EDA

2024-02-29

```
library("tidyverse")
```

```
## Warning: package 'ggplot2' was built under R version 4.3.3
```

```
## Warning: package 'dplyr' was built under R version 4.3.3
```

```
## -- Attaching core tidyverse packages ------------------------ tidyverse 2.0.0 --
## v dplyr     1.1.4     v readr     2.1.5
## v forcats   1.0.0     v stringr   1.5.1
## v ggplot2   3.5.0     v tibble    3.2.1
## v lubridate 1.9.3     v tidyr     1.3.1
## v purrr     1.0.2
## -- Conflicts ------------------------------------------ tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library("readxl")
```

```
## Warning: package 'readxl' was built under R version 4.3.3
```

```
library("ggplot2")
library("dplyr")
library("corrplot")
```

```
## Warning: package 'corrplot' was built under R version 4.3.3
```

```
## corrplot 0.92 loaded
```

Data

```
click <- read_excel("ClickData.xlsx")
clicksonly <- read_excel("ClicksOnlyData.xlsx")
```

I re-coded some of the values with numbers which may make the data easier to work with. The clicks only dataset does not include the eight participants who did not click during their interview.

Summary Statistics

Means

```
mean(click$Clicks)
```

```
## [1] 9.222222
```

```
mean(click$clicks_per_word)
```

```
## [1] 0.002752559
```

```
mean(click$words_per_click)
```

```
## [1] 1134.55
```

```
mean(click$PlacementM)
```

```
## [1] 6.333333
```

```
mean(click$PlacementN)
```

```
## [1] 2.777778
```

```
mean(click$PlacementF)
```

```
## [1] 0.1111111
```

```
mean(click$Gender)
```

```
## [1] 0.4722222
```

```
mean(click$Age)
```

```
## [1] 2
```

```
mean(click$place_of_birth)
```

```
## [1] 0.4722222
```

```
mean(click$Domain)
```

```
## [1] 2.381806
```

```r
mean(click$SpeakingAbility)
```

```
## [1] 4.555556
```

```r
mean(click$Education)
```

```
## [1] 2.583333
```

```r
mean(click$Words)
```

```
## [1] 3395.028
```

```r
mean(click$FunctionO)
```

```
## [1] 2.833333
```

```r
mean(click$FunctionC)
```

```
## [1] 2.916667
```

```r
mean(click$FunctionR)
```

```
## [1] 0.4722222
```

```r
mean(click$FunctionS)
```

```
## [1] 5.583333
```

```r
mean(click$FunctionST)
```

```
## [1] 3.611111
```

Ranges

```r
range(click$clicks_per_word)
```

```
## [1] 0.00000000 0.01675978
```

```r
range(click$words_per_click)
```

```
## [1]   59.66667 3000.00000
```

```r
range(click$Words)
```

```
## [1]  537 6425
```

Standard Deviations

```r
sd(click$Clicks)
```

```
## [1] 12.43523
```

```r
sd(click$words_per_click)
```

```
## [1] 1143.753
```

```r
sd(click$clicks_per_word)
```

```
## [1] 0.003402868
```

```r
sd(click$SpeakingAbility)
```

```
## [1] 0.6946508
```

```r
sd(click$Education)
```

```
## [1] 0.6917886
```

```r
sd(click$Domain)
```

```
## [1] 1.247865
```

Analysis

Recoded variables in the data:

G1: 1

G2: 2

G3: 3

Place of Birth:

United States: 0

Mexico: 1

Gender:

Female: 0

Male: 1

Hypothesis 1:

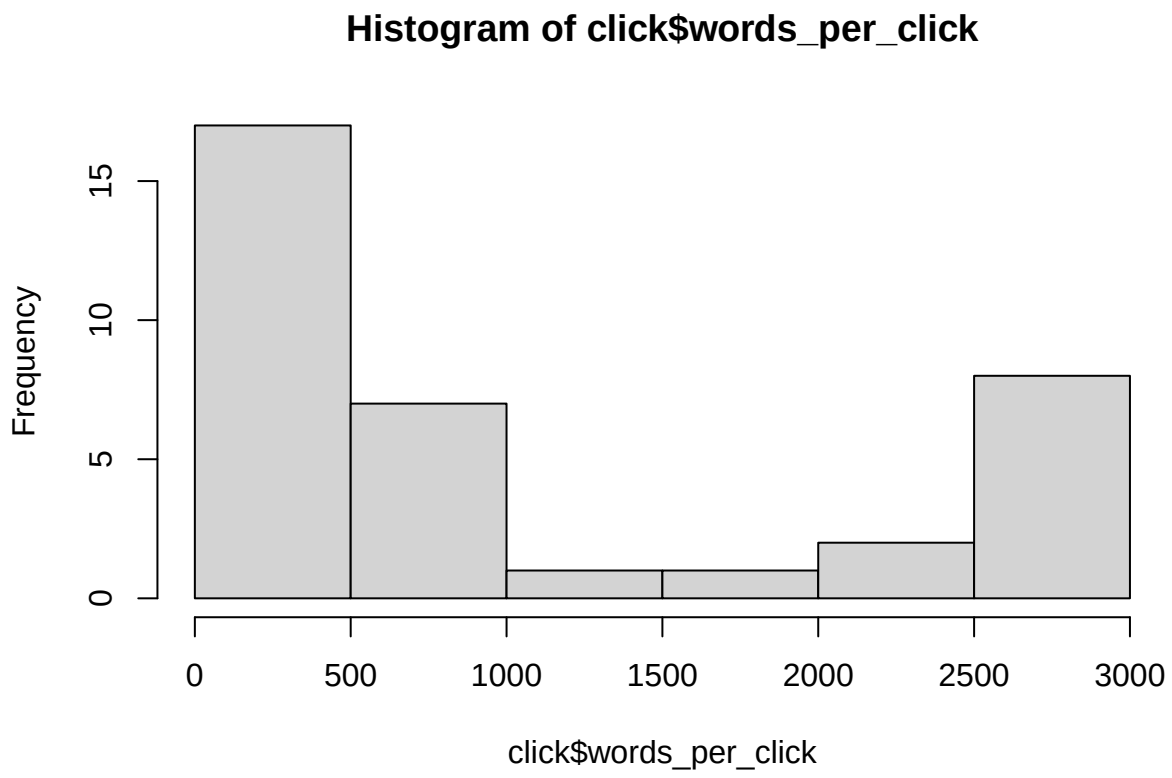
There will not be a statistically significant difference in the ratio of words per click (or clicks per word) based on the following variables: gender, age, place of birth, domain, speaking ability, and education.

```
summary(click$words_per_click)
```

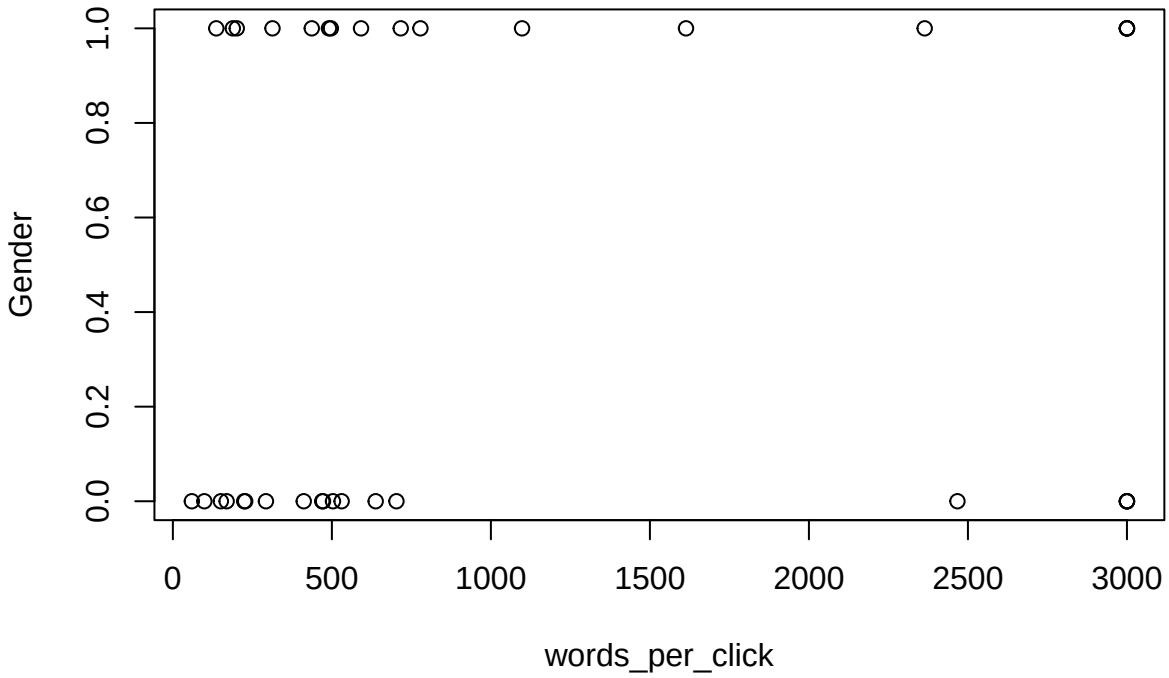
Words per click including people who didn't click

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   59.67  276.32  517.03 1134.55 2389.75 3000.00
```

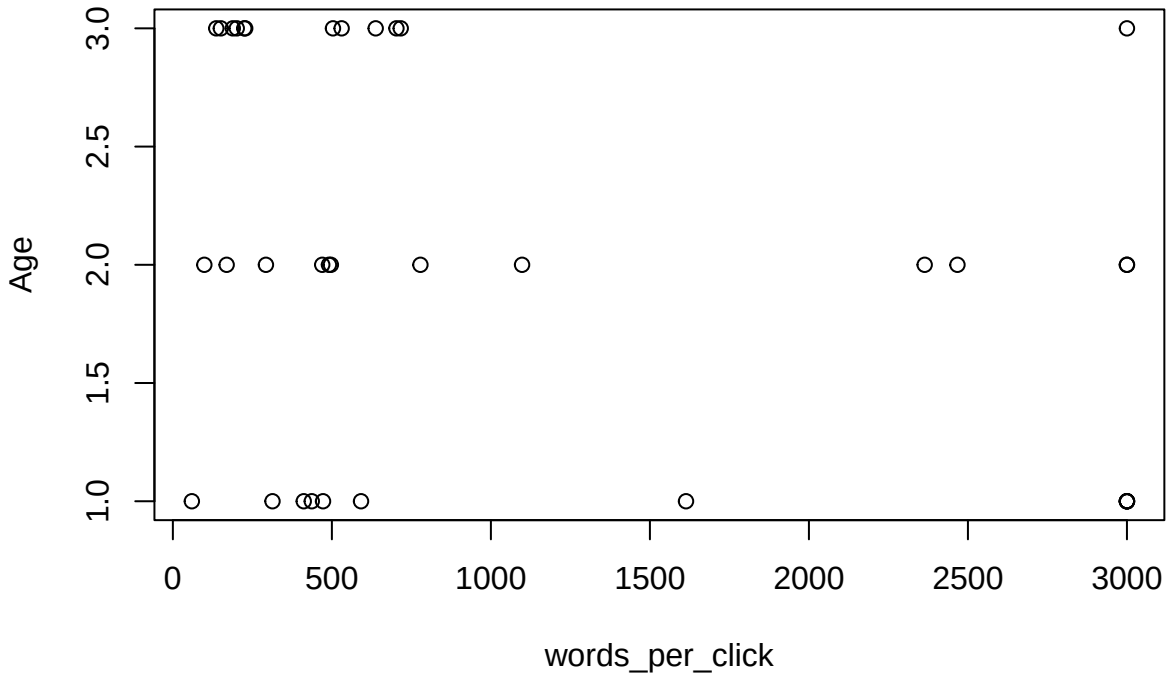
```
hist(click$words_per_click)
```



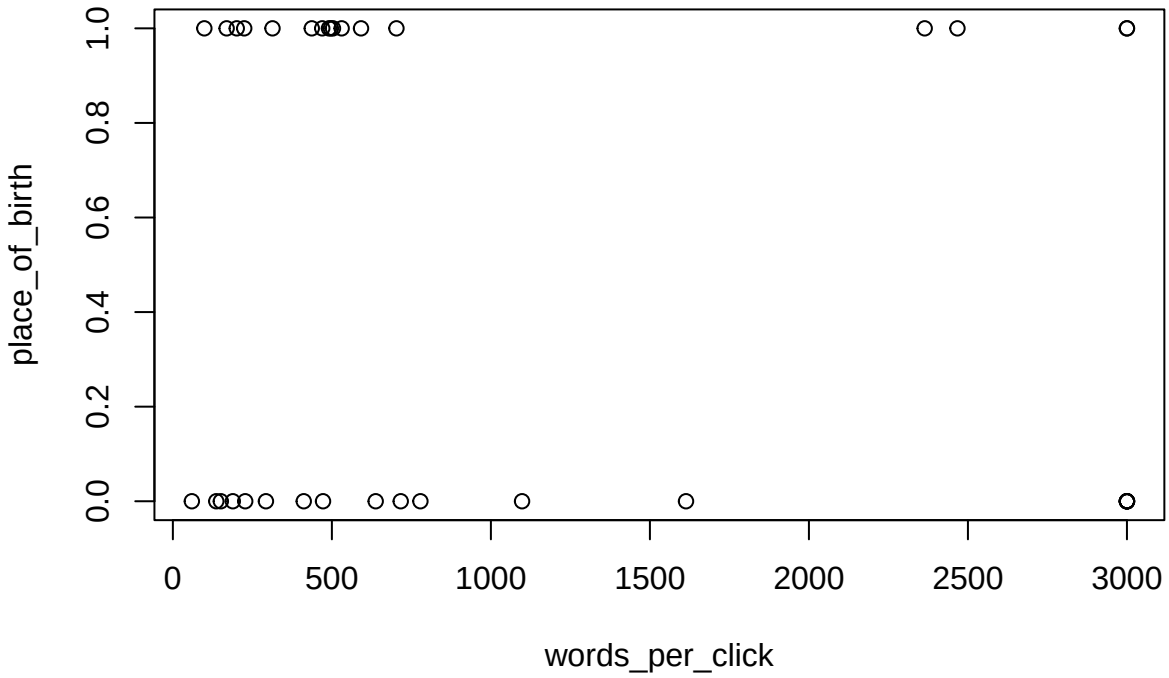

```
plot(Gender ~ words_per_click, data = click)
```



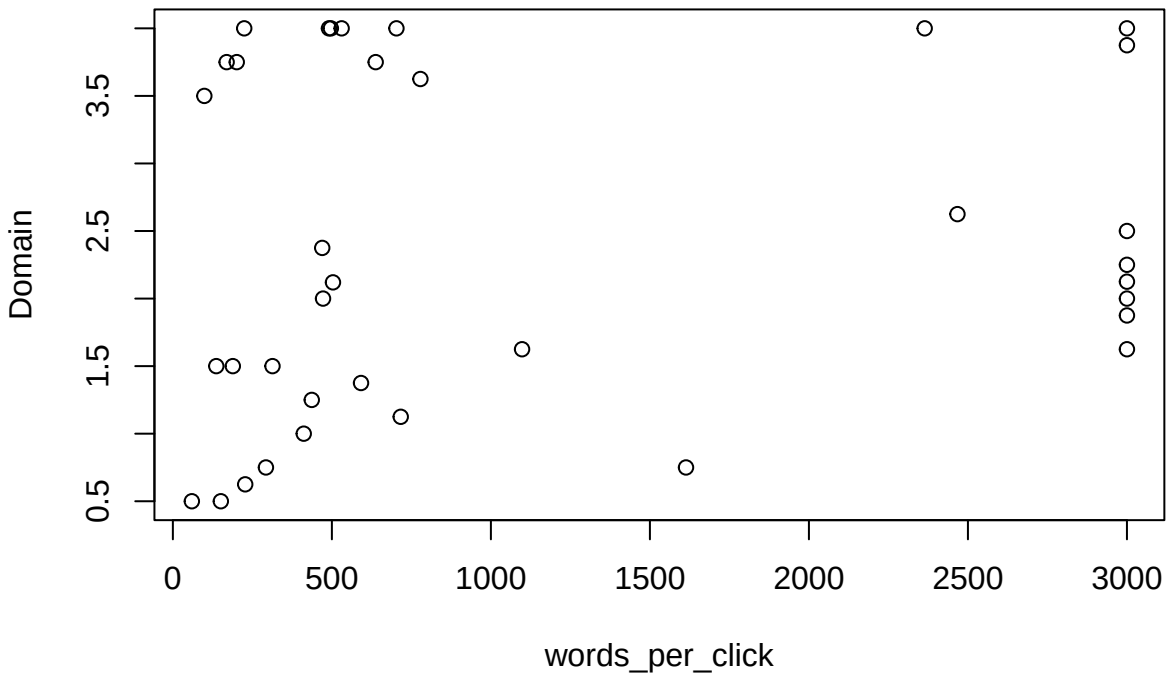

```
plot(Age ~ words_per_click, data = click)
```



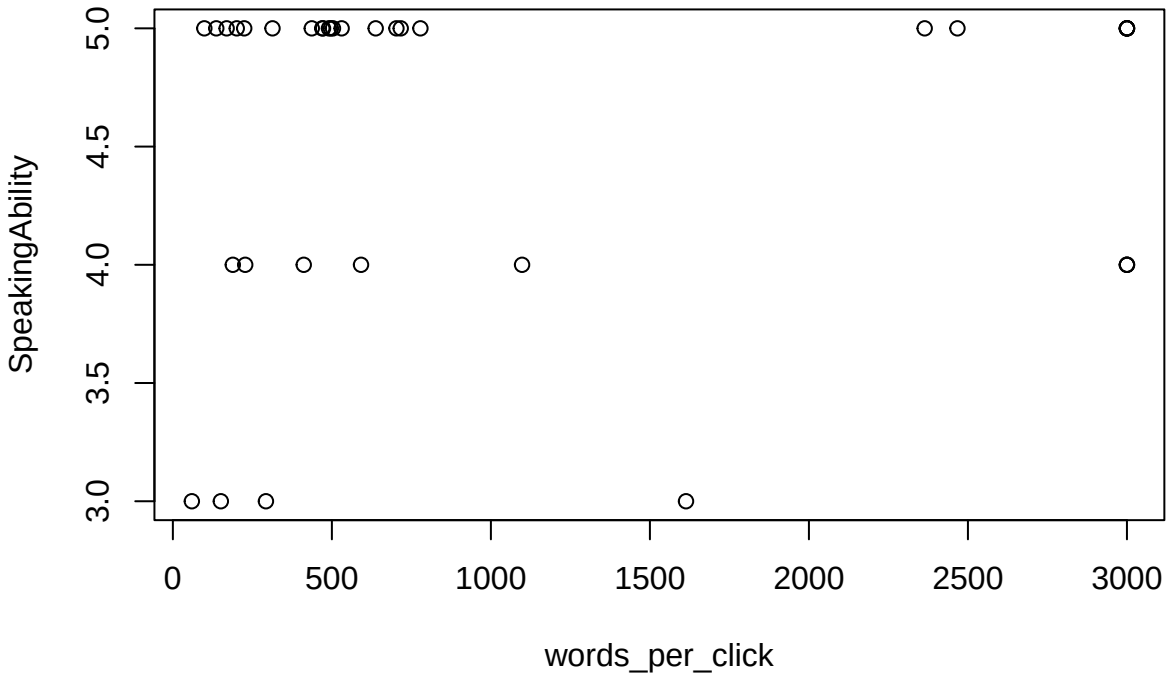

```
plot(place_of_birth ~ words_per_click, data = click)
```



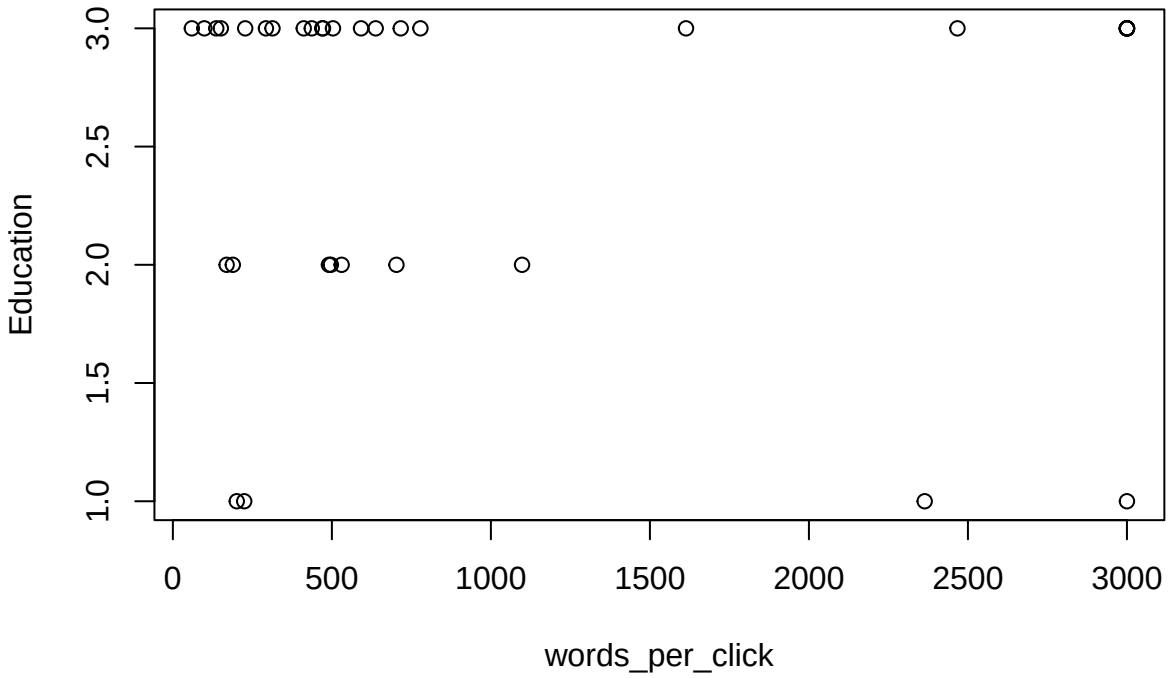

```
plot(Domain ~ words_per_click, data = click)
```




```
plot(SpeakingAbility ~ words_per_click, data = click)
```




```
plot(Education ~ words_per_click, data = click)
```




```
chisq.test(click$words_per_click)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$words_per_click
## X-squared = 40356, df = 35, p-value < 2.2e-16
```

```
aov(Gender ~ words_per_click, data = click)
```

```
## Call:
##    aov(formula = Gender ~ words_per_click, data = click)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.099854  8.872368
## Deg. of Freedom               1        34
##
## Residual standard error: 0.5108346
## Estimated effects may be unbalanced
```

```
aov(Age ~ words_per_click, data = click)
```

```
## Call:
```

```
##    aov(formula = Age ~ words_per_click, data = click)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         2.978858 21.021142
## Deg. of Freedom               1        34
##
## Residual standard error: 0.7863008
## Estimated effects may be unbalanced
```

```
aov(place_of_birth ~ words_per_click, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ words_per_click, data = click)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.227445  8.744777
## Deg. of Freedom               1        34
##
## Residual standard error: 0.5071482
## Estimated effects may be unbalanced
```

```
aov(Domain ~ words_per_click, data = click)
```

```
## Call:
##    aov(formula = Domain ~ words_per_click, data = click)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares          0.85376  53.64709
## Deg. of Freedom               1        34
##
## Residual standard error: 1.256127
## Estimated effects may be unbalanced
```

```
aov(SpeakingAbility ~ words_per_click, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ words_per_click, data = click)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.126046 16.762842
## Deg. of Freedom               1        34
##
## Residual standard error: 0.7021572
## Estimated effects may be unbalanced
```

```
aov(Education ~ words_per_click, data = click)
```

```
## Call:
##    aov(formula = Education ~ words_per_click, data = click)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.067868 16.682132
## Deg. of Freedom               1        34
##
## Residual standard error: 0.7004648
## Estimated effects may be unbalanced
```

```
kruskal.test(Gender ~ words_per_click, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by words_per_click
## Kruskal-Wallis chi-squared = 27.198, df = 28, p-value = 0.5075
```

```
kruskal.test(Age ~ words_per_click, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by words_per_click
## Kruskal-Wallis chi-squared = 29.167, df = 28, p-value = 0.4041
```

```
kruskal.test(place_of_birth ~ words_per_click, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by words_per_click
## Kruskal-Wallis chi-squared = 29.149, df = 28, p-value = 0.405
```

```
kruskal.test(Domain ~ words_per_click, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by words_per_click
## Kruskal-Wallis chi-squared = 32.033, df = 28, p-value = 0.2732
```

```
kruskal.test(SpeakingAbility ~ words_per_click, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by words_per_click
## Kruskal-Wallis chi-squared = 28.75, df = 28, p-value = 0.4253
```

```r
kruskal.test(Education ~ words_per_click, data = click)
```

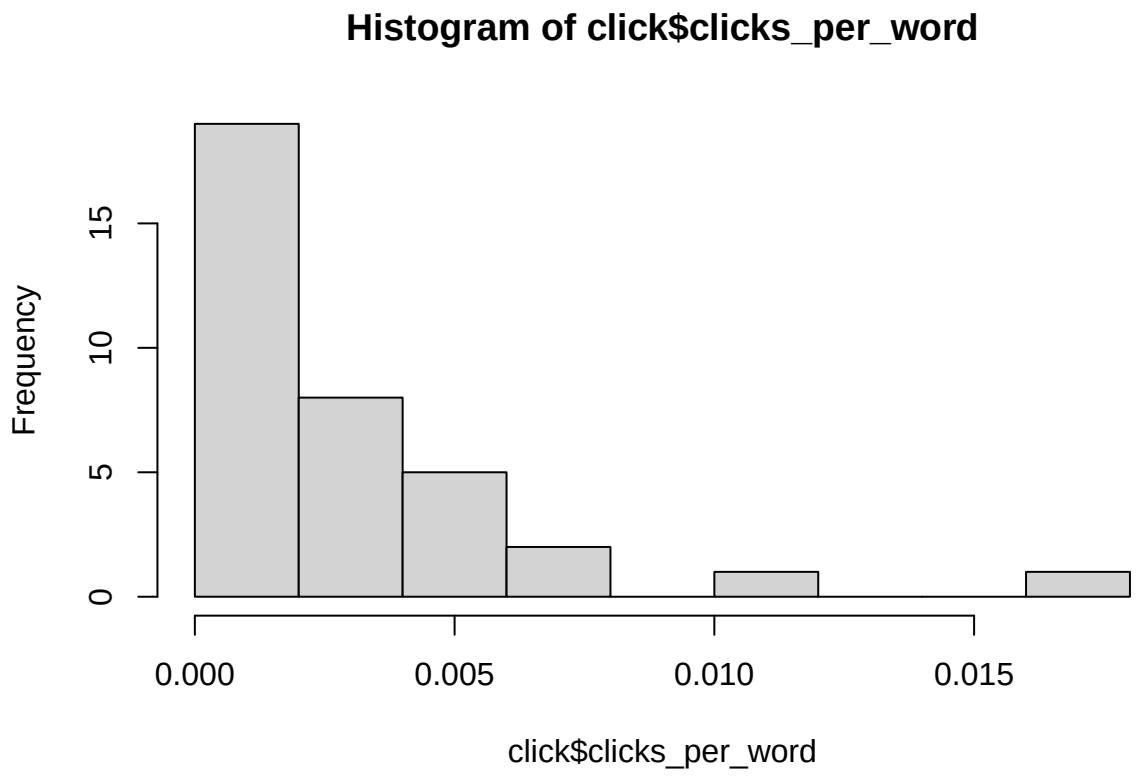
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by words_per_click
## Kruskal-Wallis chi-squared = 29.453, df = 28, p-value = 0.3898
```

```r
summary(click$clicks_per_word)
```

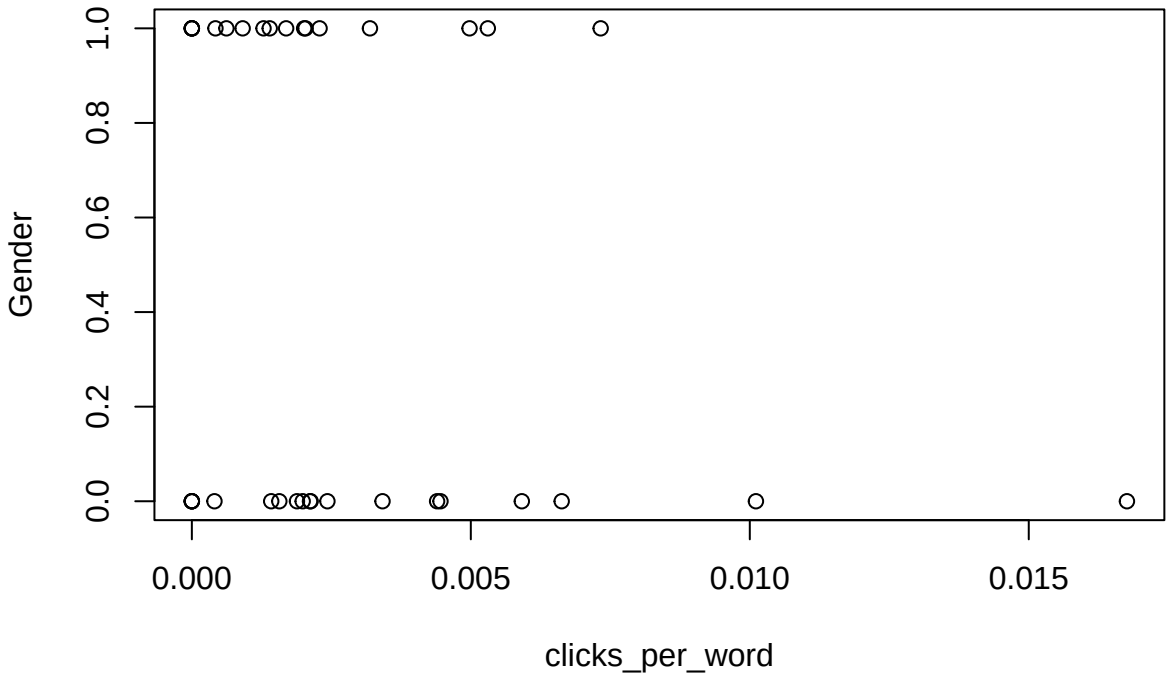
Clicks per word including people who did not click

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## 0.0000000 0.0004186 0.0019355 0.0027526 0.0036621 0.0167598
```

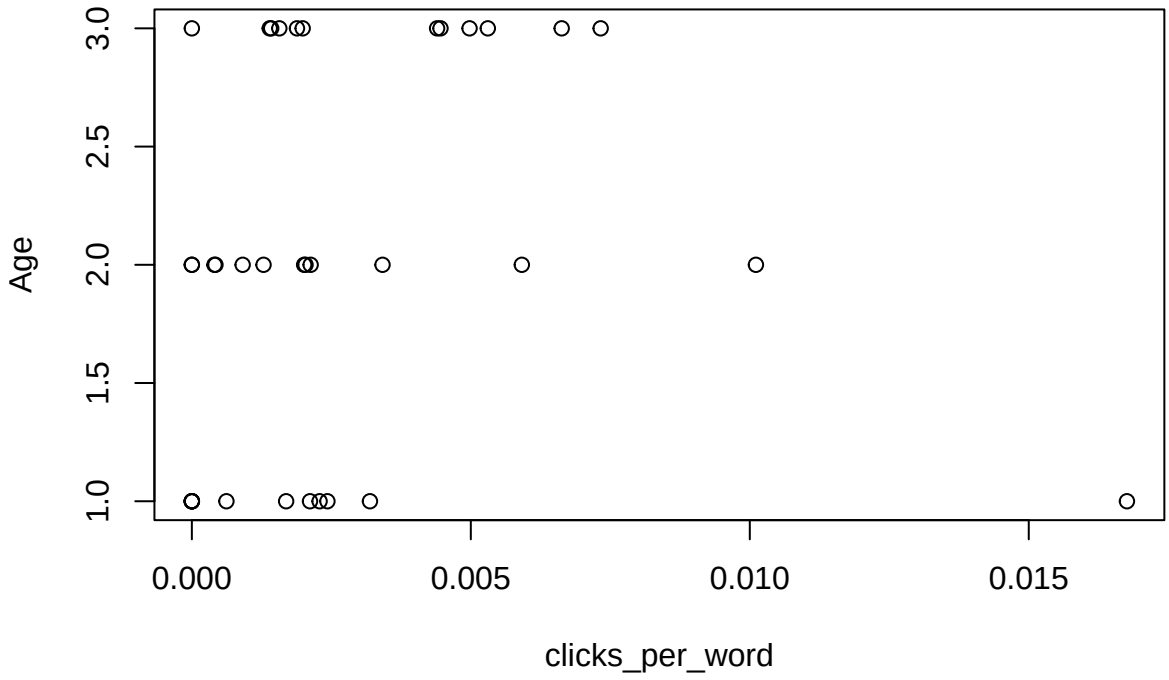
```r
hist(click$clicks_per_word)
```



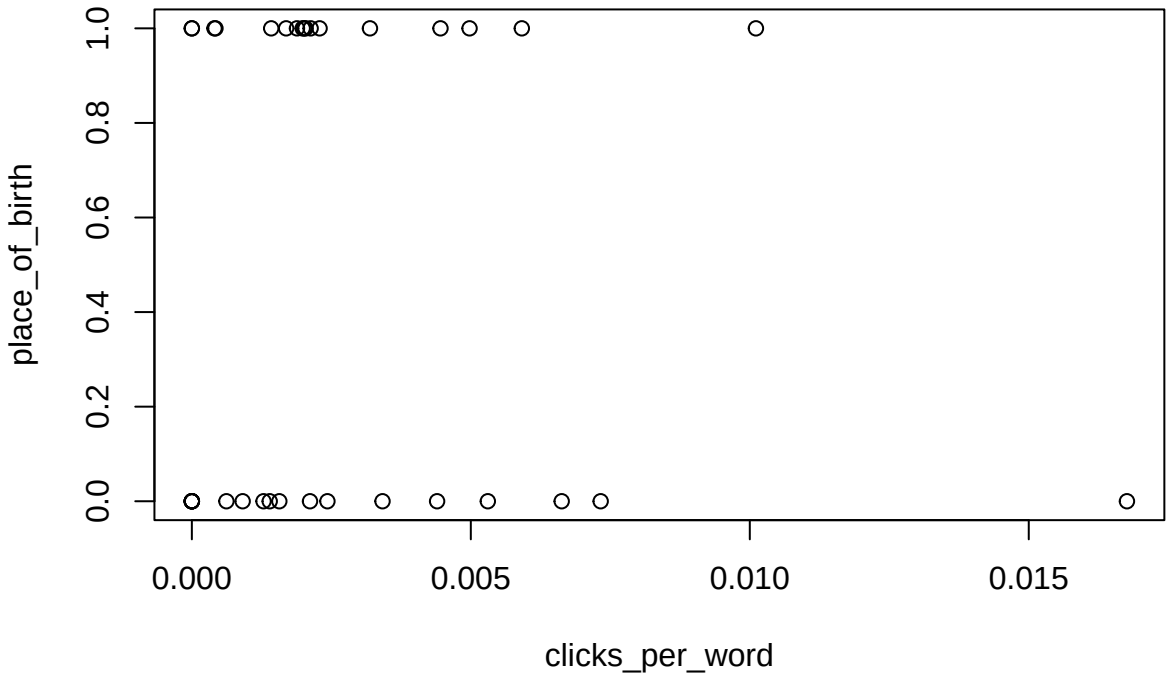

```r
plot(Gender ~ clicks_per_word, data = click)
```



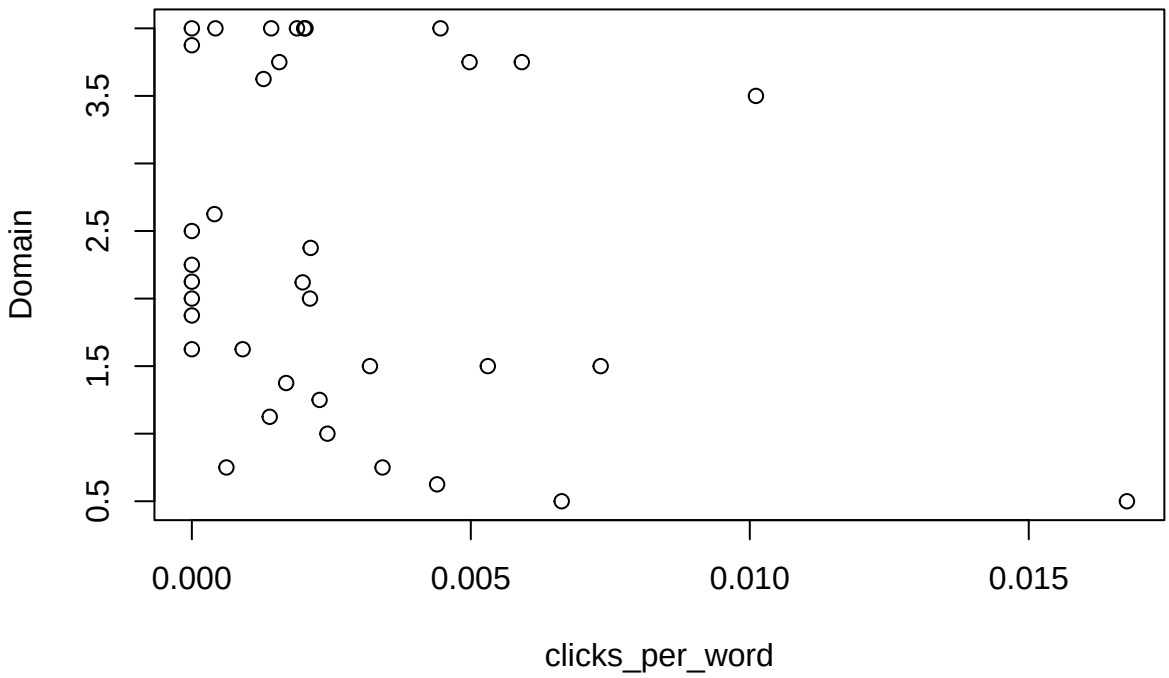

