

First Pass

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This is the first pass I took at putting together some of the analyses which we talked about last week. The first step I took was to create a new variable called `tv_prefer` which was just the difference between the respondents MSNBC preference and FOX preference. In doing so, this allowed me to determine whether the preferred MSNBC (number > 0) or FOX (number < 0) rather quickly.

After this, I subset the data to include those who preferred MSNBC or FOX and were in the control, choice, and assigned conditions. This created the separate subgroups from which our comparisons could be drawn. To determine the levels of immigration support each group had, I took the mean of our three immigration questions (`immig_increased`, `taxes_pos`, `jobs_pos`) and scaled them from 0 to 1 with higher numbers indicating higher support for immigration based on these 3 questions.

NEW STUFF!

I added in the neither category to the three groups (control, assigned, choice) and calculated the mean and CIs. Additionally, there are now two ggplot graphs below which show the control vs free choice and control vs assigned - I did not spend too much time on the formatting, so that can always be cleaned up. I did separate each group into its own x coordinate because when the 3 difference preferences were shown together, they were very difficult to read. Maybe there is another way to separate them that we could discuss?

Talk to you all soon!

NEW NEW STUFF!

I was able to separate the three panels by preference in our graphs below - I also noticed that I had made a mistake in the CIs when I initially sent this last week. That error has been fixed, so these basic descriptive graphs should be good to go!

load packages -

```
library(here)
library(readr)
library(tidyverse)
library(ggplot2)
library(expss)
library(broom)
library(purrr)
library(stargazer)
```

set wd and load data -

```
setwd("C:/Users/Owner/Desktop/UW-Milwaukee Graduate Year 2/Lab Meeting/Data")

dat <- read.csv("immigration_20191219_clean.csv")

## View(dat)
```

preference variable -

```
tv_prefer <- dat$tv_msnbc - dat$tv_fox
dat["tv_prefer"] <- tv_prefer

## View(dat)
```

H3 - effects of corrective information condition on preferred media choice

Here, I subset the data to include those individuals who were part of the control group and preferred either FOX or MSNBC and calculated their mean immigration levels based on the 3 immigration questions asked after they would have read the story (if they were not in control). I also calculated their CIs in the table below.

Added those in the neither category!

control -

```
preferMSNBC_Control <- subset(dat, tv_prefer > 0 & condition == "control")
## View(preferMSNBC_Control)

preferFOX_Control <- subset(dat, tv_prefer < 0 & condition == "control")
## View(preferFOX_Control)

preferneither_control <- subset(dat, tv_prefer == 0 & condition == "control")
## View(preferneither_control)

mean_MSNBC_Control_ImmigrationLevel <- mean(preferMSNBC_Control$immig_increased) + mean(preferMSNBC_Control$taxes_pos)
mean_MSNBC_Control_ImmigrationLevel <- mean_MSNBC_Control_ImmigrationLevel / 3

mean_FOX_Control_ImmigrationLevel <- mean(preferFOX_Control$immig_increased) + mean(preferFOX_Control$taxes_pos)
mean_FOX_Control_ImmigrationLevel <- mean_FOX_Control_ImmigrationLevel / 3

mean_prefer_neither_ImmigrationLevel <- mean(preferneither_control$immig_increased) + mean(preferneither_control$taxes_pos)
mean_prefer_neither_ImmigrationLevel <- mean_prefer_neither_ImmigrationLevel / 3

## Confidence Interval -

MSNBC_Control_ImmigrationLevel <- ((preferMSNBC_Control$immig_increased) + (preferMSNBC_Control$taxes_pos) / 2)
t1 <- t.test(MSNBC_Control_ImmigrationLevel)

FOX_Control_ImmigrationLevel <- ((preferFOX_Control$immig_increased) + (preferFOX_Control$taxes_pos) / 2)
t2 <- t.test(FOX_Control_ImmigrationLevel)

prefer_neither_immigrationlevel <- ((preferneither_control$immig_increased) + (preferneither_control$taxes_pos) / 2)
ta <- t.test(prefer_neither_immigrationlevel)

table1 <- map_df(list(t1, ta, t2), broom::tidy)
```

```
table1[c("estimate", "statistic", "p.value", "conf.low", "conf.high")]
```

```
## # A tibble: 3 x 5
##   estimate statistic  p.value conf.low conf.high
##   <dbl>      <dbl>    <dbl>    <dbl>    <dbl>
## 1    0.612      23.6 3.19e-34    0.560    0.664
## 2    0.506      16.9 5.56e-26    0.446    0.566
## 3    0.415      12.0 1.09e-16    0.345    0.484
```

