lm(formula = Q15_4 ~ treatment + pfc + as.numeric(fb) + as.numeric(twitter) +
##     as.numeric(internet) + age + as.numeric(educ) + pid, data = total)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
```

```
## -63.955 -21.738   0.438  19.452  61.414
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           72.31519   11.17017   6.474 1.72e-10 ***
## treatmentDem_CB       -2.10719    2.63643  -0.799  0.42439
## treatmentRep_non      -1.39846    2.60916  -0.536  0.59213
## treatmentRep_CB       -2.04213    2.59611  -0.787  0.43176
## pfc                   -0.81895    4.85595  -0.169  0.86612
## as.numeric(fb)         1.18649    0.45784   2.592  0.00974 **
## as.numeric(twitter)   -0.30168    0.40488  -0.745  0.45643
## as.numeric(internet)  -4.06543    1.58953  -2.558  0.01073 *
## age                   -0.08925    0.07853  -1.137  0.25610
## as.numeric(educ)       3.48402    1.09261   3.189  0.00149 **
## pidLean Democrat      -6.53928    3.24919  -2.013  0.04451 *
## pidIndependent       -22.35146    2.55850  -8.736  < 2e-16 ***
## pidLean Republican   -19.98467    2.90568  -6.878 1.28e-11 ***
## pidRepublican        -27.86474    2.98166  -9.345  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 25.55 on 754 degrees of freedom
##   (12 observations deleted due to missingness)
## Multiple R-squared:  0.1769, Adjusted R-squared:  0.1627
## F-statistic: 12.46 on 13 and 754 DF,  p-value: < 2.2e-16
```

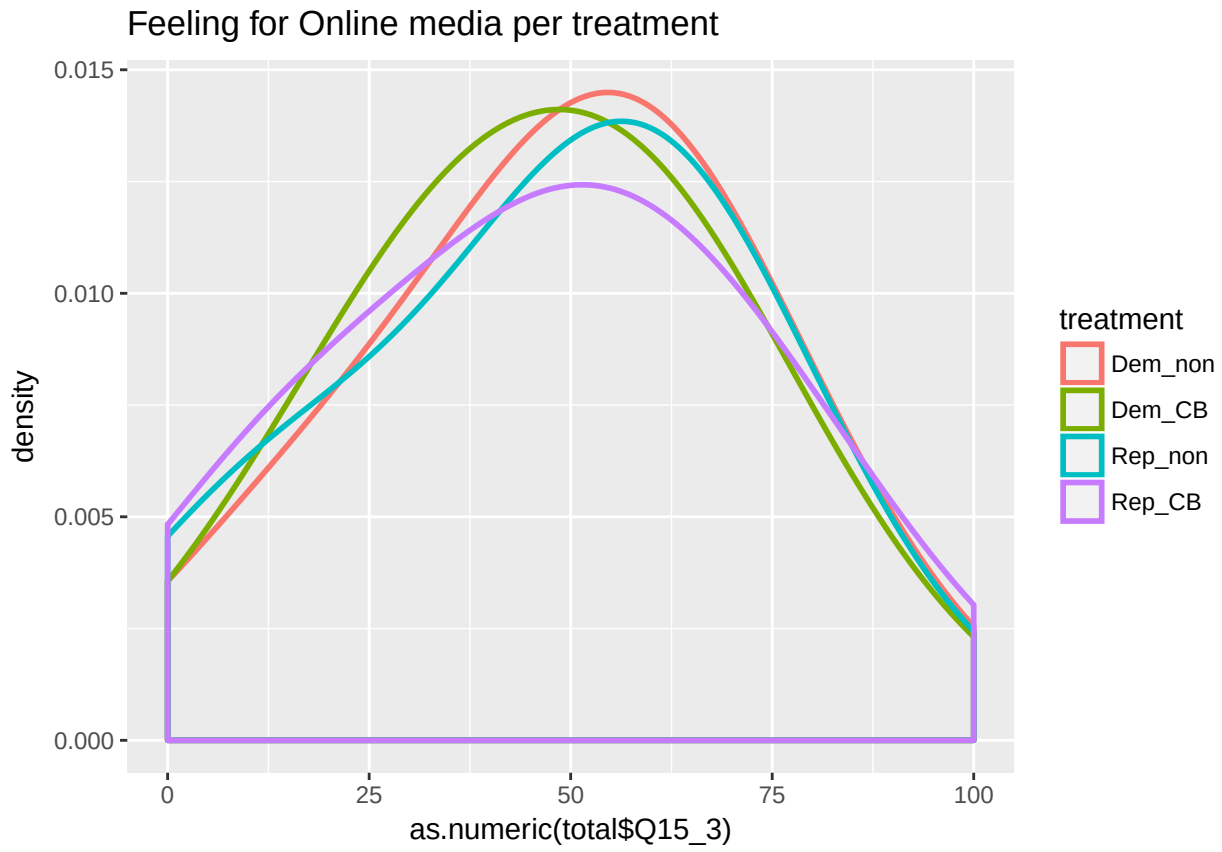
```
ggplot(total,aes(x=as.numeric(total$Q15_1), colour=treatment)) + geom_density(adjust=2.1,size=1) +ggtitl
```



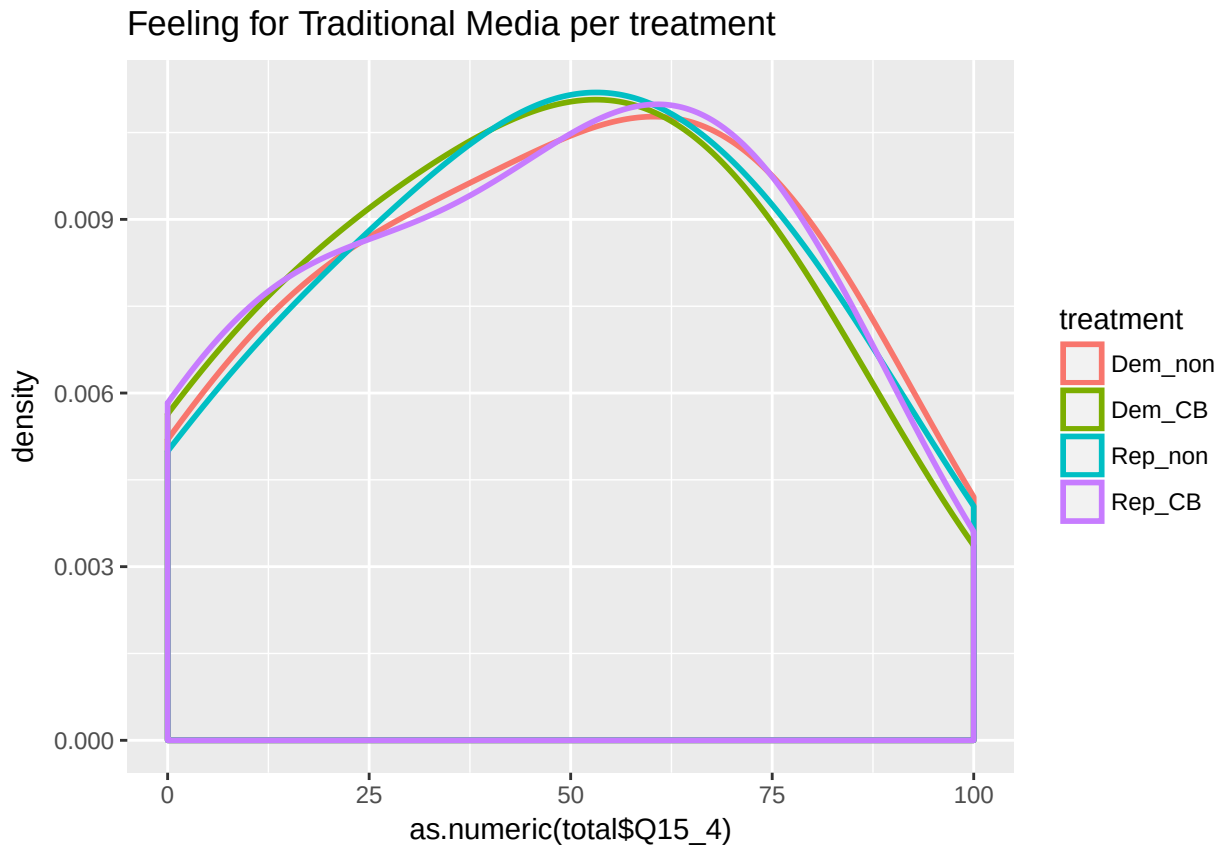