```
plot(Age ~ clicks_per_word, data = click)
```



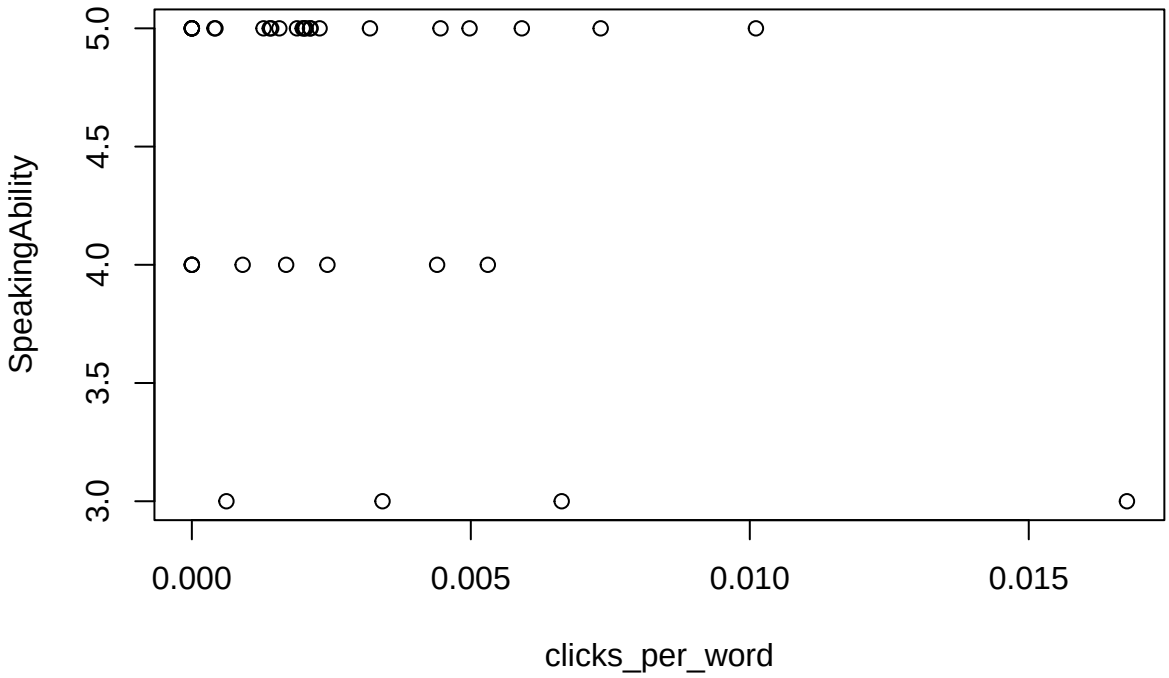

```
plot(place_of_birth ~ clicks_per_word, data = click)
```



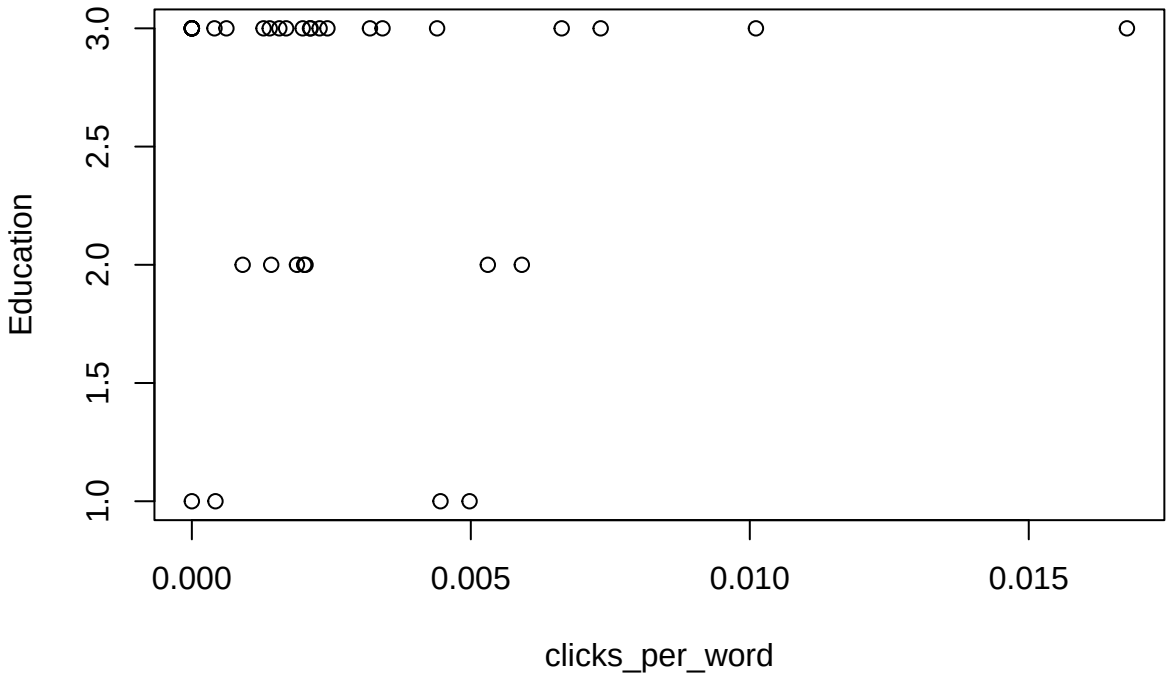

```
plot(Domain ~ clicks_per_word, data = click)
```




```
plot(SpeakingAbility ~ clicks_per_word, data = click)
```




```
plot(Education ~ clicks_per_word, data = click)
```




```
chisq.test(click$clicks_per_word)
```

```
## Warning in chisq.test(click$clicks_per_word): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$clicks_per_word
## X-squared = 0.14724, df = 35, p-value = 1
```

```
aov(Gender ~ clicks_per_word, data = click)
```

```
## Call:
##    aov(formula = Gender ~ clicks_per_word, data = click)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.438263  8.533960
## Deg. of Freedom               1        34
##
## Residual standard error: 0.5009978
## Estimated effects may be unbalanced
```

```r
aov(Age ~ clicks_per_word, data = click)
```

```
## Call:
##    aov(formula = Age ~ clicks_per_word, data = click)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.370157 23.629843
## Deg. of Freedom               1        34
##
## Residual standard error: 0.8336638
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ clicks_per_word, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ clicks_per_word, data = click)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.008555  8.963667
## Deg. of Freedom               1        34
##
## Residual standard error: 0.5134562
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ clicks_per_word, data = click)
```

```
## Call:
##    aov(formula = Domain ~ clicks_per_word, data = click)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares          2.82978  51.67107
## Deg. of Freedom               1        34
##
## Residual standard error: 1.232776
## Estimated effects may be unbalanced
```

```r
aov(SpeakingAbility ~ clicks_per_word, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ clicks_per_word, data = click)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         1.609766 15.279123
## Deg. of Freedom               1        34
##
## Residual standard error: 0.6703626
## Estimated effects may be unbalanced
```

```r
aov(Education ~ clicks_per_word, data = click)
```

```
## Call:
##    aov(formula = Education ~ clicks_per_word, data = click)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.010752 16.739248
## Deg. of Freedom               1        34
##
## Residual standard error: 0.7016629
## Estimated effects may be unbalanced
```

```r
kruskal.test(Gender ~ clicks_per_word, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by clicks_per_word
## Kruskal-Wallis chi-squared = 27.198, df = 28, p-value = 0.5075
```

```r
kruskal.test(Age ~ clicks_per_word, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by clicks_per_word
## Kruskal-Wallis chi-squared = 29.167, df = 28, p-value = 0.4041
```

```r
kruskal.test(place_of_birth ~ clicks_per_word, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by clicks_per_word
## Kruskal-Wallis chi-squared = 29.149, df = 28, p-value = 0.405
```

```r
kruskal.test(Domain ~ clicks_per_word, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by clicks_per_word
## Kruskal-Wallis chi-squared = 32.033, df = 28, p-value = 0.2732
```

```r
kruskal.test(SpeakingAbility ~ clicks_per_word, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by clicks_per_word
## Kruskal-Wallis chi-squared = 28.75, df = 28, p-value = 0.4253
```

```
kruskal.test(Education ~ clicks_per_word, data = click)
```

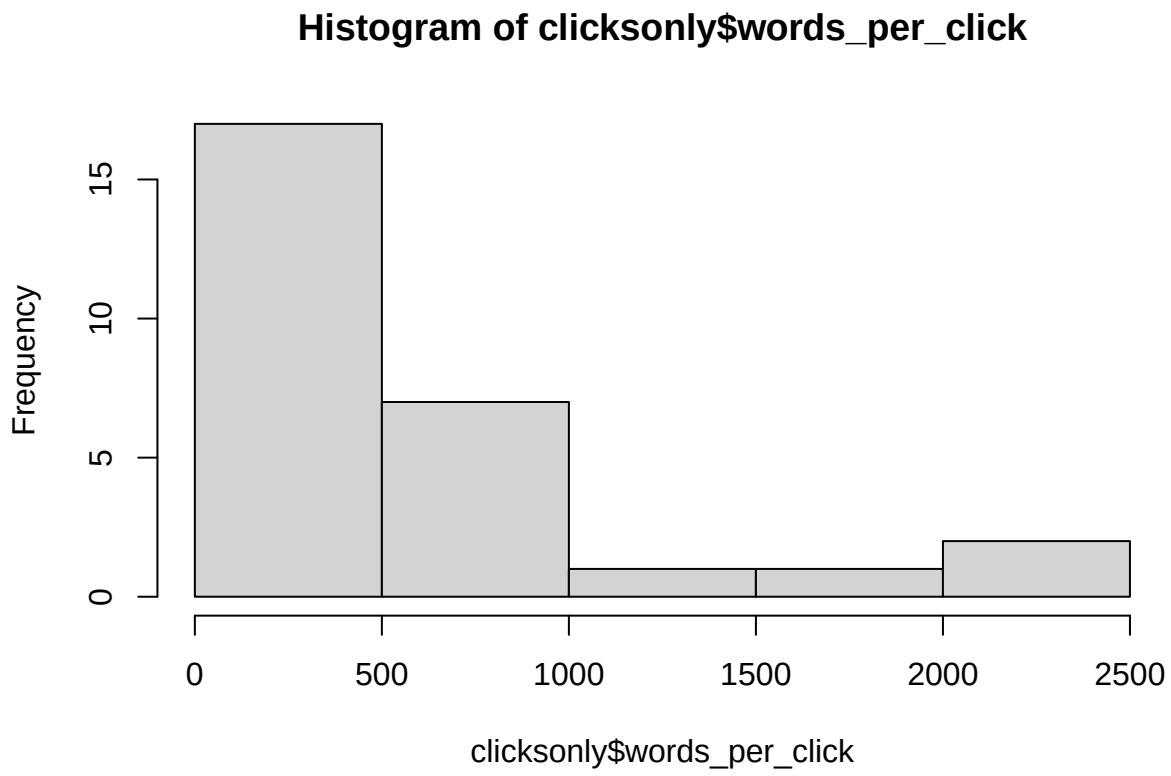
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by clicks_per_word
## Kruskal-Wallis chi-squared = 29.453, df = 28, p-value = 0.3898
```

```
summary(clicksonly$words_per_click)
```

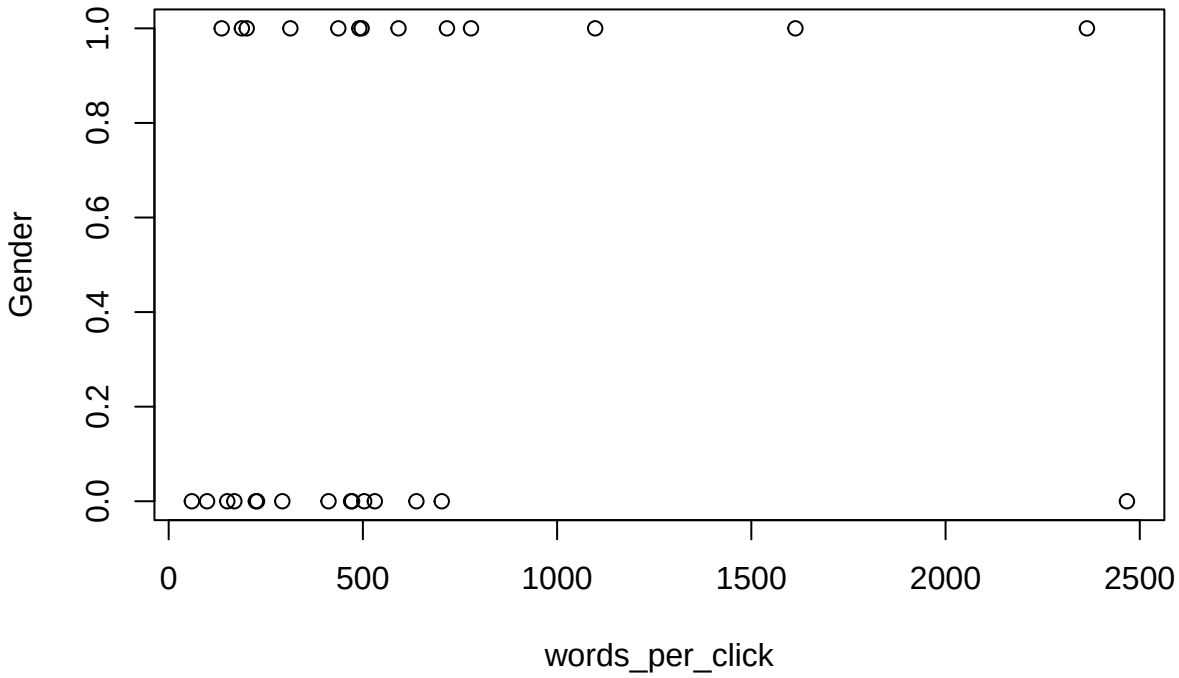
Words per click of only people who clicked

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##   59.67  218.53  470.92  601.56  654.06 2467.00
```

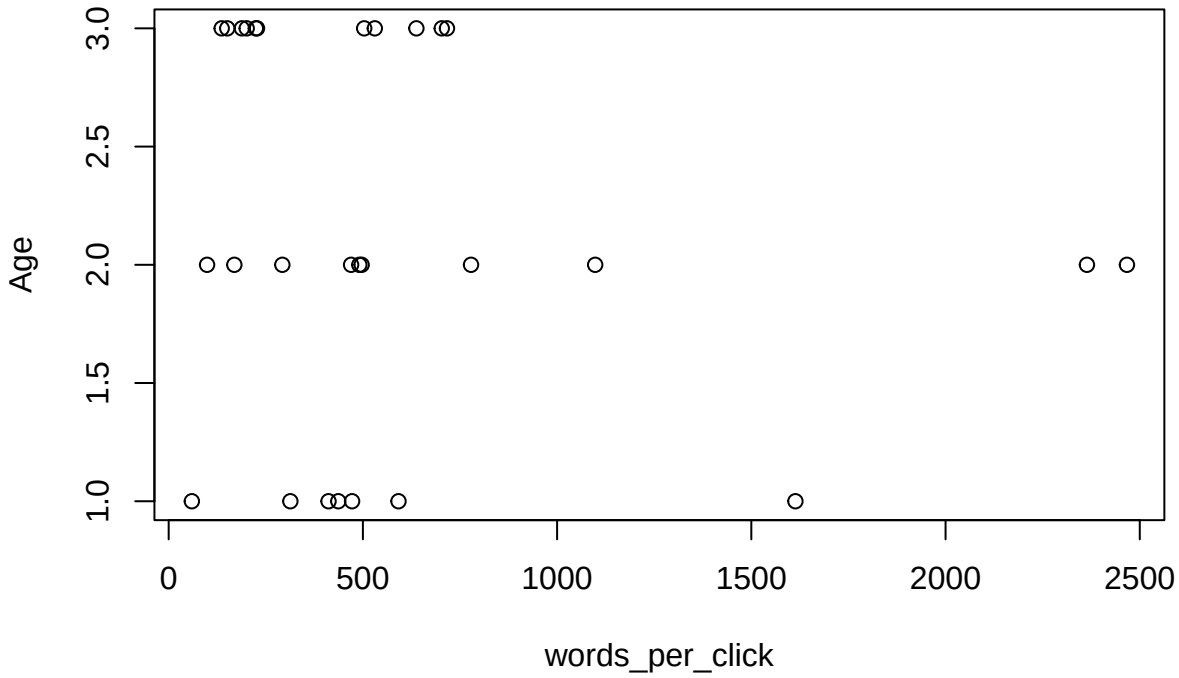
```
hist(clicksonly$words_per_click)
```



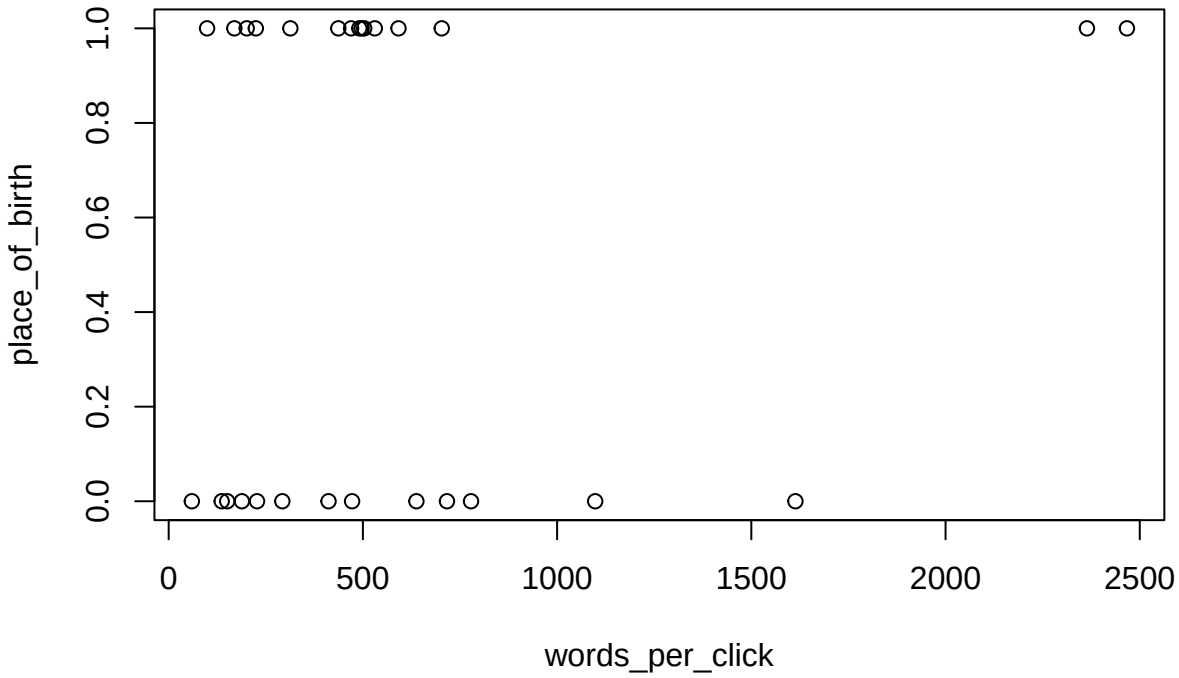

```
plot(Gender ~ words_per_click, data = clicksonly)
```



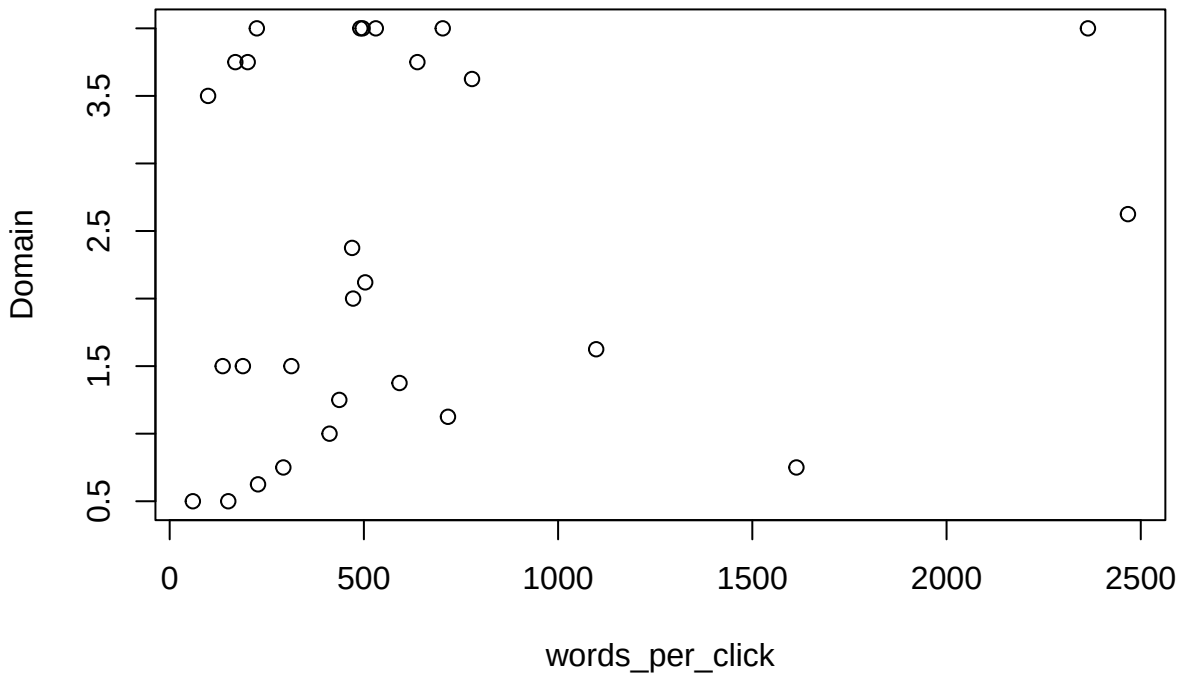

```
plot(Age ~ words_per_click, data = clicksonly)
```



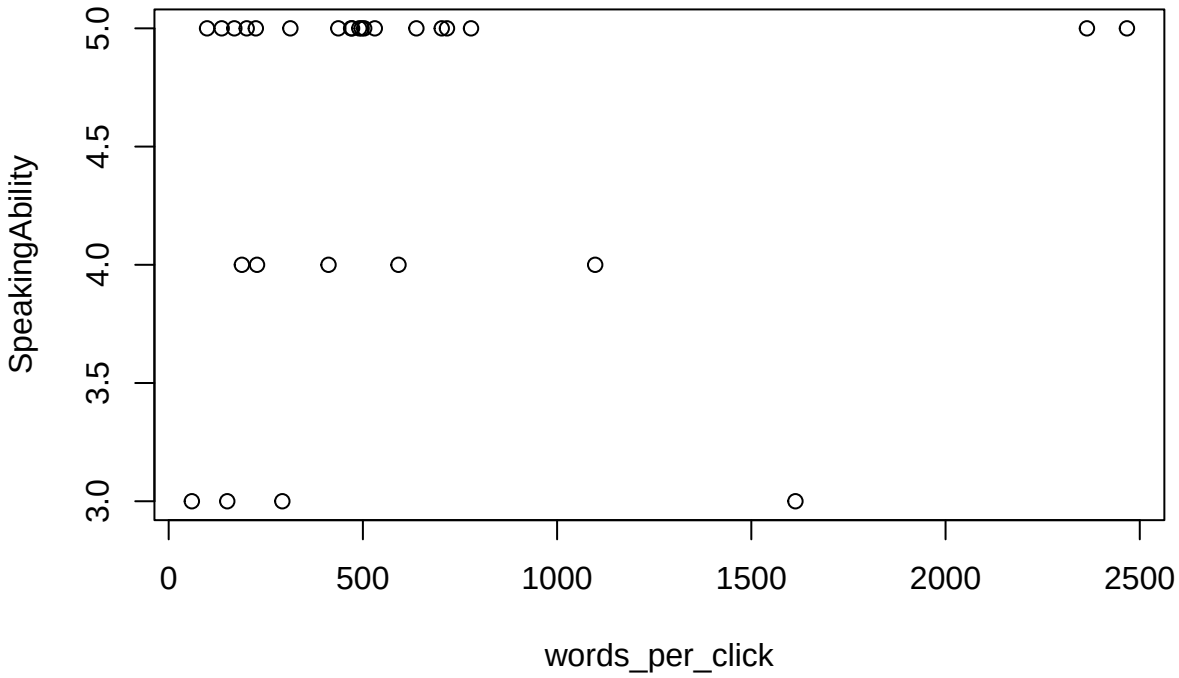

```
plot(place_of_birth ~ words_per_click, data = clicksonly)
```



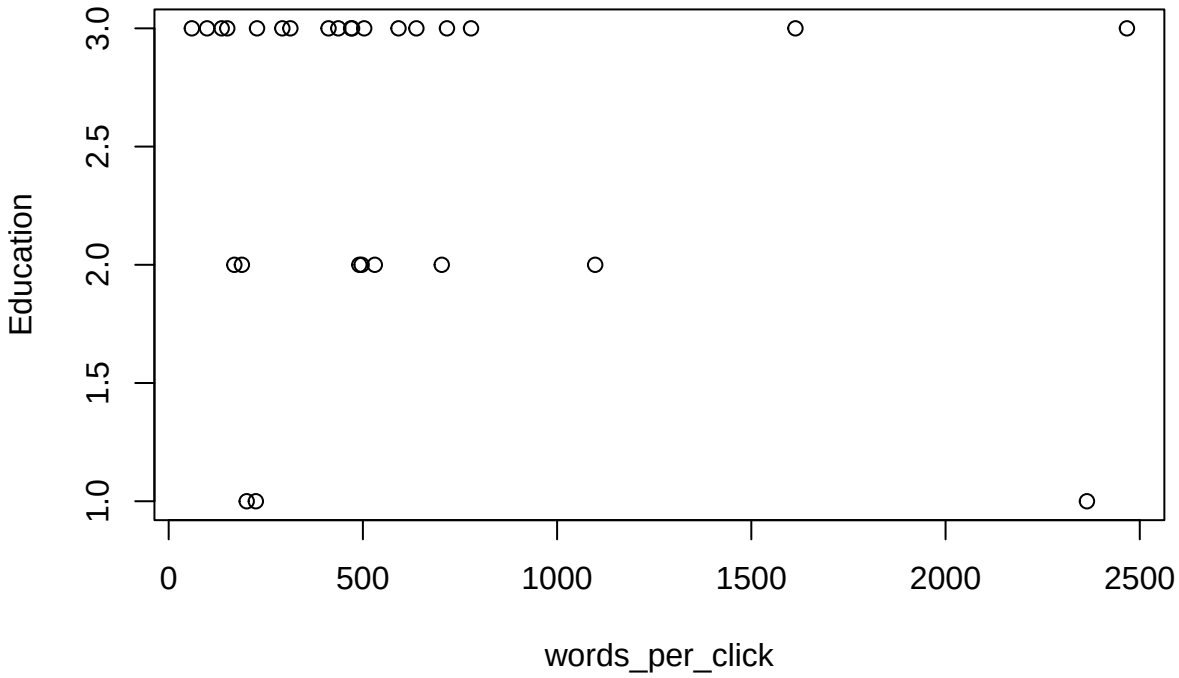

```
plot(Domain ~ words_per_click, data = clicksonly)
```




```
plot(SpeakingAbility ~ words_per_click, data = clicksonly)
```




```
plot(Education ~ words_per_click, data = clicksonly)
```




```
chisq.test(clicksonly$words_per_click)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$words_per_click
## X-squared = 16611, df = 27, p-value < 2.2e-16
```

```
aov(Gender ~ words_per_click, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ words_per_click, data = clicksonly)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.257862  6.706423
## Deg. of Freedom               1        26
##
## Residual standard error: 0.5078773
## Estimated effects may be unbalanced
```

```
aov(Age ~ words_per_click, data = clicksonly)
```

```
## Call:
```

```
##    aov(formula = Age ~ words_per_click, data = clicksonly)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.434985 16.993586
## Deg. of Freedom               1        26
##
## Residual standard error: 0.808455
## Estimated effects may be unbalanced
```

```
aov(place_of_birth ~ words_per_click, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ words_per_click, data = clicksonly)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.107583  6.856703
## Deg. of Freedom               1        26
##
## Residual standard error: 0.5135361
## Estimated effects may be unbalanced
```

```
aov(Domain ~ words_per_click, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ words_per_click, data = clicksonly)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares          1.14650  47.38245
## Deg. of Freedom               1        26
##
## Residual standard error: 1.349964
## Estimated effects may be unbalanced
```

```
aov(SpeakingAbility ~ words_per_click, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ words_per_click, data = clicksonly)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.114544 14.849742
## Deg. of Freedom               1        26
##
## Residual standard error: 0.7557406
## Estimated effects may be unbalanced
```

```
aov(Education ~ words_per_click, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ words_per_click, data = clicksonly)
##
## Terms:
##                 words_per_click Residuals
## Sum of Squares         0.206112 12.758174
## Deg. of Freedom               1        26
##
## Residual standard error: 0.7004991
## Estimated effects may be unbalanced
```

```
kruskal.test(Gender ~ words_per_click, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by words_per_click
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```
kruskal.test(Age ~ words_per_click, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by words_per_click
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```
kruskal.test(place_of_birth ~ words_per_click, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by words_per_click
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```
kruskal.test(Domain ~ words_per_click, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by words_per_click
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```
kruskal.test(SpeakingAbility ~ words_per_click, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by words_per_click
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```r
kruskal.test(Education ~ words_per_click, data = clicksonly)
```

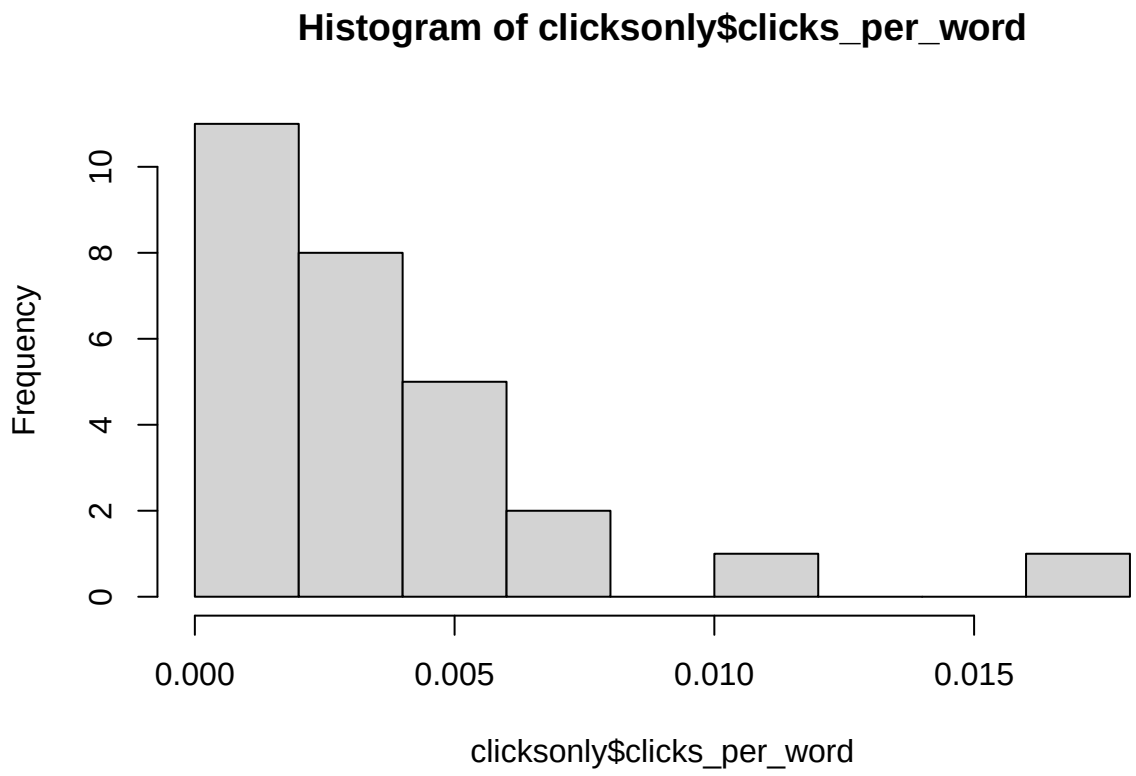
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by words_per_click
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```r
summary(clicksonly$clicks_per_word)
```

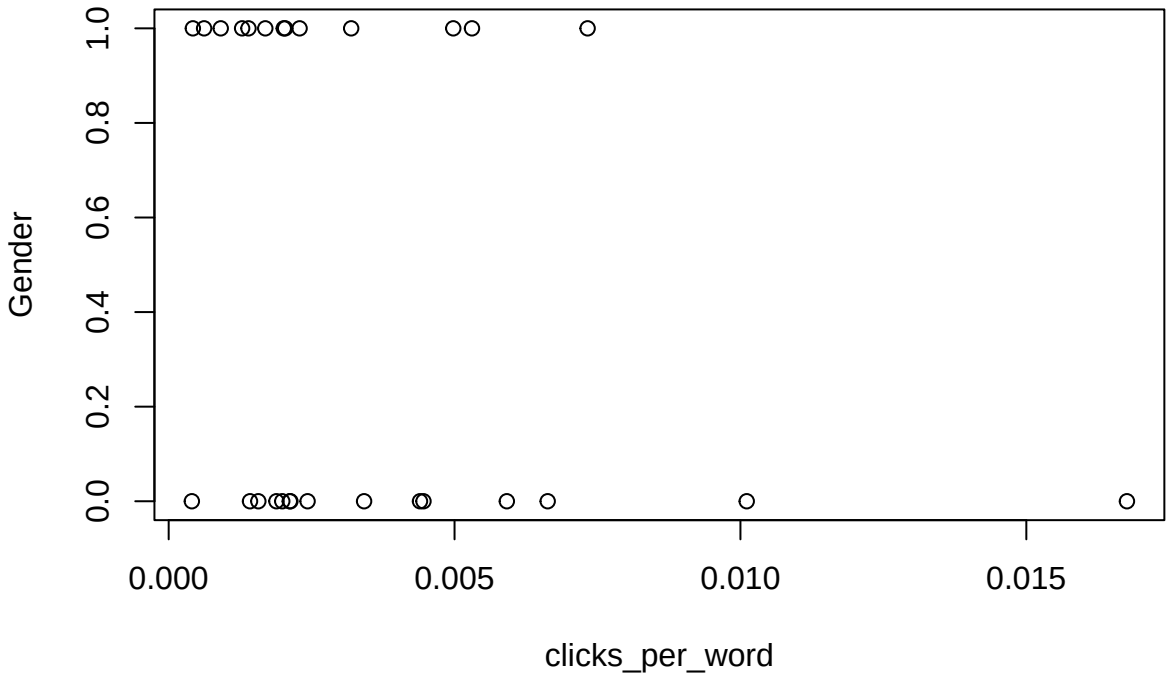
Clicks per word without people who did not click

```
##      Min.   1st Qu.    Median      Mean   3rd Qu.      Max.
## 0.0004054 0.0015316 0.0021235 0.0035390 0.0045866 0.0167598
```

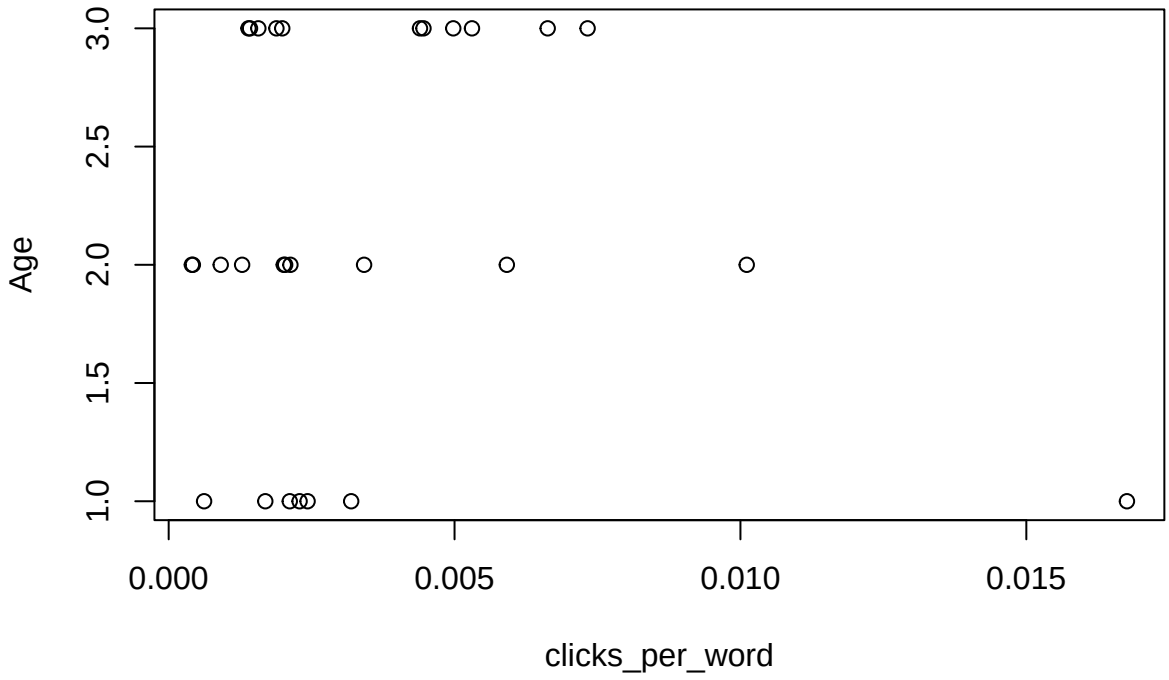
```r
hist(clicksonly$clicks_per_word)
```



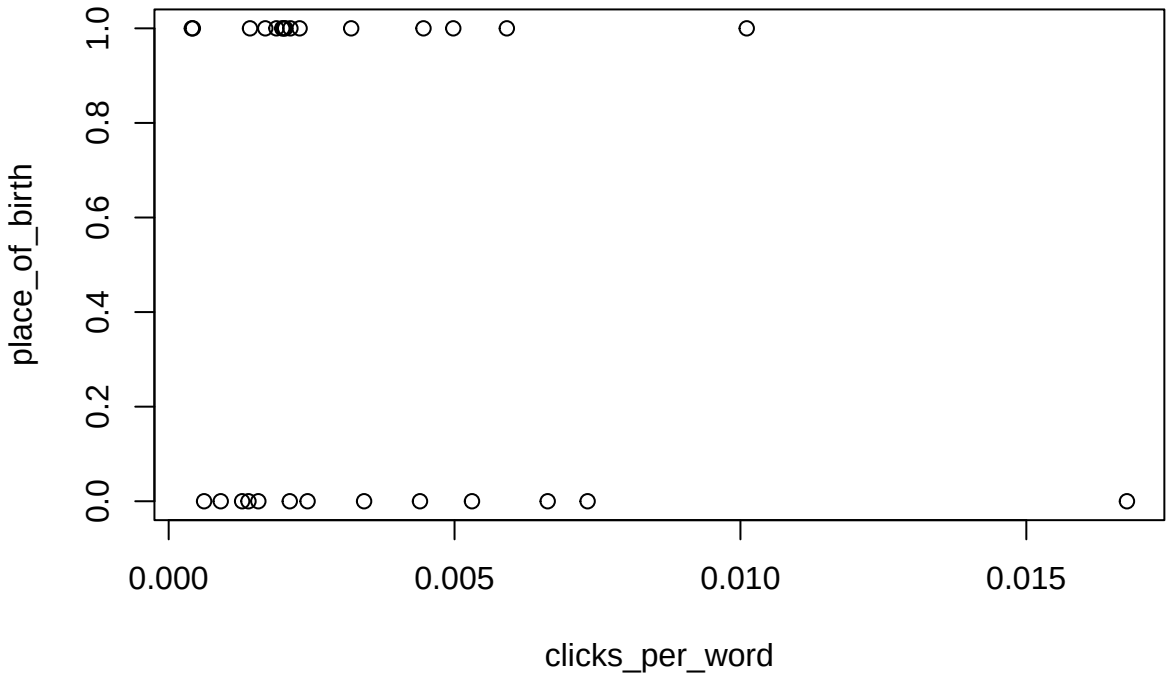

```r
plot(Gender ~ clicks_per_word, data = clicksonly)
```



