w241_final_project_report_figures

```
library(data.table)
library(ggplot2)
library(RCurl)
```

```
## Loading required package: bitops
```

```
library(stargazer)
```

```
##
## Please cite as:
```

```
##  Hlavac, Marek (2015). stargazer: Well-Formatted Regression and Summary Statistics Tables.
```

```
##  R package version 5.2. http://CRAN.R-project.org/package=stargazer
```

```
library(ri)


############################
###### ATG EXPERIMENT ######
############################

###### ATG EXPERIMENT: EXPLORATORY ANALYSIS ######

# read data from remote git repo
csv = getURL('https://raw.githubusercontent.com/winlingit/w241-project-csw/master/rcode/atg_results.csv
dt.atg = data.table(read.csv(textConnection(csv)))

# recover observations, from: http://stackoverflow.com/questions/2894775/replicate-each-row-of-data-fra
dt.atgx = dt.atg[rep(seq(.N), N)]  # expand table to 352 rows
dt.atgx[ , responded := c(rep(1, max(Responses)), rep(0, .N - max(Responses))), by = CollectorName]  # 
dt.atg$Responses == dt.atgx[ , sum(responded), by = CollectorName]$V1  # checksums for total responses
```

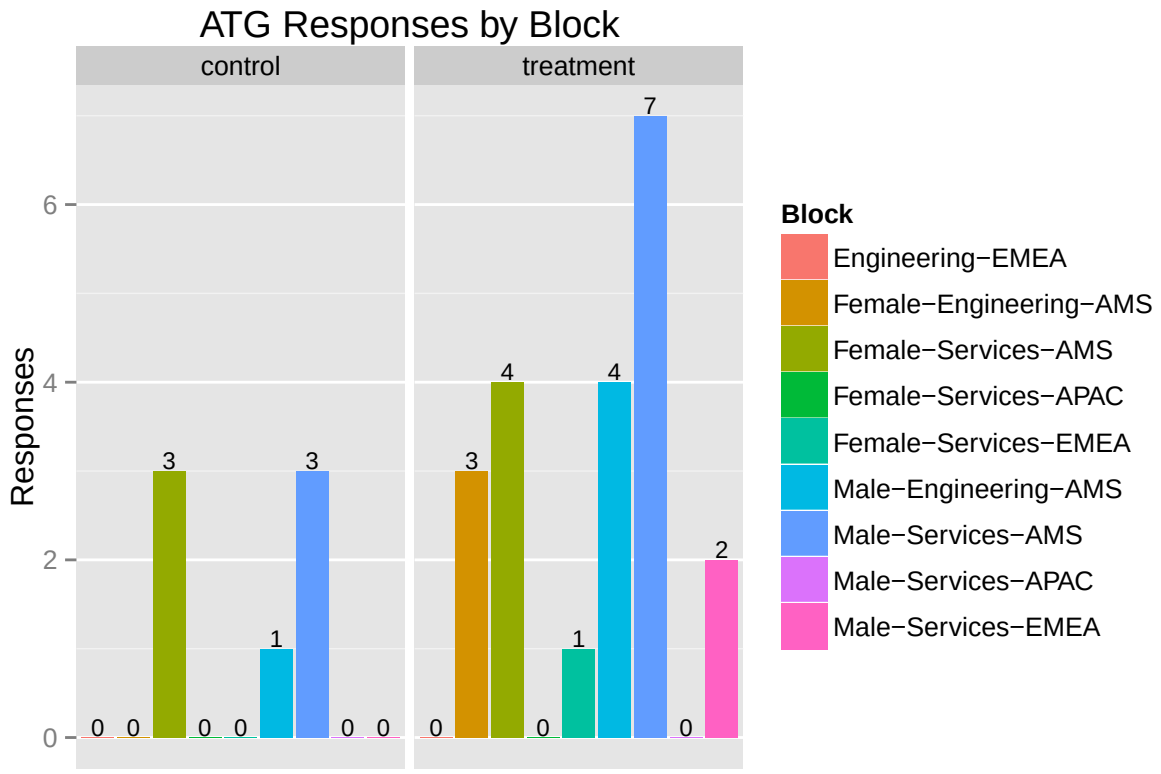
[1] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE [15] TRUE TRUE TRUE TRUE

```
# estimate overall ATE
dt.atg[ , .(y = sum(Responses)/sum(N)), by = treat][ , y[1]-y[2]]
```