```
ggplot(total,aes(x=as.numeric(total$Q15_2), colour=treatment)) + geom_density(adjust=2.1,size=1) +ggtitl
```




```
ggplot(total,aes(x=as.numeric(total$Q15_3), colour=treatment)) + geom_density(adjust=2.1,size=1) +ggtitl
```




```
ggplot(total,aes(x=as.numeric(total$Q15_4), colour=treatment)) + geom_density(adjust=2.1,size=1) +ggtitl
```




```
##working on the correct answers
total$correct<-0
total$correct1<-0
total$correct2<-0
total$correct3<-0


total$correct[total$QID34=="The House of Representatives"]<-1
total$correct[total$QID35=="lead to more than 5 million Americans who are currently insured to lose thei
total$correct[total$Q36=="provide Americans more choice, greater control and lower costs"]<-1+total$cori
total$correct1[total$QID34=="The House of Representatives"]<-1
total$correct2[total$QID35=="lead to more than 5 million Americans who are currently insured to lose the
total$correct3[total$Q36=="provide Americans more choice, greater control and lower costs"]<-1


dems<-filter(total, pid == "Democrat" | pid == "Lean Democrat")
reps<-filter(total, pid == "Republican" | pid == "Lean Republican")
inds<-filter(total, pid == "Independent")


##general population
summ_correct_gen<-total %>% group_by(treatment) %>%
  summarise(shareCorrect = mean(correct),
            sd_PL = sd(correct),
            n_PL = n(),
            SE_PL = sd(correct)/sqrt(n()))
```

```
p1<-ggplot(summ_correct_gen, aes(treatment, shareCorrect)) +
  geom_errorbar(aes(ymin=shareCorrect-SE_PL, ymax=shareCorrect+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("% of correct answers, all")


##dems
summ_correct_dem<-dems %>% group_by(treatment) %>%
  summarise(shareCorrect = mean(correct),
            sd_PL = sd(correct),
            n_PL = n(),
            SE_PL = sd(correct)/sqrt(n()))

p2<-ggplot(summ_correct_dem, aes(treatment, shareCorrect)) +
  geom_errorbar(aes(ymin=shareCorrect-SE_PL, ymax=shareCorrect+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("% of correct answers, Democrats")

##reps
summ_correct_rep<-reps %>% group_by(treatment) %>%
  summarise(shareCorrect = mean(correct),
            sd_PL = sd(correct),
            n_PL = n(),
            SE_PL = sd(correct)/sqrt(n()))

p3<-ggplot(summ_correct_rep, aes(treatment, shareCorrect)) +
  geom_errorbar(aes(ymin=shareCorrect-SE_PL, ymax=shareCorrect+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("% of correct answers, Republicans")

pdf("results/correct.pdf", 7, 5)
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
###by question
##general population
summ_correct3_gen<-total %>% group_by(treatment) %>%
  summarise(shareCorrect = mean(correct3),
            sd_PL = sd(correct3),
            n_PL = n(),
            SE_PL = sd(correct3)/sqrt(n()))

p1<-ggplot(summ_correct3_gen, aes(treatment, shareCorrect)) +
  geom_errorbar(aes(ymin=shareCorrect-SE_PL, ymax=shareCorrect+SE_PL), width=.1, position=pd) +
```