Here I subset the data for those who chose their news source. This was subset for those who (1) preferred MSNBC and chose MSNBC, (2) preferred MSNBC and chose FOX, (3) preferred FOX and chose FOX, and those who (4) preferred FOX and chose MSNBC. I calculated their mean immigration support levels (higher = more liberal) based on the 3 immigration questions asked after they read the story. I also calculated their CIs in the table below.

Added those in the neither category!

free choice -

```
# Prefer MSNBC & Chose MSNBC
```

```
preferMSNBC_Choice_Same <- subset(dat, tv_prefer > 0 & condition == "choice" & source == "MSNBC")
## View(preferMSNBC_Choice_Same)
```

```
mean_MSNBC_Choice_Same_ImmigrationLevel <- mean(preferMSNBC_Choice_Same$immig_increased) + mean(preferM
mean_MSNBC_Choice_Same_ImmigrationLevel <- mean_MSNBC_Choice_Same_ImmigrationLevel / 3
mean_MSNBC_Choice_Same_ImmigrationLevel
```

```
## [1] 0.7202128
```

```
## Confidence Interval
```

```
MSNBC_Choice_Same_ImmigrationLevel <- ((preferMSNBC_Choice_Same$immig_increased) + (preferMSNBC_Choice_
t3 <- t.test(MSNBC_Choice_Same_ImmigrationLevel)
```

```
# Prefer MSNBC & Chose Fox
```

```
preferMSNBC_Choice_Diff <- subset(dat, tv_prefer > 0 & condition == "choice" & source == "Fox News")
## View(preferMSNBC_Choice_Diff)
```

```
mean_MSNBC_Choice_Diff_ImmigrationLevel <- mean(preferMSNBC_Choice_Diff$immig_increased) + mean(preferM
mean_MSNBC_Choice_Diff_ImmigrationLevel <- mean_MSNBC_Choice_Diff_ImmigrationLevel / 3
mean_MSNBC_Choice_Diff_ImmigrationLevel
```

```
## [1] 0.7407407
```

```
## Confidence Interval
```

```
MSNBC_Choice_Diff_ImmigrationLevel <- ((preferMSNBC_Choice_Diff$immig_increased) + (preferMSNBC_Choice_
t4 <- t.test(MSNBC_Choice_Diff_ImmigrationLevel)
```

```
# Prefer Fox & Chose Fox
```

```

preferFOX_Choice_Same <- subset(dat, tv_prefer < 0 & condition == "choice" & source == "Fox News")
## View(preferFOX_Choice_Same)

mean_FOX_Choice_Same_ImmigrationLevel <- mean(preferFOX_Choice_Same$immig_increased) + mean(preferFOX_C
mean_FOX_Choice_Same_ImmigrationLevel <- mean_FOX_Choice_Same_ImmigrationLevel / 3
mean_FOX_Choice_Same_ImmigrationLevel

## [1] 0.420679
## Confidence Interval

FOX_Choice_Same_ImmigrationLevel <- ((preferFOX_Choice_Same$immig_increased) + (preferFOX_Choice_Same$t
t5 <- t.test(FOX_Choice_Same_ImmigrationLevel)

# Prefer Fox and Chose MSNBC

preferFOX_Choice_Diff <- subset(dat, tv_prefer < 0 & condition == "choice" & source == "MSNBC")
## View(preferFOX_Choice_Diff)

mean_FOX_Choice_Diff_ImmigrationLevel <- mean(preferFOX_Choice_Diff$immig_increased) + mean(preferFOX_C
mean_FOX_Choice_Diff_ImmigrationLevel <- mean_FOX_Choice_Diff_ImmigrationLevel / 3
mean_FOX_Choice_Diff_ImmigrationLevel

## [1] 0.562963
## Confidence Interval

FOX_Choice_Diff_ImmigrationLevel <- ((preferFOX_Choice_Diff$immig_increased) + (preferFOX_Choice_Diff$t
t6 <- t.test(FOX_Choice_Diff_ImmigrationLevel)

## Prefer Neither, Chose MSNBC

preferneither_Choose_MSNBC <- subset(dat, tv_prefer == 0 & condition == "choice" & source == "MSNBC")
## View(preferneither_Choose_MSNBC)

mean_preferneither_ChooseMSNBC_ImmigrationLevel <- mean(preferneither_Choose_MSNBC$immig_increased) + me
mean_preferneither_ChooseMSNBC_ImmigrationLevel <- mean_preferneither_ChooseMSNBC_ImmigrationLevel / 3
mean_preferneither_ChooseMSNBC_ImmigrationLevel

## [1] 0.6511905
## Confidence Interval -

preferneither_Choose_MSNBC_immigrationlevel <- ((preferneither_Choose_MSNBC$immig_increased) + (preferne
tb <- t.test(preferneither_Choose_MSNBC_immigrationlevel)

## Prefer Neither, Chose FOX

preferneither_Choose_FOX <- subset(dat, tv_prefer == 0 & condition == "choice" & source == "Fox News")
## View(preferneither_Choose_FOX)

mean_preferneither_ChooseFOX_ImmigrationLevel <- mean(preferneither_Choose_FOX$immig_increased) + mean(p
mean_preferneither_ChooseFOX_ImmigrationLevel <- mean_preferneither_ChooseFOX_ImmigrationLevel / 3