[1] 0.07931818

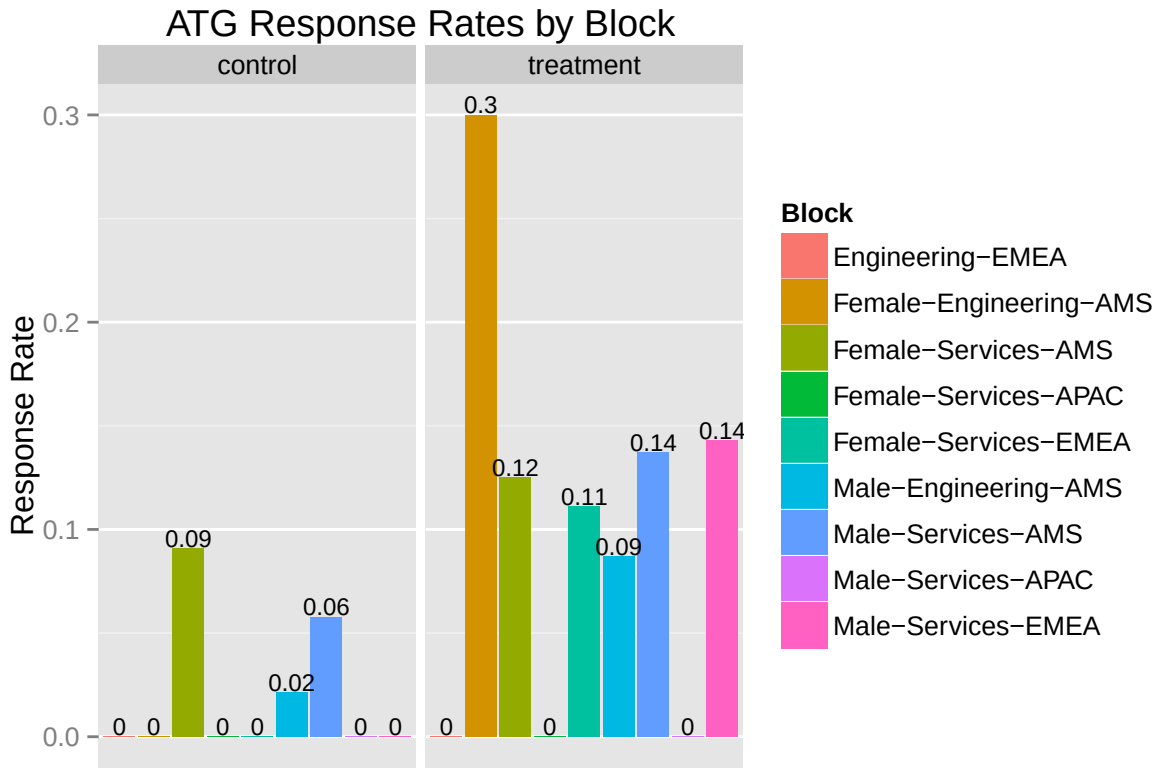
```
# calculate response rates in each block
dt.atg[, Rate := Responses / N]
dt.atg[ treat == 1, Treat := 'treatment']
dt.atg[ treat == 0, Treat := 'control']

# Plot the chart of winning
```

```
ggplot(dt.atg, aes(x=Block, y=Responses, fill=Block)) +
  geom_bar(stat='identity') +
  geom_text(aes(x=Block, y=Responses, label=Responses), vjust=-.1, size=3) +
  facet_wrap( ~ Treat) +
  ggtitle("ATG Responses by Block") +
  xlab("") +
  ylab("Responses") +
  theme( axis.line=element_blank(),
         axis.text.x=element_blank(),
         axis.ticks.x=element_blank(),
         axis.title.x=element_blank(),
         panel.border=element_blank(),
         panel.grid.major.x=element_blank(),
         panel.grid.minor.x=element_blank())
```




```
# Plot the chart of proportional winning
ggplot(dt.atg, aes(x=Block, y=Rate, fill=Block)) +
  geom_bar(stat='identity') +
  geom_text(aes(x=Block, y=Rate, label=round(Rate, digits=2)), vjust=-.1, size=3) +
  facet_wrap( ~ Treat) +
  ggtitle("ATG Response Rates by Block") +
  xlab("") +
  ylab("Response Rate") +
  theme( axis.line=element_blank(),
         axis.text.x=element_blank(),
         axis.ticks.x=element_blank(),
         axis.title.x=element_blank(),
         panel.border=element_blank(),
```

```
        panel.grid.major.x=element_blank(),
        panel.grid.minor.x=element_blank())
```




```
###### ATG EXPERIMENT: REGRESSION ANALYSIS ######

# regression models
m1.atg = lm(responded ~ treat, data = dt.atgx) # treatment only
m2.atg = lm(responded ~ treat + Female, data = dt.atgx) # treatment + female
m3.atg = lm(responded ~ treat + Female + Org, data = dt.atgx) # treatment + female + org
m4.atg = lm(responded ~ treat + Female + Org + Region, data = dt.atgx) # treatment + female + org + reg

# show all regression models
stargazer(m1.atg, m2.atg, m3.atg, m4.atg, type = 'latex', title = 'Regression Analysis for ATG Feedback
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, May 04, 2016 - 01:15:06

