

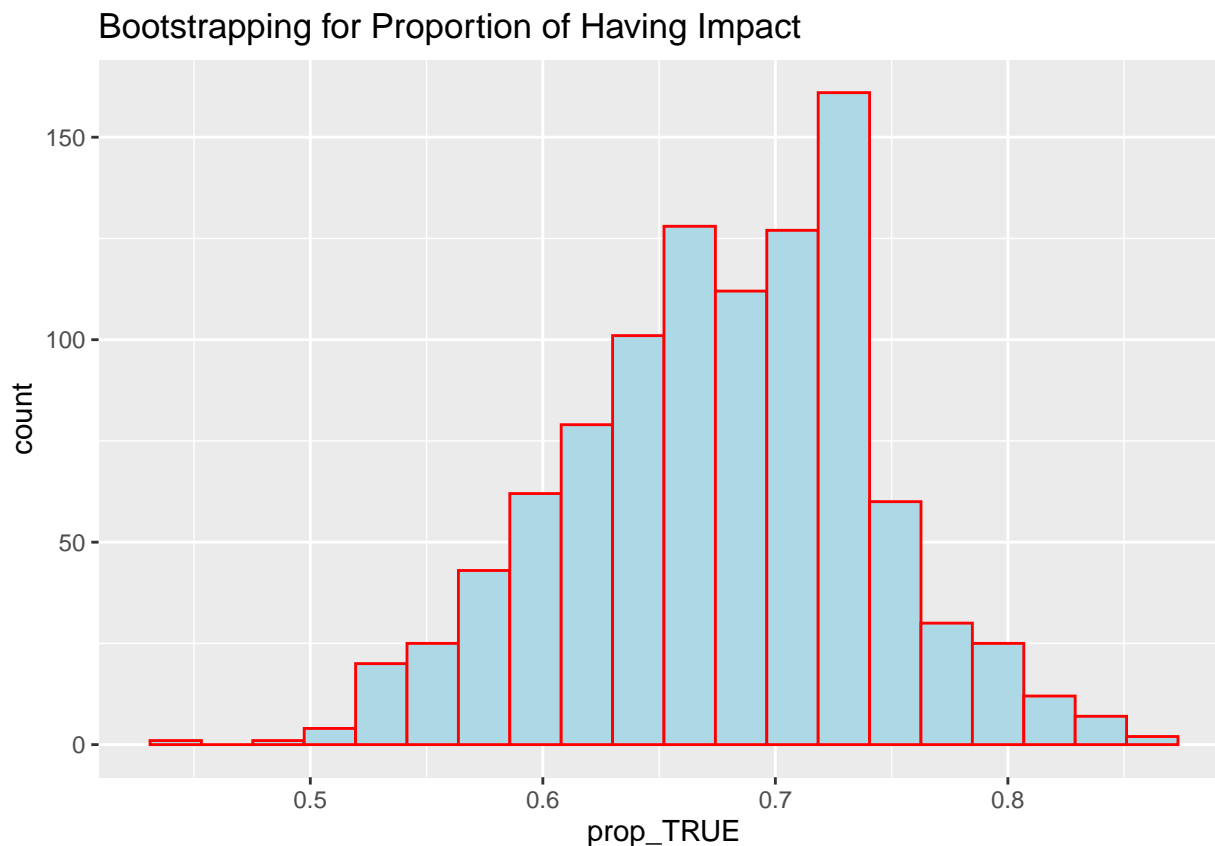
STA304_Assignment

2023-11-16

```
library(boot)
library(readxl)
library(tidyverse)
library(mosaic)
```

```
#Cleaning data
sta304 <- read_excel("Downloads/sta304.xlsx")
sta304 <- sta304[, -1]
```

```
#Bootstrapping for impact
set.seed(0)
boot_impact = do(1000)*prop(~Impact == "Y", data = resample(sta304))
ggplot(boot_impact) +
  geom_histogram(aes(x = prop_TRUE), bins = 20, fill = "lightblue", color = "red") +
  ggtitle("Bootstrapping for Proportion of Having Impact")
```



```
#Standard Error
summarize(boot_impact, std_err_prop = sd(prop_TRUE))
```