```

```

mean_preferneither_ChoseFOX_ImmigrationLevel

## [1] 0.4877451
## Confidence Interval -

preferneither_Choose_FOX_immigrationlevel <- ((preferneither_Choose_FOX$immig_increased) + (preferneith

tc <- t.test(preferneither_Choose_FOX_immigrationlevel)

table2 <- map_df(list(t3, t4, t5, t6, tb, tc), broom::tidy)
table2[c("estimate", "statistic", "p.value", "conf.low", "conf.high")]

## # A tibble: 6 x 5
##   estimate statistic p.value conf.low conf.high
##   <dbl>      <dbl>   <dbl>   <dbl>   <dbl>
## 1    0.720    30.8 2.40e-32  0.673   0.767
## 2    0.741    15.8 2.51e- 7  0.633   0.849
## 3    0.421    12.0 8.58e-17  0.351   0.491
## 4    0.563     5.82 3.96e- 4  0.340   0.786
## 5    0.651    22.2 1.73e-24  0.592   0.710
## 6    0.488    11.0 1.31e-12  0.398   0.578

```

plot control vs. free choice

Control vs Free Choice - Updated plot with accurate CIs and seperate panels

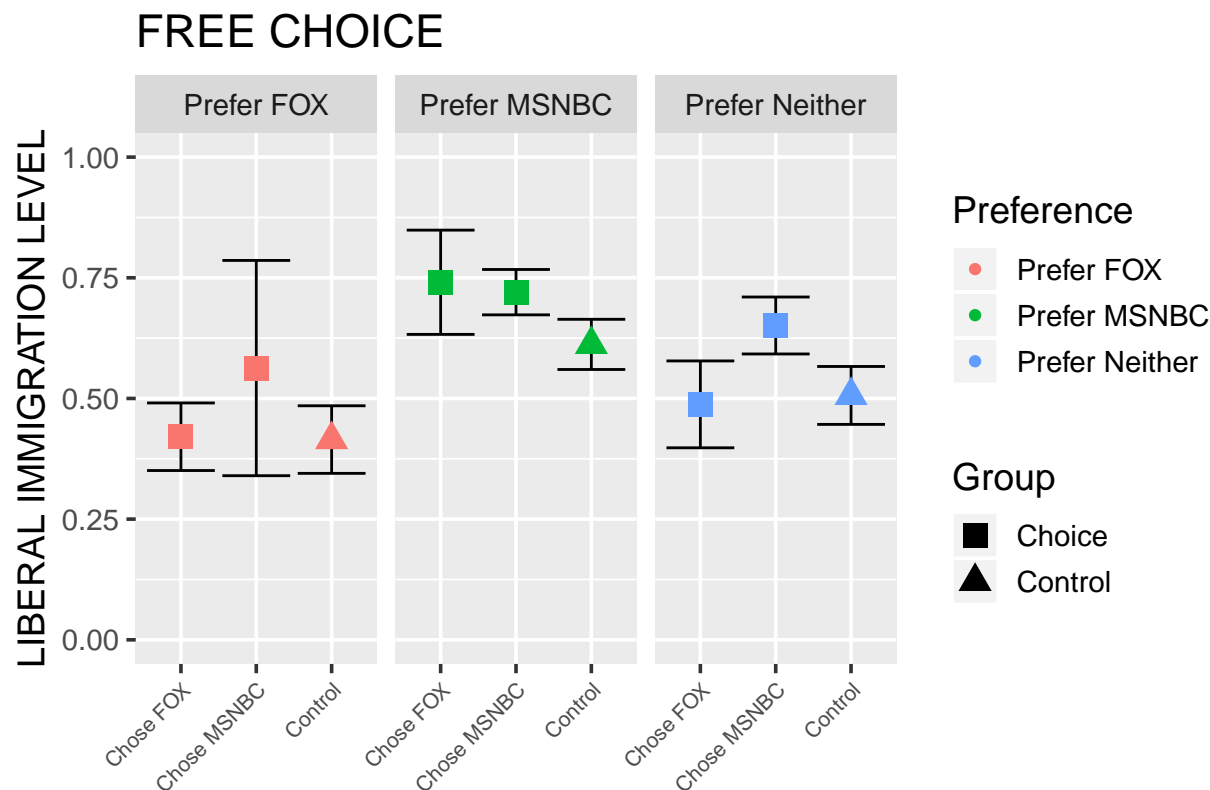
```

data <- data.frame(x = c("Control", "Control", "Control", "Chose MSNBC", "Chose FOX", "Chose FOX", "Chose FOX", "Chose FOX", "Chose FOX", "Chose FOX"),
  y = c(mean_MSNBC_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel),
  CHI = c(0.052, 0.07, 0.06, 0.047, 0.07, 0.108, 0.223, 0.059, 0.09),
  CLO = c(0.052, 0.07, 0.06, 0.047, 0.07, 0.108, 0.223, 0.059, 0.09),