```
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("% of correct answers, all")


##dems
summ_correct3_dem<-dems %>% group_by(treatment) %>%
  summarise(shareCorrect = mean(correct3),
            sd_PL = sd(correct3),
            n_PL = n(),
            SE_PL = sd(correct3)/sqrt(n()))

p2<-ggplot(summ_correct3_dem, aes(treatment, shareCorrect)) +
  geom_errorbar(aes(ymin=shareCorrect-SE_PL, ymax=shareCorrect+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("% of correct answers, Democrats")

##reps
summ_correct3_rep<-reps %>% group_by(treatment) %>%
  summarise(shareCorrect = mean(correct3),
            sd_PL = sd(correct3),
            n_PL = n(),
            SE_PL = sd(correct3)/sqrt(n()))

p3<-ggplot(summ_correct3_rep, aes(treatment, shareCorrect)) +
  geom_errorbar(aes(ymin=shareCorrect-SE_PL, ymax=shareCorrect+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("% of correct answers, Republicans")

pdf("results/correct3.pdf", 7, 5)
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
### t-tests --> Democratic non CB is significantly higher that other treatments
t.test(total$correct[total$treatment=="Dem_non"],total$correct[total$treatment!="Dem_non"])
```

```
##
##  Welch Two Sample t-test
##
## data:  total$correct[total$treatment == "Dem_non"] and total$correct[total$treatment != "Dem_non"]
## t = 2.4339, df = 367.48, p-value = 0.01541
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  0.02804202 0.26395007
## sample estimates:
```

```
## mean of x mean of y
##  2.585859  2.439863
```

```
### this is true for Republican voters only
t.test(dems$correct[dems$treatment=="Dem_non"],dems$correct[dems$treatment!="Dem_non"])
```

```
##
##  Welch Two Sample t-test
##
## data:  dems$correct[dems$treatment == "Dem_non"] and dems$correct[dems$treatment != "Dem_non"]
## t = 1.4919, df = 152.06, p-value = 0.1378
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.04463318  0.31988007
## sample estimates:
## mean of x mean of y
##  2.602740  2.465116
```

```
t.test(reps$correct[reps$treatment=="Dem_non"],reps$correct[reps$treatment!="Dem_non"])
```

```
##
##  Welch Two Sample t-test
##
## data:  reps$correct[reps$treatment == "Dem_non"] and reps$correct[reps$treatment != "Dem_non"]
## t = 2.447, df = 149.01, p-value = 0.01557
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  0.04321509 0.40584696
## sample estimates:
## mean of x mean of y
##  2.628571  2.404040
```

```
##create filter for those who made >2 mistakes
bad<-filter(total, correct<2)
good<-filter(total, correct>1)

##re-run t-tests on "good" population only --> not a big change for sentiment
## pro-dem sentiment with dem_CB on whole pop, dem pop or rep pop
t.test(as.numeric(good$Q15_1)[good$treatment=="Dem_CB"],as.numeric(good$Q15_1)[good$treatment!="Dem_CB"]
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(good$Q15_1)[good$treatment == "Dem_CB"] and as.numeric(good$Q15_1)[good$treatment
## t = 0.73505, df = 280.53, p-value = 0.4629
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.378840  7.406063
## sample estimates:
## mean of x mean of y
##  46.55488  44.54127
```

```
t.test(as.numeric(good$Q15_1)[good$treatment=="Dem_CB" & (good$pid=="Democrat" | good$pid=="Lean Democra
```

```
##
##  Welch Two Sample t-test
##
```

```
## data:  as.numeric(good$Q15_1)[good$treatment == "Dem_CB" & (good$pid ==  and as.numeric(good$Q15_1)[g
## t = 0.78991, df = 102.8, p-value = 0.4314
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.264975  7.587173
## sample estimates:
## mean of x mean of y
##  74.55172  72.39062
```