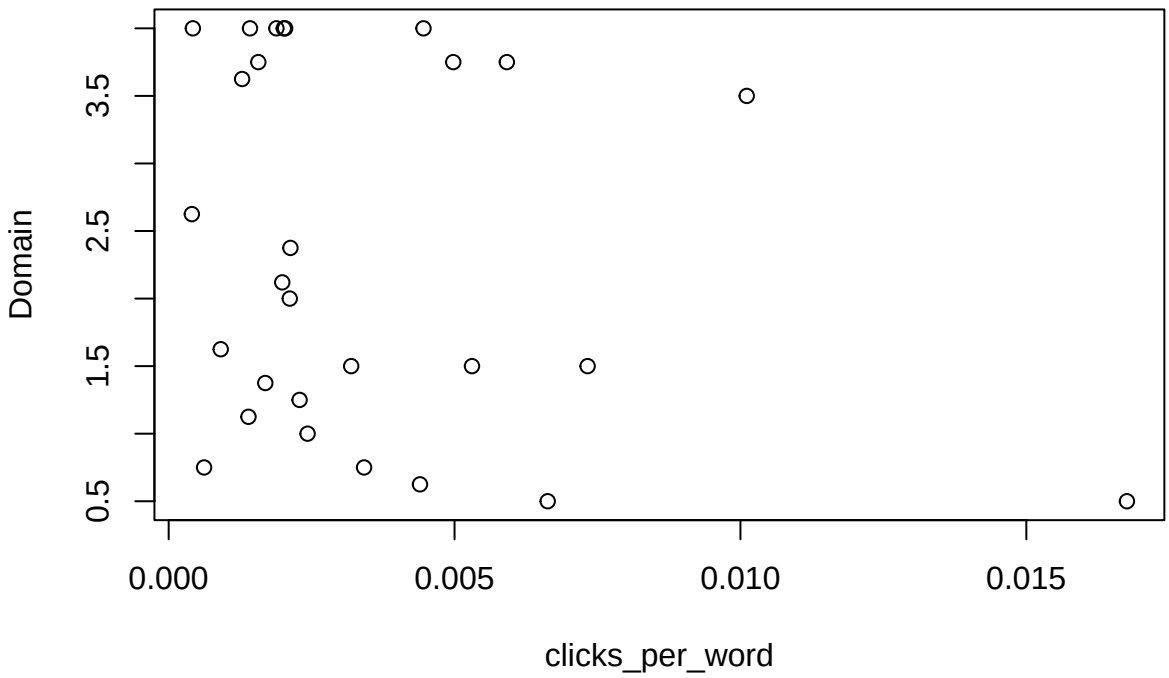

```
plot(Age ~ clicks_per_word, data = clicksonly)
```



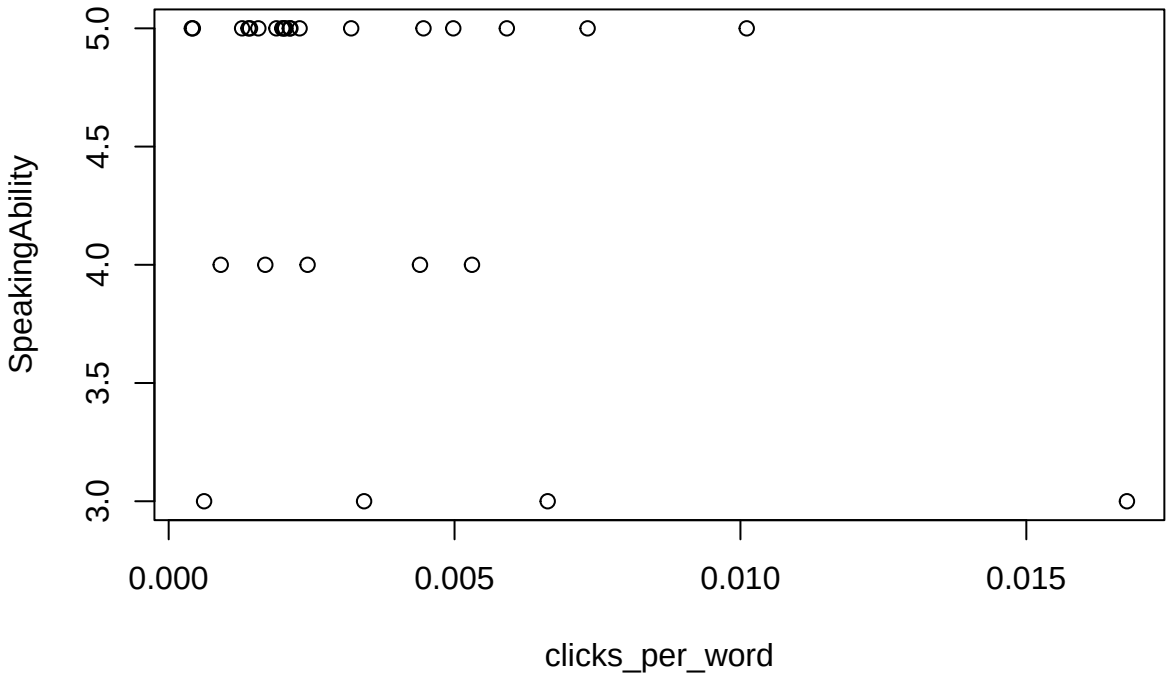

```
plot(place_of_birth ~ clicks_per_word, data = clicksonly)
```



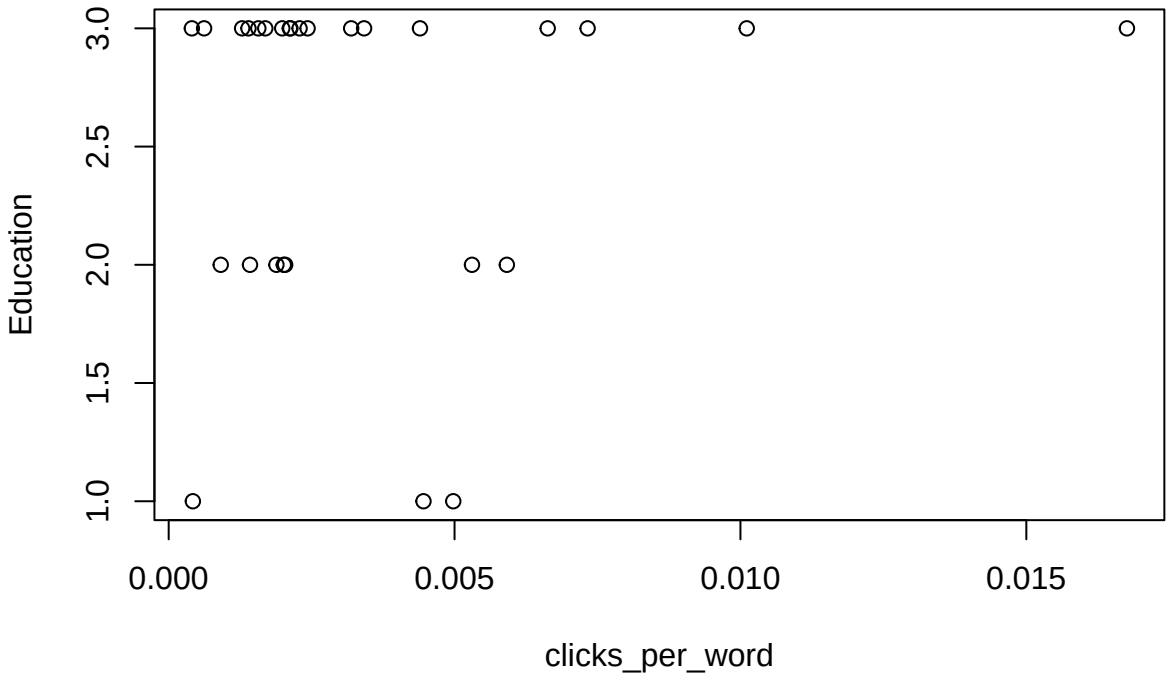

```
plot(Domain ~ clicks_per_word, data = clicksonly)
```




```
plot(SpeakingAbility ~ clicks_per_word, data = clicksonly)
```




```
plot(Education ~ clicks_per_word, data = clicksonly)
```




```
chisq.test(clicksonly$clicks_per_word)
```

```
## Warning in chisq.test(clicksonly$clicks_per_word): Chi-squared approximation
## may be incorrect

##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$clicks_per_word
## X-squared = 0.092498, df = 27, p-value = 1
```

```
aov(Gender ~ clicks_per_word, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ clicks_per_word, data = clicksonly)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.480449  6.483836
## Deg. of Freedom               1        26
##
## Residual standard error: 0.4993779
## Estimated effects may be unbalanced
```

```r
aov(Age ~ clicks_per_word, data = clicksonly)
```

```
## Call:
##    aov(formula = Age ~ clicks_per_word, data = clicksonly)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.011119 17.417453
## Deg. of Freedom               1        26
##
## Residual standard error: 0.8184754
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ clicks_per_word, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ clicks_per_word, data = clicksonly)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.203087  6.761199
## Deg. of Freedom               1        26
##
## Residual standard error: 0.5099472
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ clicks_per_word, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ clicks_per_word, data = clicksonly)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares          2.68271  45.84624
## Deg. of Freedom               1        26
##
## Residual standard error: 1.327899
## Estimated effects may be unbalanced
```

```r
aov(SpeakingAbility ~ clicks_per_word, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ clicks_per_word, data = clicksonly)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         1.697981 13.266305
## Deg. of Freedom               1        26
##
## Residual standard error: 0.7143126
## Estimated effects may be unbalanced
```

```r
aov(Education ~ clicks_per_word, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ clicks_per_word, data = clicksonly)
##
## Terms:
##                 clicks_per_word Residuals
## Sum of Squares         0.141511 12.822774
## Deg. of Freedom               1        26
##
## Residual standard error: 0.7022703
## Estimated effects may be unbalanced
```

```r
kruskal.test(Gender ~ clicks_per_word, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by clicks_per_word
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```r
kruskal.test(Age ~ clicks_per_word, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by clicks_per_word
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```r
kruskal.test(place_of_birth ~ clicks_per_word, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by clicks_per_word
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```r
kruskal.test(Domain ~ clicks_per_word, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by clicks_per_word
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```r
kruskal.test(SpeakingAbility ~ clicks_per_word, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by clicks_per_word
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

```r
kruskal.test(Education ~ clicks_per_word, data = clicksonly)
```

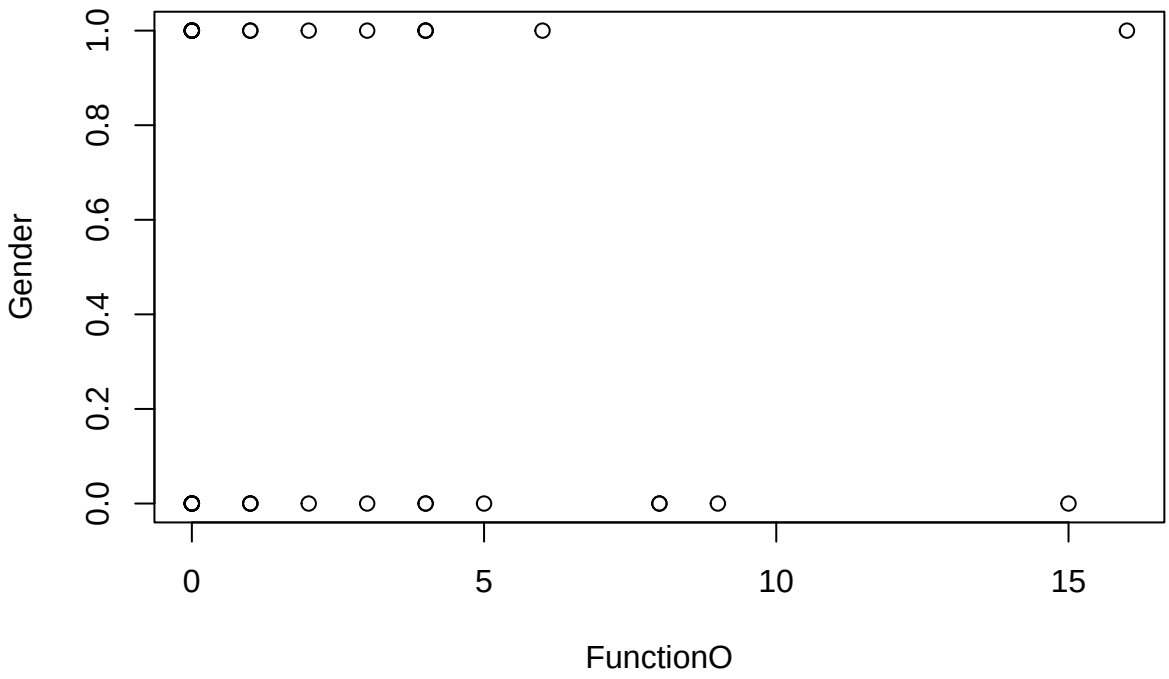
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by clicks_per_word
## Kruskal-Wallis chi-squared = 27, df = 27, p-value = 0.4638
```

Hypothesis 2:

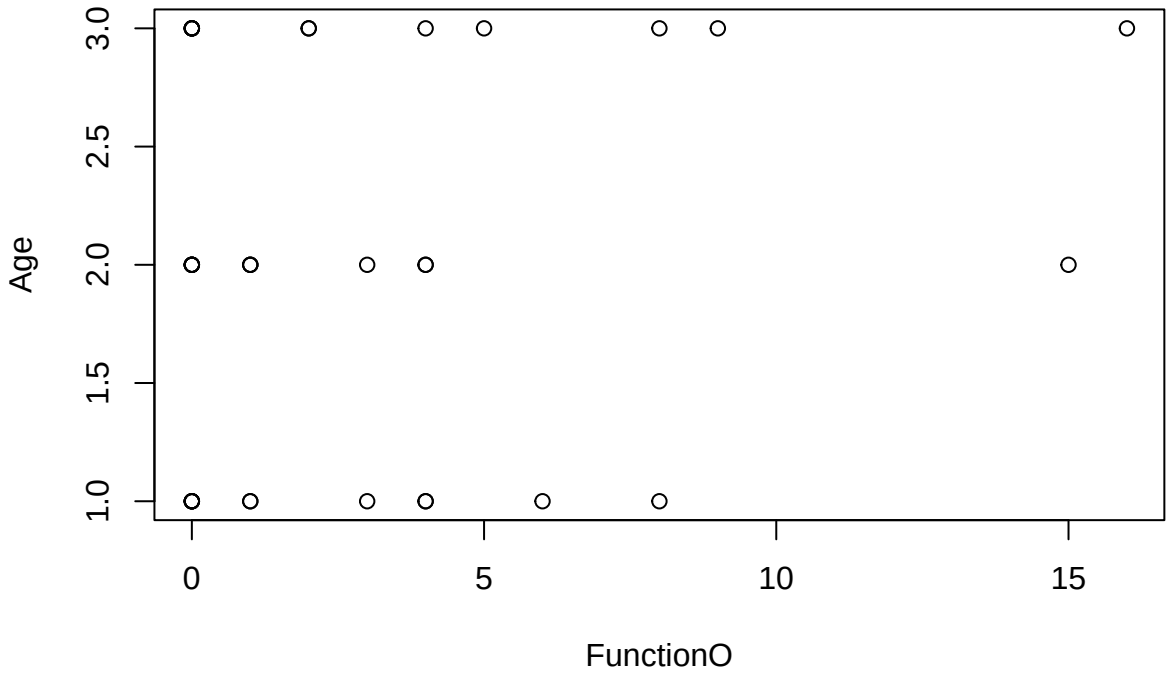
There will not be a statistically significant difference in the functions of clicks based on the following variables: gender, age, place of birth, domain, speaking ability, and education.

Function O with non-clickers

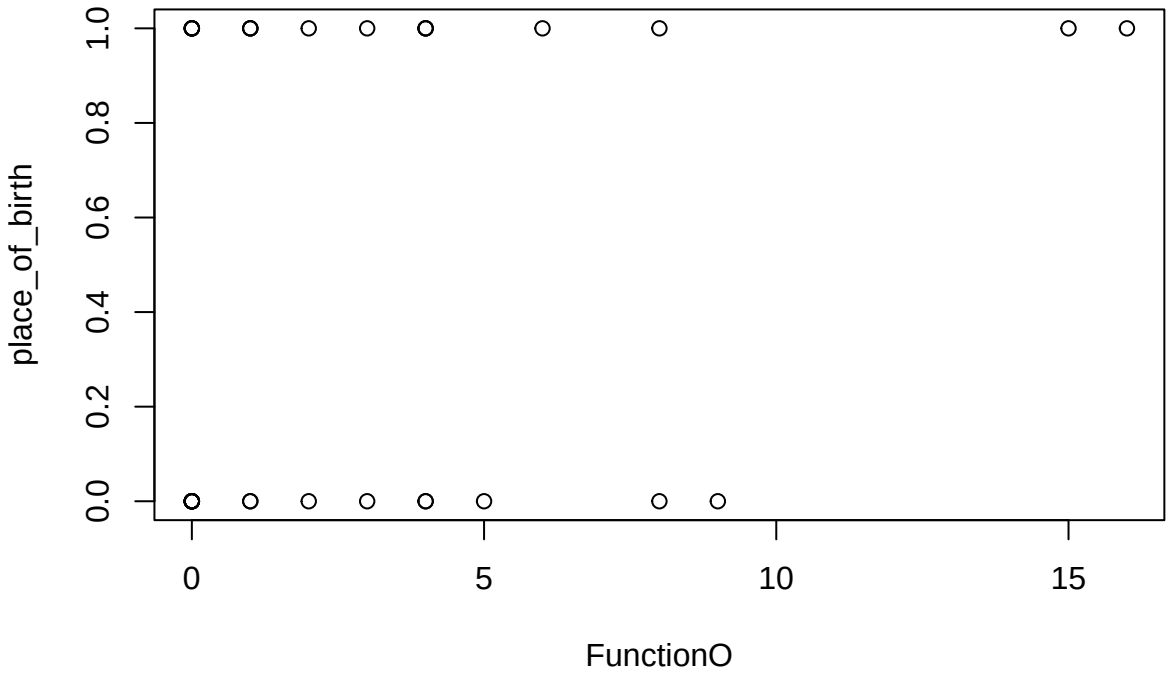
```r
plot(Gender ~ FunctionO, data = click)
```



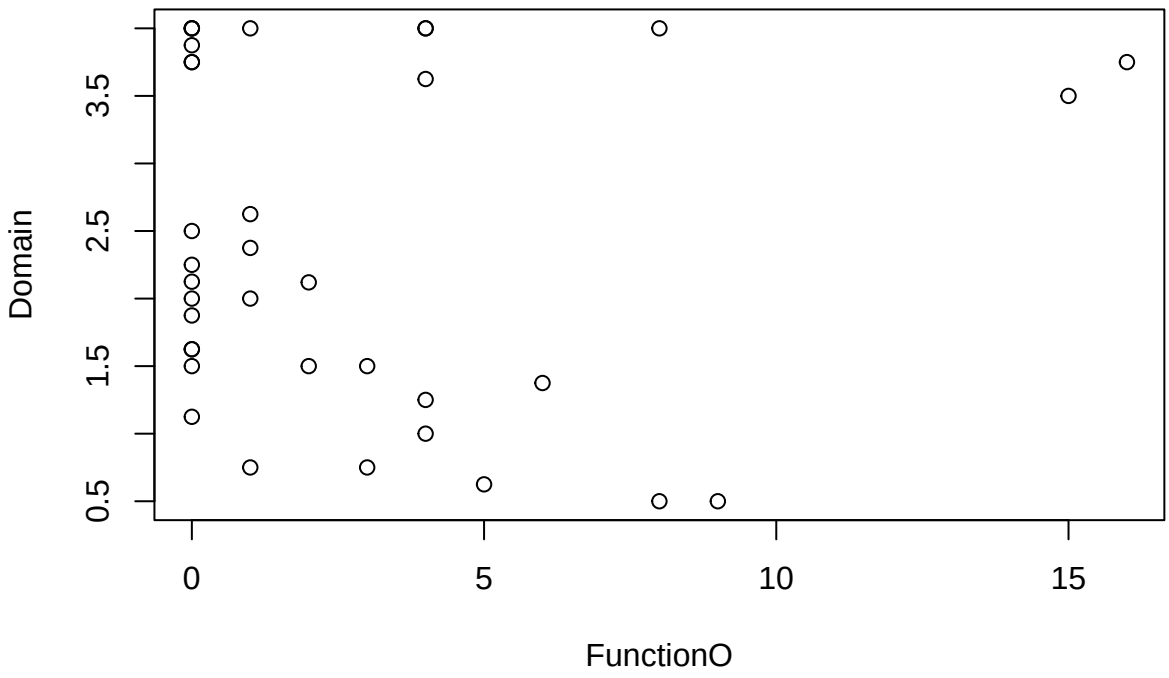

```r
plot(Age ~ FunctionO, data = click)
```



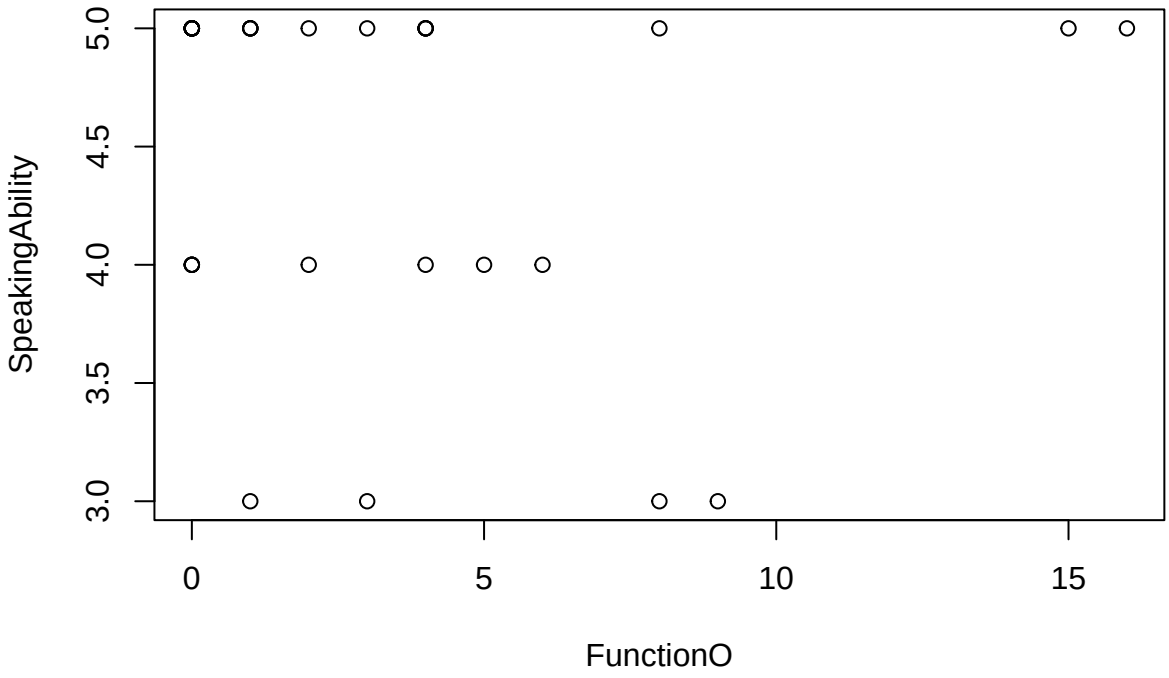

```
plot(place_of_birth ~ FunctionO, data = click)
```



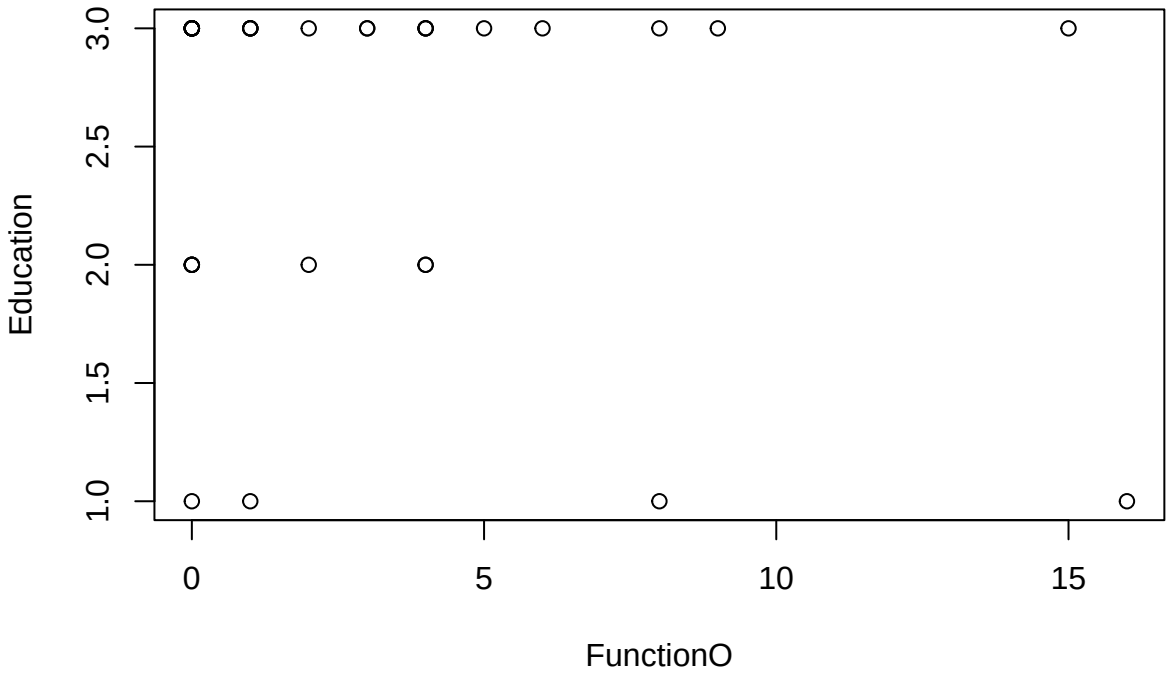

```
plot(Domain ~ FunctionO, data = click)
```




```
plot(SpeakingAbility ~ FunctionO, data = click)
```




```
plot(Education ~ FunctionO, data = click)
```




```
chisq.test(click$FunctionO)
```

```
## Warning in chisq.test(click$FunctionO): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$FunctionO
## X-squared = 202.24, df = 35, p-value < 2.2e-16
```

```
aov(Gender ~ FunctionO, data = click)
```

```
## Call:
##    aov(formula = Gender ~ FunctionO, data = click)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.089635  8.882587
## Deg. of Freedom         1        34
##
## Residual standard error: 0.5111287
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionO, data = click)
```

```
## Call:
##    aov(formula = Age ~ FunctionO, data = click)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.630017 23.369983
## Deg. of Freedom         1        34
##
## Residual standard error: 0.8290672
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionO, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionO, data = click)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.494522  8.477700
## Deg. of Freedom         1        34
##
## Residual standard error: 0.4993437
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionO, data = click)
```

```
## Call:
##    aov(formula = Domain ~ FunctionO, data = click)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares    0.01245  54.48841
## Deg. of Freedom         1        34
##
## Residual standard error: 1.265938
## Estimated effects may be unbalanced
```

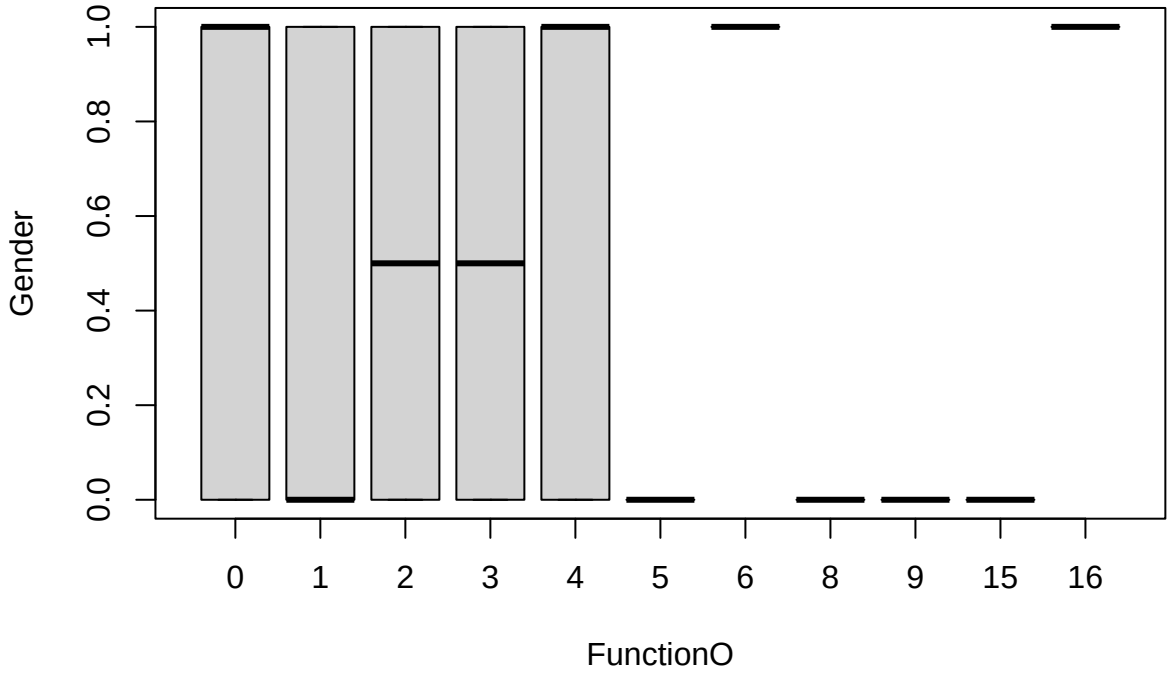
```r
aov(SpeakingAbility ~ FunctionO, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionO, data = click)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.325965 16.562924
## Deg. of Freedom         1        34
##
## Residual standard error: 0.6979576
## Estimated effects may be unbalanced
```

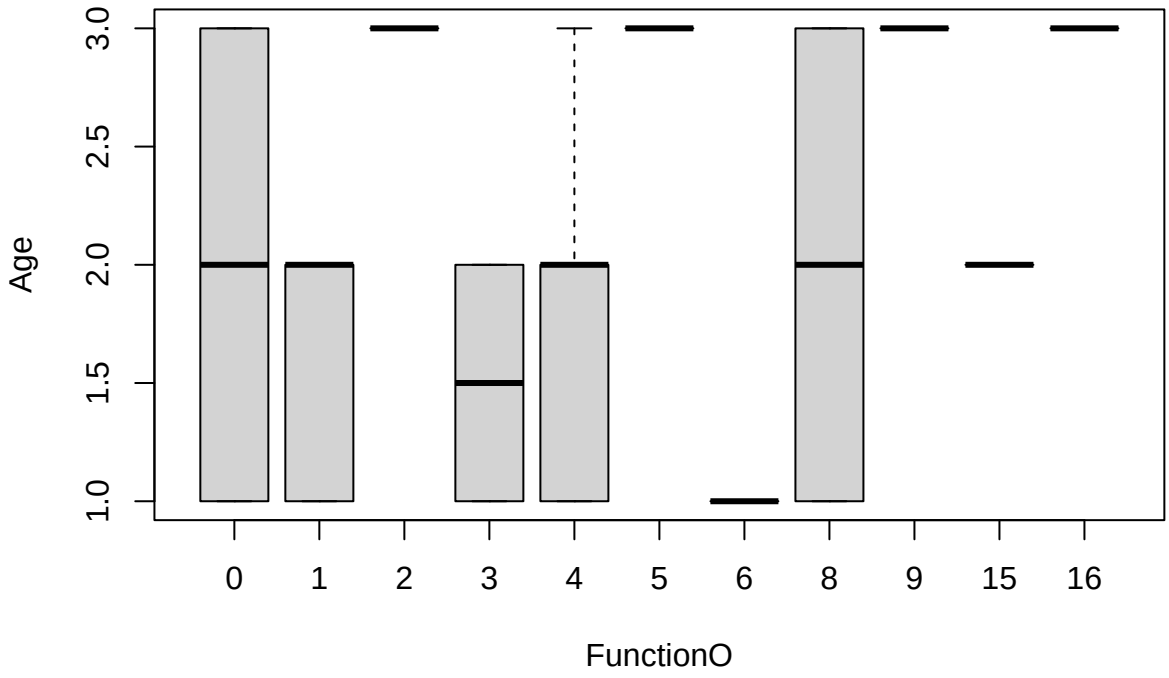
```r
aov(Education ~ FunctionO, data = click)
```

```
## Call:
##    aov(formula = Education ~ FunctionO, data = click)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.534468 16.215532
## Deg. of Freedom         1        34
##
## Residual standard error: 0.6905993
## Estimated effects may be unbalanced
```

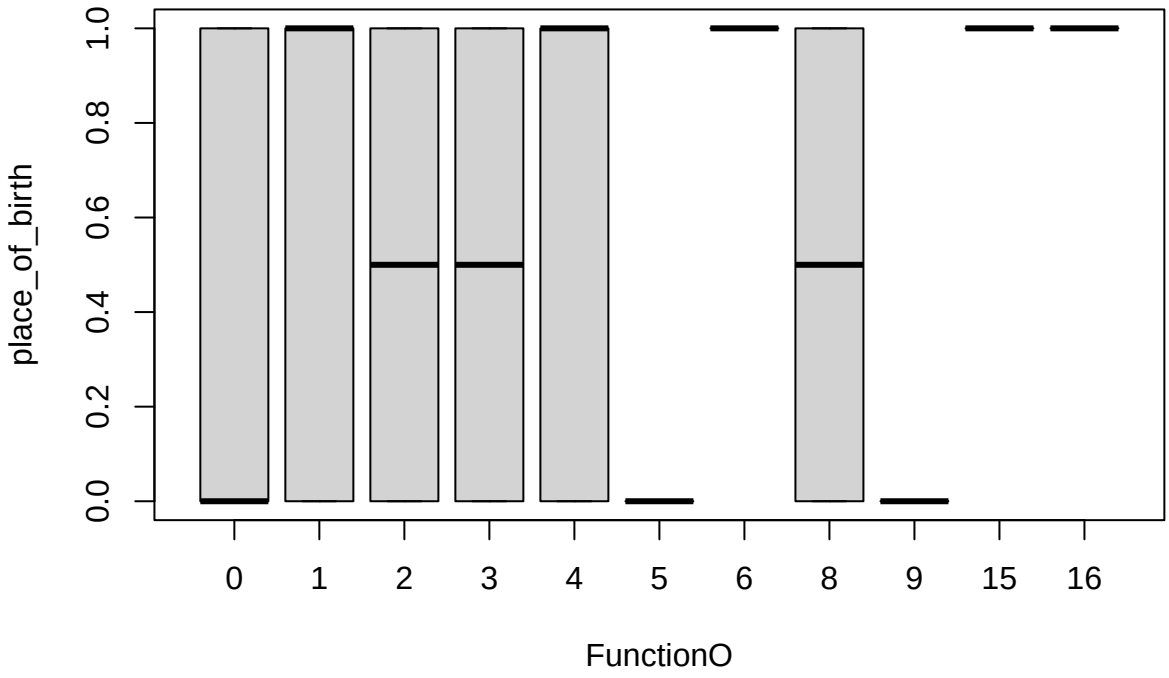
```r
boxplot(Gender ~ FunctionO, click)
```



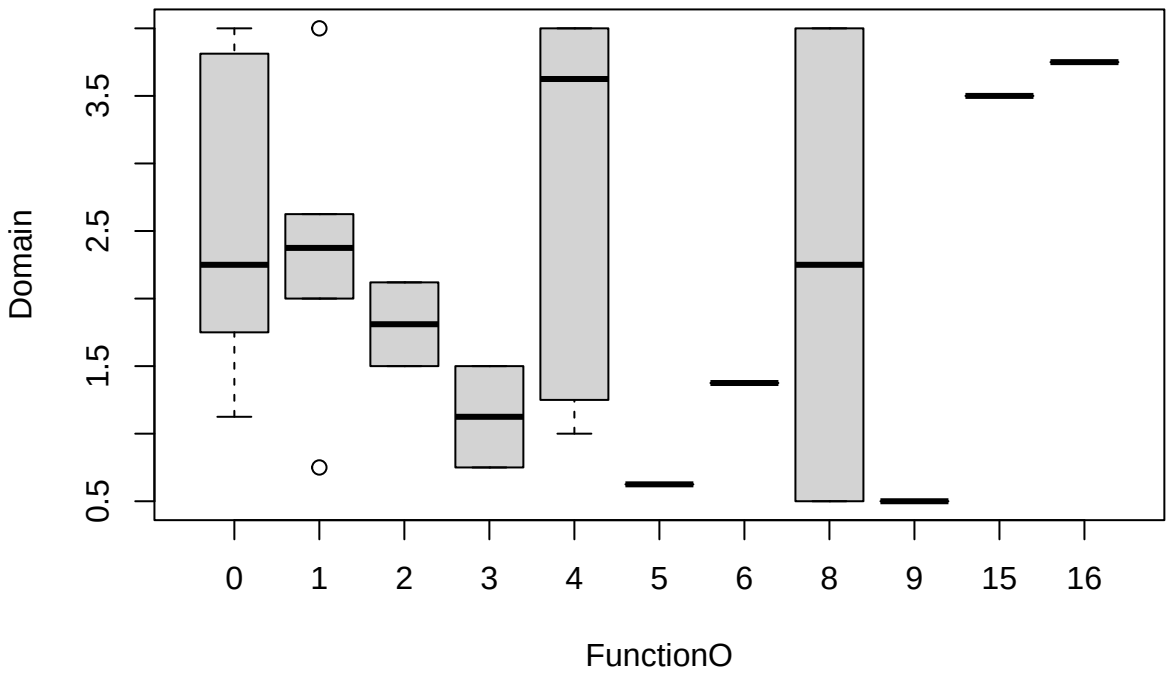

```r
boxplot(Age ~ FunctionO, click)
```



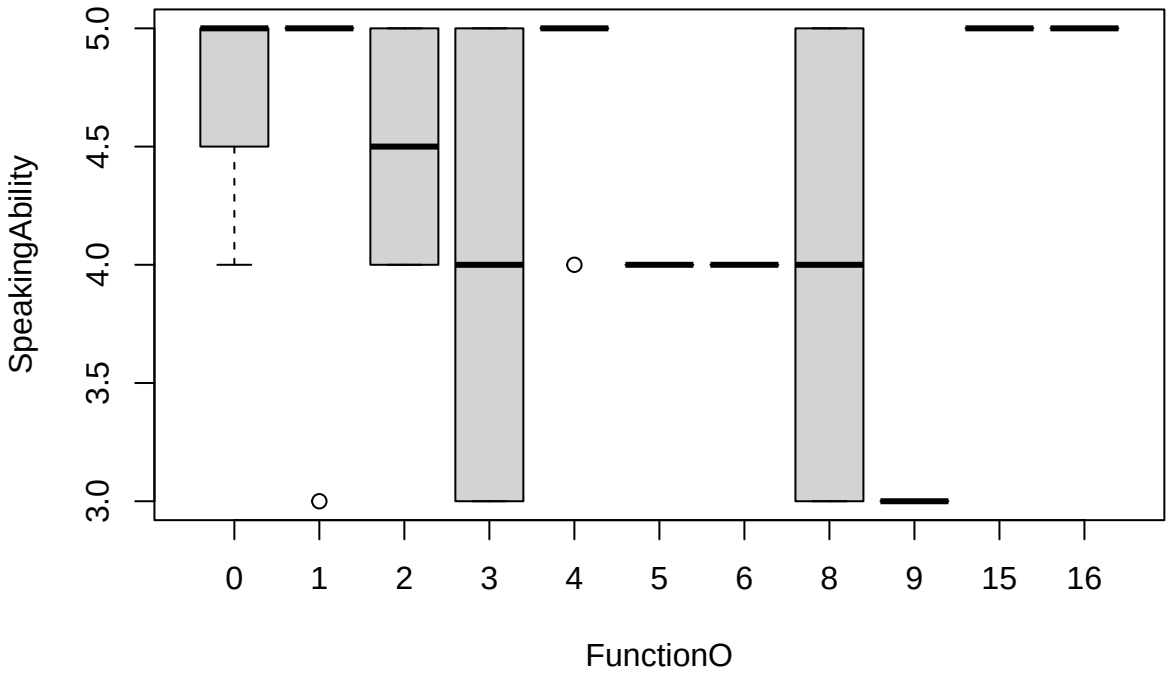

```
boxplot(place_of_birth ~ FunctionO, click)
```