  Preference = c("Prefer MSNBC", "Prefer FOX", "Prefer Neither", "Prefer MSNBC", "Prefer FOX", "Prefer Neither", "Prefer MSNBC", "Prefer FOX", "Prefer Neither", "Prefer Neither"),
  Group = c("Control", "Control", "Control", "Choice", "Choice", "Choice", "Choice", "Choice", "Choice", "Choice"))

Choice <- ggplot(data, aes(x, y, group = Preference)) +
  geom_point() +
  geom_errorbar(aes(ymin = y + CHI, ymax = y - CLO)) +
  labs(x = "",
    y = "LIBERAL IMMIGRATION LEVEL",
    title = "FREE CHOICE") +
  theme_classic() +
  geom_point(aes(color = Preference, shape = Group, size = Group)) +
  scale_shape_manual(values=c(15, 17, 16)) +
  scale_size_manual(values=c(4,4,4)) +
  theme_gray(base_size = 14) +
  theme(axis.text.x = element_text(angle = 45, size = 8, hjust = 1)) +
  facet_wrap(~Preference, ncol = 3, scales = "free_x") +
  ylim(c(0:1))

Choice

```



assigned -

Here I subset the data for those who were assigned their news source. This was subset for those who (1) preferred MSNBC and were assigned MSNBC, (2) preferred MSNBC and were assigned FOX, (3) preferred FOX and were assigned FOX, and those who (4) preferred FOX and were assigned MSNBC. I calculated their mean immigration support levels (higher = more liberal) based on the 3 immigration questions asked after they read the story. I also calculated their CIs in the table below.