```
############################
###### PTG EXPERIMENT ######
############################

###### PTG EXPERIMENT: EXPLORATORY ANALYSIS ######

# read data from remote git repo
csv = getURL('https://raw.githubusercontent.com/winlingit/w241-project-csw/master/rcode/ptg_results.csv
dt.ptg = data.table(read.csv(textConnection(csv)))

# recover observations
```

Table 1: Regression Analysis for ATG Feedback Survey Experiment

	Dependent variable:			
	responded			
	(1)	(2)	(3)	(4)
treat	0.079***	0.081***	0.081***	0.083***
	(0.029)	(0.029)	(0.029)	(0.029)
Female		0.032	0.030	0.026
		(0.032)	(0.032)	(0.033)
OrgServices			0.009	0.025
			(0.032)	(0.034)
RegionAPAC				−0.101
				(0.068)
RegionEMEA				−0.036
				(0.046)
Constant	0.040**	0.031	0.025	0.025
	(0.020)	(0.023)	(0.030)	(0.030)
Observations	351	344	344	344
R^2	0.021	0.025	0.025	0.033
Adjusted R^2	0.019	0.019	0.017	0.018
Residual Std. Error	0.269 (df = 349)	0.271 (df = 341)	0.272 (df = 340)	0.271 (df = 338)
F Statistic	7.641*** (df = 1; 349)	4.396** (df = 2; 341)	2.951** (df = 3; 340)	2.285** (df = 5; 338)
Note:				*p<0.1; **p<0.05; ***p<0.01

```
dt.ptgx = dt.ptg[rep(seq(.N), N)]  # expand table to 352 rows
dt.ptgx[ , responded := c(rep(1, max(Responses)), rep(0, .N - max(Responses))), by = CollectorName]  #
dt.ptg$Responses == dt.ptgx[ , sum(responded), by = CollectorName]$V1  # checksums for total responses
```

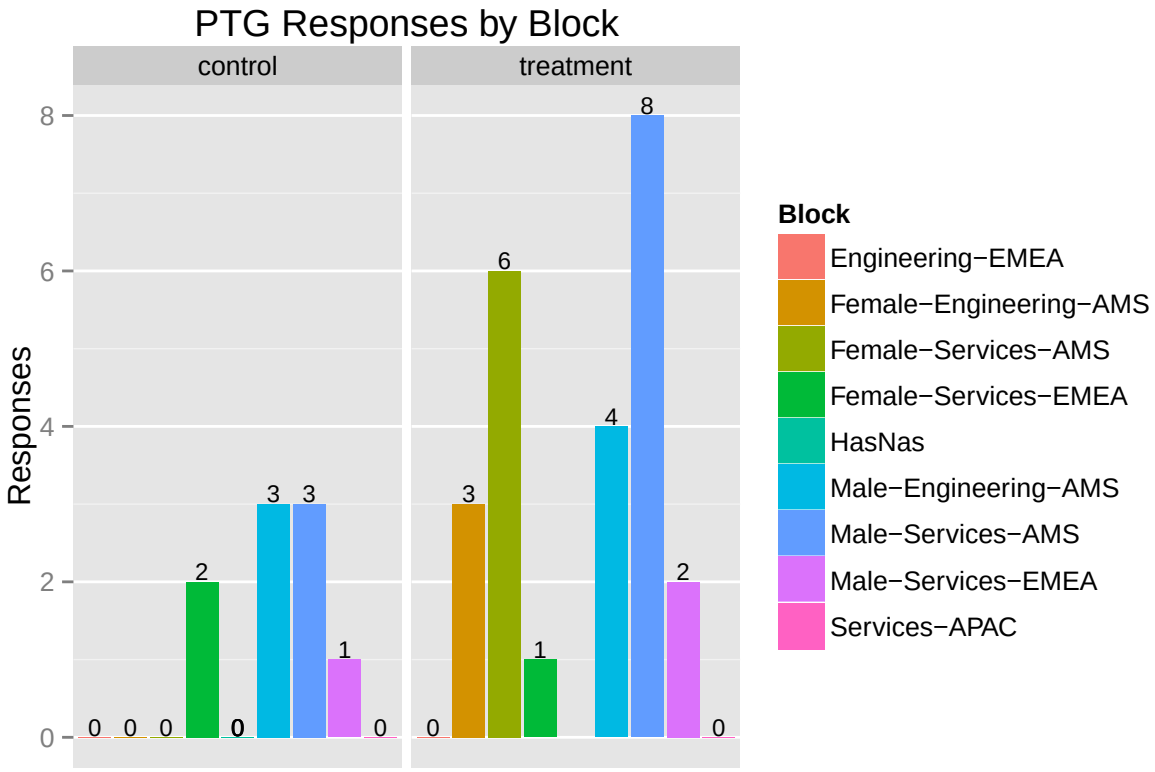
```
## Warning in dt.ptg$Responses == dt.ptgx[, sum(responded), by =
## CollectorName]$V1: longer object length is not a multiple of shorter object
## length
```

[1] TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE [15] TRUE TRUE TRUE TRUE TRUE TRUE