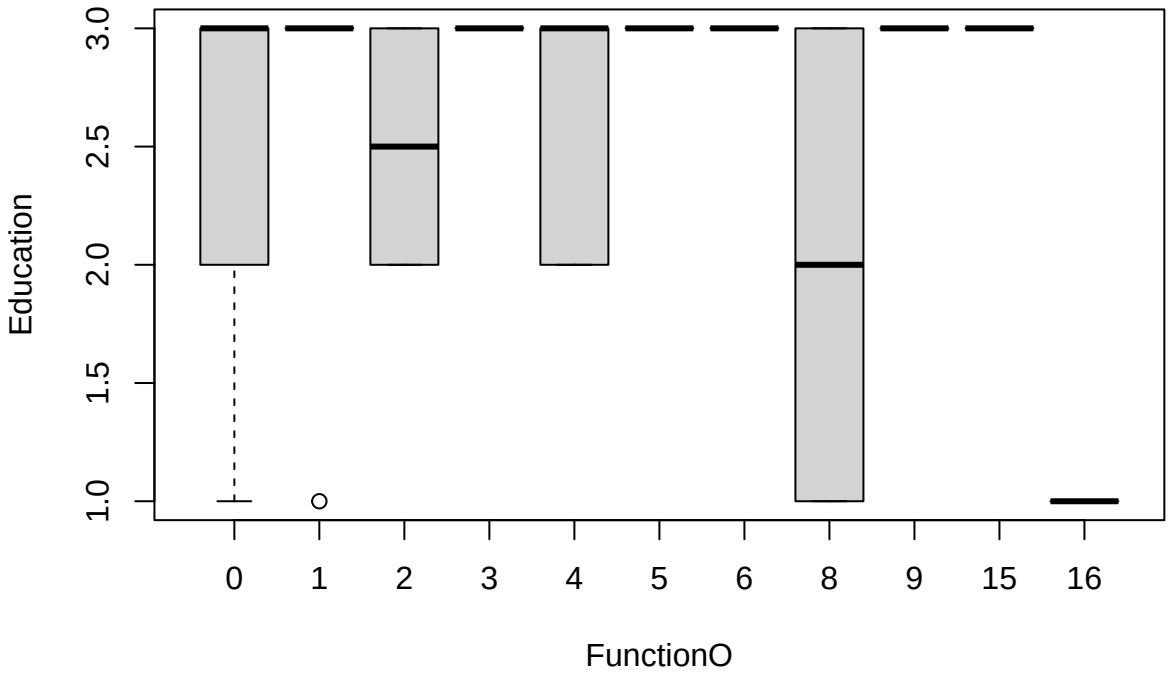

```
boxplot(Domain ~ FunctionO, click)
```




```
boxplot(SpeakingAbility ~ FunctionO, click)
```




```
boxplot(Education ~ FunctionO, click)
```




```
kruskal.test(Gender ~ FunctionO, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionO
## Kruskal-Wallis chi-squared = 7.1734, df = 10, p-value = 0.709
```

```
kruskal.test(Age ~ FunctionO, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionO
## Kruskal-Wallis chi-squared = 10.937, df = 10, p-value = 0.3624
```

```
kruskal.test(place_of_birth ~ FunctionO, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionO
## Kruskal-Wallis chi-squared = 6.7833, df = 10, p-value = 0.7457
```

```r
kruskal.test(Domain ~ FunctionO, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionO
## Kruskal-Wallis chi-squared = 10.39, df = 10, p-value = 0.407
```

```r
kruskal.test(SpeakingAbility ~ FunctionO, data = click)
```

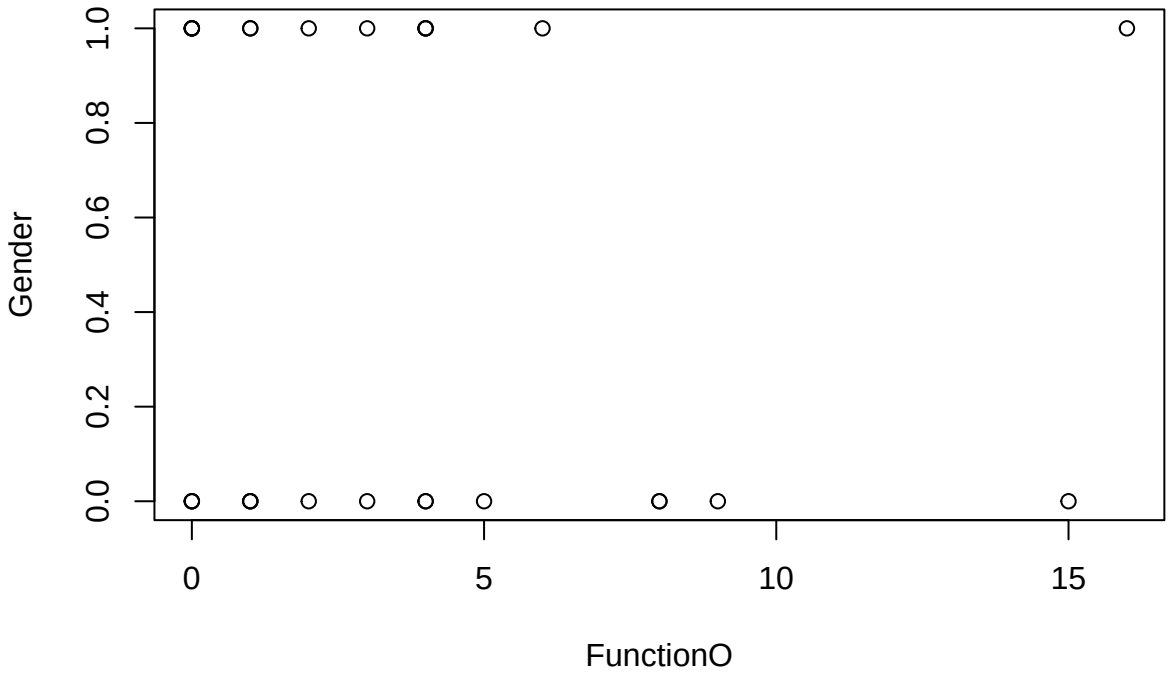
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionO
## Kruskal-Wallis chi-squared = 9.5451, df = 10, p-value = 0.4813
```

```r
kruskal.test(Education ~ FunctionO, data = click)
```

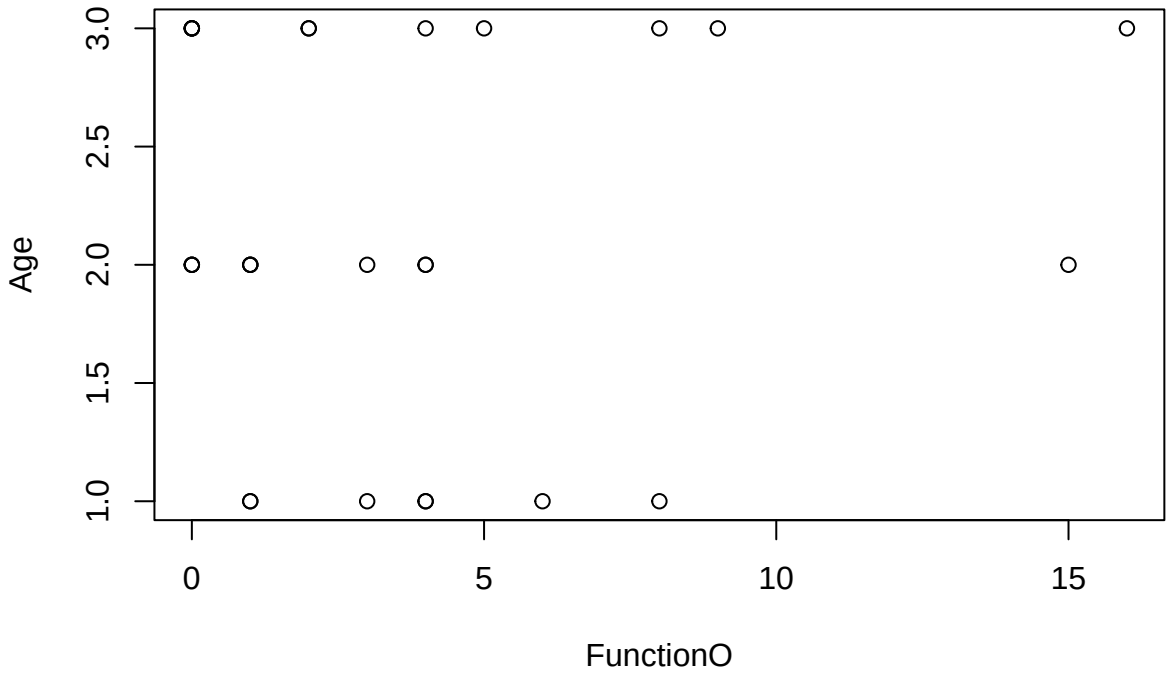
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionO
## Kruskal-Wallis chi-squared = 7.0902, df = 10, p-value = 0.7169
```

Function O without non-clickers

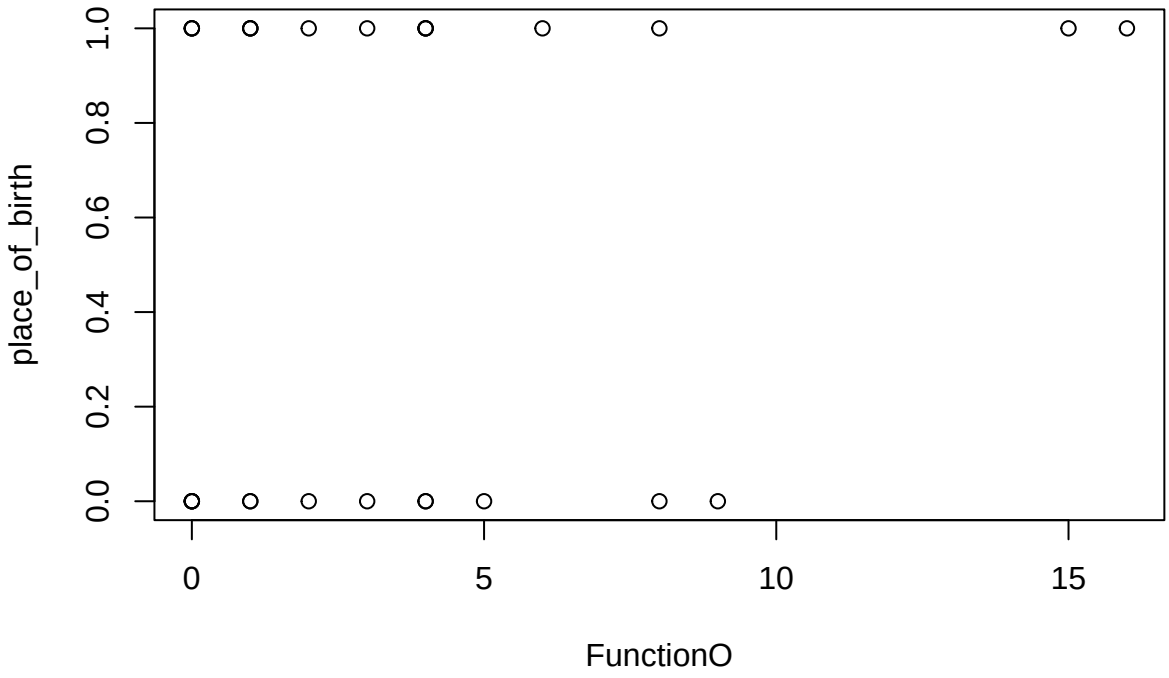
```r
plot(Gender ~ FunctionO, data = clicksonly)
```



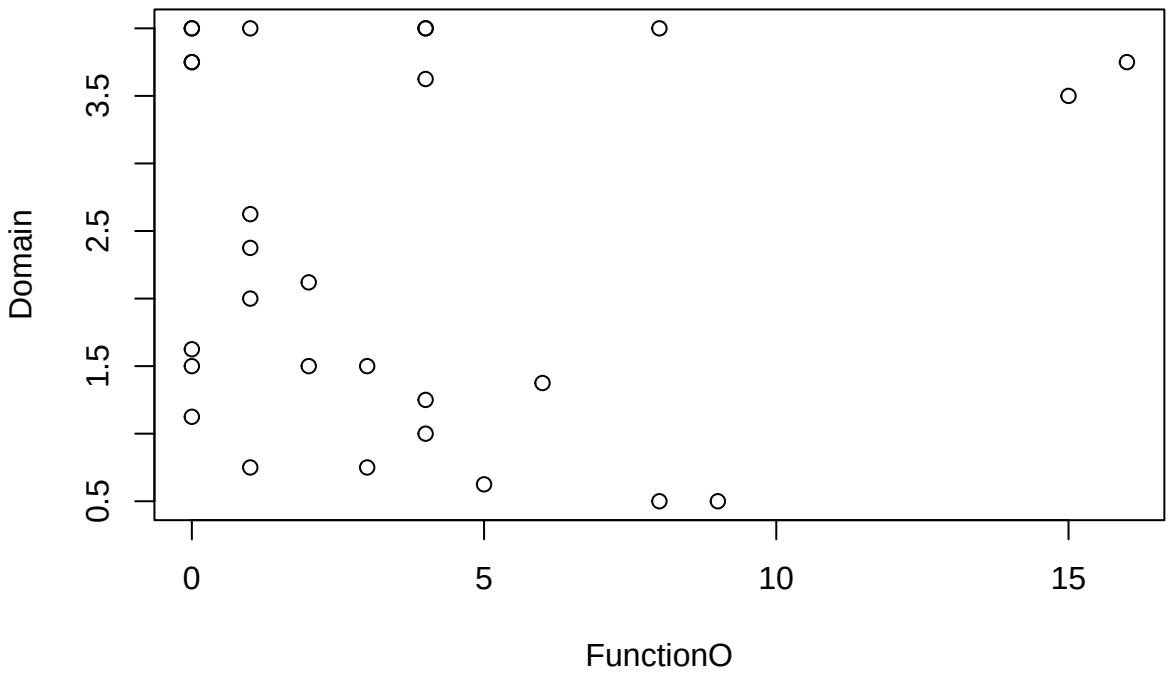

```
plot(Age ~ FunctionO, data = clicksonly)
```



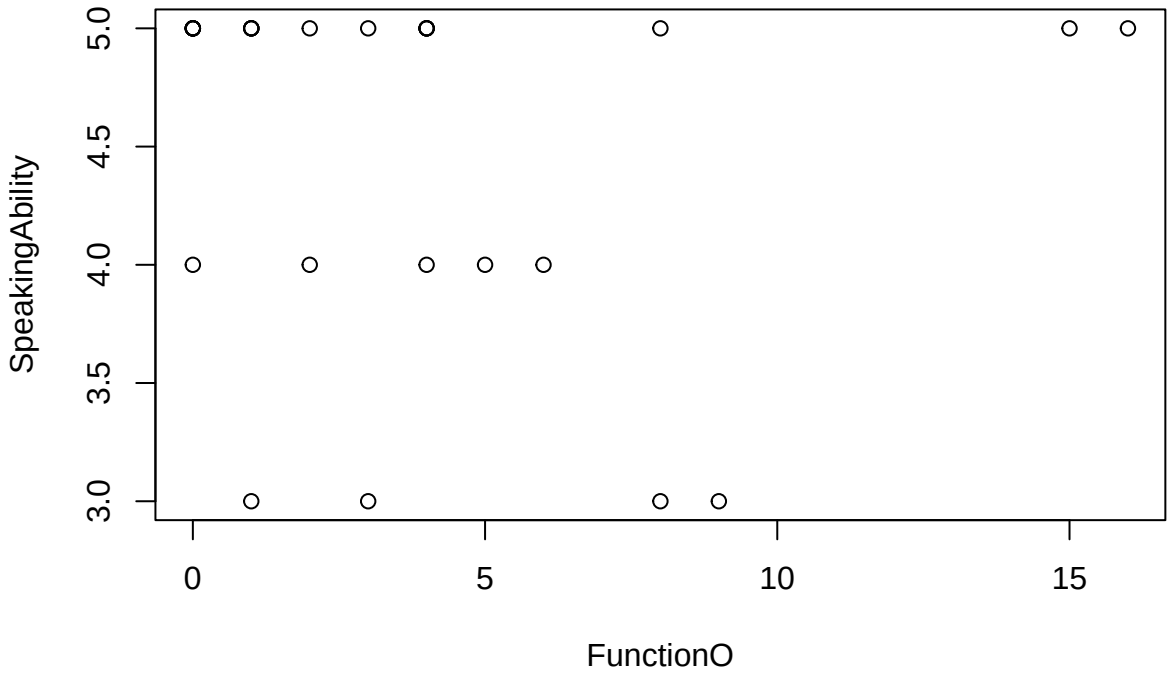

```
plot(place_of_birth ~ FunctionO, data = clicksonly)
```



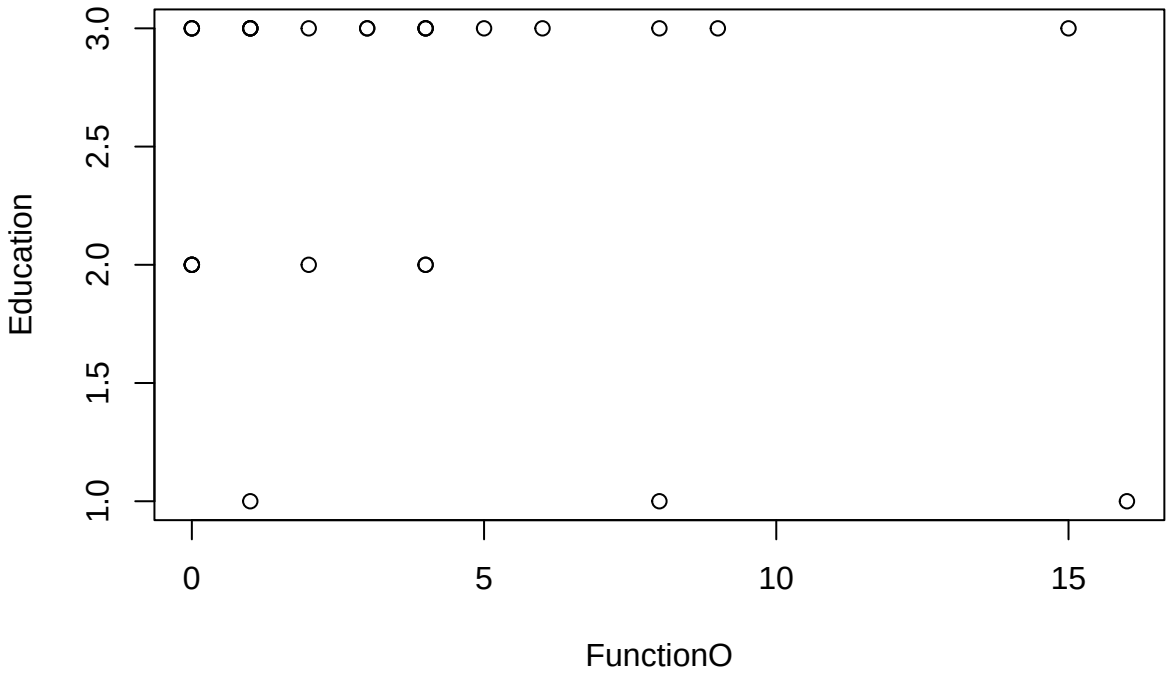

```
plot(Domain ~ FunctionO, data = clicksonly)
```




```
plot(SpeakingAbility ~ FunctionO, data = clicksonly)
```




```
plot(Education ~ FunctionO, data = clicksonly)
```




```
chisq.test(clicksonly$FunctionO)
```

```
## Warning in chisq.test(clicksonly$FunctionO): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$FunctionO
## X-squared = 134.63, df = 27, p-value = 2.963e-16
```

```
aov(Gender ~ FunctionO, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ FunctionO, data = clicksonly)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.082404  6.881882
## Deg. of Freedom         1        26
##
## Residual standard error: 0.5144781
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionO, data = clicksonly)
```

```
## Call:
##    aov(formula = Age ~ FunctionO, data = clicksonly)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares    0.03999  17.38858
## Deg. of Freedom         1        26
##
## Residual standard error: 0.8177968
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionO, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionO, data = clicksonly)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.218728  6.745558
## Deg. of Freedom         1        26
##
## Residual standard error: 0.509357
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionO, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ FunctionO, data = clicksonly)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares    0.10066  48.42829
## Deg. of Freedom         1        26
##
## Residual standard error: 1.364781
## Estimated effects may be unbalanced
```

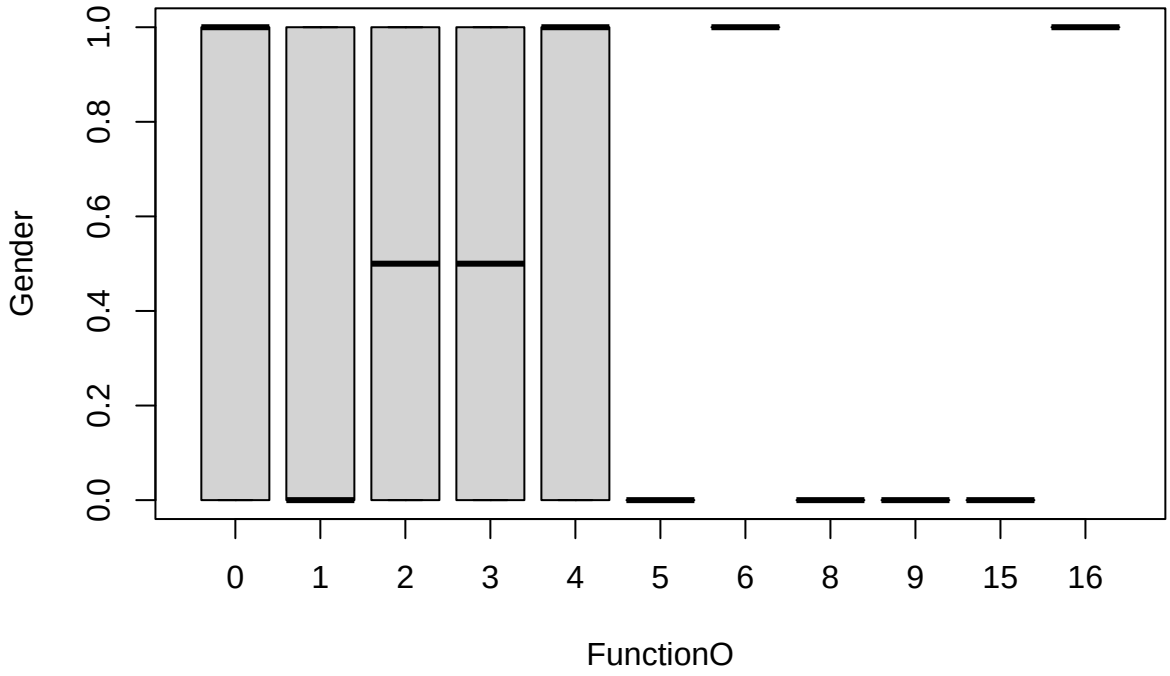
```r
aov(SpeakingAbility ~ FunctionO, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionO, data = clicksonly)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.276403 14.687882
## Deg. of Freedom         1        26
##
## Residual standard error: 0.7516106
## Estimated effects may be unbalanced
```

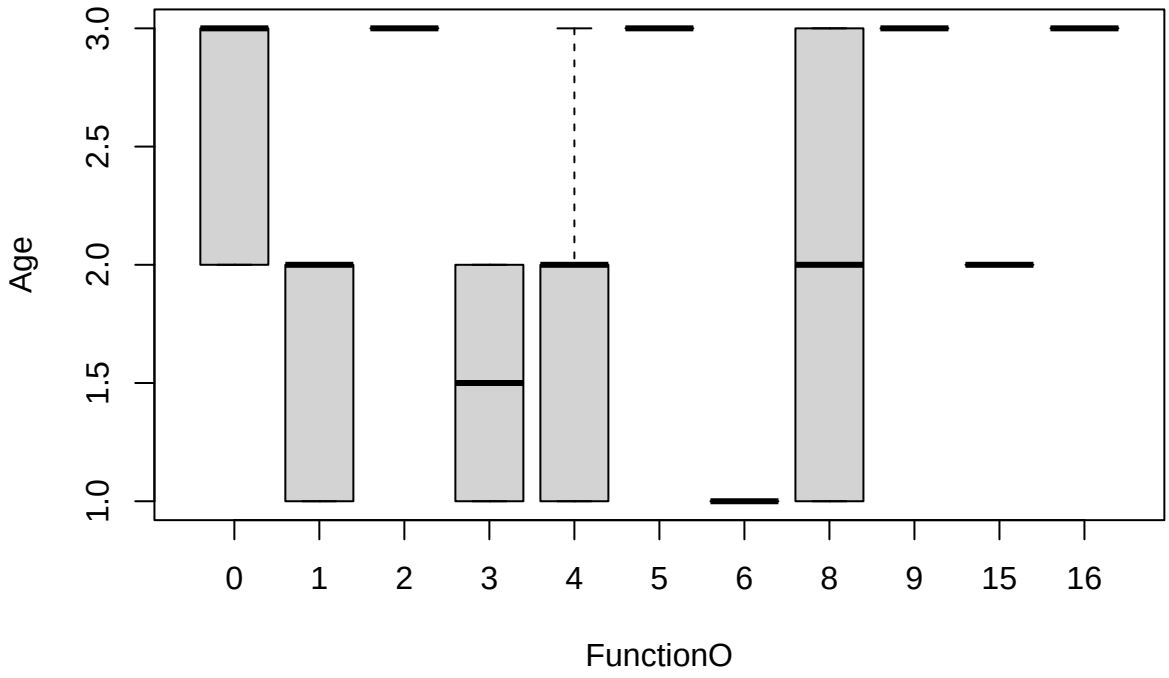
```r
aov(Education ~ FunctionO, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ FunctionO, data = clicksonly)
##
## Terms:
##                 FunctionO Residuals
## Sum of Squares   0.325923 12.638363
## Deg. of Freedom         1        26
##
## Residual standard error: 0.6972022
## Estimated effects may be unbalanced
```

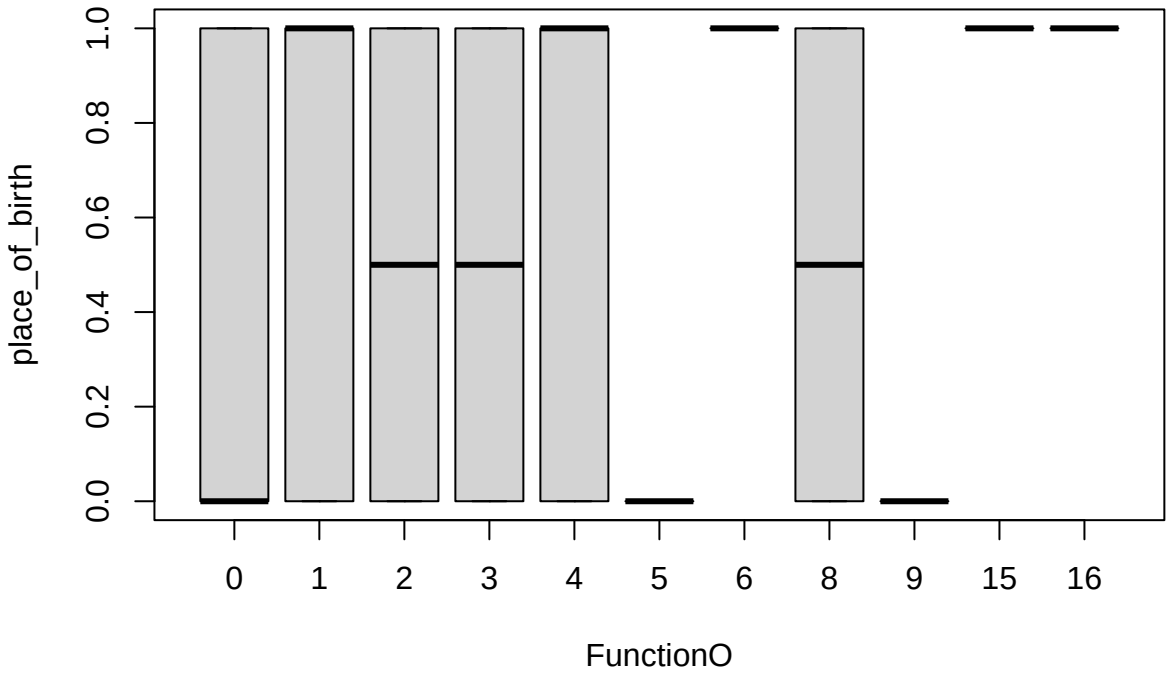
```r
boxplot(Gender ~ FunctionO, clicksonly)
```



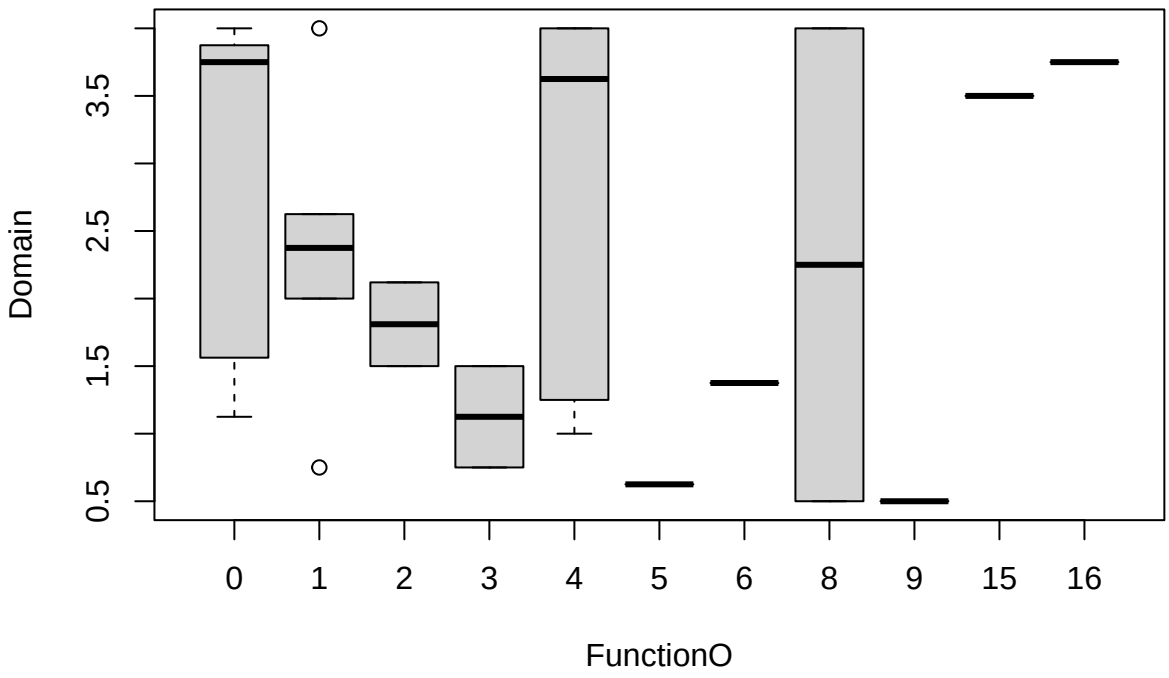

```r
boxplot(Age ~ FunctionO, clicksonly)
```



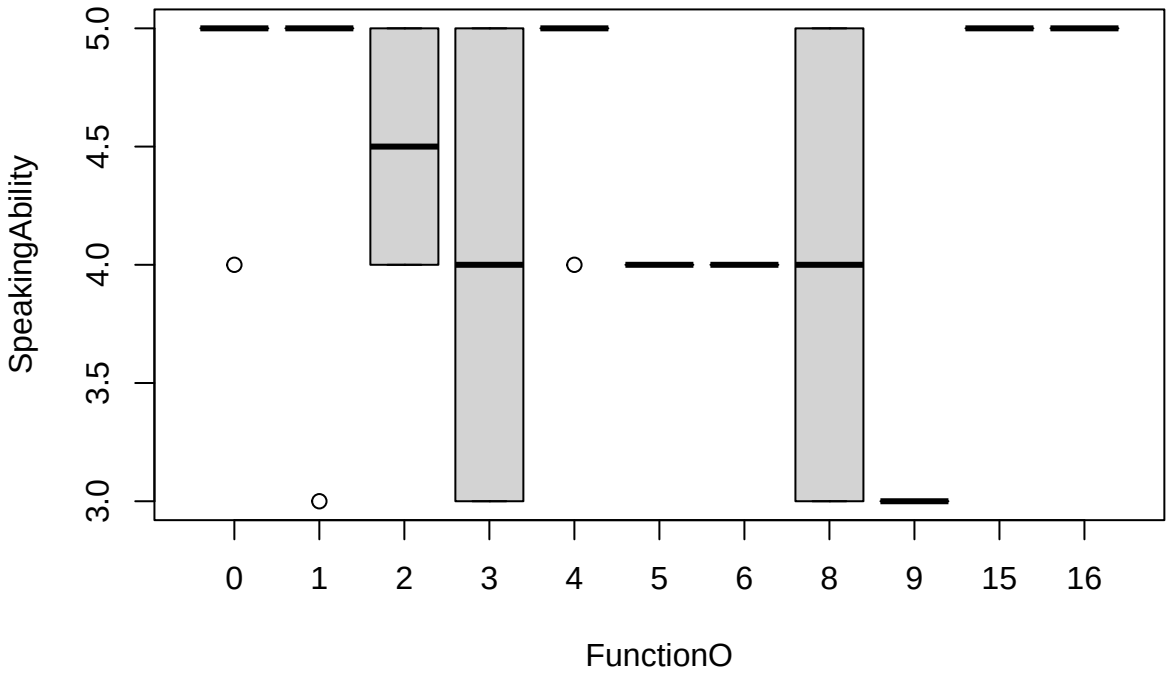

```
boxplot(place_of_birth ~ FunctionO, clicksonly)
```



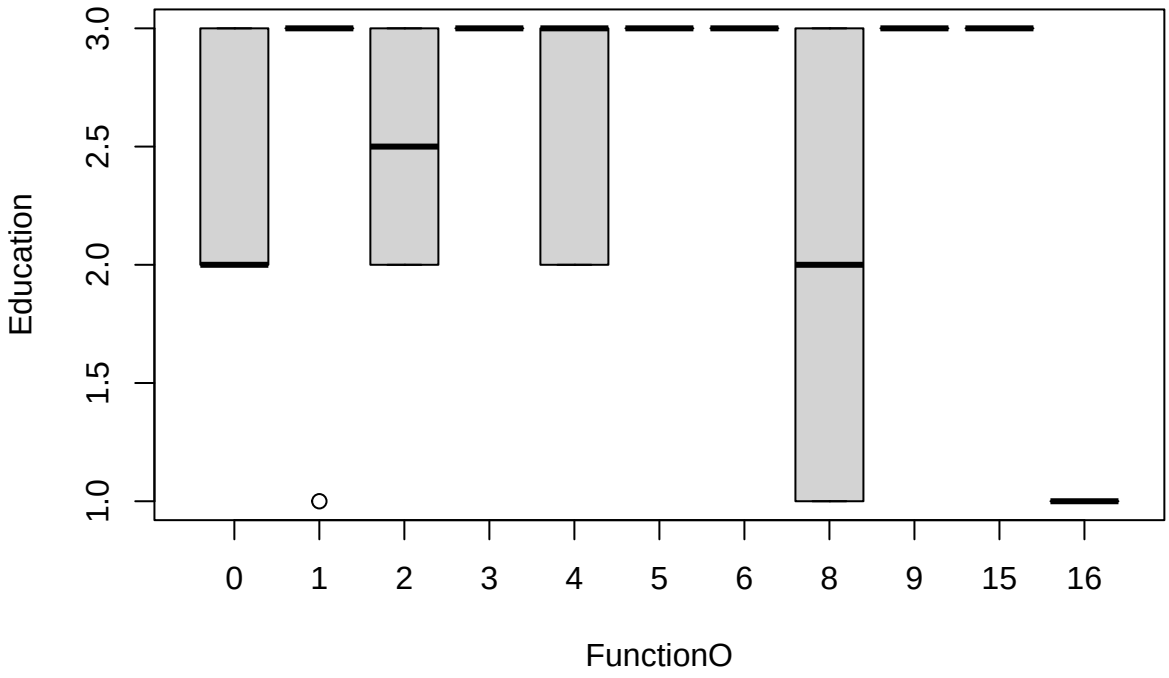

```
boxplot(Domain ~ FunctionO, clicksonly)
```




```
boxplot(SpeakingAbility ~ FunctionO, clicksonly)
```




```
boxplot(Education ~ FunctionO, clicksonly)
```




```
kruskal.test(Gender ~ FunctionO, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionO
## Kruskal-Wallis chi-squared = 7.1723, df = 10, p-value = 0.7091
```

```
kruskal.test(Age ~ FunctionO, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionO
## Kruskal-Wallis chi-squared = 14.586, df = 10, p-value = 0.1479
```

```
kruskal.test(place_of_birth ~ FunctionO, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionO
## Kruskal-Wallis chi-squared = 5.2338, df = 10, p-value = 0.875
```

```r
kruskal.test(Domain ~ FunctionO, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionO
## Kruskal-Wallis chi-squared = 8.7748, df = 10, p-value = 0.5536
```

```r
kruskal.test(SpeakingAbility ~ FunctionO, data = clicksonly)
```