Added those in the neither category!

```
## Prefer MSNBC, Assigned MSNBC
```

```
preferMSNBC_assignedMSNBC <- subset(dat, tv_prefer > 0 & condition == "assigned" & source == "MSNBC")
## View(preferMSNBC_assignedMSNBC)
```

```
mean_preferMSNBC_assignedMSNBC_ImmigrationLevel <- mean(preferMSNBC_assignedMSNBC$immig_increased) + me
mean_preferMSNBC_assignedMSNBC_ImmigrationLevel <- mean_preferMSNBC_assignedMSNBC_ImmigrationLevel / 3
mean_preferMSNBC_assignedMSNBC_ImmigrationLevel
```

```
## [1] 0.6720721
```

```
## Confidence interval -
```

```
preferMSNBC_assignedMSNBC_ImmigrationLevel <- ((preferMSNBC_assignedMSNBC$immig_increased) + (preferMSNBC
```

```
t7 <- t.test(preferMSNBC_assignedMSNBC_ImmigrationLevel)
```

```
## Prefer MSNBC, Assigned FOX
```

```
preferMSNBC_assignedFOX <- subset(dat, tv_prefer > 0 & condition == "assigned" & source == "Fox News")  
## View(preferMSNBC_assignedFOX)
```

```
mean_preferMSNBC_assignedFOX_ImmigrationLevel <- mean(preferMSNBC_assignedFOX$immig_increased) + mean(p  
mean_preferMSNBC_assignedFOX_ImmigrationLevel <- mean_preferMSNBC_assignedFOX_ImmigrationLevel / 3  
mean_preferMSNBC_assignedFOX_ImmigrationLevel
```

```
## [1] 0.6703704
```

```
## Confidence Intervals -
```

```
preferMSNBC_assignedFOX_ImmigrationLevel <- ((preferMSNBC_assignedFOX$immig_increased) + (preferMSNBC_a  
t8 <- t.test(preferMSNBC_assignedFOX_ImmigrationLevel)
```

```
## Prefer Fox, Assigned FOX
```

```
preferFOX_assignedFOX <- subset(dat, tv_prefer < 0 & condition == "assigned" & source == "Fox News")  
## View(preferFOX_assignedFOX)
```

```
mean_preferFOX_assignedFOX_ImmigrationLevel <- mean(preferFOX_assignedFOX$immig_increased) + mean(prefer  
mean_preferFOX_assignedFOX_ImmigrationLevel <- mean_preferFOX_assignedFOX_ImmigrationLevel / 3  
mean_preferFOX_assignedFOX_ImmigrationLevel
```

```
## [1] 0.5220238
```

```
## Confidence Intervals -
```

```
preferFOX_assignedFOX_ImmigrationLevel <- ((preferFOX_assignedFOX$immig_increased) + (preferFOX_assigne  
t9 <- t.test(preferFOX_assignedFOX_ImmigrationLevel)
```

```
## Prefer FOX, Assigned MSNBC
```

```
preferFOX_assignedMSNBC <- subset(dat, tv_prefer < 0 & condition == "assigned" & source == "MSNBC")  
## View(preferFOX_assignedMSNBC)
```

```
mean_preferFOX_assignedMSNBC_ImmigrationLevel <- mean(preferFOX_assignedMSNBC$immig_increased) + mean(p  