```
# estimate overall ATE
dt.ptg[ , .(y = sum(Responses)/sum(N)), by = treat][ , y[1]-y[2]]
```

[1] 0.08108108

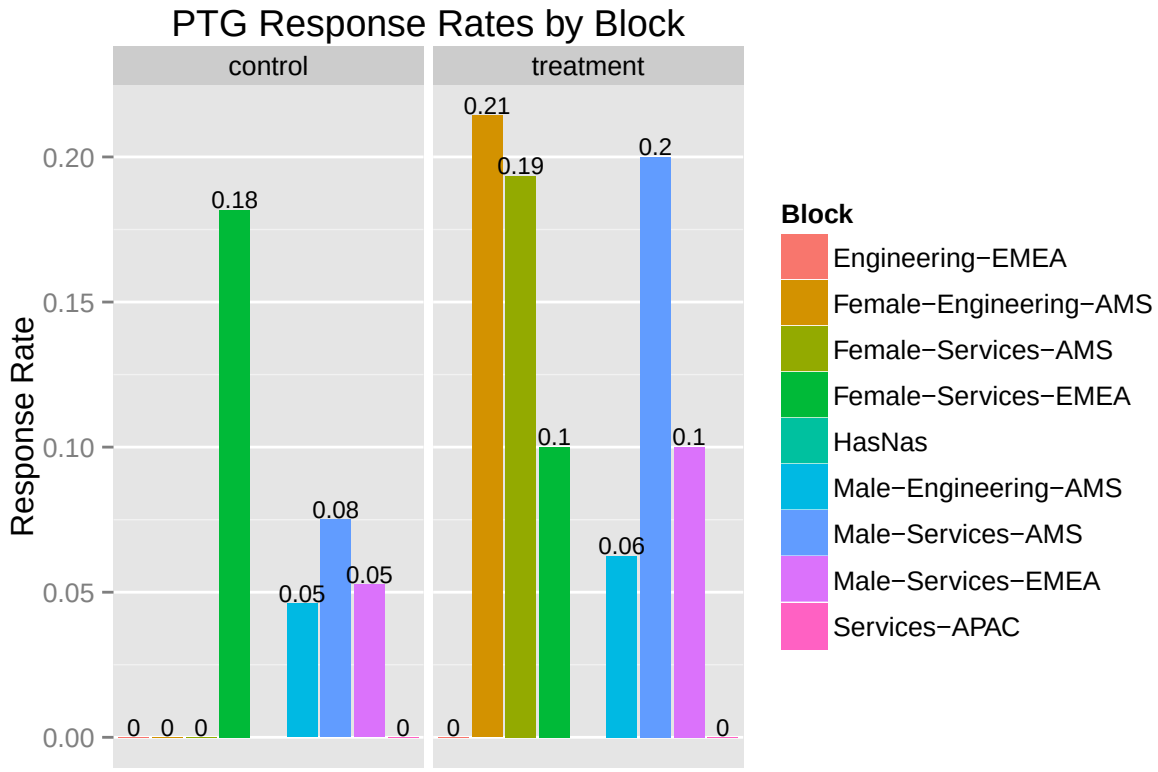
```
# calculate response rates in each block
dt.ptg[, Rate := Responses / N]
dt.ptg[ treat == 1, Treat := 'treatment']
dt.ptg[ treat == 0, Treat := 'control']