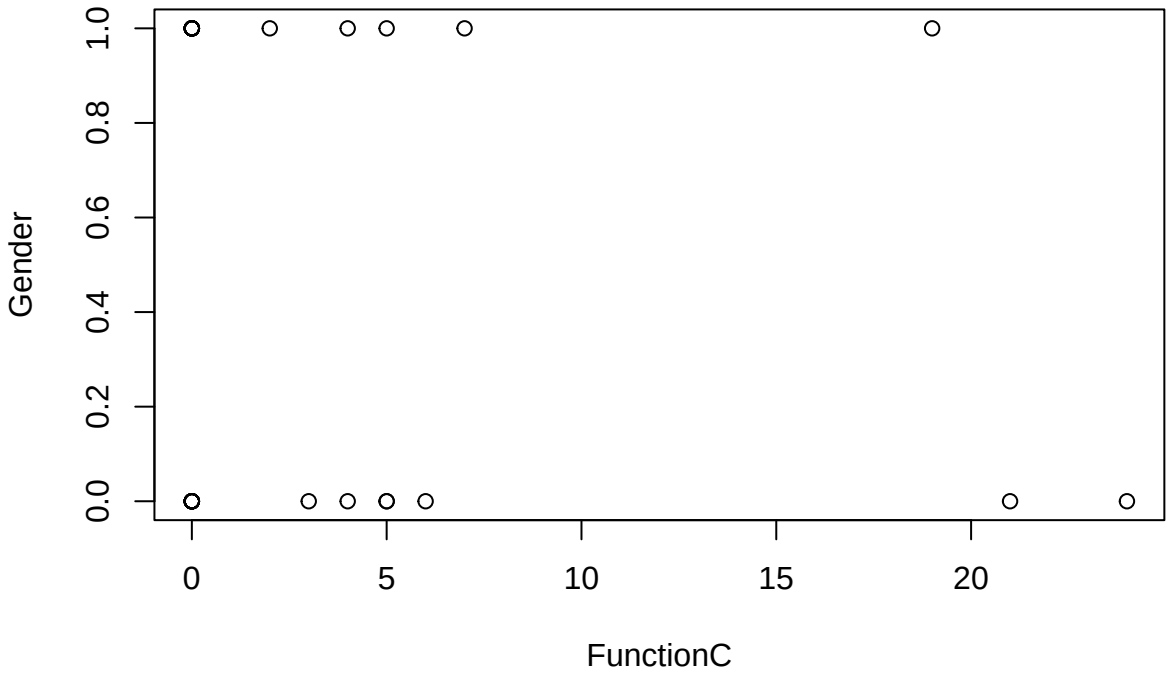
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionO
## Kruskal-Wallis chi-squared = 9.5939, df = 10, p-value = 0.4768
```

```r
kruskal.test(Education ~ FunctionO, data = clicksonly)
```

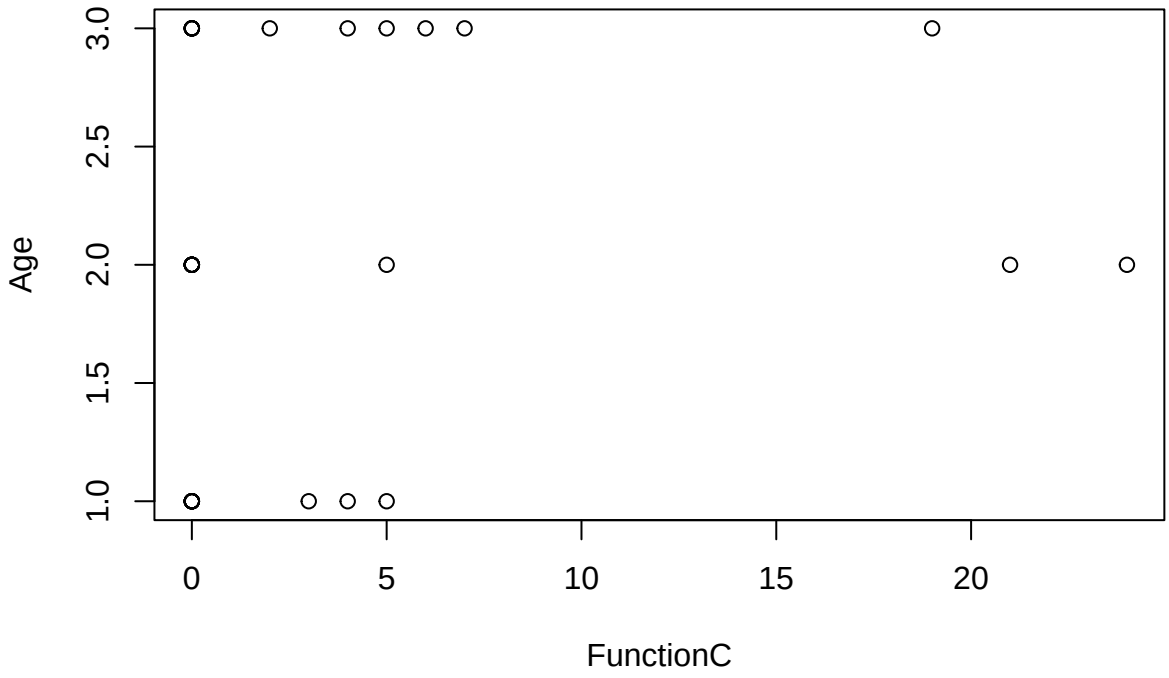
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionO
## Kruskal-Wallis chi-squared = 7.8355, df = 10, p-value = 0.6449
```

Function C with non-clickers

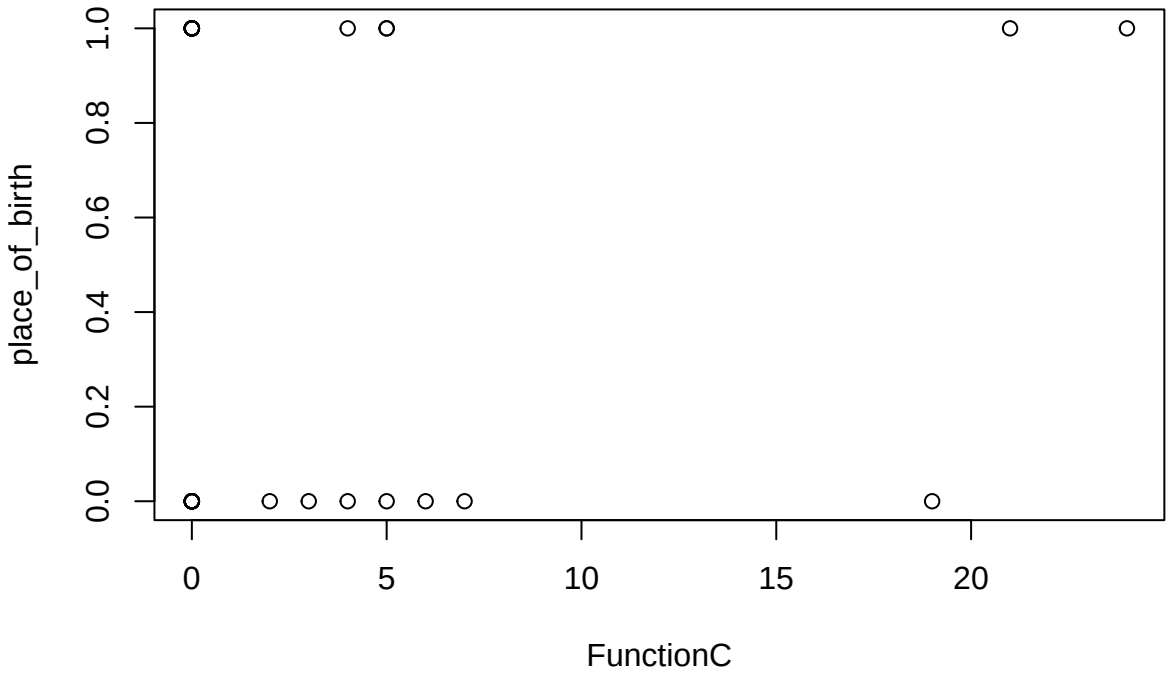
```r
plot(Gender ~ FunctionC, data = click)
```



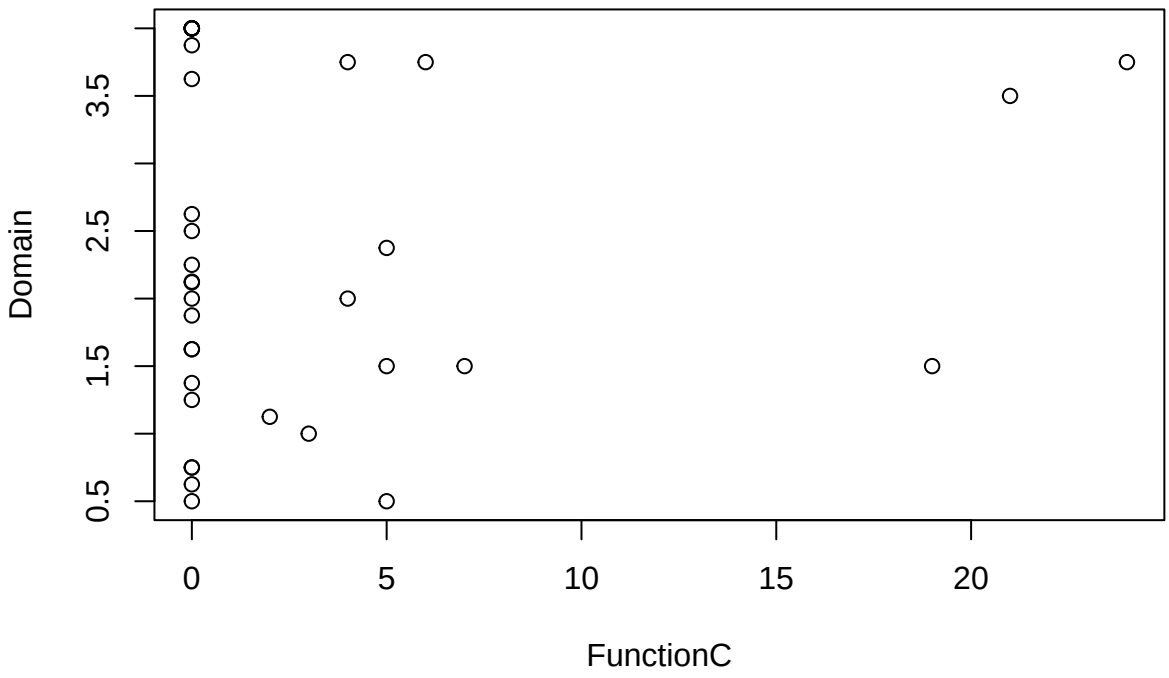

```
plot(Age ~ FunctionC, data = click)
```



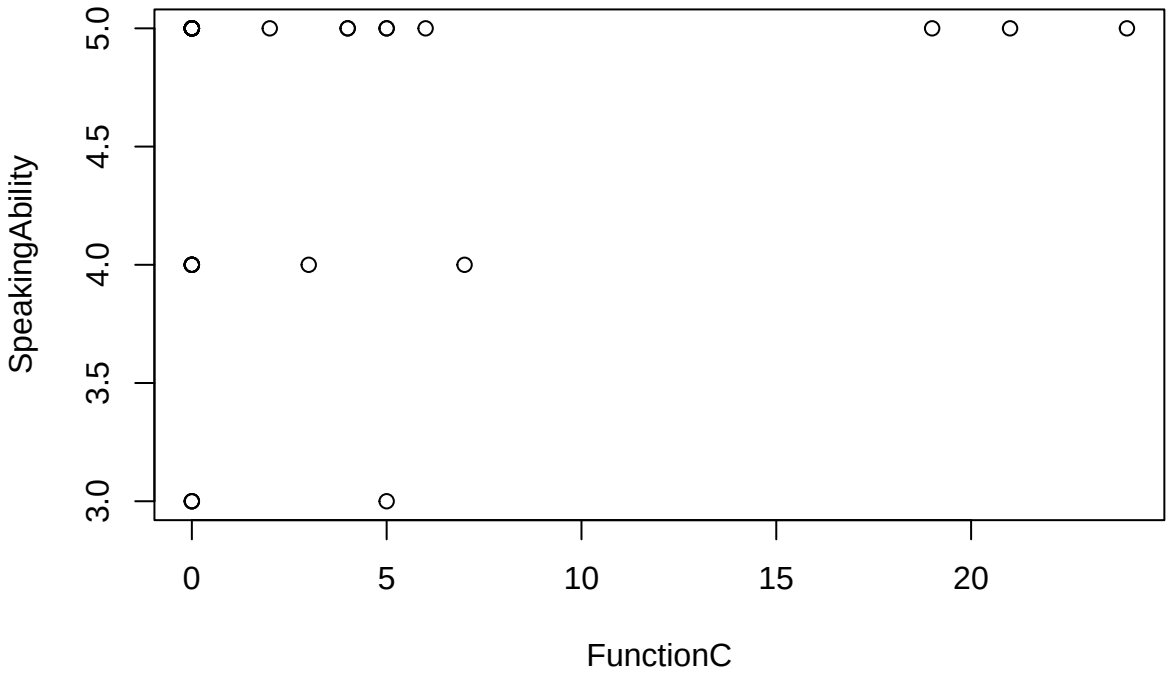

```
plot(place_of_birth ~ FunctionC, data = click)
```



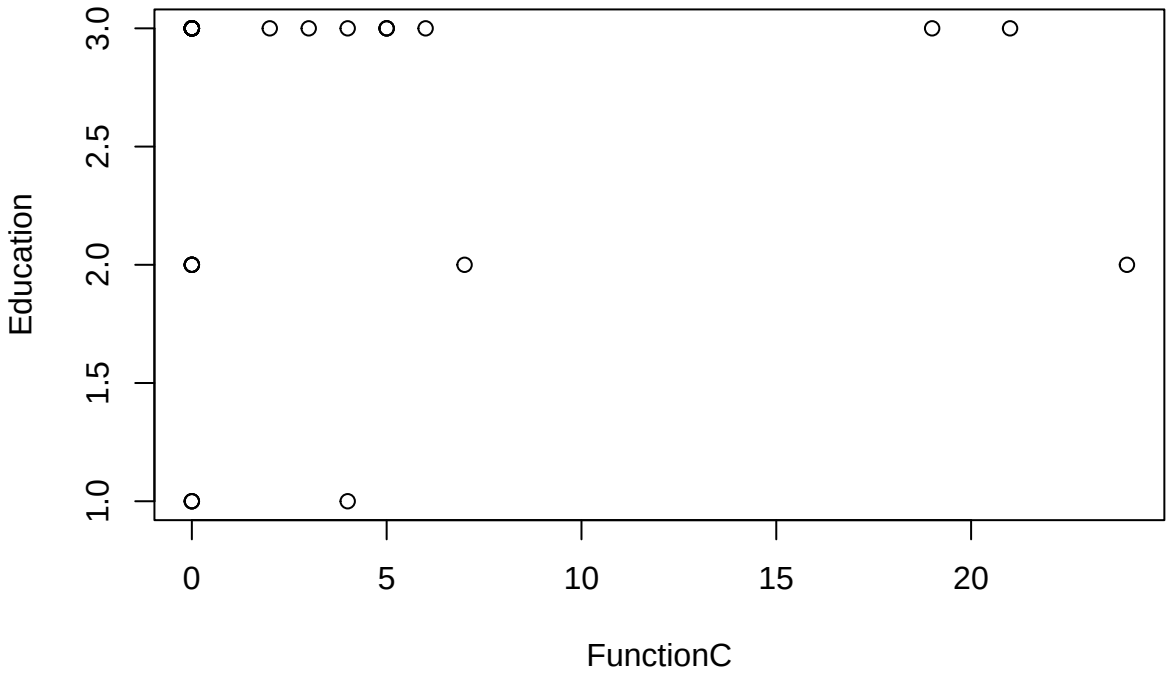

```
plot(Domain ~ FunctionC, data = click)
```




```
plot(SpeakingAbility ~ FunctionC, data = click)
```




```
plot(Education ~ FunctionC, data = click)
```




```
chisq.test(click$FunctionC)
```

```
## Warning in chisq.test(click$FunctionC): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$FunctionC
## X-squared = 437.74, df = 35, p-value < 2.2e-16
```

```
aov(Gender ~ FunctionC, data = click)
```

```
## Call:
##    aov(formula = Gender ~ FunctionC, data = click)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.124018  8.848204
## Deg. of Freedom         1        34
##
## Residual standard error: 0.5101385
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionC, data = click)
```

```
## Call:
##    aov(formula = Age ~ FunctionC, data = click)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.752692 23.247308
## Deg. of Freedom         1        34
##
## Residual standard error: 0.8268883
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionC, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionC, data = click)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.069453  8.902770
## Deg. of Freedom         1        34
##
## Residual standard error: 0.5117091
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionC, data = click)
```

```
## Call:
##    aov(formula = Domain ~ FunctionC, data = click)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares    0.49091  54.00995
## Deg. of Freedom         1        34
##
## Residual standard error: 1.260368
## Estimated effects may be unbalanced
```

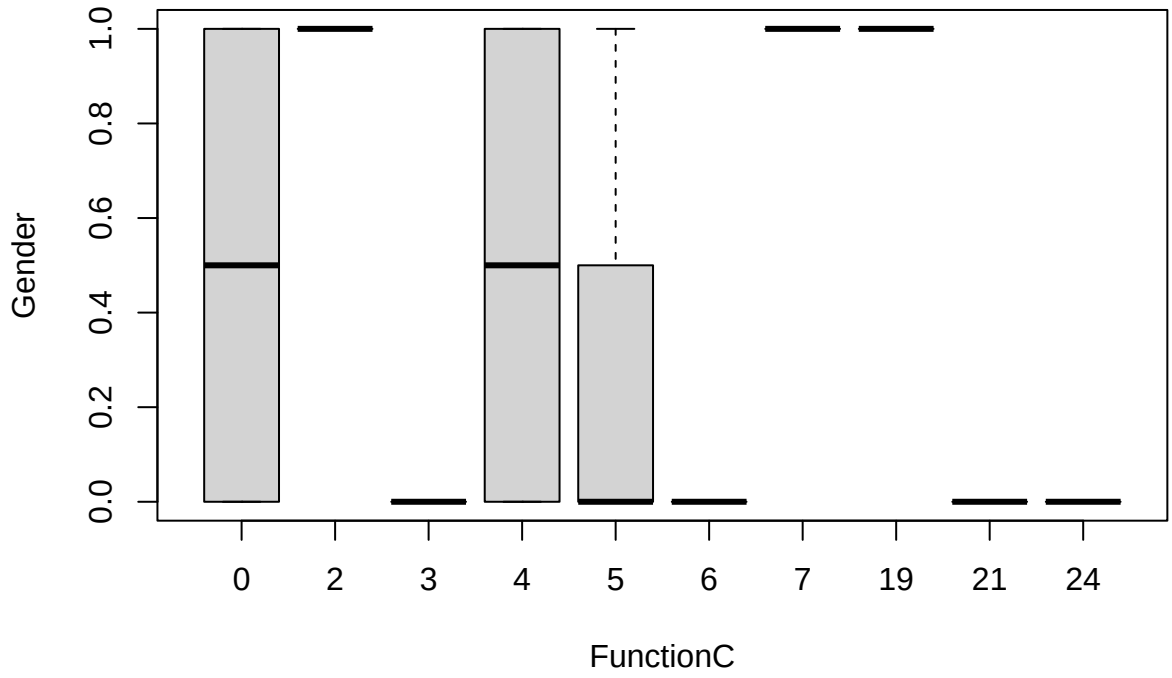
```r
aov(SpeakingAbility ~ FunctionC, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionC, data = click)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares    0.55697  16.33192
## Deg. of Freedom         1        34
##
## Residual standard error: 0.6930733
## Estimated effects may be unbalanced
```

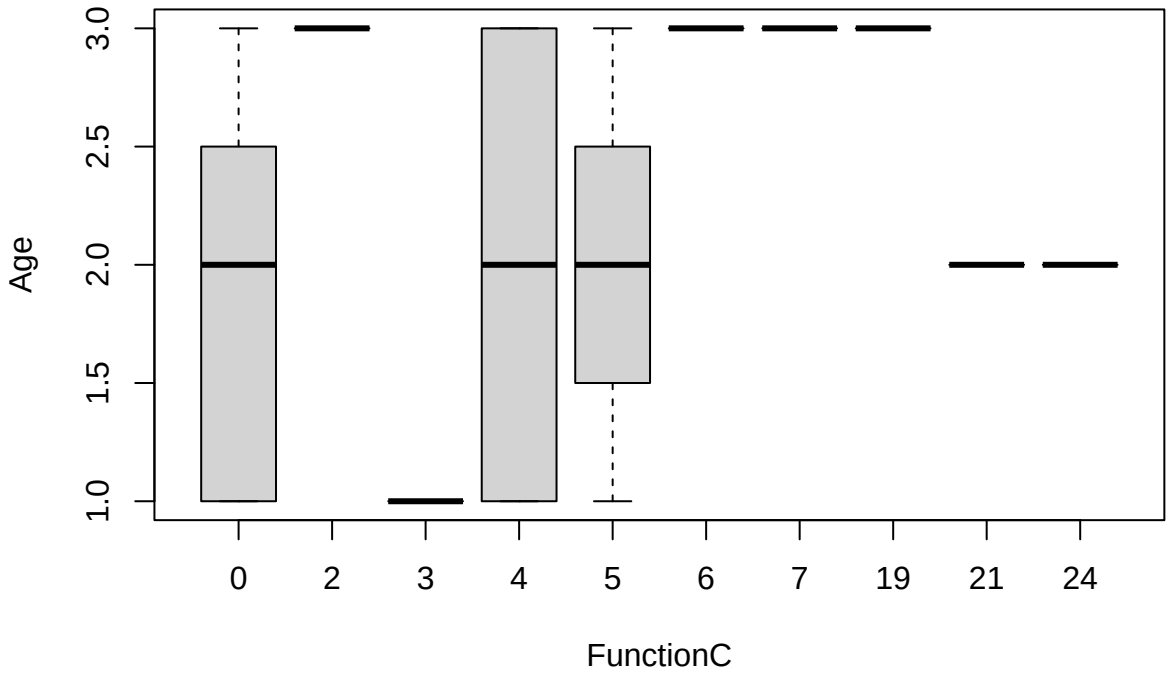
```r
aov(Education ~ FunctionC, data = click)
```

```
## Call:
##    aov(formula = Education ~ FunctionC, data = click)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.017672 16.732328
## Deg. of Freedom         1        34
##
## Residual standard error: 0.7015179
## Estimated effects may be unbalanced
```

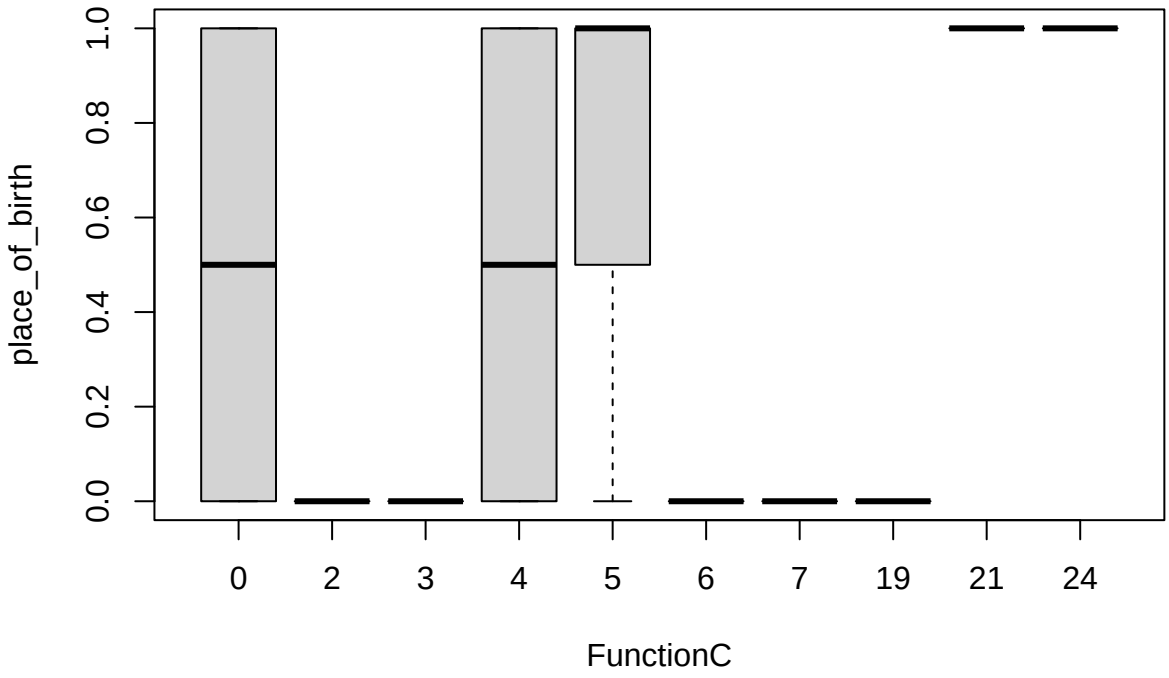
```r
boxplot(Gender ~ FunctionC, click)
```



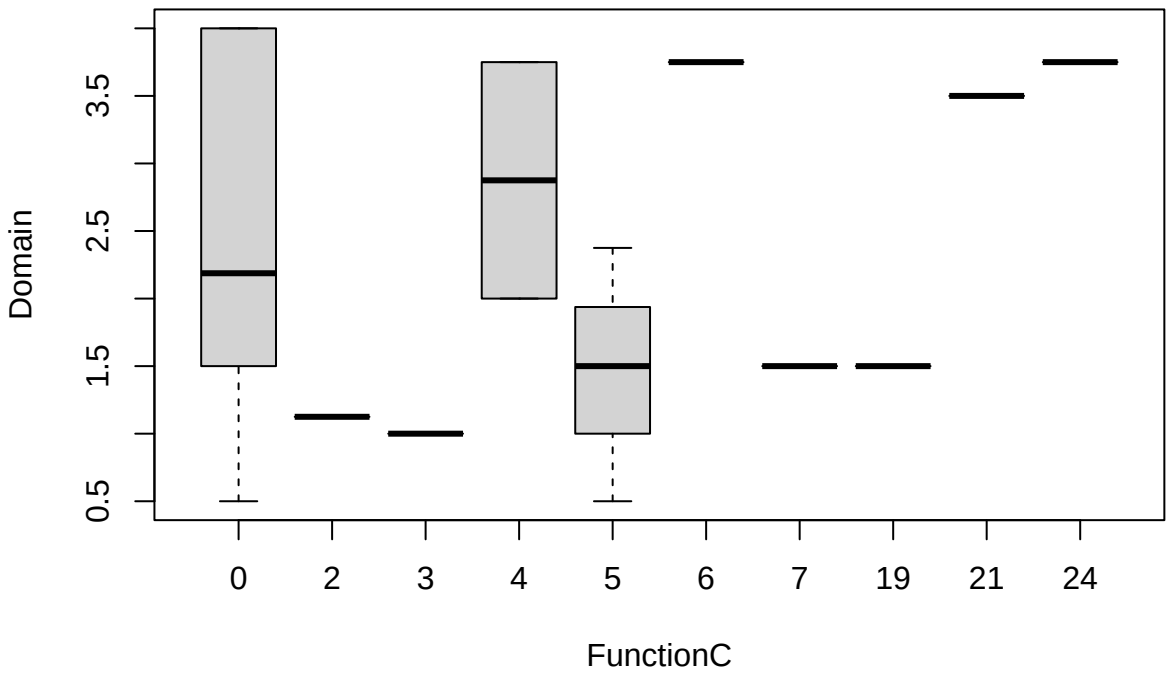

```r
boxplot(Age ~ FunctionC, click)
```



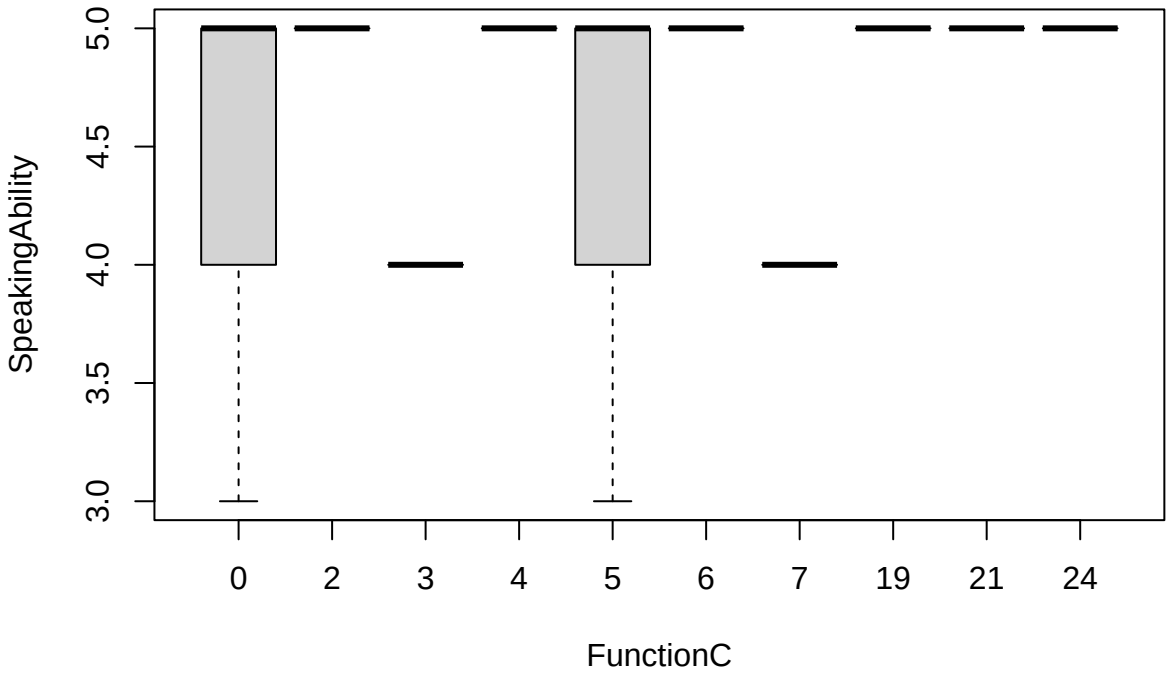

```
boxplot(place_of_birth ~ FunctionC, click)
```



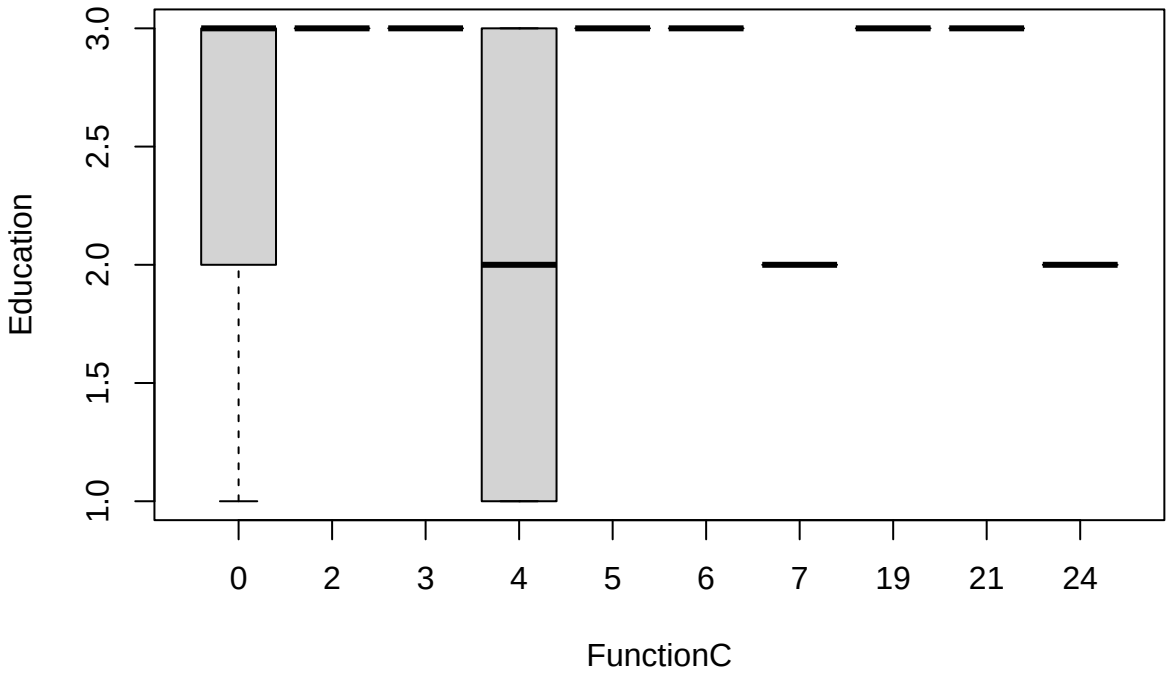

```
boxplot(Domain ~ FunctionC, click)
```




```
boxplot(SpeakingAbility ~ FunctionC, click)
```




```
boxplot(Education ~ FunctionC, click)
```




```
kruskal.test(Gender ~ FunctionC, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionC
## Kruskal-Wallis chi-squared = 7.0433, df = 9, p-value = 0.6326
```

```
kruskal.test(Age ~ FunctionC, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionC
## Kruskal-Wallis chi-squared = 7.8385, df = 9, p-value = 0.5505
```

```
kruskal.test(place_of_birth ~ FunctionC, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionC
## Kruskal-Wallis chi-squared = 7.0433, df = 9, p-value = 0.6326
```

```r
kruskal.test(Domain ~ FunctionC, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionC
## Kruskal-Wallis chi-squared = 7.2788, df = 9, p-value = 0.6081
```

```r
kruskal.test(SpeakingAbility ~ FunctionC, data = click)
```

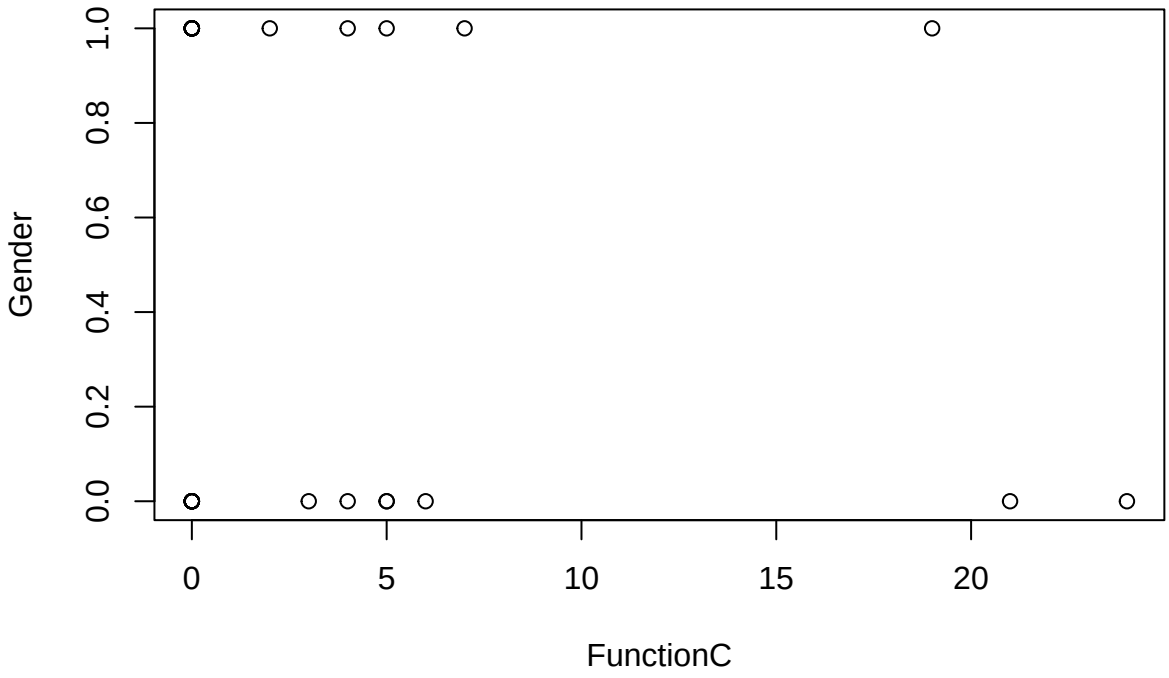
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionC
## Kruskal-Wallis chi-squared = 6.1306, df = 9, p-value = 0.7268
```

```r
kruskal.test(Education ~ FunctionC, data = click)
```

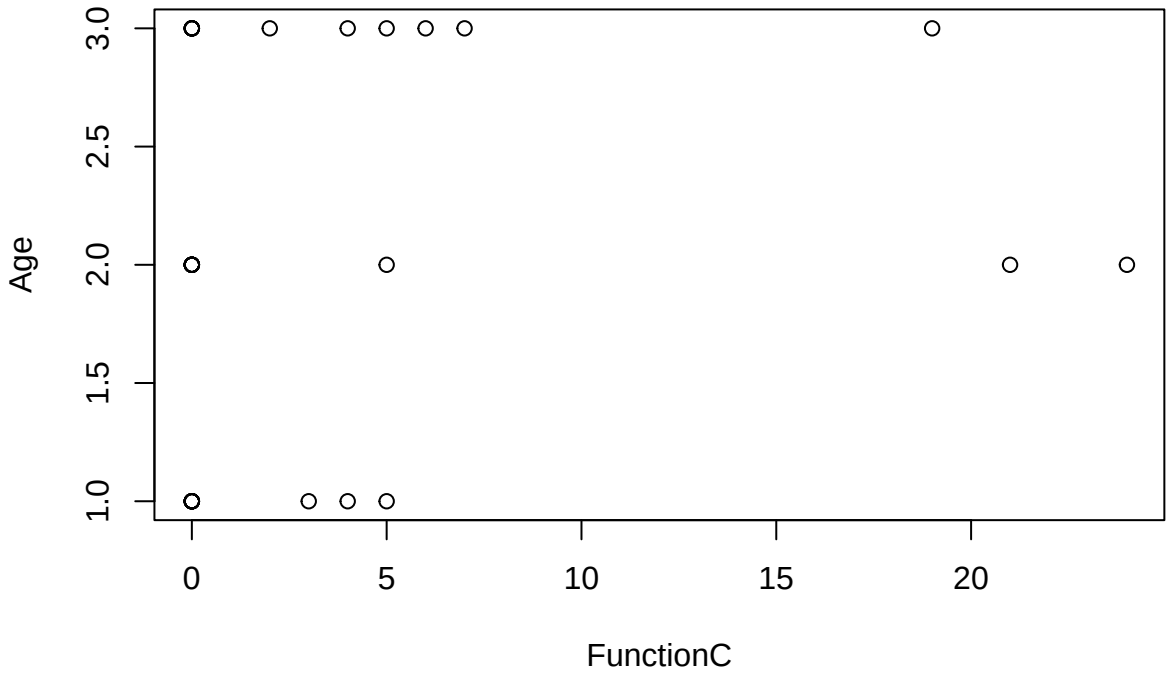
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionC
## Kruskal-Wallis chi-squared = 7.1884, df = 9, p-value = 0.6175
```