mean_preferFOX_assignedMSNBC_ImmigrationLevel <- mean_preferFOX_assignedMSNBC_ImmigrationLevel / 3  
mean_preferFOX_assignedMSNBC_ImmigrationLevel
```

```
## [1] 0.4787037
```

```
## Confidence Intervals -
```

```
preferFOX_assignedMSNBC_ImmigrationLevel <- ((preferFOX_assignedMSNBC$immig_increased) + (preferFOX_ass  
t10 <- t.test(preferFOX_assignedMSNBC_ImmigrationLevel)
```

```
## Prefer neither, Assigned MSNBC
```

```
preferneither_assignedMSNBC <- subset(dat, tv_prefer == 0 & condition == "assigned" & source == "MSNBC")  
## View(preferFOX_assignedMSNBC)
```

```

mean_preferneither_assignedMSNBC_ImmigrationLevel <- mean(preferneither_assignedMSNBC$immig_increased)
mean_preferneither_assignedMSNBC_ImmigrationLevel <- mean_preferneither_assignedMSNBC_ImmigrationLevel
mean_preferneither_assignedMSNBC_ImmigrationLevel

## [1] 0.5818627
## Confidence Intervals -

preferneither_assignedMSNBC_ImmigrationLevel <- ((preferneither_assignedMSNBC$immig_increased) + (preferneither_assignedMSNBC$immig_decreased)) / 2

td <- t.test(preferneither_assignedMSNBC_ImmigrationLevel)

## Prefer neither, Assigned MSNBC

preferneither_assignedFOX <- subset(dat, tv_prefer == 0 & condition == "assigned" & source == "Fox News")
## View(preferFOX_assignedFOX)

mean_preferneither_assignedFOX_ImmigrationLevel <- mean(preferneither_assignedFOX$immig_increased) + mean(preferneither_assignedFOX$immig_decreased) / 2
mean_preferneither_assignedFOX_ImmigrationLevel <- mean_preferneither_assignedFOX_ImmigrationLevel / 3
mean_preferneither_assignedFOX_ImmigrationLevel

## [1] 0.6387255
## Confidence Intervals -

preferneither_assignedFOX_ImmigrationLevel <- ((preferneither_assignedFOX$immig_increased) + (preferneither_assignedFOX$immig_decreased)) / 2

te <- t.test(preferneither_assignedFOX_ImmigrationLevel)

table3 <- map_df(list(t1, t2, t6, t7, t8, t9, td, te), broom::tidy)
table3[c("estimate", "statistic", "p.value", "conf.low", "conf.high")]

## # A tibble: 8 x 5
##   estimate statistic p.value conf.low conf.high
##   <dbl>      <dbl>   <dbl>   <dbl>   <dbl>
## 1  0.612      23.6 3.19e-34  0.560   0.664
## 2  0.415      12.0 1.09e-16  0.345   0.484
## 3  0.563       5.82 3.96e- 4  0.340   0.786
## 4  0.672      20.2 3.01e-21  0.605   0.739
## 5  0.670      15.0 2.50e-14  0.579   0.762
## 6  0.522      12.7 6.50e-13  0.438   0.606
## 7  0.582      14.0 1.93e-15  0.497   0.666
## 8  0.639      19.7 7.92e-20  0.573   0.705