```
t.test(as.numeric(good$Q15_1)[good$treatment=="Dem_CB" & (good$pid=="Republican" | good$pid=="Lean Repu
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(good$Q15_1)[good$treatment == "Dem_CB" & (good$pid ==  and as.numeric(good$Q15_1)[g
## t = 1.813, df = 126.65, p-value = 0.0722
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.4765145 10.8938874
## sample estimates:
## mean of x mean of y
##  25.93750  20.72881
```

```
## same for pro-rep with Rep_CB
t.test(as.numeric(good$Q15_2)[good$treatment=="Rep_CB"],as.numeric(good$Q15_2)[good$treatment!="Rep_CB"]
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(good$Q15_2)[good$treatment == "Rep_CB"] and as.numeric(good$Q15_2)[good$treatment
## t = 0.97541, df = 279.88, p-value = 0.3302
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -2.740666  8.124523
## sample estimates:
## mean of x mean of y
##  41.68023  38.98830
```

```
t.test(as.numeric(good$Q15_2)[good$treatment=="Rep_CB" & (good$pid=="Democrat" | good$pid=="Lean Democra
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(good$Q15_2)[good$treatment == "Rep_CB" & (good$pid ==  and as.numeric(good$Q15_2)[g
## t = 2.0211, df = 94.649, p-value = 0.0461
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   0.1215037 13.6231949
## sample estimates:
## mean of x mean of y
##  26.26154  19.38919
```

```
t.test(as.numeric(good$Q15_2)[good$treatment=="Rep_CB" & (good$pid=="Republican" | good$pid=="Lean Repu
```

```
##
##  Welch Two Sample t-test
##
```

```
## data:  as.numeric(good$Q15_2)[good$treatment == "Rep_CB" & (good$pid ==  and as.numeric(good$Q15_2)[g
## t = 1.3966, df = 89.722, p-value = 0.166
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -1.981518 11.360862
## sample estimates:
## mean of x mean of y
##  70.44643  65.75676
```

```
##create filter for quick replies
summary(as.numeric(total$Q43_Page.Submit))
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   8.397   9.439  11.430  14.256  15.865 103.895
```

```
summary(as.numeric(total$Q46_Page.Submit))
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   8.501   9.943  13.465  16.250  18.602 191.246
```

```
summary(as.numeric(total$Q45_Page.Submit))
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   8.437   9.393  11.236  14.213  14.997 405.992
```

```
## working on % of CB chosen in phase 1
HighCB<-filter(total, CB>4)
LowCB<-filter(total, CB<2)

#################
#### feelings analysis
########3
## towards Dem
########3
##general pop

###No specific effect on people who like more CB
summ_feeldem<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))

##HighCB
summ_feeldem_highCB<-HighCB %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))

##LowCB
summ_feeldem_lowCB<-LowCB %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_1)),
            sd_PL = sd(as.numeric(Q15_1)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_1))/sqrt(n()))
```

```
pdf("results/feeldem_CBlikelihood.pdf", 7, 5)
p1<-ggplot(summ_feeldem, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, all")

p2<-ggplot(summ_feeldem_highCB, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, HighCB")

p3<-ggplot(summ_feeldem_lowCB, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Democrats, LowCB")

multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
######
##towards Reps
#####

summ_feelrep<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))

summ_feelrep_highCB<-HighCB %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))

summ_feelrep_lowCB<-LowCB %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_2)),
            sd_PL = sd(as.numeric(Q15_2)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_2))/sqrt(n()))

pdf("results/feelrep_CBlikelihood.pdf", 7, 5)
p1<-ggplot(summ_feelrep, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
```

```
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, all")
p2<-ggplot(summ_feelrep_highCB, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, HighCB")
p3<-ggplot(summ_feelrep_lowCB, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Republicans, LowCB")
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
########3
## towards online media
########3
##general pop
summ_feelonl<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_3)),
            sd_PL = sd(as.numeric(Q15_3)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_3))/sqrt(n()))

p1<-ggplot(summ_feelonl, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Online Media, all")