Function C without non-clickers

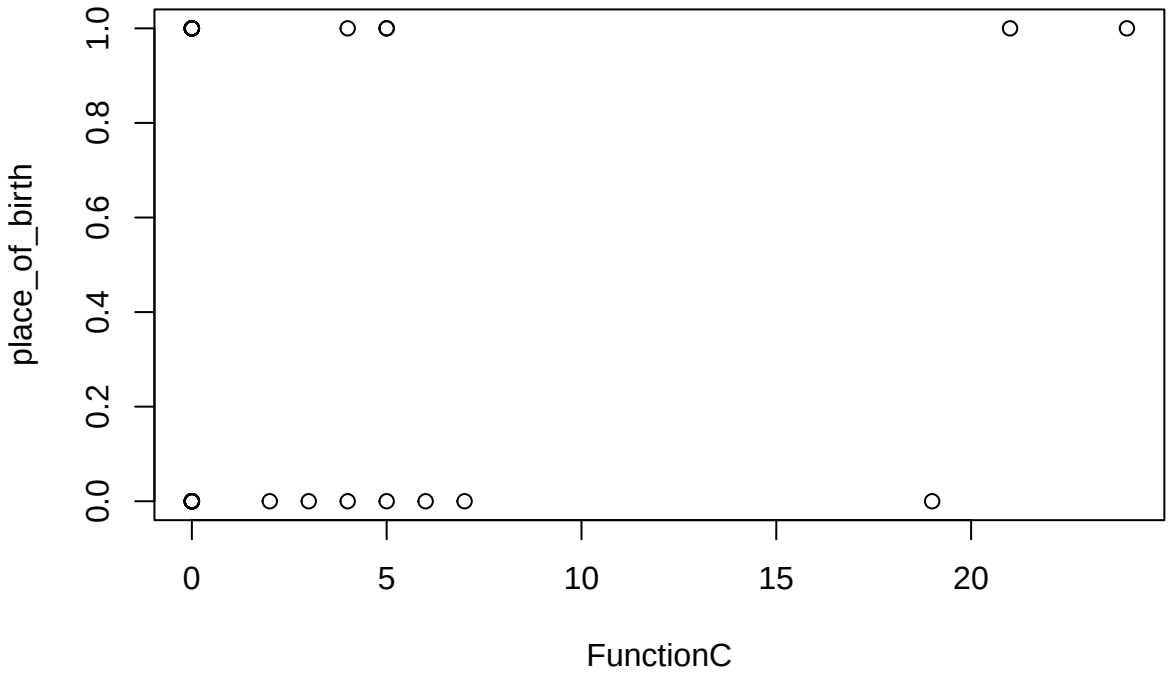
```r
plot(Gender ~ FunctionC, data = click)
```



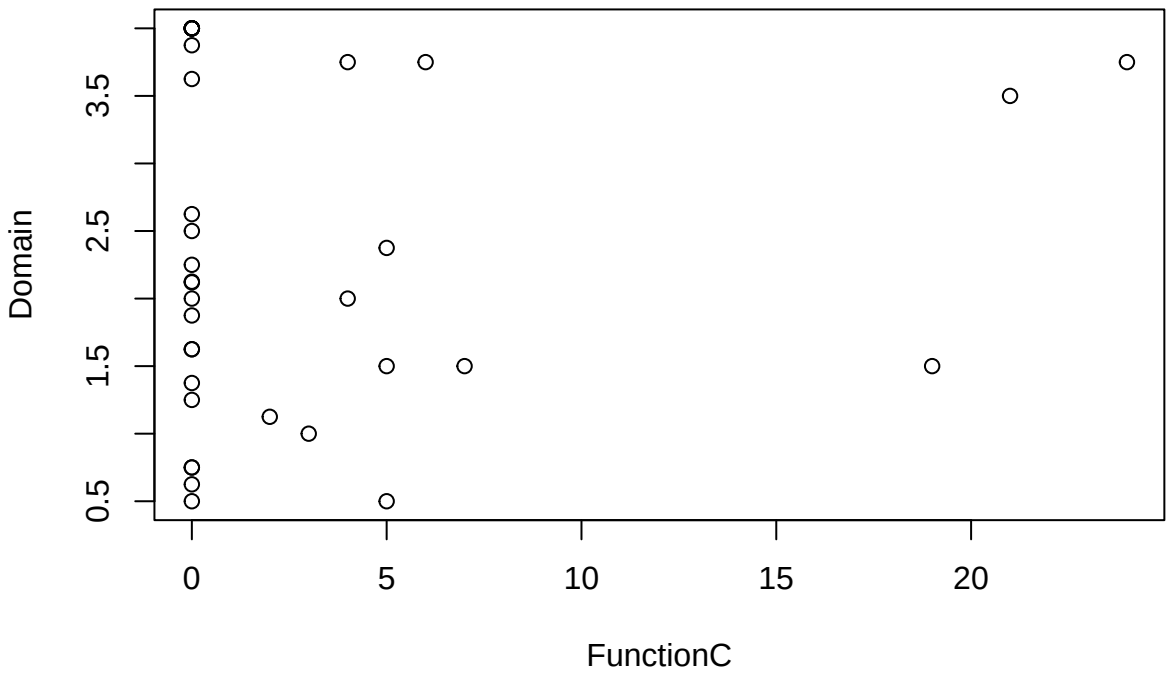

```
plot(Age ~ FunctionC, data = click)
```



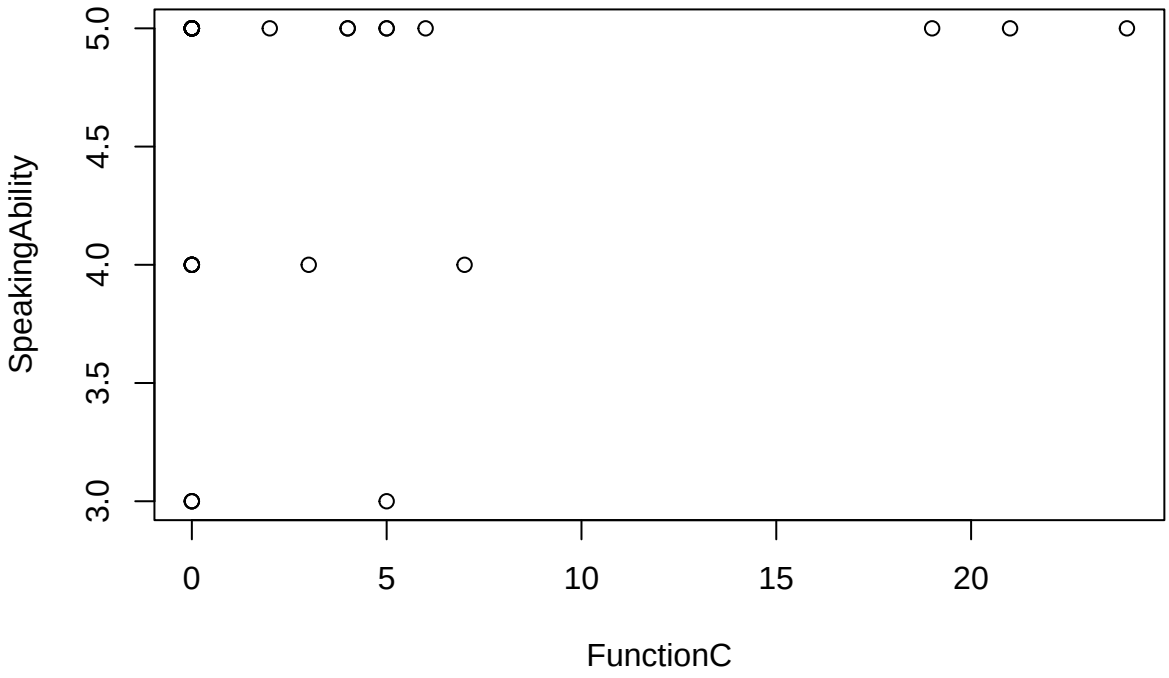

```
plot(place_of_birth ~ FunctionC, data = click)
```



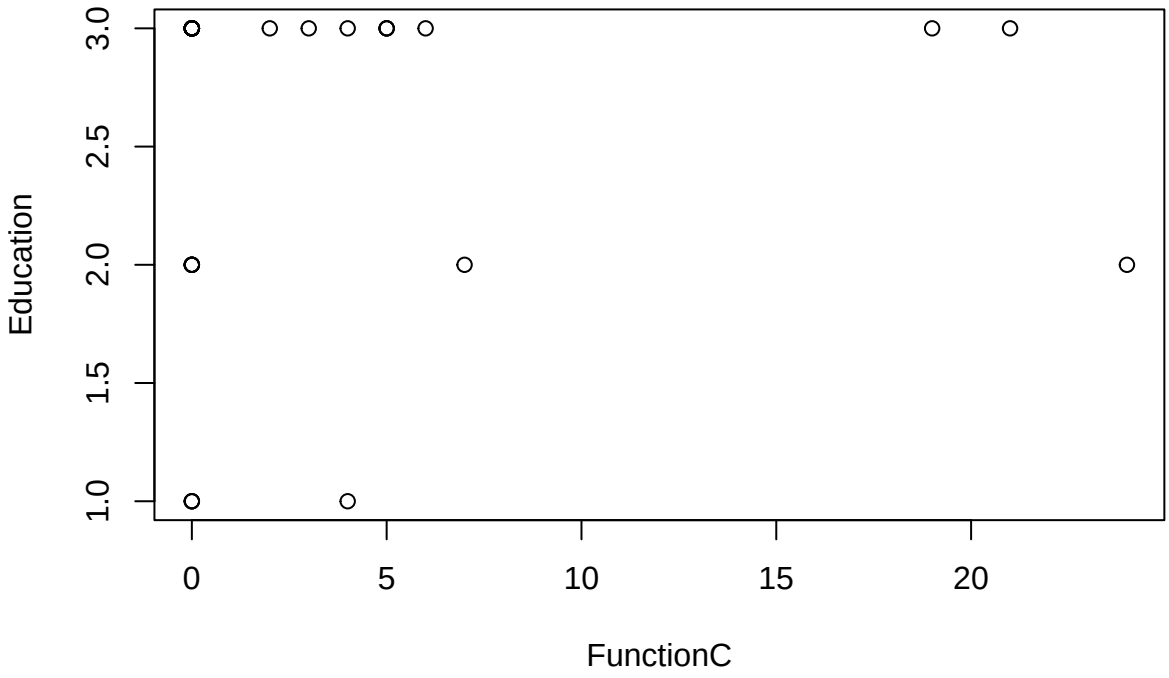

```
plot(Domain ~ FunctionC, data = click)
```




```
plot(SpeakingAbility ~ FunctionC, data = click)
```




```
plot(Education ~ FunctionC, data = click)
```




```
chisq.test(clicksonly$FunctionC)
```

```
## Warning in chisq.test(clicksonly$FunctionC): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$FunctionC
## X-squared = 317.13, df = 27, p-value < 2.2e-16
```

```
aov(Gender ~ FunctionC, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ FunctionC, data = clicksonly)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.116092  6.848194
## Deg. of Freedom         1        26
##
## Residual standard error: 0.5132174
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionC, data = clicksonly)
```

```
## Call:
##    aov(formula = Age ~ FunctionC, data = clicksonly)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.215262 17.213310
## Deg. of Freedom         1        26
##
## Residual standard error: 0.8136648
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionC, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionC, data = clicksonly)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.006359  6.957927
## Deg. of Freedom         1        26
##
## Residual standard error: 0.5173128
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionC, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ FunctionC, data = clicksonly)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares    0.73269  47.79626
## Deg. of Freedom         1        26
##
## Residual standard error: 1.355846
## Estimated effects may be unbalanced
```

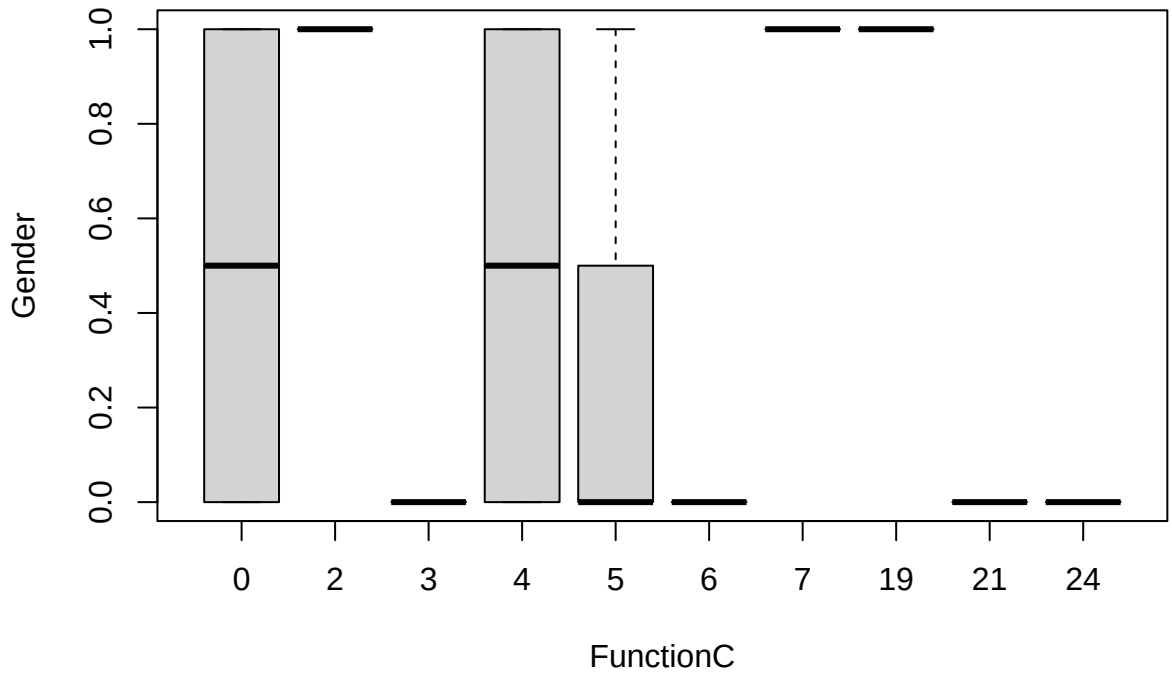
```r
aov(SpeakingAbility ~ FunctionC, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionC, data = clicksonly)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.695028 14.269257
## Deg. of Freedom         1        26
##
## Residual standard error: 0.7408222
## Estimated effects may be unbalanced
```

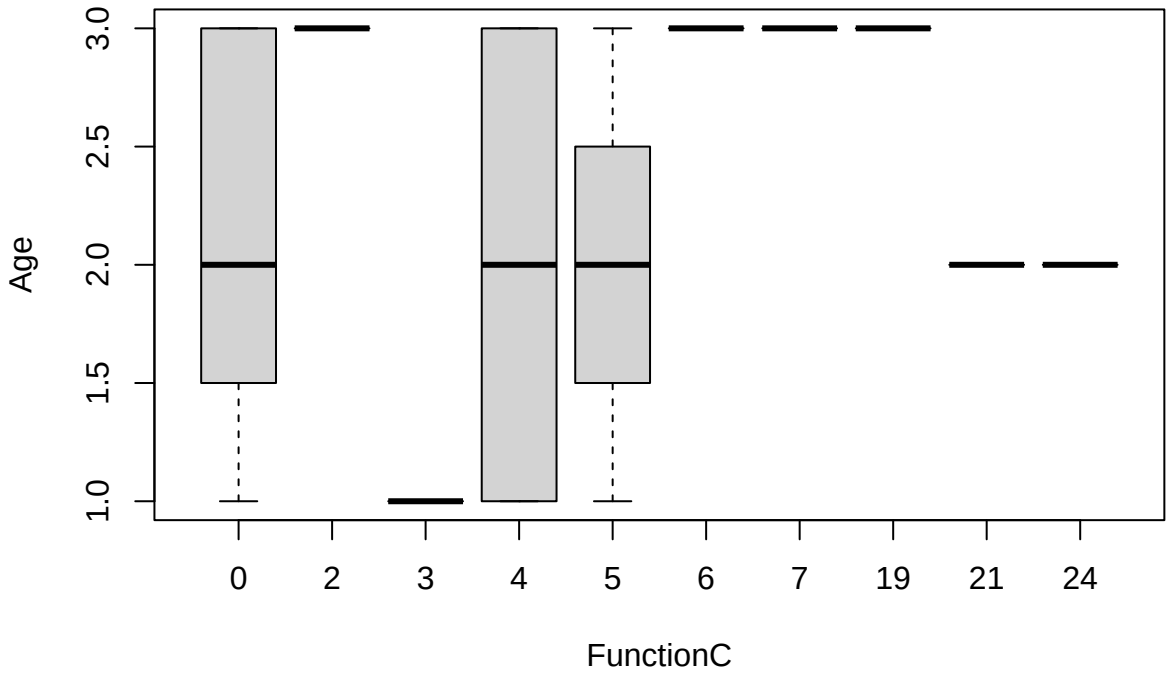
```r
aov(Education ~ FunctionC, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ FunctionC, data = clicksonly)
##
## Terms:
##                 FunctionC Residuals
## Sum of Squares   0.079935 12.884351
## Deg. of Freedom         1        26
##
## Residual standard error: 0.7039545
## Estimated effects may be unbalanced
```

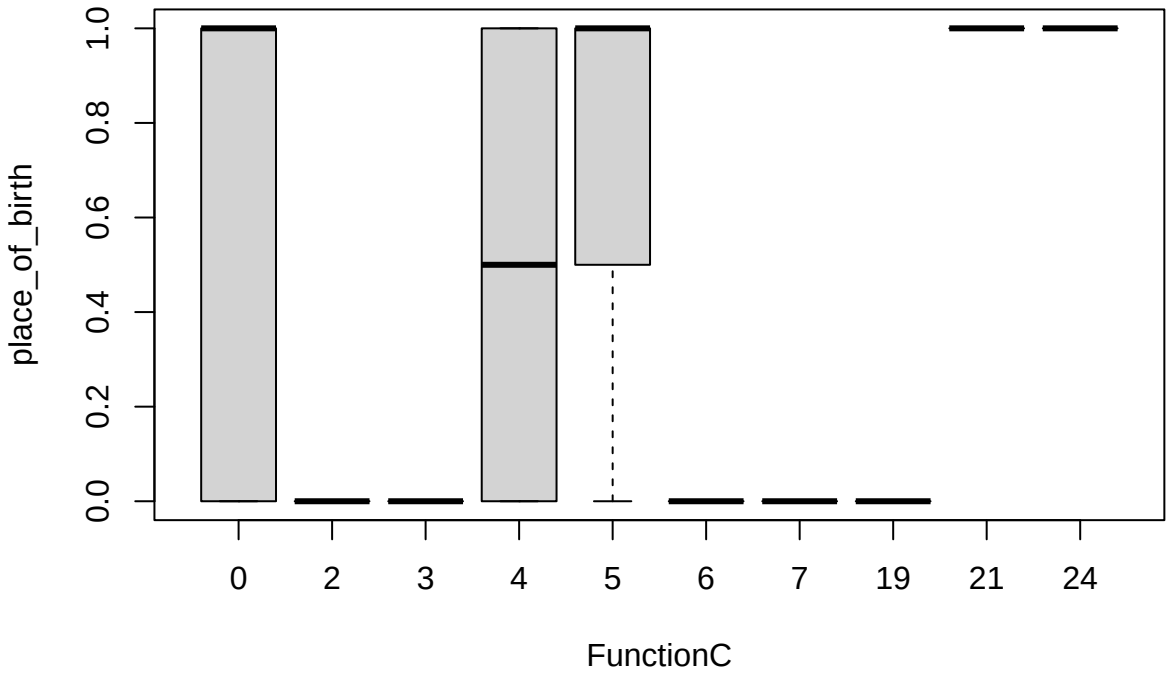
```r
boxplot(Gender ~ FunctionC, clicksonly)
```



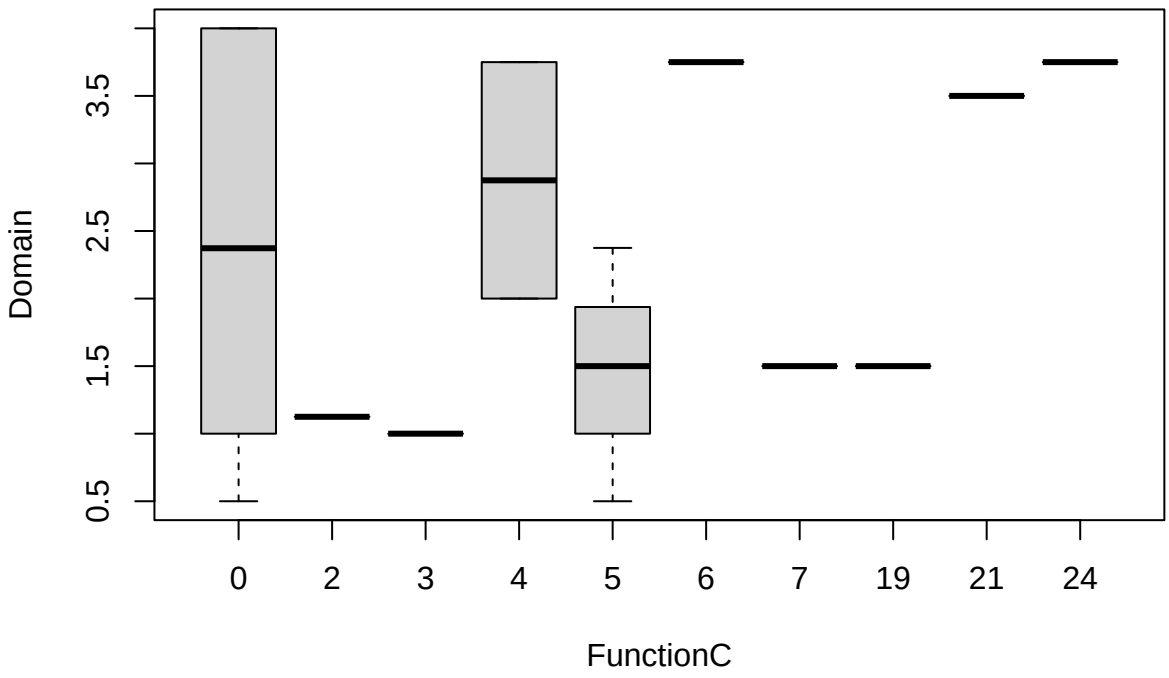

```r
boxplot(Age ~ FunctionC, clicksonly)
```



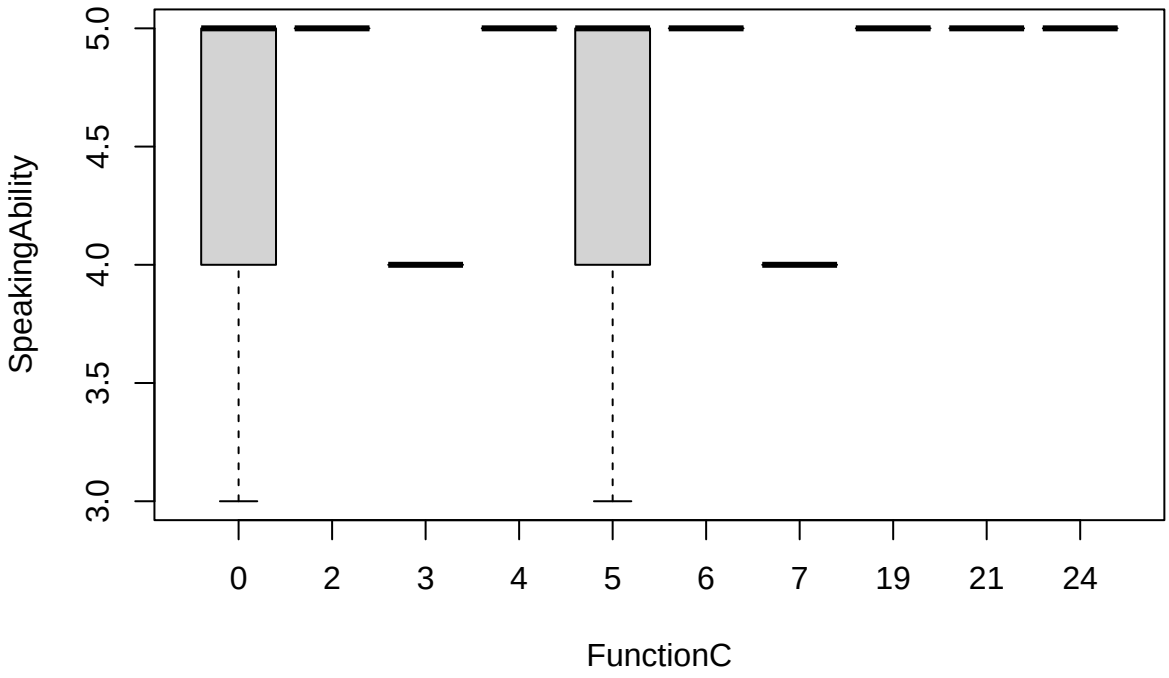

```
boxplot(place_of_birth ~ FunctionC, clicksonly)
```



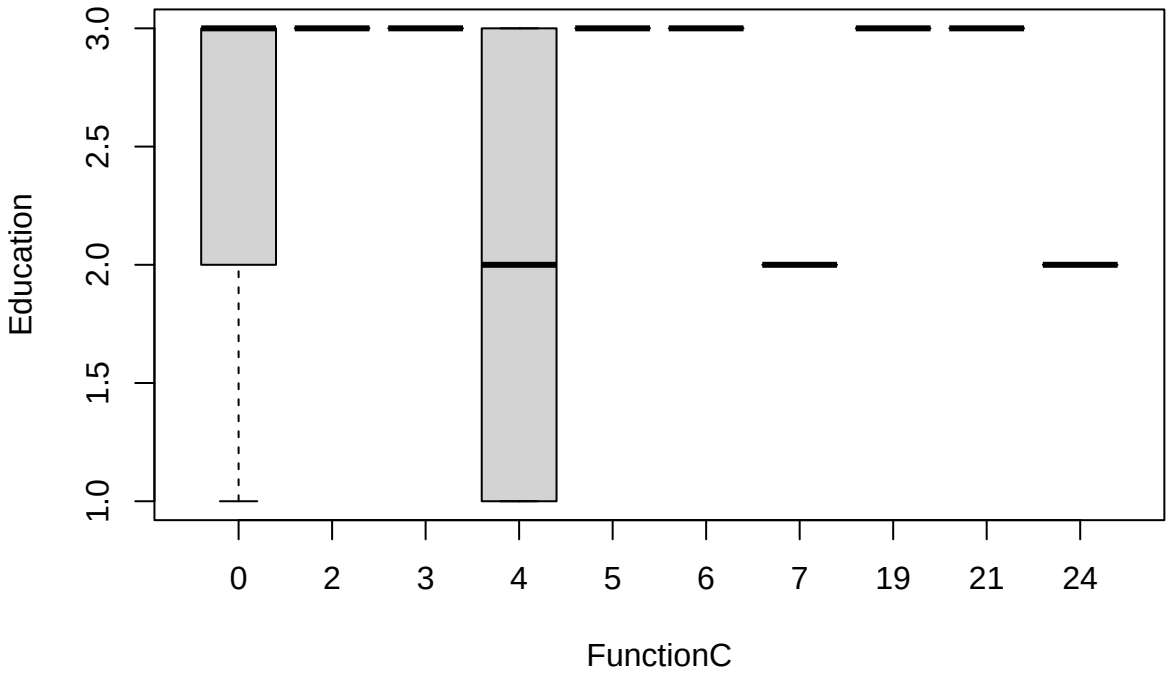

```
boxplot(Domain ~ FunctionC, clicksonly)
```




```
boxplot(SpeakingAbility ~ FunctionC, clicksonly)
```




```
boxplot(Education ~ FunctionC, clicksonly)
```




```
kruskal.test(Gender ~ FunctionC, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionC
## Kruskal-Wallis chi-squared = 6.9692, df = 9, p-value = 0.6403
```

```
kruskal.test(Age ~ FunctionC, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionC
## Kruskal-Wallis chi-squared = 7.1592, df = 9, p-value = 0.6205
```

```
kruskal.test(place_of_birth ~ FunctionC, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionC
## Kruskal-Wallis chi-squared = 7.9385, df = 9, p-value = 0.5404
```

```r
kruskal.test(Domain ~ FunctionC, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionC
## Kruskal-Wallis chi-squared = 5.3531, df = 9, p-value = 0.8025
```

```r
kruskal.test(SpeakingAbility ~ FunctionC, data = clicksonly)
```

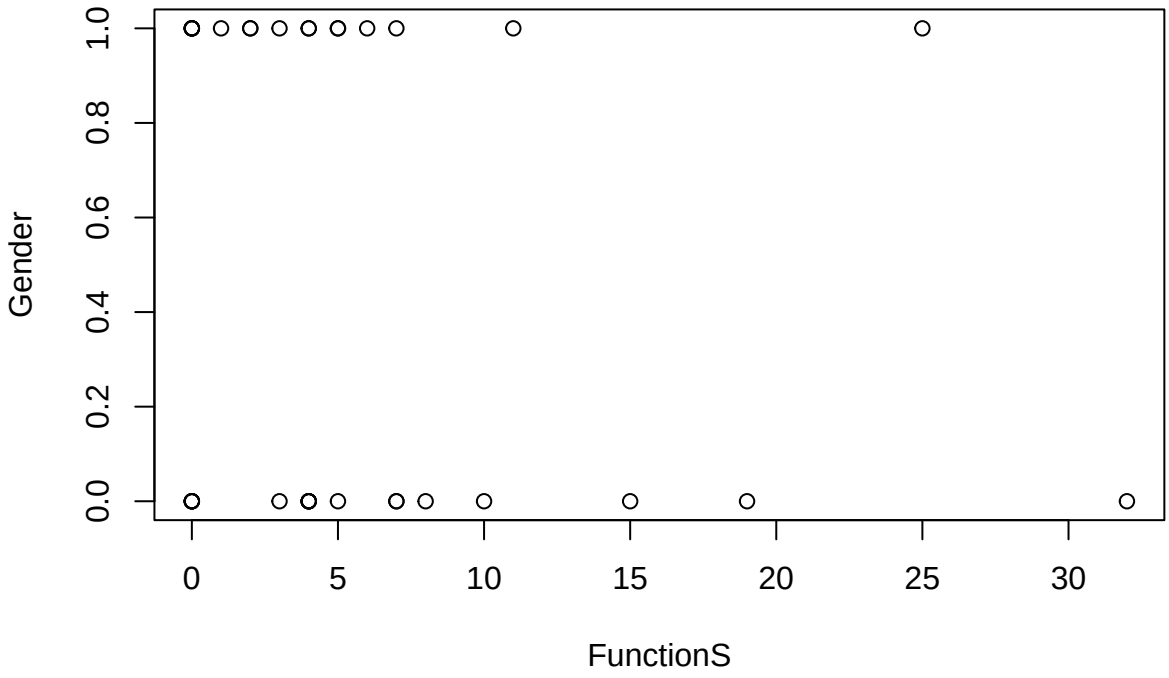
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionC
## Kruskal-Wallis chi-squared = 5.84, df = 9, p-value = 0.7558
```

```r
kruskal.test(Education ~ FunctionC, data = clicksonly)
```

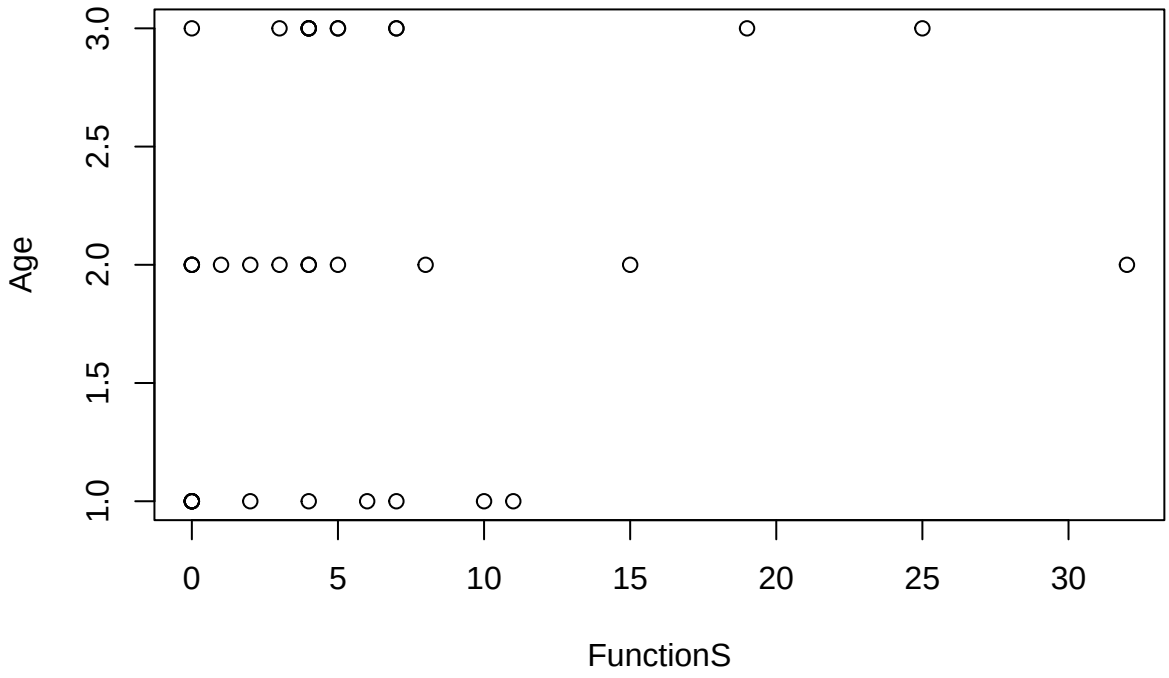
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionC
## Kruskal-Wallis chi-squared = 7.4009, df = 9, p-value = 0.5955
```

Function S with non-clickers

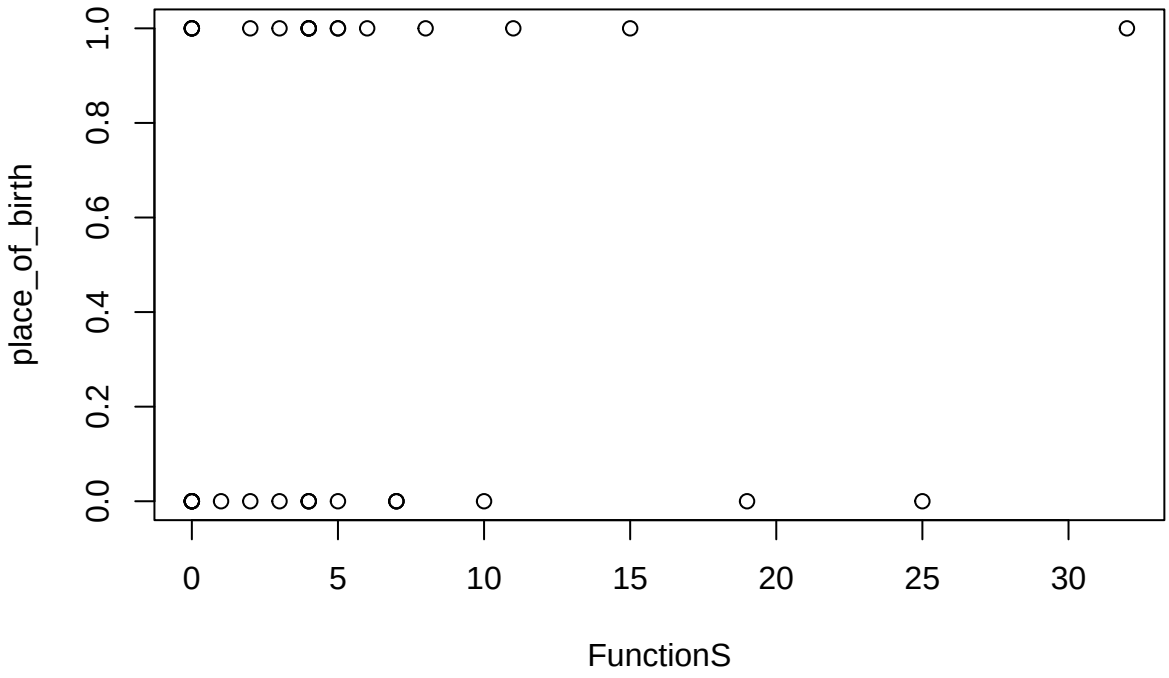
```r
plot(Gender ~ FunctionS, data = click)
```



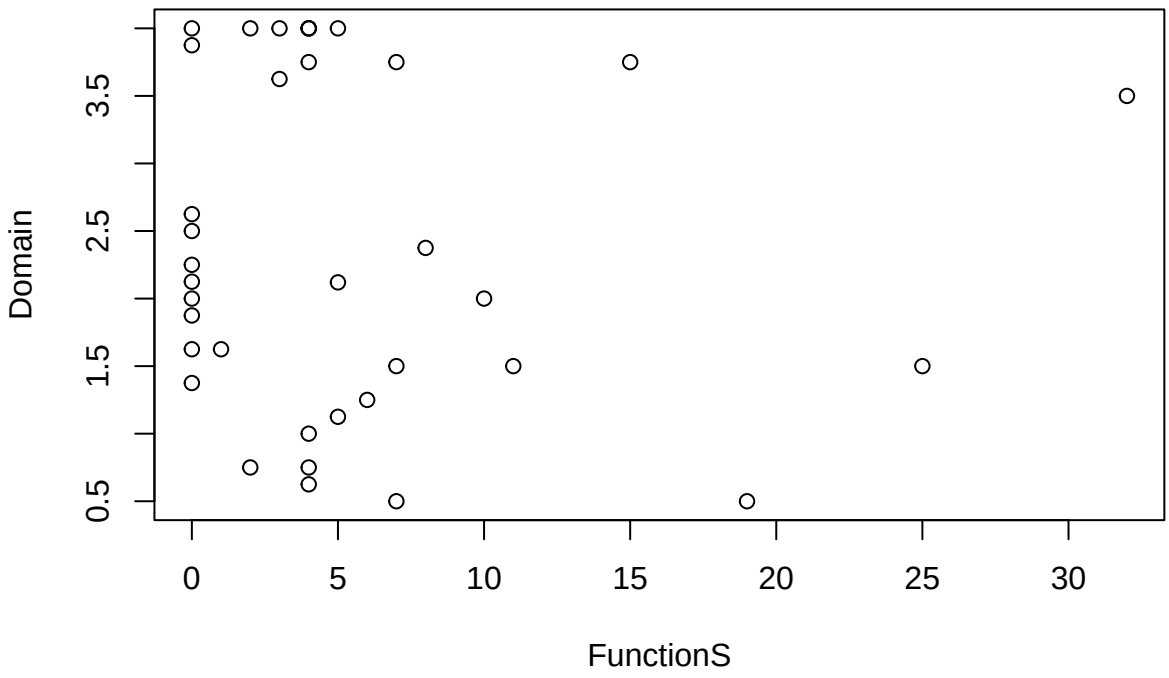

```
plot(Age ~ FunctionS, data = click)
```