# Plot the chart of winning
ggplot(dt.ptg, aes(x=Block, y=Responses, fill=Block)) +
        geom_bar(stat='identity') +
        geom_text(aes(x=Block, y=Responses, label=Responses), vjust=-.1, size=3) +
        facet_wrap( ~ Treat) +
        ggtitle("PTG Responses by Block") +
        xlab("") +
        ylab("Responses") +
        theme( axis.line=element_blank(),
               axis.text.x=element_blank(),
               axis.ticks.x=element_blank(),
               axis.title.x=element_blank(),
               panel.border=element_blank(),
               panel.grid.major.x=element_blank(),
               panel.grid.minor.x=element_blank())
```




```
# Plot the chart of proportional winning
ggplot(dt.ptg, aes(x=Block, y=Rate, fill=Block)) +
        geom_bar(stat='identity') +
        facet_wrap( ~ Treat) +
        geom_text(aes(x=Block, y=Rate, label=round(Rate, digits=2)), vjust=-.1, size=3) +
        ggtitle("PTG Response Rates by Block") +
        xlab("") +
        ylab("Response Rate") +
        theme( axis.line=element_blank(),
               axis.text.x=element_blank(),
               axis.ticks.x=element_blank(),
               axis.title.x=element_blank(),
               panel.border=element_blank(),
               panel.grid.major.x=element_blank(),
               panel.grid.minor.x=element_blank())
```

```
## Warning: Removed 4 rows containing missing values (position_stack).
```

```
## Warning: Removed 4 rows containing missing values (geom_text).
```




```
###### PTG EXPERIMENT: REGRESSION ANALYSIS ######

# regression models
m1.ptg = lm(responded ~ treat, data = dt.ptgx) # treatment only
m2.ptg = lm(responded ~ treat + Female, data = dt.ptgx) # treatment + female
m3.ptg = lm(responded ~ treat + Female + Org, data = dt.ptgx) # treatment + female + org
m4.ptg = lm(responded ~ treat + Female + Org + Region, data = dt.ptgx) # treatment + female + org + reg

# show all models
stargazer(m1.ptg, m2.ptg, m3.ptg, m4.ptg, type = 'latex', title = 'Regression Analysis for PTG Feedback
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, May 04, 2016 - 01:15:08

```
stargazer(m1.atg, m1.ptg, type = 'latex', title = 'Regression Analysis for ATG and PTG Feedback Survey
```

% Table created by stargazer v.5.2 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu
% Date and time: Wed, May 04, 2016 - 01:15:08

Table 2: Regression Analysis for PTG Feedback Survey Experiment

	Dependent variable:			
	responded			
	(1)	(2)	(3)	(4)
treat	0.081***	0.082***	0.081***	0.082***
	(0.029)	(0.029)	(0.029)	(0.029)
Female		0.025	0.012	0.012
		(0.032)	(0.033)	(0.033)
OrgServices			0.044	0.055
			(0.031)	(0.033)
RegionAPAC				−0.122
				(0.103)
RegionEMEA				−0.022
				(0.042)
Constant	0.049**	0.041*	0.020	0.020
	(0.021)	(0.023)	(0.027)	(0.027)
Observations	370	370	370	370
R^2	0.020	0.022	0.027	0.031
Adjusted R^2	0.018	0.016	0.019	0.018
Residual Std. Error	0.283 (df = 368)	0.283 (df = 367)	0.283 (df = 366)	0.283 (df = 364)
F Statistic	7.599*** (df = 1; 368)	4.094** (df = 2; 367)	3.424** (df = 3; 366)	2.362** (df = 5; 364)
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 3: Regression Analysis for ATG and PTG Feedback Survey Experiments

	Dependent variable:	
	responded	
	ATG	PTG
	(1)	(2)
treat	0.079***	0.081***
	(0.029)	(0.029)
Constant	0.040**	0.049**
	(0.020)	(0.021)
Observations	351	370
R^2	0.021	0.020
Adjusted R^2	0.019	0.018
Residual Std. Error	0.269 (df = 349)	0.283 (df = 368)
F Statistic	7.641*** (df = 1; 349)	7.599*** (df = 1; 368)
Note:		*p<0.1; **p<0.05; ***p<0.01