##high CB
summ_feelonl_highCB<-HighCB %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_3)),
            sd_PL = sd(as.numeric(Q15_3)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_3))/sqrt(n()))

p2<-ggplot(summ_feelonl_highCB, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Online Media, High CB")

##low CB
summ_feelonl_lowCB<-LowCB %>% group_by(treatment) %>%
  summarise(sentiment = mean(as.numeric(Q15_3)),
            sd_PL = sd(as.numeric(Q15_3)),
```

```
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_3))/sqrt(n()))

p3<-ggplot(summ_feelonl_lowCB, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Online Media, Low CB")
pdf("results/feelonl_CBlikelihood.pdf", 7, 5)
multiplot(p1,p2,p3,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
summ_feelonlCB<-total %>% group_by(CB) %>%
  summarise(sentiment = mean(as.numeric(Q15_3)),
            sd_PL = sd(as.numeric(Q15_3)),
            n_PL = n(),
            SE_PL = sd(as.numeric(Q15_3))/sqrt(n()))
## nothing appears when we compare people by level of selected CB

p1<-ggplot(summ_feelonlCB, aes(CB, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("sentiment for Online Media by #of CB selected")
pdf("results/feelonl_byCB.pdf", 7, 5)
multiplot(p1)
dev.off()
```

```
## pdf
##   2
```

```
### analysis of difference in-party out-party
total$diffDR<-as.numeric(total$Q15_1)-as.numeric(total$Q15_2)
dems<-filter(total, pid == "Democrat" | pid == "Lean Democrat")
reps<-filter(total, pid == "Republican" | pid == "Lean Republican")
inds<-filter(total, pid == "Independent")

summ_feeldiffDR<-total %>% group_by(treatment) %>%
  summarise(sentiment = mean(diffDR),
            sd_PL = sd(diffDR),
            n_PL = n(),
            SE_PL = sd(diffDR)/sqrt(n()))
summ_feeldiffDR_dems<-dems %>% group_by(treatment) %>%
  summarise(sentiment = mean(diffDR),
            sd_PL = sd(diffDR),
            n_PL = n(),
            SE_PL = sd(diffDR)/sqrt(n()))
```

```
summ_feeldiffDR_reps<-reps %>% group_by(treatment) %>%
  summarise(sentiment = mean(diffDR),
            sd_PL = sd(diffDR),
            n_PL = n(),
            SE_PL = sd(diffDR)/sqrt(n()))
summ_feeldiffDR_inds<-inds %>% group_by(treatment) %>%
  summarise(sentiment = mean(diffDR),
            sd_PL = sd(diffDR),
            n_PL = n(),
            SE_PL = sd(diffDR)/sqrt(n()))

p1<-ggplot(summ_feeldiffDR, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("Difference in sentiment Dem-Rep, all")

p2<-ggplot(summ_feeldiffDR_dems, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("Difference in sentiment Dem-Rep, Democrats")

p3<-ggplot(summ_feeldiffDR_reps, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("Difference in sentiment Dem-Rep, Republicans")

p4<-ggplot(summ_feeldiffDR_inds, aes(treatment, sentiment)) +
  geom_errorbar(aes(ymin=sentiment-SE_PL, ymax=sentiment+SE_PL), width=.1, position=pd) +
  geom_line(position=pd) +
  geom_point(position=pd) +ggtitle("Difference in sentiment Dem-Rep, Independents")

pdf("results/feelDiffDR.pdf", 7, 5)
multiplot(p1,p2,p3,p4,cols=2)
```

```
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
## geom_path: Each group consists of only one observation. Do you need to
## adjust the group aesthetic?
```