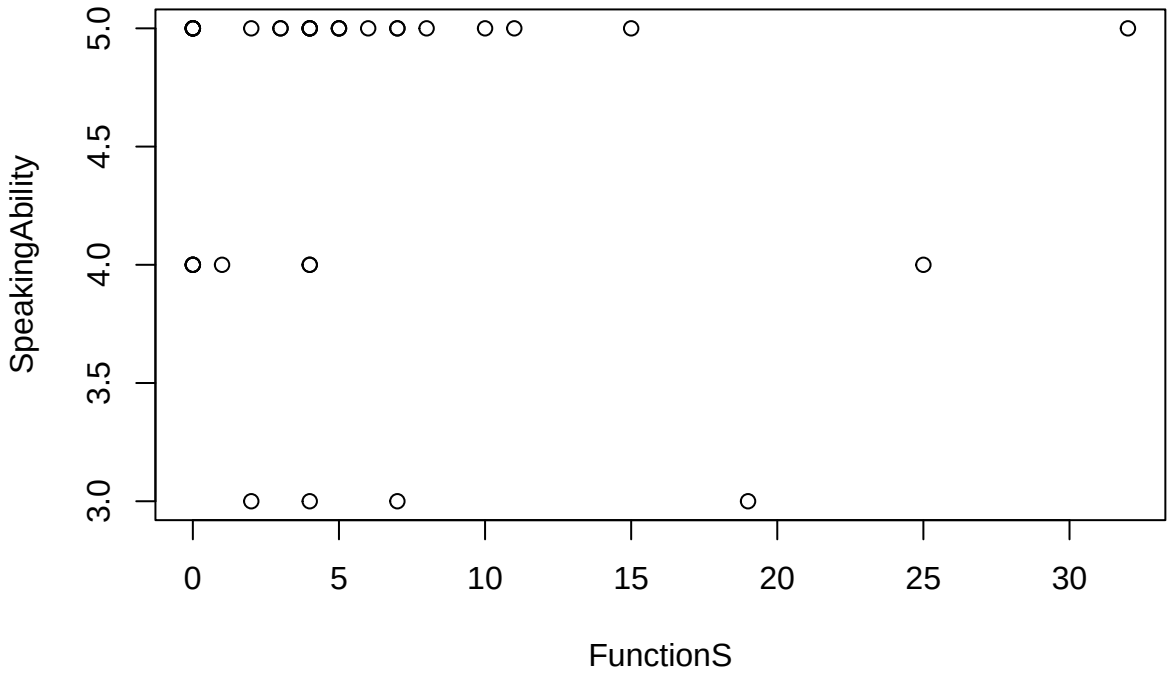

```
plot(place_of_birth ~ FunctionS, data = click)
```



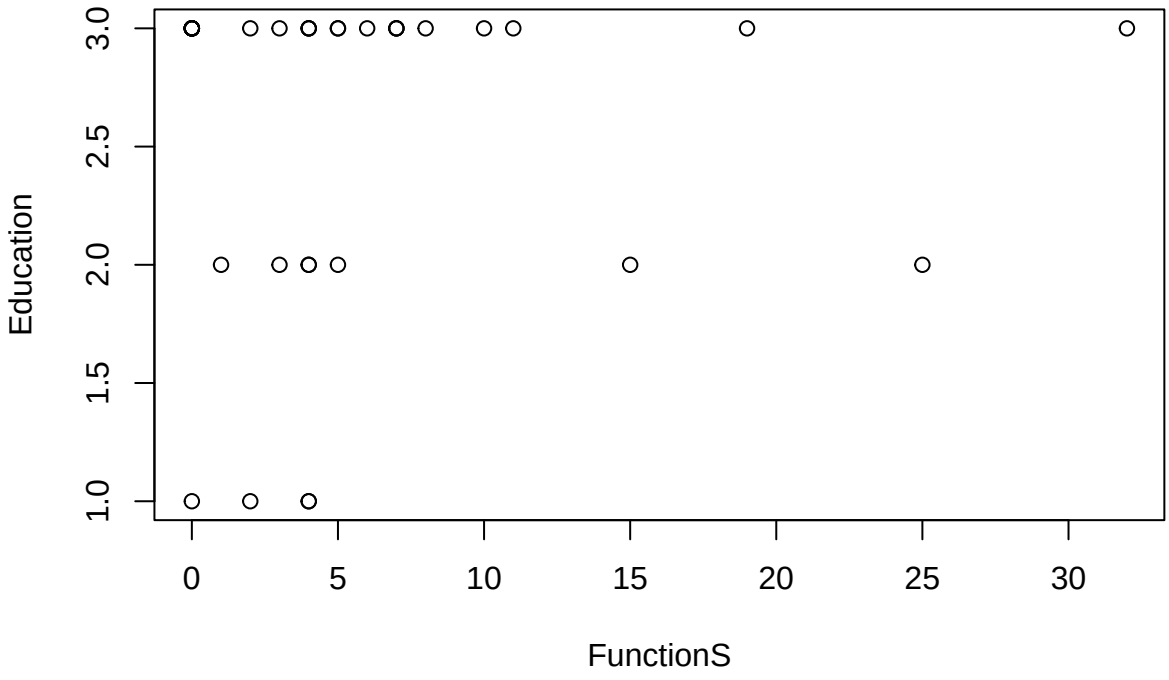

```
plot(Domain ~ FunctionS, data = click)
```




```
plot(SpeakingAbility ~ FunctionS, data = click)
```




```
plot(Education ~ FunctionS, data = click)
```




```
chisq.test(click$FunctionS)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$FunctionS
## X-squared = 321.45, df = 35, p-value < 2.2e-16
```

```
aov(Gender ~ FunctionS, data = click)
```

```
## Call:
##    aov(formula = Gender ~ FunctionS, data = click)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.221019  8.751203
## Deg. of Freedom         1        34
##
## Residual standard error: 0.5073345
## Estimated effects may be unbalanced
```

```
aov(Age ~ FunctionS, data = click)
```

```
## Call:
```

```
##    aov(formula = Age ~ FunctionS, data = click)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   1.230812 22.769188
## Deg. of Freedom         1        34
##
## Residual standard error: 0.818341
## Estimated effects may be unbalanced
```

```
aov(place_of_birth ~ FunctionS, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionS, data = click)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.036406  8.935816
## Deg. of Freedom         1        34
##
## Residual standard error: 0.5126579
## Estimated effects may be unbalanced
```

```
aov(Domain ~ FunctionS, data = click)
```

```
## Call:
##    aov(formula = Domain ~ FunctionS, data = click)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares    0.17099  54.32987
## Deg. of Freedom         1        34
##
## Residual standard error: 1.264095
## Estimated effects may be unbalanced
```

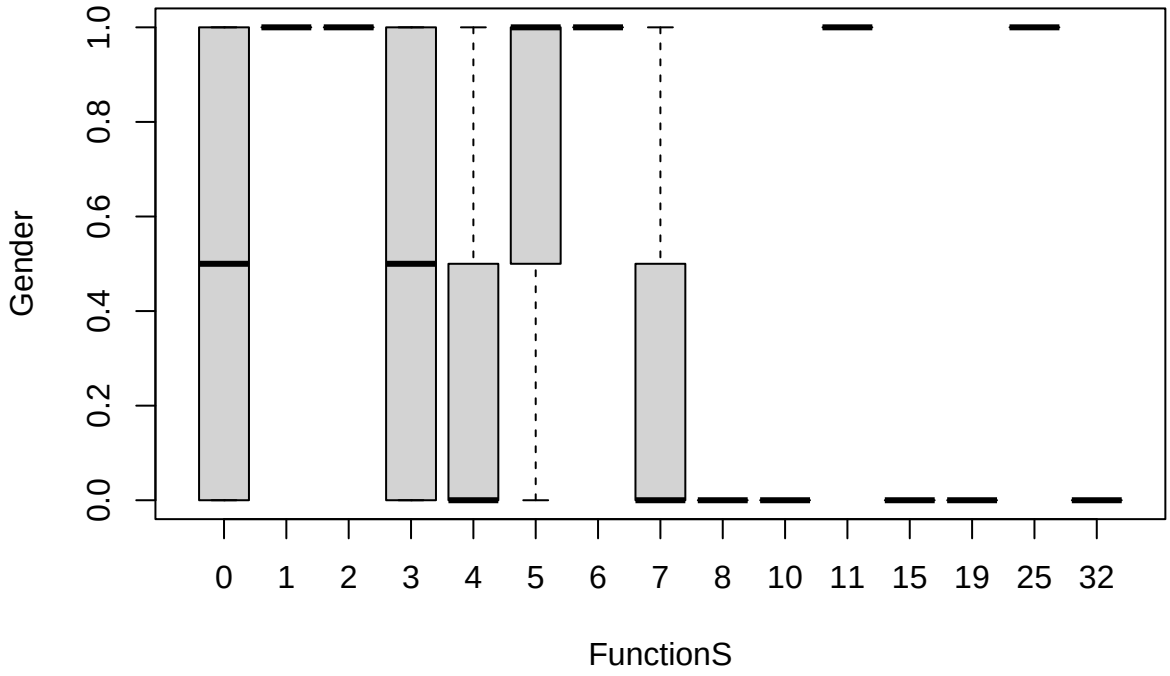
```
aov(SpeakingAbility ~ FunctionS, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionS, data = click)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares    0.04185  16.84704
## Deg. of Freedom         1        34
##
## Residual standard error: 0.7039184
## Estimated effects may be unbalanced
```

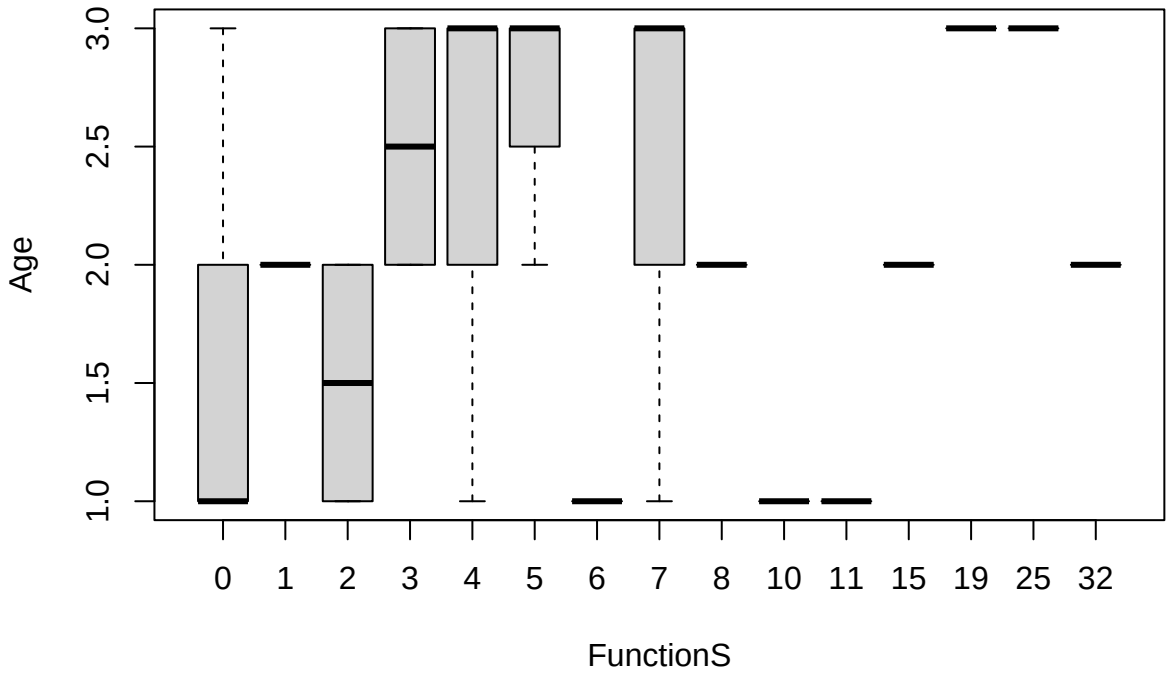
```
aov(Education ~ FunctionS, data = click)
```

```
## Call:
##    aov(formula = Education ~ FunctionS, data = click)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.025387 16.724613
## Deg. of Freedom         1        34
##
## Residual standard error: 0.7013561
## Estimated effects may be unbalanced
```

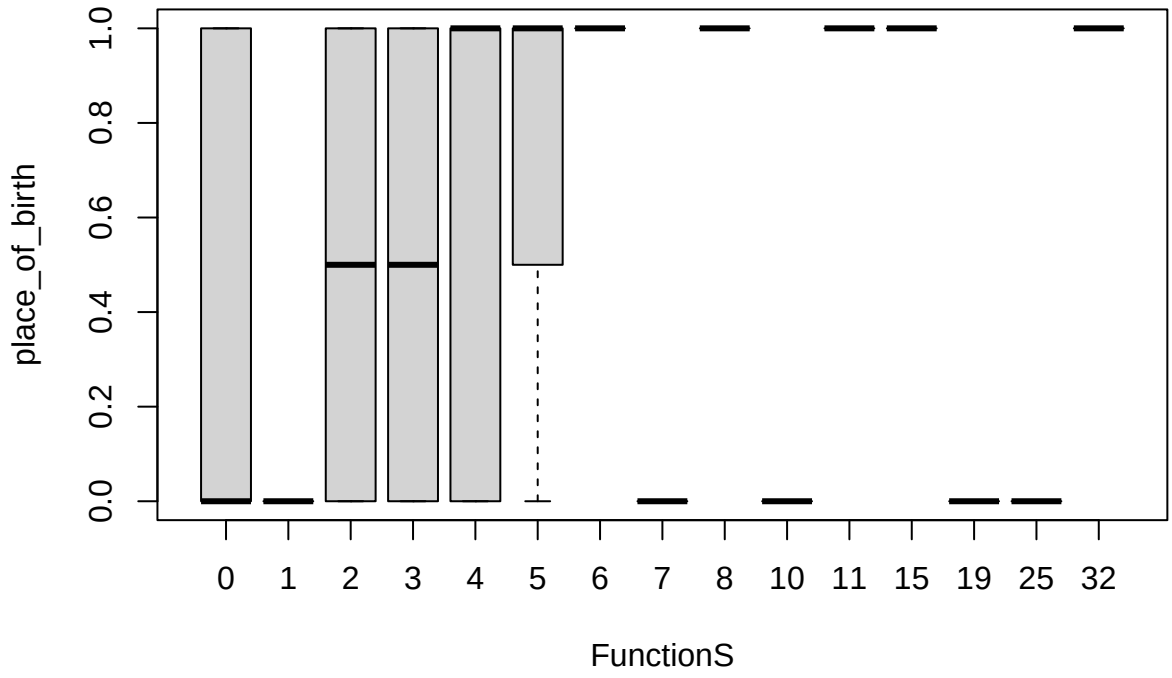
```
boxplot(Gender ~ FunctionS, click)
```



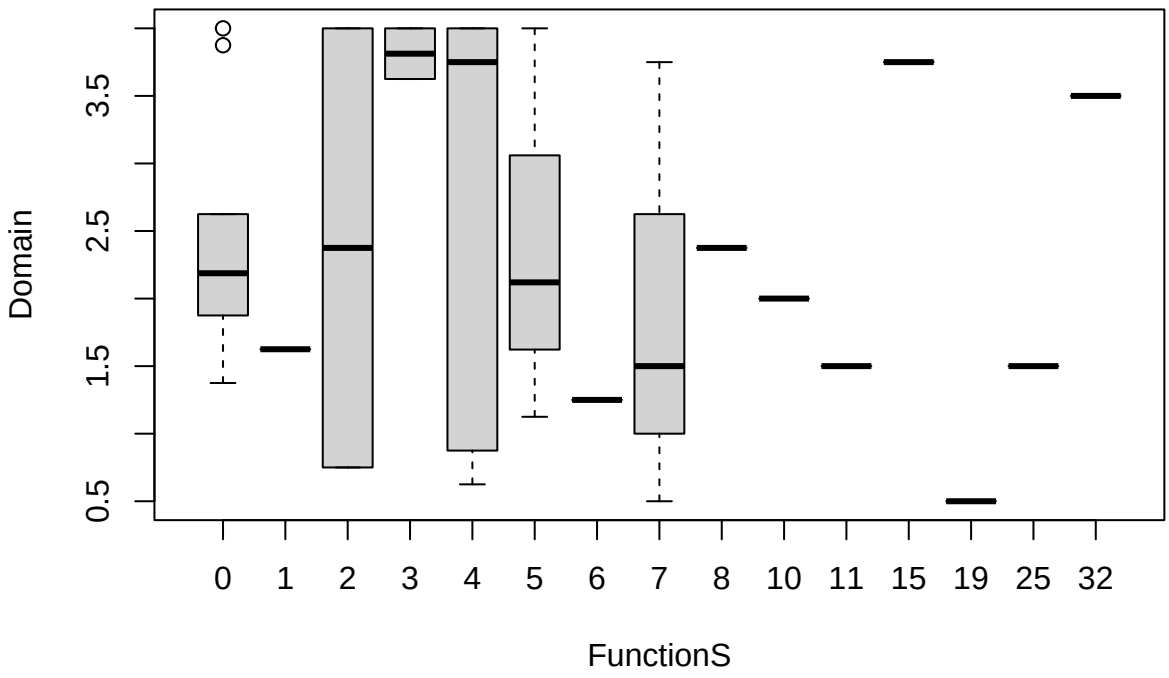

```
boxplot(Age ~ FunctionS, click)
```



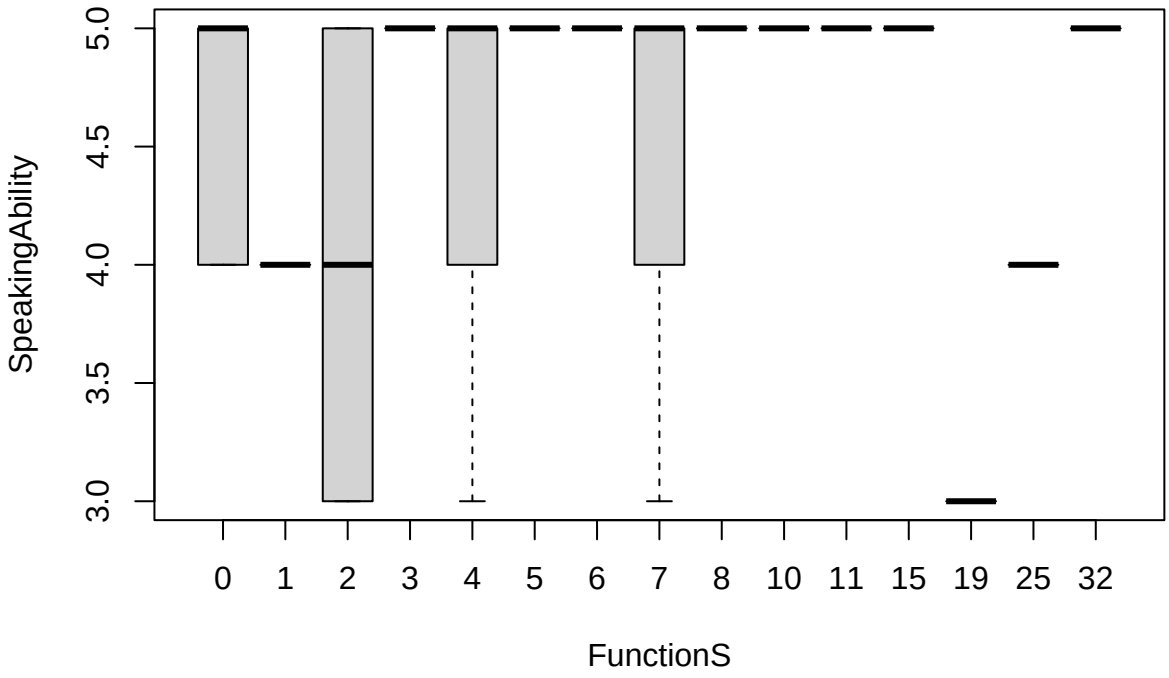

```
boxplot(place_of_birth ~ FunctionS, click)
```



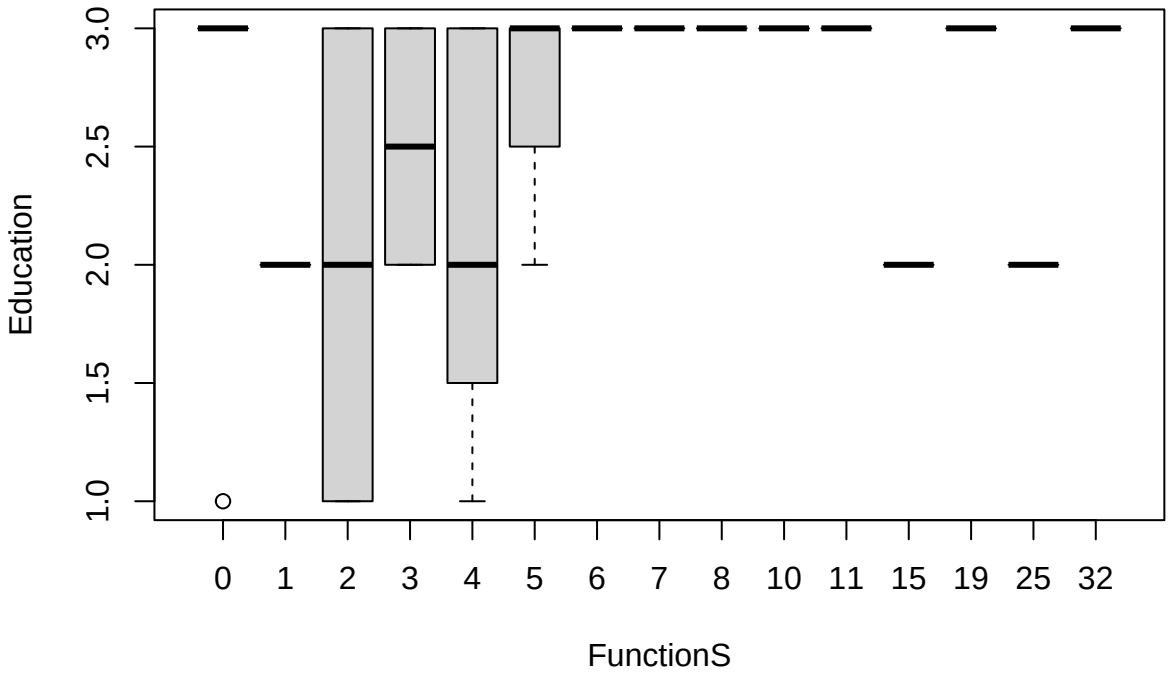

```
boxplot(Domain ~ FunctionS, click)
```




```
boxplot(SpeakingAbility ~ FunctionS, click)
```




```
boxplot(Education ~ FunctionS, click)
```




```
kruskal.test(Gender ~ FunctionS, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionS
## Kruskal-Wallis chi-squared = 12.523, df = 14, p-value = 0.5644
```

```
kruskal.test(Age ~ FunctionS, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionS
## Kruskal-Wallis chi-squared = 16.701, df = 14, p-value = 0.2724
```

```
kruskal.test(place_of_birth ~ FunctionS, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionS
## Kruskal-Wallis chi-squared = 12.449, df = 14, p-value = 0.5703
```

```r
kruskal.test(Domain ~ FunctionS, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionS
## Kruskal-Wallis chi-squared = 9.037, df = 14, p-value = 0.8287
```

```r
kruskal.test(SpeakingAbility ~ FunctionS, data = click)
```

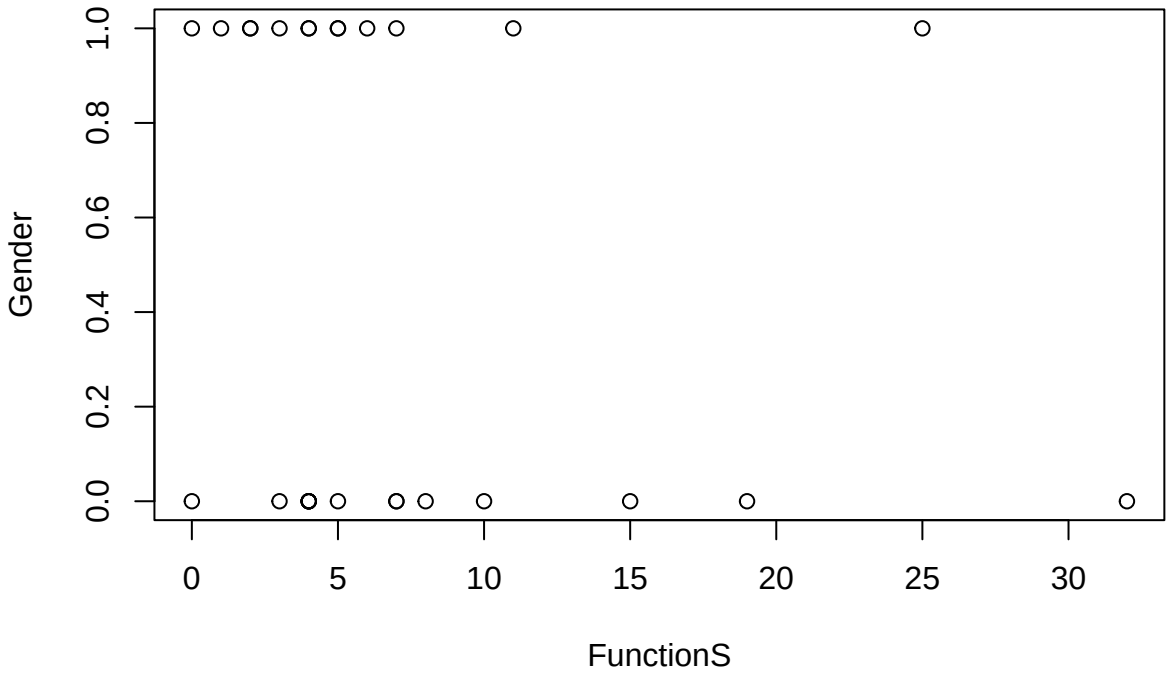
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionS
## Kruskal-Wallis chi-squared = 12.103, df = 14, p-value = 0.598
```

```r
kruskal.test(Education ~ FunctionS, data = click)
```

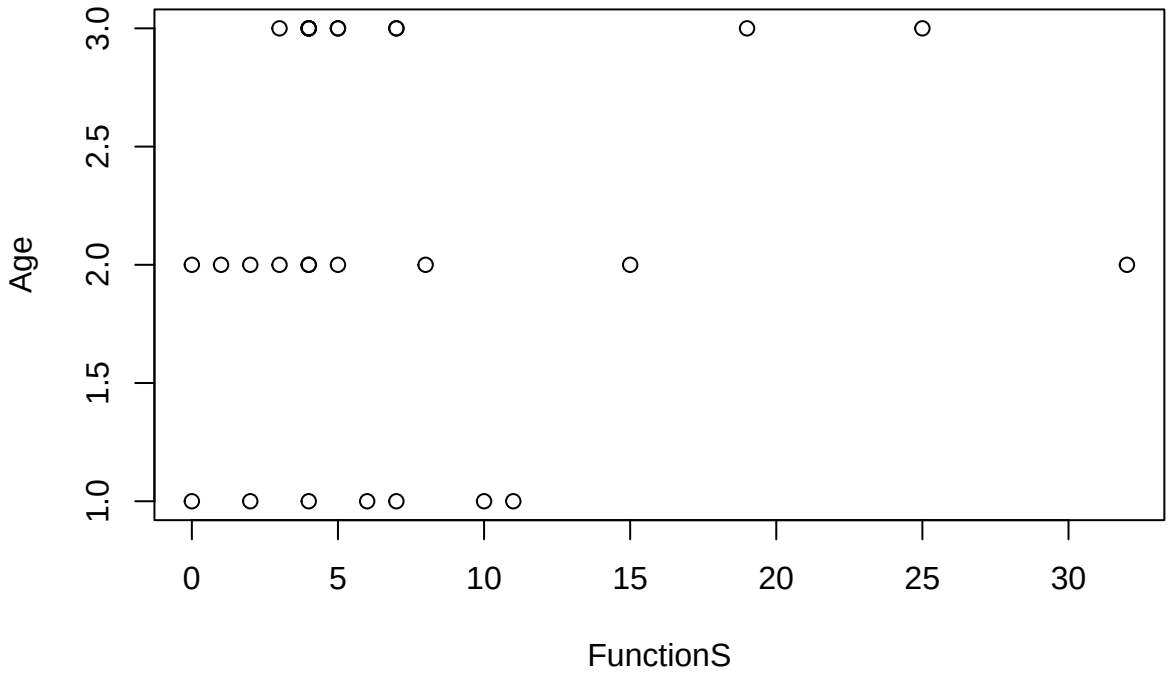
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionS
## Kruskal-Wallis chi-squared = 13.348, df = 14, p-value = 0.4993
```

Function S without non-clickers

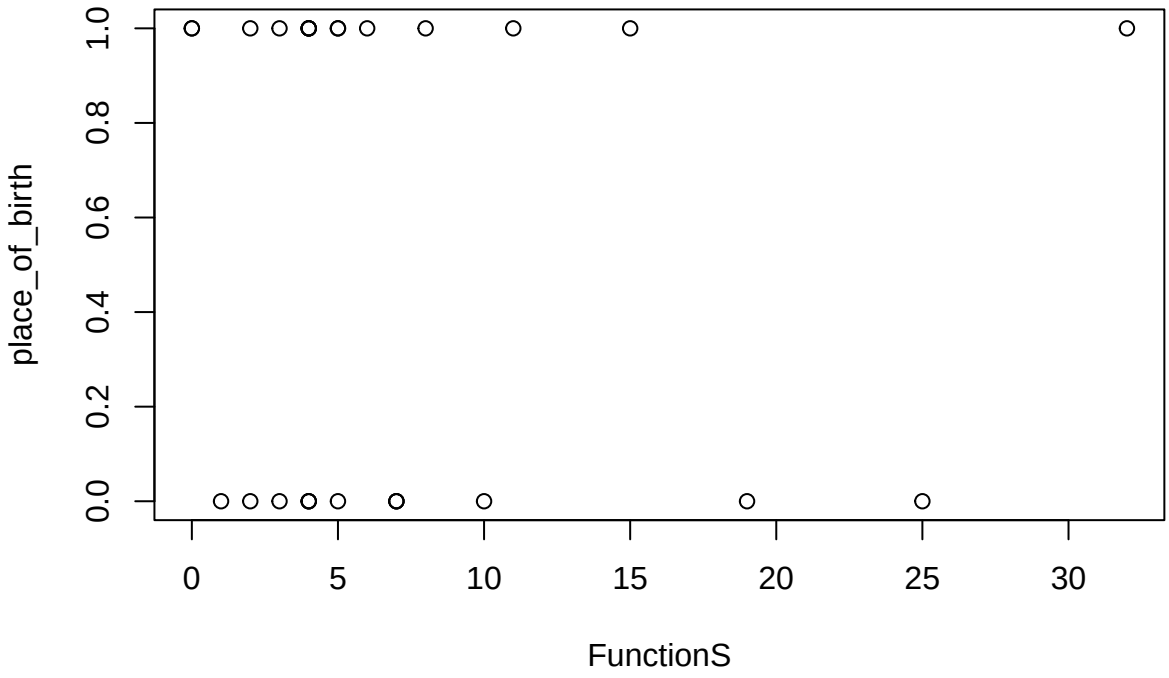
```r
plot(Gender ~ FunctionS, data = clicksonly)
```



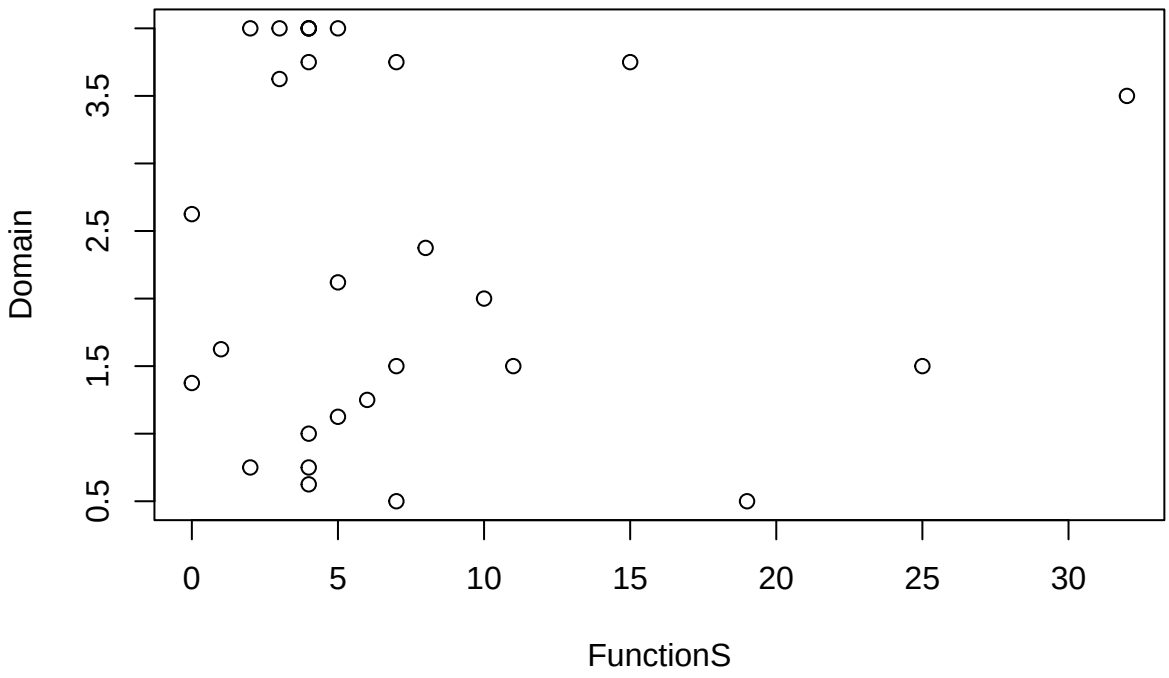

```
plot(Age ~ FunctionS, data = clicksonly)
```



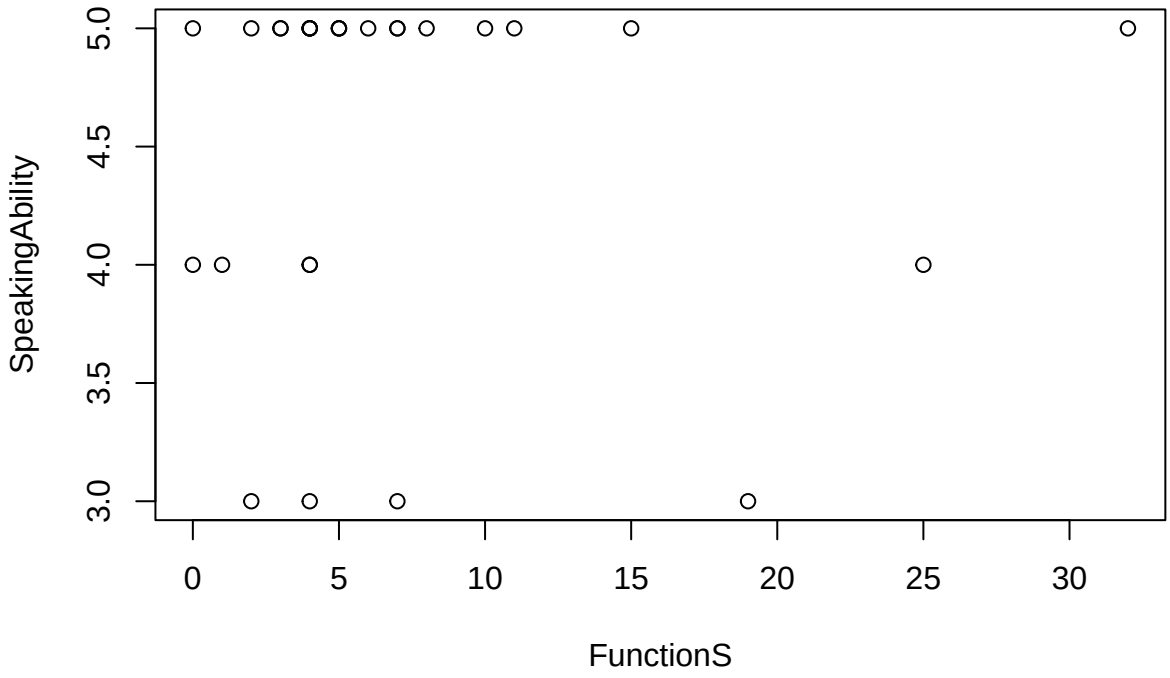

```
plot(place_of_birth ~ FunctionS, data = clicksonly)
```



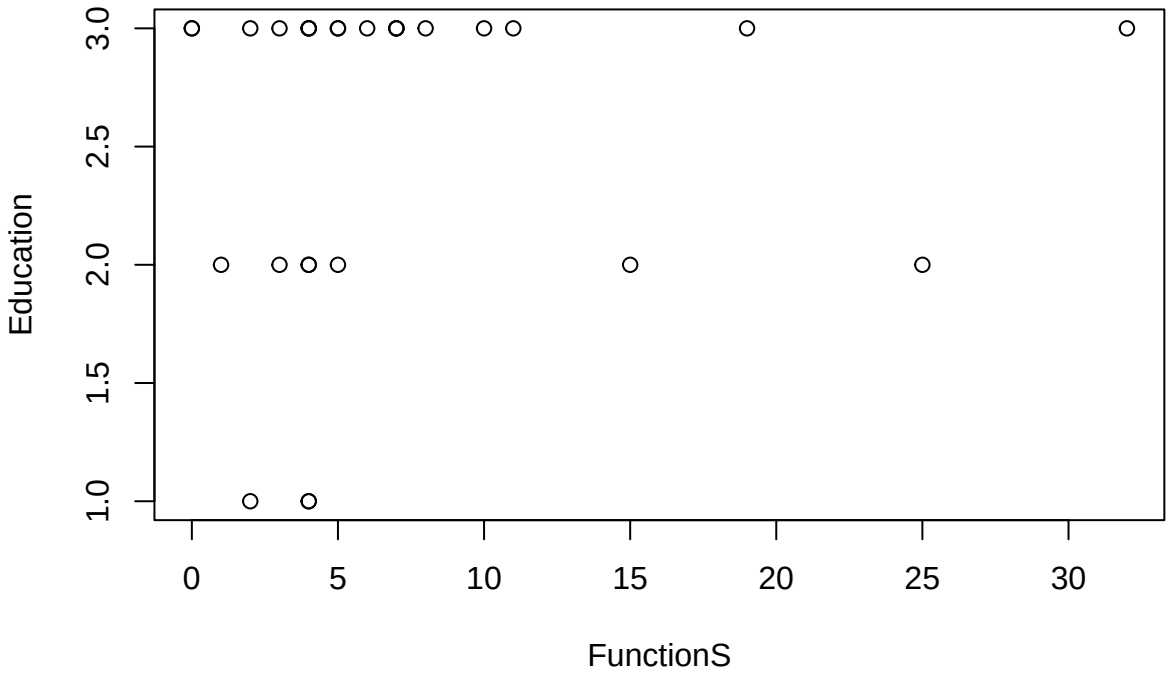

```
plot(Domain ~ FunctionS, data = clicksonly)
```




```
plot(SpeakingAbility ~ FunctionS, data = clicksonly)
```




```
plot(Education ~ FunctionS, data = clicksonly)
```




```
chisq.test(clicksonly$FunctionS)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$FunctionS
## X-squared = 205.35, df = 27, p-value < 2.2e-16
```

```
aov(Gender ~ FunctionS, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ FunctionS, data = clicksonly)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.227714  6.736572
## Deg. of Freedom         1        26
##
## Residual standard error: 0.5090176
## Estimated effects may be unbalanced
```

```
aov(Age ~ FunctionS, data = clicksonly)
```

```
## Call:
```

```
##    aov(formula = Age ~ FunctionS, data = clicksonly)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.226827 17.201744
## Deg. of Freedom         1        26
##
## Residual standard error: 0.8133914
## Estimated effects may be unbalanced
```

```
aov(place_of_birth ~ FunctionS, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionS, data = clicksonly)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.014849  6.949437
## Deg. of Freedom         1        26
##
## Residual standard error: 0.5169971
## Estimated effects may be unbalanced
```

```
aov(Domain ~ FunctionS, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ FunctionS, data = clicksonly)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares    0.05416  48.47479
## Deg. of Freedom         1        26
##
## Residual standard error: 1.365436
## Estimated effects may be unbalanced
```