```

combine and plot -

Control vs Assigned - Updated plot with accurate CIs and separate panels

```

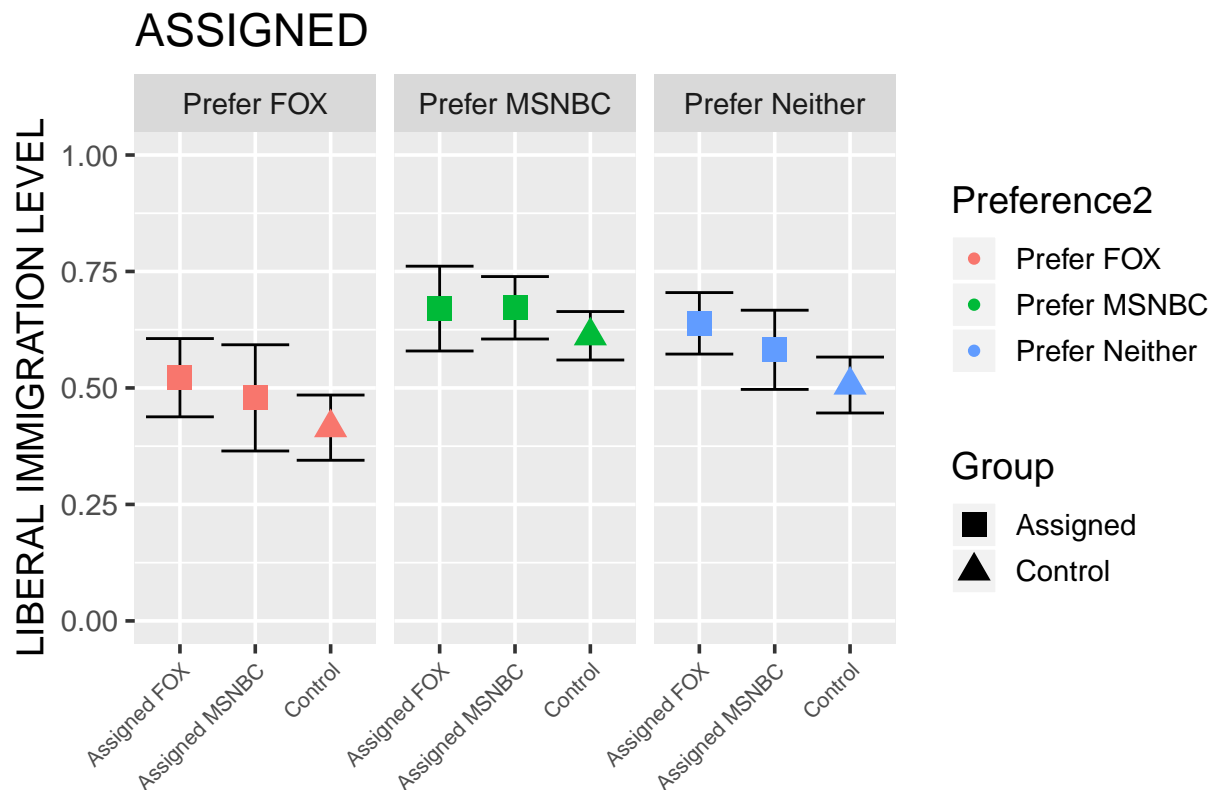
data2 <- data.frame(x2 = c("Control", "Control", "Control", "Assigned MSNBC", "Assigned FOX", "Assigned FOX", "Assigned FOX"),
  y2 = c(mean_MSNBC_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Control_ImmigrationLevel, mean_FOX_Assigned_ImmigrationLevel, mean_FOX_Assigned_ImmigrationLevel, mean_FOX_Assigned_ImmigrationLevel, mean_FOX_Assigned_ImmigrationLevel),
  CHI_2 = c(0.052, 0.07, 0.06, 0.067, 0.084, 0.091, 0.114, 0.085, 0.066),
  CLO_2 = c(0.052, 0.07, 0.06, 0.067, 0.084, 0.091, 0.114, 0.085, 0.066),
  Preference2 = c("Prefer MSNBC", "Prefer FOX", "Prefer Neither", "Prefer MSNBC", "Prefer FOX", "Prefer FOX", "Prefer FOX"),
  Group = c("Control", "Control", "Control", "Assigned", "Assigned", "Assigned", "Assigned"))

```



```
Assigned <- ggplot(data2, aes(x2, y2, group = Preference2)) +
  geom_point() +
  geom_errorbar(aes(ymin = y2 + CHI_2, ymax = y2 - CLO_2)) +
  labs(x = "",
       y = "LIBERAL IMMIGRATION LEVEL",
       title = "ASSIGNED") +
  theme_classic() +
  geom_point(aes(color=Preference2, shape=Group, size = Group)) +
  scale_shape_manual(values=c(15, 17, 16)) +
  scale_size_manual(values=c(4,4,4)) +
  theme_gray(base_size = 14) +
  theme(axis.text.x = element_text(angle = 45, size = 8, hjust = 1)) +
  facet_wrap(~Preference2, ncol = 3, scales = "free_x") +
  ylim(c(0:1))
```

Assigned



OLS Analysis

```
libimm_data <- dat %>% select(immig_increased, taxes_pos, jobs_pos, condition)
libimm_data$condition <- as.factor(libimm_data$condition)

libimm <- rowMeans(subset(libimm_data, select = c(immig_increased, taxes_pos, jobs_pos)), na.rm = TRUE)
libimm_data <- cbind(libimm_data, libimm)
```

```

libimm_data$libimm <- as.numeric(libimm_data$libimm)

libimm_data$condition <- relevel(libimm_data$condition, ref = "control")

View(libimm_data)

test1 <- lm(libimm ~ condition, data = libimm_data)

stargazer(test1, header = F)

```

Table 1:

	<i>Dependent variable:</i>
	libimm
conditionassigned	0.082*** (0.024)
conditionchoice	0.057** (0.024)
Constant	0.522*** (0.017)
Observations	600
R ²	0.020
Adjusted R ²	0.016
Residual Std. Error	0.241 (df = 597)
F Statistic	5.966*** (df = 2; 597)
<i>Note:</i>	*p<0.1; **p<0.05; ***p<0.01