```
dev.off()
```

```
## pdf
##   2
```

```
## t-test DemCB Vs All --> non significant
t.test(as.numeric(total$diffDR)[total$treatment=="Dem_CB"],as.numeric(total$diffDR)[total$treatment!="D
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(total$diffDR)[total$treatment == "Dem_CB"] and as.numeric(total$diffDR)[total$trea
```

```
## t = -0.58772, df = 315.35, p-value = 0.5571
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -10.77507   5.81842
## sample estimates:
## mean of x mean of y
##  3.589474  6.067797
```

```
t.test(as.numeric(dems$diffDR)[dems$treatment=="Dem_CB"],as.numeric(dems$diffDR)[dems$treatment!="Dem_C
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(dems$diffDR)[dems$treatment == "Dem_CB"] and as.numeric(dems$diffDR)[dems$treatmen
## t = 1.1659, df = 101.67, p-value = 0.2464
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.491063 13.446420
## sample estimates:
## mean of x mean of y
##  54.40625  49.42857
```

```
t.test(as.numeric(reps$diffDR)[reps$treatment=="Dem_CB"],as.numeric(reps$diffDR)[reps$treatment!="Dem_C
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(reps$diffDR)[reps$treatment == "Dem_CB"] and as.numeric(reps$diffDR)[reps$treatmen
## t = 1.1946, df = 138.1, p-value = 0.2343
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -3.165562 12.827738
## sample estimates:
## mean of x mean of y
## -41.20000 -46.03109
```

```
##t-test DemCB Vs RepCB --> highly significant for Dem and Rep responders (not for general population/i
t.test(as.numeric(total$diffDR)[total$treatment=="Dem_CB"],as.numeric(total$diffDR)[total$treatment=="R
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(total$diffDR)[total$treatment == "Dem_CB"] and as.numeric(total$diffDR)[total$trea
## t = -0.068335, df = 384.85, p-value = 0.9456
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -10.41791   9.71807
## sample estimates:
## mean of x mean of y
##  3.589474  3.939394
```

```
t.test(as.numeric(dems$diffDR)[dems$treatment=="Dem_CB"],as.numeric(dems$diffDR)[dems$treatment=="Rep_C
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(dems$diffDR)[dems$treatment == "Dem_CB"] and as.numeric(dems$diffDR)[dems$treatmen
```

```
## t = 2.2467, df = 135.6, p-value = 0.02628
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   1.389285 21.812826
## sample estimates:
## mean of x mean of y
##  54.40625  42.80519
```

```
t.test(as.numeric(reps$diffDR)[reps$treatment=="Dem_CB"],as.numeric(reps$diffDR)[reps$treatment=="Rep_CB
```

```
##
##  Welch Two Sample t-test
##
## data:  as.numeric(reps$diffDR)[reps$treatment == "Dem_CB"] and as.numeric(reps$diffDR)[reps$treatment
## t = 2.0448, df = 131.3, p-value = 0.04287
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##   0.3330843 20.1056254
## sample estimates:
## mean of x mean of y
## -41.20000 -51.41935
```

```
### regression analysis
summary(lm(diffDR ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.numeric(inter
```

```
##
## Call:
## lm(formula = diffDR ~ treatment + as.numeric(fb) + as.numeric(CB) +
##     as.numeric(twitter) + as.numeric(internet) + age + as.numeric(educ) +
##     pid, data = total)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -109.294  -17.029   -2.504   19.645   91.701
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)             61.58967   12.27968   5.016 6.58e-07 ***
## treatmentDem_CB          0.08044    2.89495   0.028  0.97784
## treatmentRep_non        -1.98969    2.87644  -0.692  0.48932
## treatmentRep_CB         -3.99873    2.86962  -1.393  0.16388
## as.numeric(fb)          -0.64498    0.50379  -1.280  0.20085
## as.numeric(CB)          -1.05561    0.72356  -1.459  0.14500
## as.numeric(twitter)     -0.92739    0.44558  -2.081  0.03774 *
## as.numeric(internet)     1.40959    1.75839   0.802  0.42301
## age                     -0.22961    0.08819  -2.603  0.00941 **
## as.numeric(educ)         2.17877    1.20364   1.810  0.07066 .
## pidLean Democrat       -20.71761    3.58640  -5.777 1.11e-08 ***
## pidIndependent         -49.59183    2.82541 -17.552  < 2e-16 ***
## pidLean Republican     -89.83758    3.18823 -28.178  < 2e-16 ***
## pidRepublican         -112.83389    3.29637 -34.230  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 28.37 on 766 degrees of freedom
```