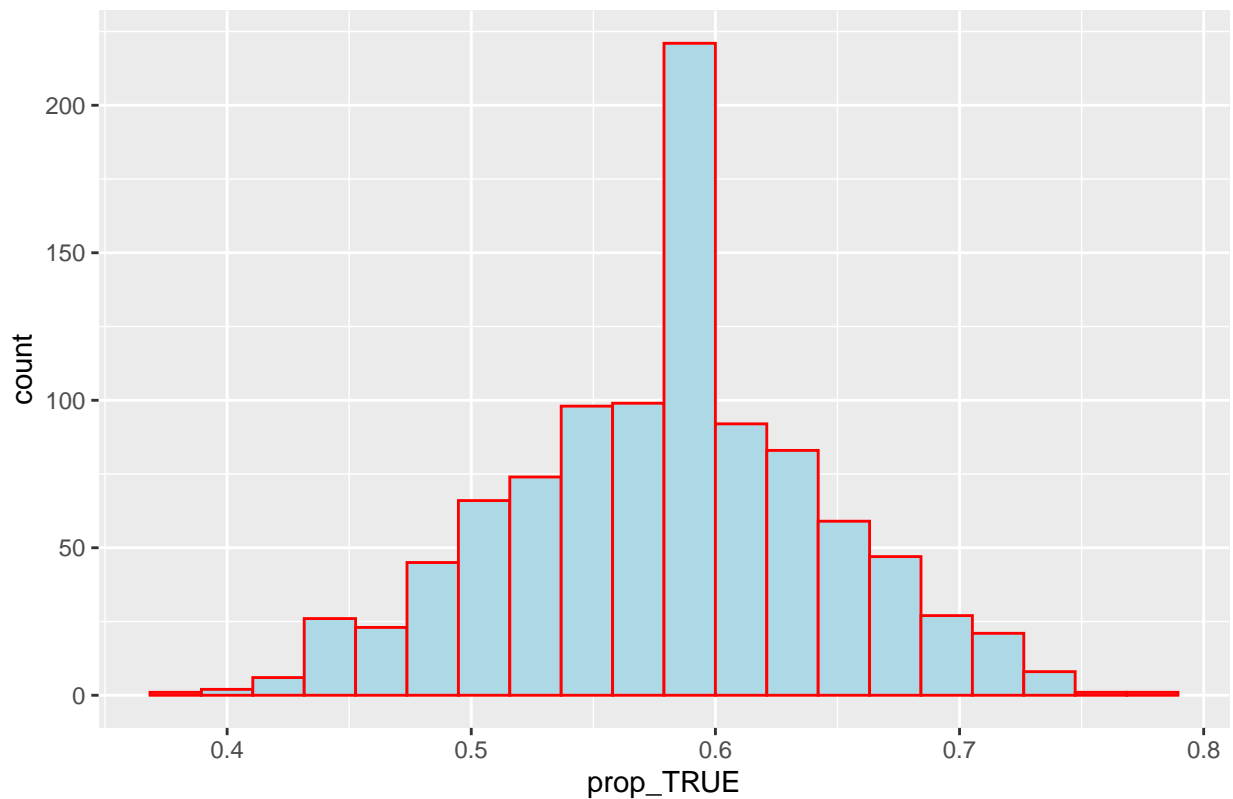
```
##   std_err_prop
## 1    0.06554746
```

```
#Bootstrapped Confidence Interval
confint(boot_impact, level=0.95)
```

```
##           name lower upper level    method estimate
## 1 prop_TRUE  0.54   0.8  0.95 percentile      0.68
```

```
#Bootstrapping for Academic
set.seed(1)
boot_academic = do(1000)*prop(~Academic == "Y", data = resample(sta304))
ggplot(boot_academic) +
  geom_histogram(aes(x = prop_TRUE), bins = 20, fill = "lightblue", color = "red")+
  ggtitle("Bootstrapping for Proportion of Improving Academic Performance")
```

Bootstrapping for Proportion of Improving Academic Performance



```
#Standard Error
summarize(boot_academic, std_err_prop = sd(prop_TRUE))
```

```
##   std_err_prop
## 1    0.06969087
```

```
#Bootstrapped Confidence Interval  
confint(boot_academic, level=0.95)
```

```
##           name lower upper level      method estimate  
## 1 prop_TRUE  0.44  0.72  0.95 percentile      0.58
```