```
## Multiple R-squared:  0.6847, Adjusted R-squared:  0.6794
## F-statistic:   128 on 13 and 766 DF,  p-value: < 2.2e-16
```

```
## on Dems
summary(lm(diffDR ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.numeric(inte
```

```
##
## Call:
## lm(formula = diffDR ~ treatment + as.numeric(fb) + as.numeric(CB) +
##     as.numeric(twitter) + as.numeric(internet) + age + as.numeric(educ) +
##     pid, data = dems)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -114.340  -16.868    2.021   21.592   70.762
##
## Coefficients:
##                         Estimate Std. Error t value Pr(>|t|)
## (Intercept)           14.491661  20.041867   0.723   0.4702
## treatmentDem_CB       -0.020739   4.910989  -0.004   0.9966
## treatmentRep_non       0.068172   4.718338   0.014   0.9885
## treatmentRep_CB       -6.644832   4.722627  -1.407   0.1605
## as.numeric(fb)        -0.000989   0.823229  -0.001   0.9990
## as.numeric(CB)        -0.239997   1.236994  -0.194   0.8463
## as.numeric(twitter)   -0.633727   0.736616  -0.860   0.3904
## as.numeric(internet)   4.989503   2.948665   1.692   0.0917 .
## age                    0.064448   0.151931   0.424   0.6718
## as.numeric(educ)       4.514842   2.005870   2.251   0.0252 *
## pidLean Democrat     -18.171876   3.688650  -4.926 1.44e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 28.49 on 277 degrees of freedom
## Multiple R-squared:  0.1365, Adjusted R-squared:  0.1054
## F-statistic:  4.38 on 10 and 277 DF,  p-value: 1.023e-05
```

```
## on Reps
summary(lm(diffDR ~ treatment + as.numeric(fb) + as.numeric(CB) + as.numeric(twitter) + as.numeric(inte
```

```
##
## Call:
## lm(formula = diffDR ~ treatment + as.numeric(fb) + as.numeric(CB) +
##     as.numeric(twitter) + as.numeric(internet) + age + as.numeric(educ) +
##     pid, data = reps)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -53.161 -20.121  -1.132  17.910  78.587
##
## Coefficients:
##                       Estimate Std. Error t value Pr(>|t|)
## (Intercept)           -2.3362    18.7986  -0.124   0.9012
## treatmentDem_CB        2.5045     4.7203   0.531   0.5962
## treatmentRep_non      -3.5502     4.8619  -0.730   0.4659
## treatmentRep_CB       -7.5874     4.8040  -1.579   0.1155
## as.numeric(fb)        -1.0041     0.8540  -1.176   0.2408
```

```
## as.numeric(CB)        -2.0442     1.1543  -1.771   0.0778 .
## as.numeric(twitter)   -1.3288     0.7463  -1.780   0.0762 .
## as.numeric(internet)  -2.6772     2.7446  -0.975   0.3303
## age                   -0.3086     0.1413  -2.184   0.0298 *
## as.numeric(educ)       4.1716     2.0435   2.041   0.0422 *
## pidRepublican        -22.6141     3.3423  -6.766  8.9e-11 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 26.98 on 257 degrees of freedom
## Multiple R-squared:  0.2261, Adjusted R-squared:  0.196
## F-statistic: 7.507 on 10 and 257 DF,  p-value: 1.78e-10
```