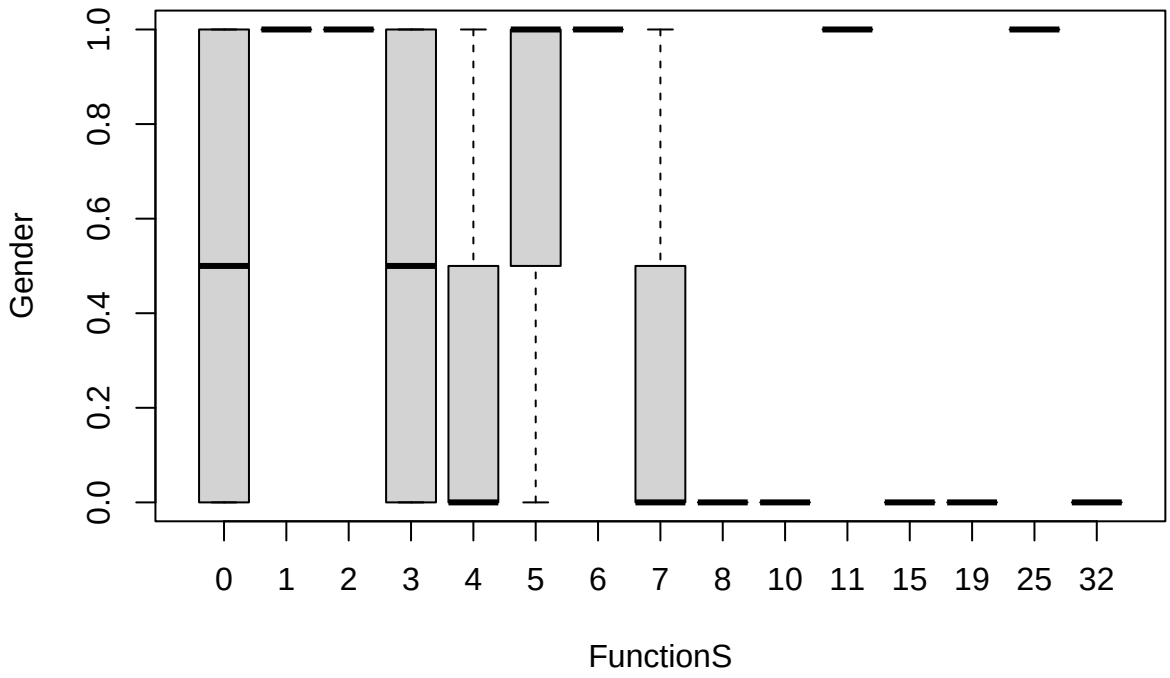
```
aov(SpeakingAbility ~ FunctionS, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionS, data = clicksonly)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.014849 14.949437
## Deg. of Freedom         1        26
##
## Residual standard error: 0.7582733
## Estimated effects may be unbalanced
```

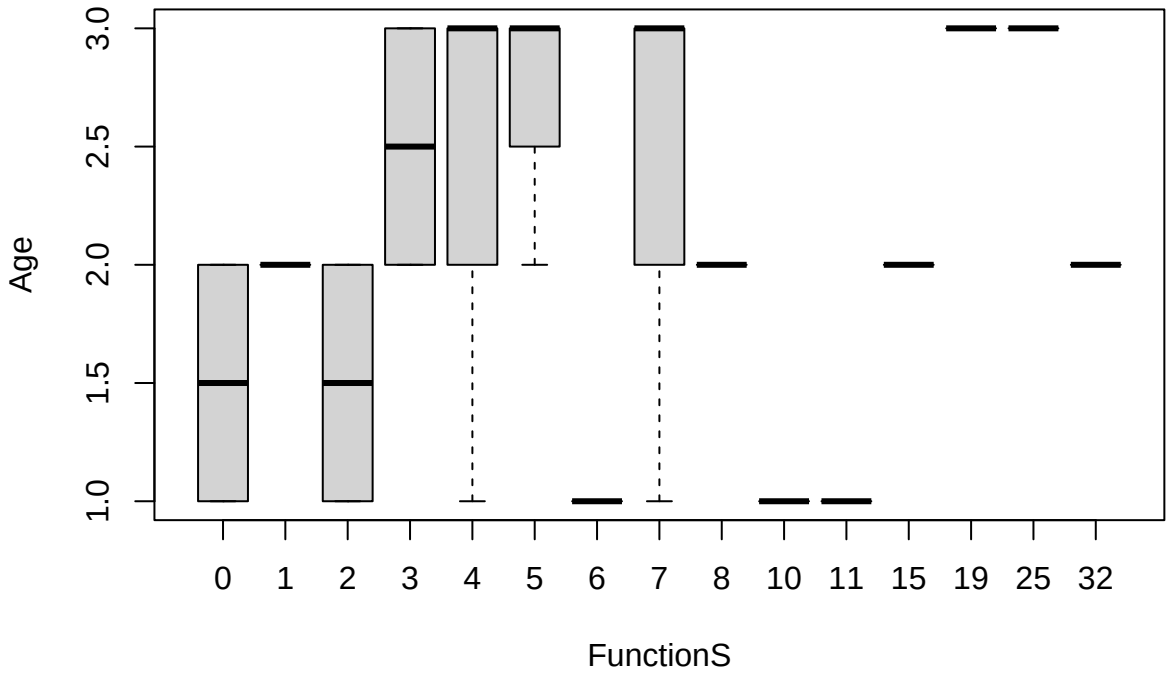
```
aov(Education ~ FunctionS, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ FunctionS, data = clicksonly)
##
## Terms:
##                 FunctionS Residuals
## Sum of Squares   0.180712 12.783574
## Deg. of Freedom         1        26
##
## Residual standard error: 0.7011961
## Estimated effects may be unbalanced
```

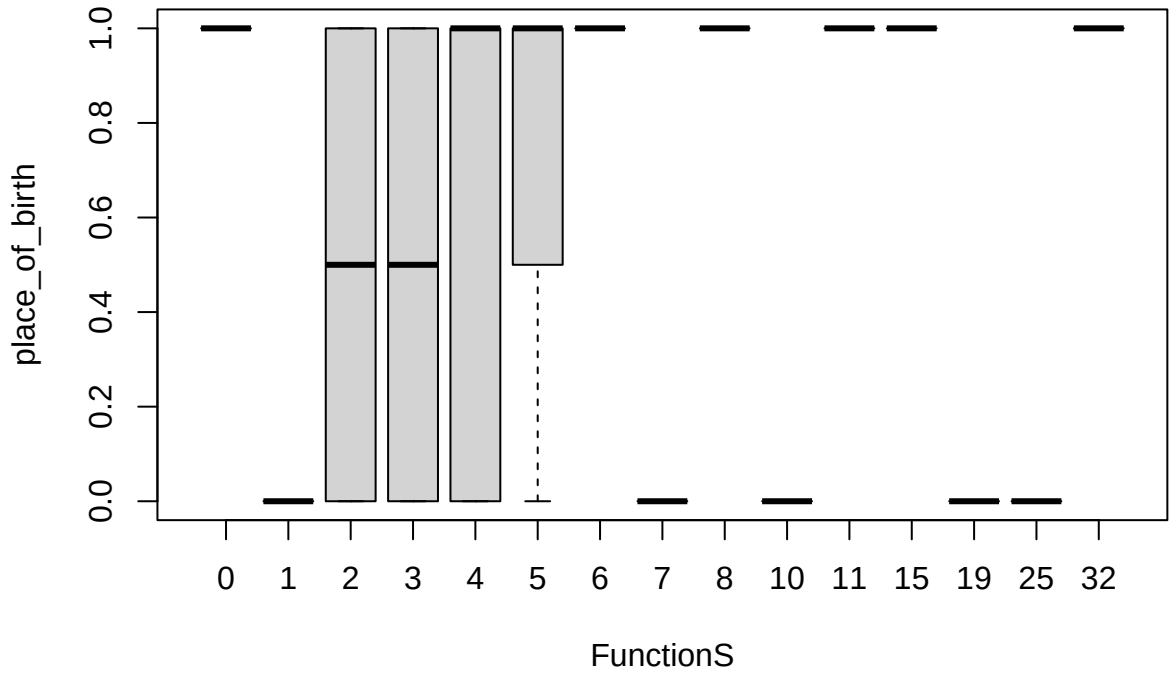
```
boxplot(Gender ~ FunctionS, clicksonly)
```



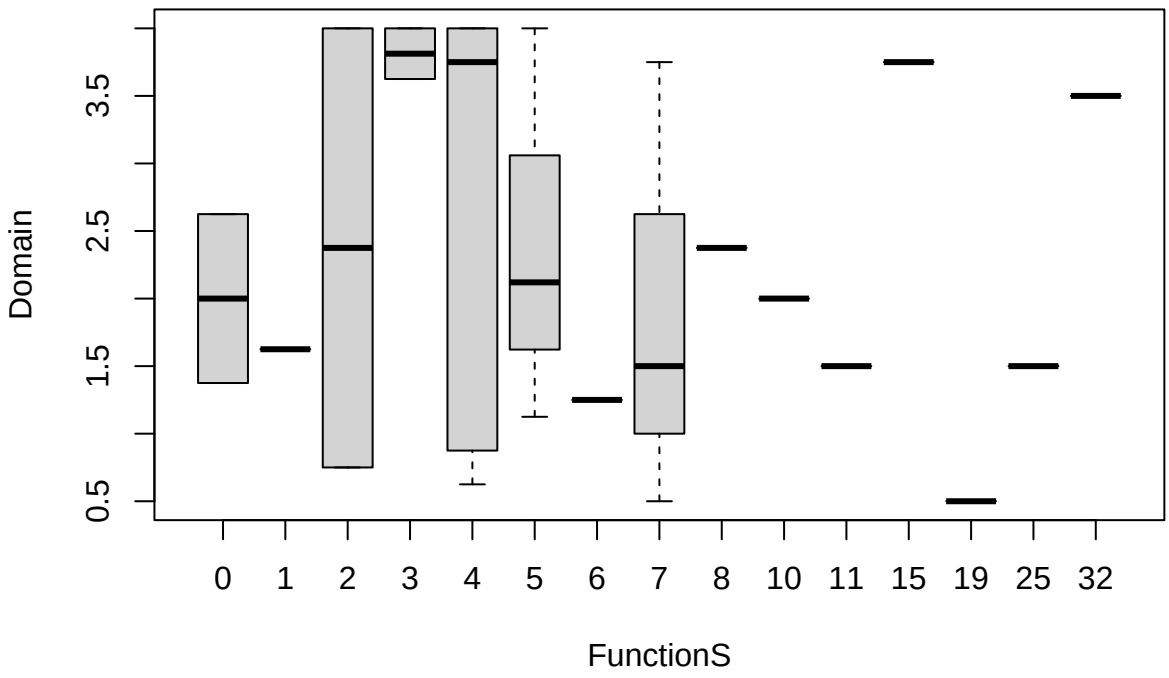

```
boxplot(Age ~ FunctionS, clicksonly)
```



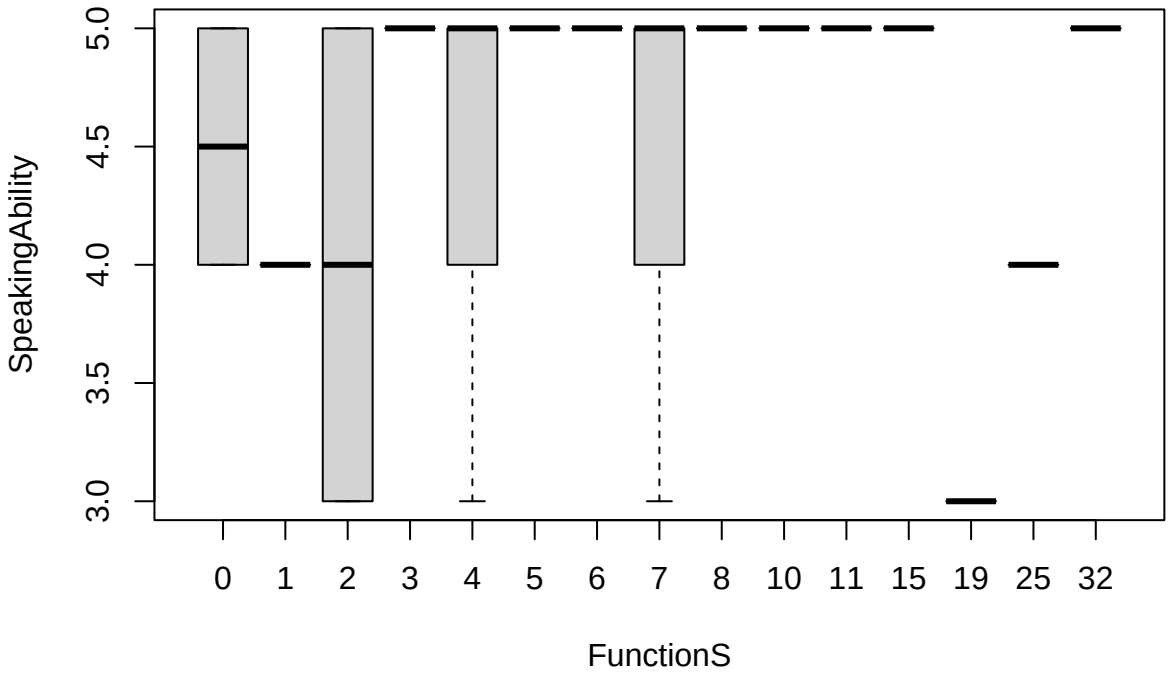

```
boxplot(place_of_birth ~ FunctionS, clicksonly)
```



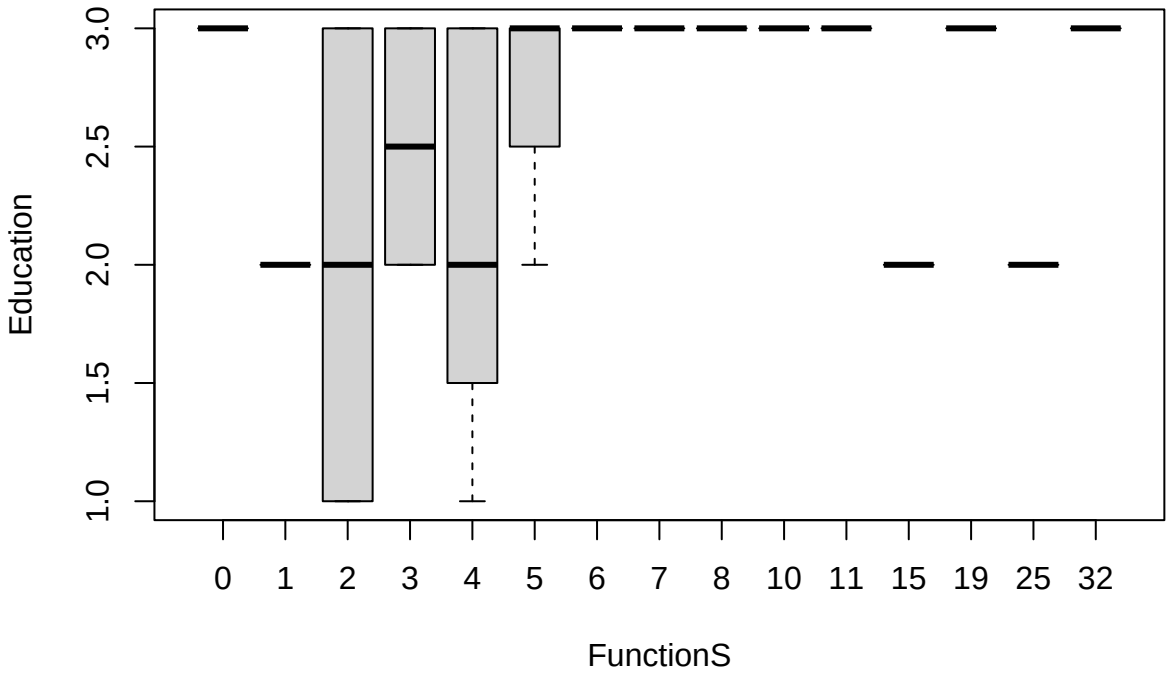

```
boxplot(Domain ~ FunctionS, clicksonly)
```




```
boxplot(SpeakingAbility ~ FunctionS, clicksonly)
```




```
boxplot(Education ~ FunctionS, clicksonly)
```




```
kruskal.test(Gender ~ FunctionS, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionS
## Kruskal-Wallis chi-squared = 12.415, df = 14, p-value = 0.573
```

```
kruskal.test(Age ~ FunctionS, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionS
## Kruskal-Wallis chi-squared = 13.648, df = 14, p-value = 0.4763
```

```
kruskal.test(place_of_birth ~ FunctionS, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionS
## Kruskal-Wallis chi-squared = 13.892, df = 14, p-value = 0.4578
```

```r
kruskal.test(Domain ~ FunctionS, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionS
## Kruskal-Wallis chi-squared = 7.0576, df = 14, p-value = 0.9325
```

```r
kruskal.test(SpeakingAbility ~ FunctionS, data = clicksonly)
```

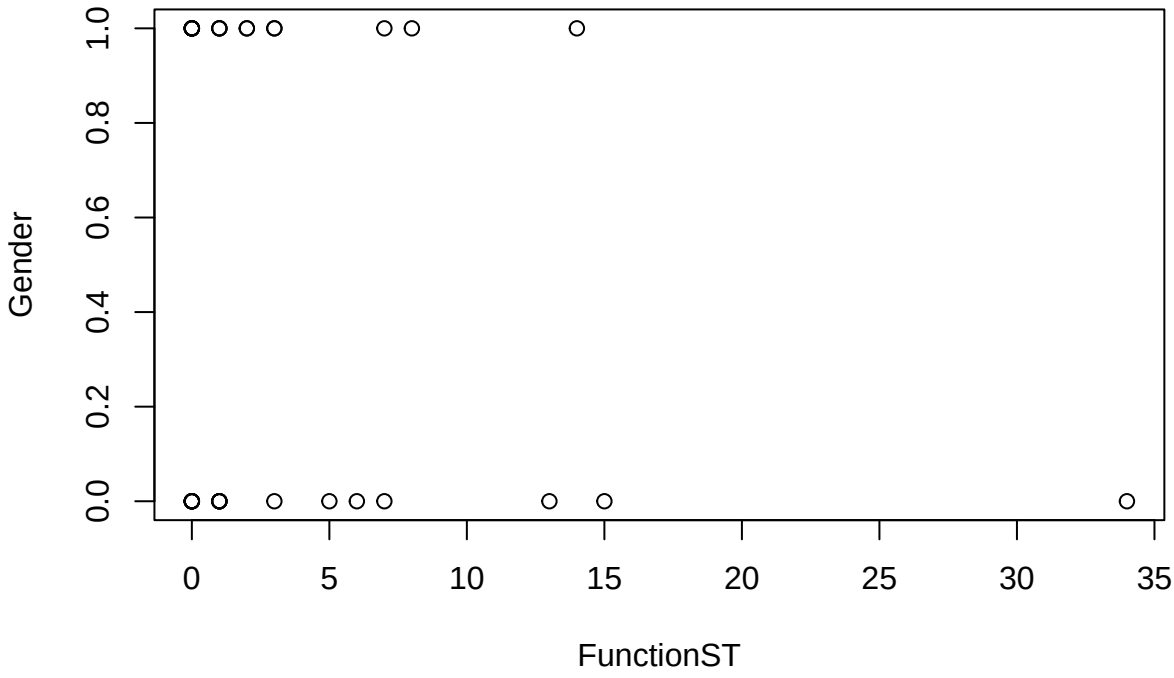
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionS
## Kruskal-Wallis chi-squared = 11.444, df = 14, p-value = 0.6508
```

```r
kruskal.test(Education ~ FunctionS, data = clicksonly)
```

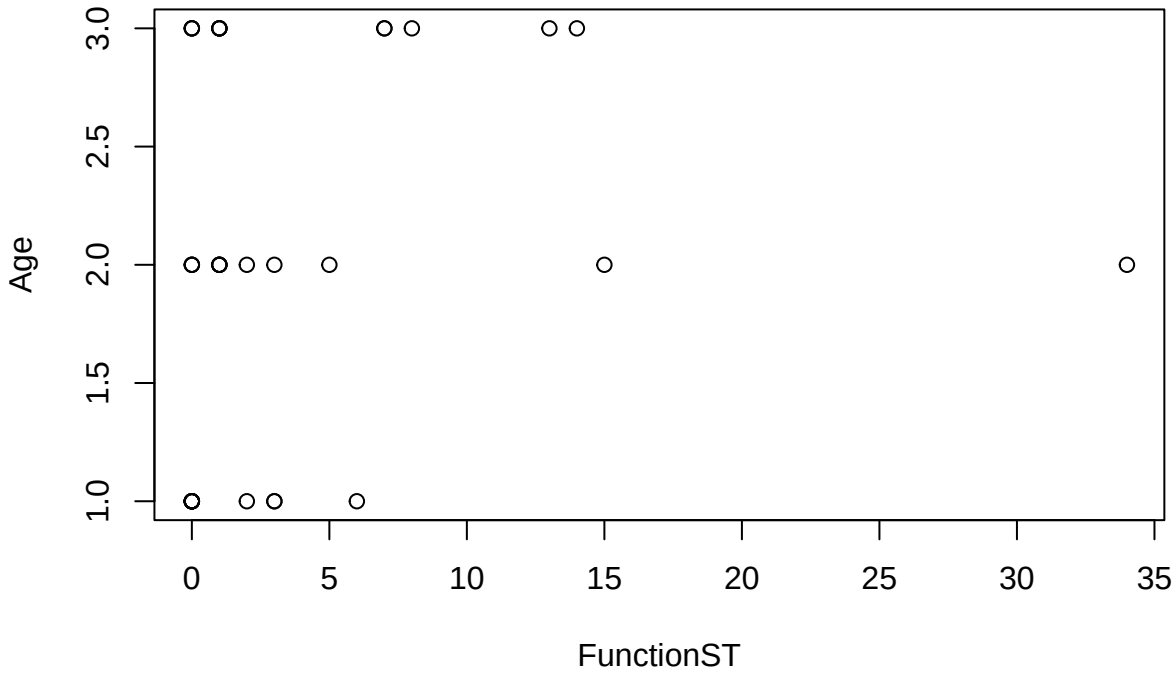
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionS
## Kruskal-Wallis chi-squared = 11.651, df = 14, p-value = 0.6343
```

Function ST with non-clickers

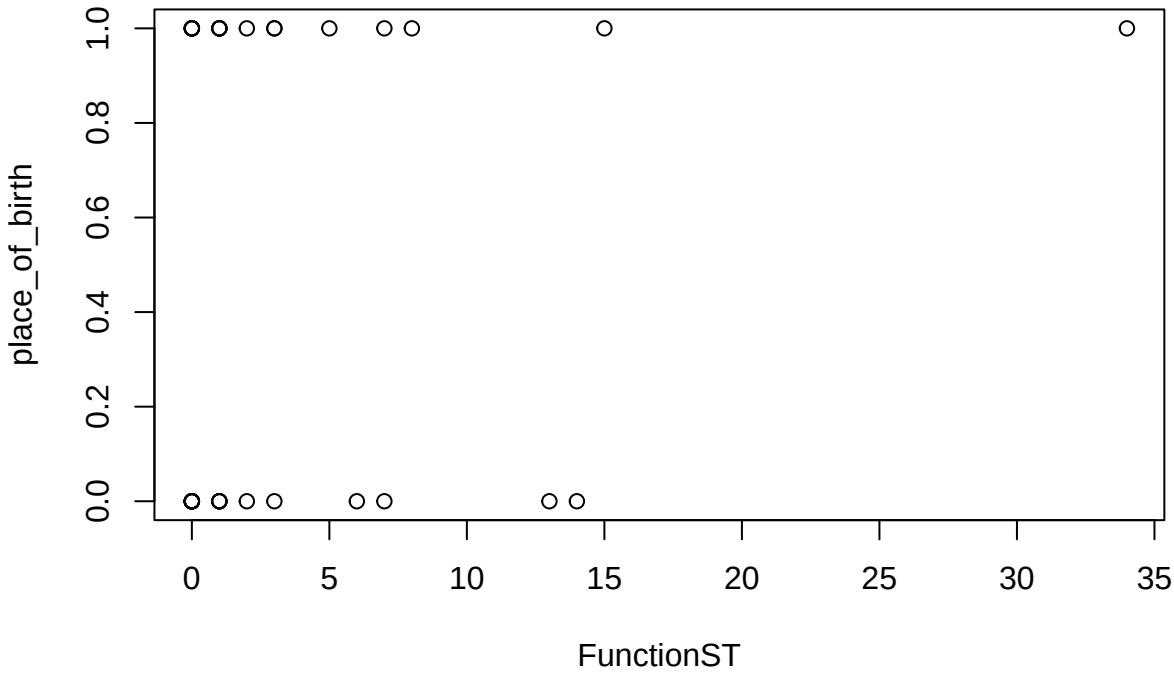
```r
plot(Gender ~ FunctionST, data = click)
```



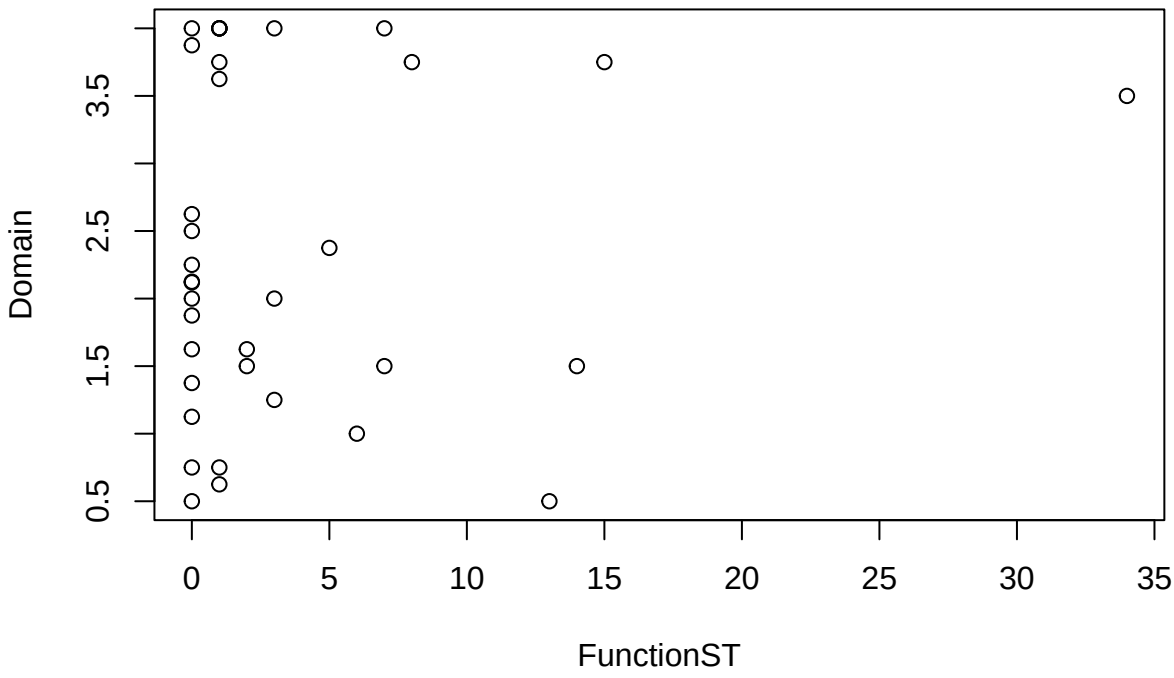

```
plot(Age ~ FunctionST, data = click)
```



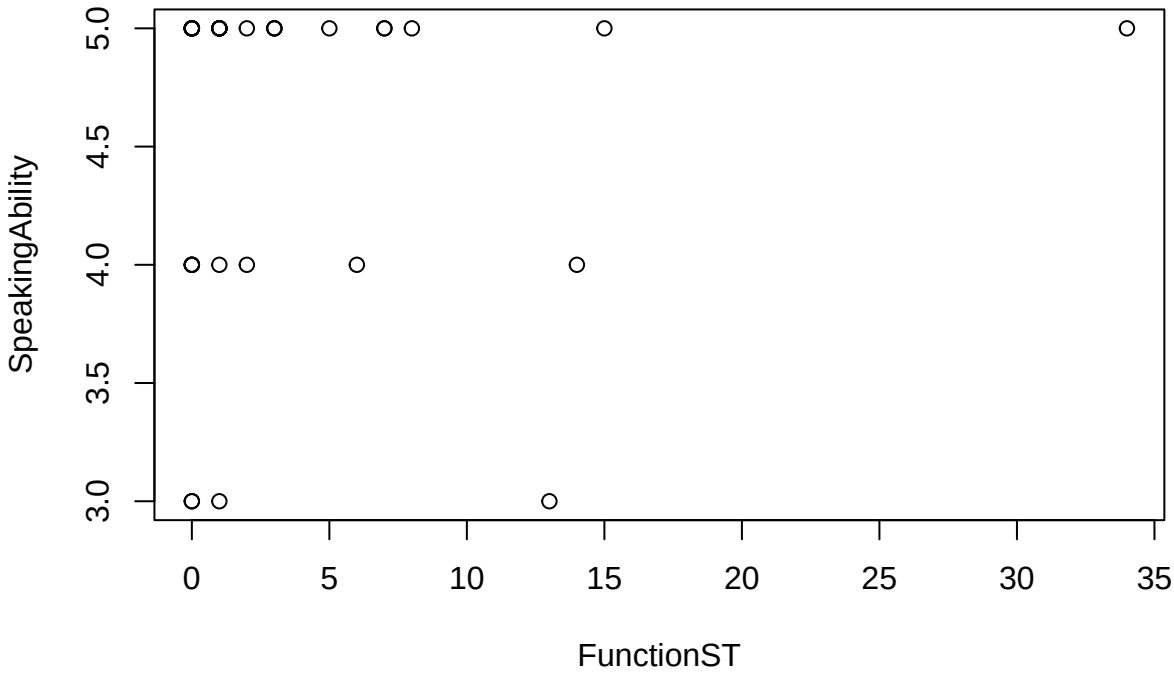

```
plot(place_of_birth ~ FunctionST, data = click)
```



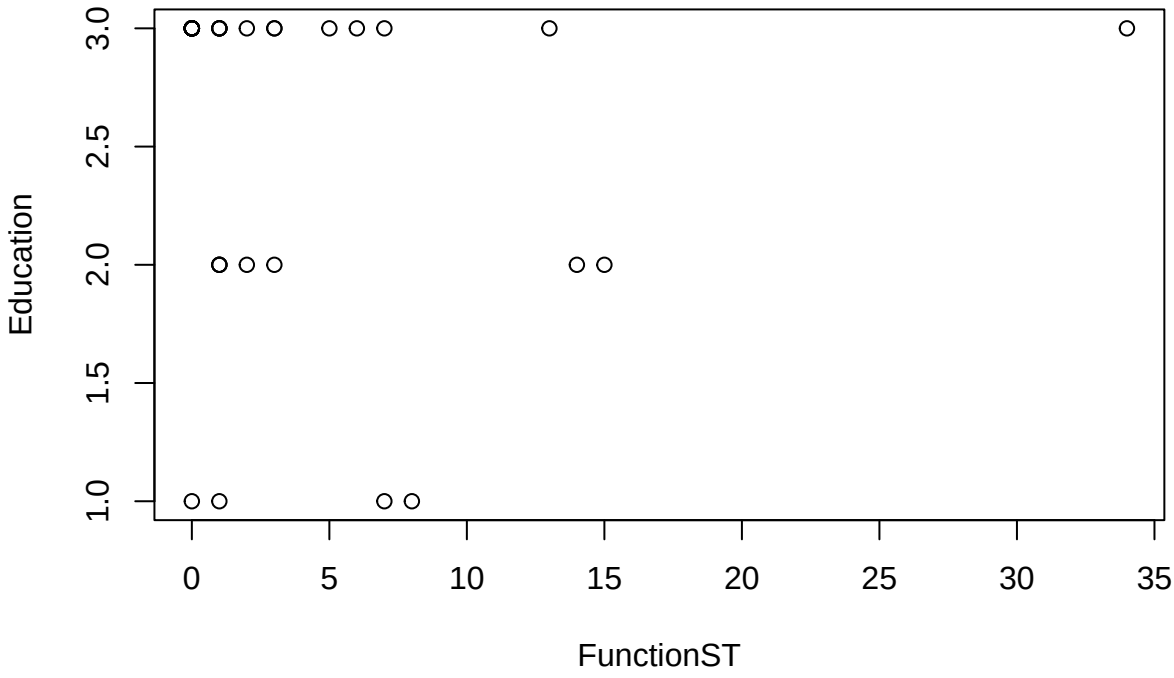

```
plot(Domain ~ FunctionST, data = click)
```




```
plot(SpeakingAbility ~ FunctionST, data = click)
```




```
plot(Education ~ FunctionST, data = click)
```




```
chisq.test(click$FunctionST)
```

```
## Warning in chisq.test(click$FunctionST): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$FunctionST
## X-squared = 427.17, df = 35, p-value < 2.2e-16
```

```
aov(Gender ~ FunctionST, data = click)
```

```
## Call:
##    aov(formula = Gender ~ FunctionST, data = click)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.243705  8.728517
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5066765
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionST, data = click)
```

```
## Call:
##    aov(formula = Age ~ FunctionST, data = click)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.986026 23.013974
## Deg. of Freedom          1        34
##
## Residual standard error: 0.8227281
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionST, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionST, data = click)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.249324  8.722899
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5065134
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionST, data = click)
```

```
## Call:
##    aov(formula = Domain ~ FunctionST, data = click)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares     0.67384  53.82702
## Deg. of Freedom          1        34
##
## Residual standard error: 1.258232
## Estimated effects may be unbalanced
```

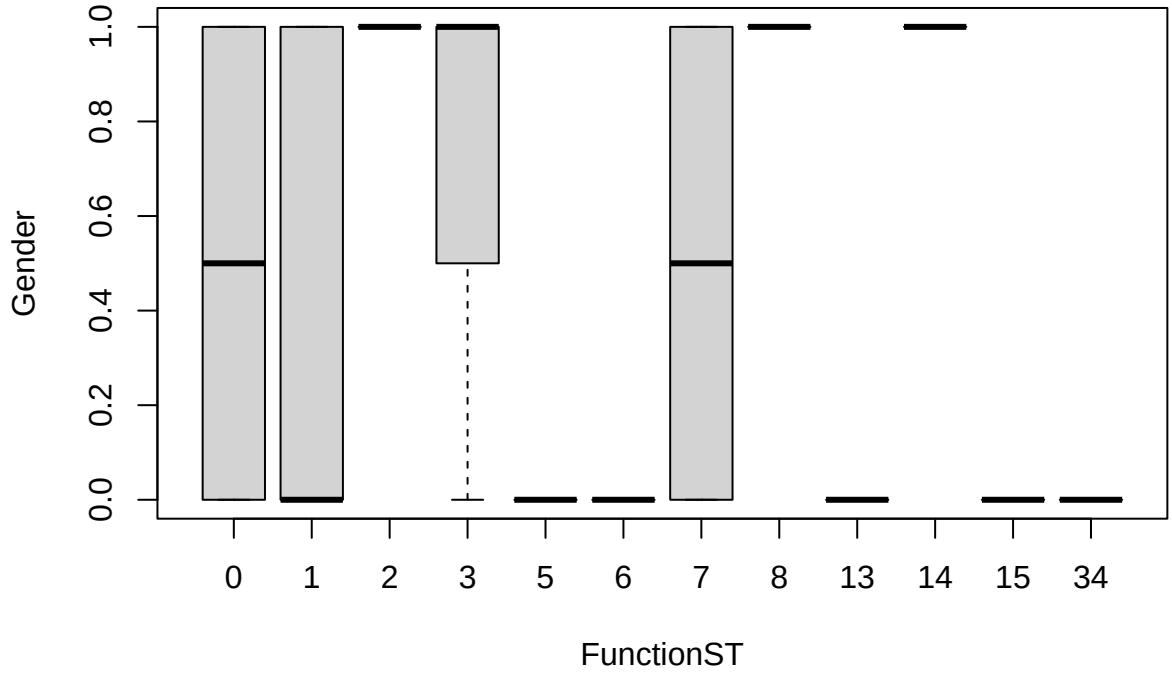
```r
aov(SpeakingAbility ~ FunctionST, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionST, data = click)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.029781 16.859108
## Deg. of Freedom          1        34
##
## Residual standard error: 0.7041705
## Estimated effects may be unbalanced
```

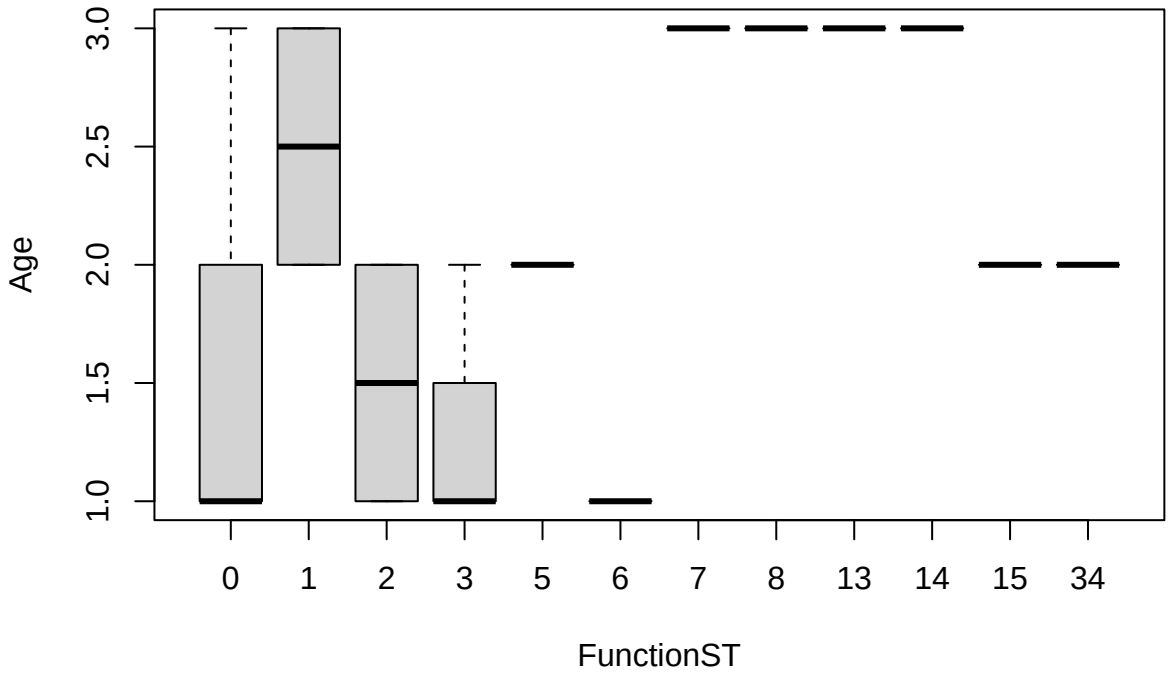
```r
aov(Education ~ FunctionST, data = click)
```

```
## Call:
##    aov(formula = Education ~ FunctionST, data = click)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.142638 16.607362
## Deg. of Freedom          1        34
##
## Residual standard error: 0.6988933
## Estimated effects may be unbalanced
```

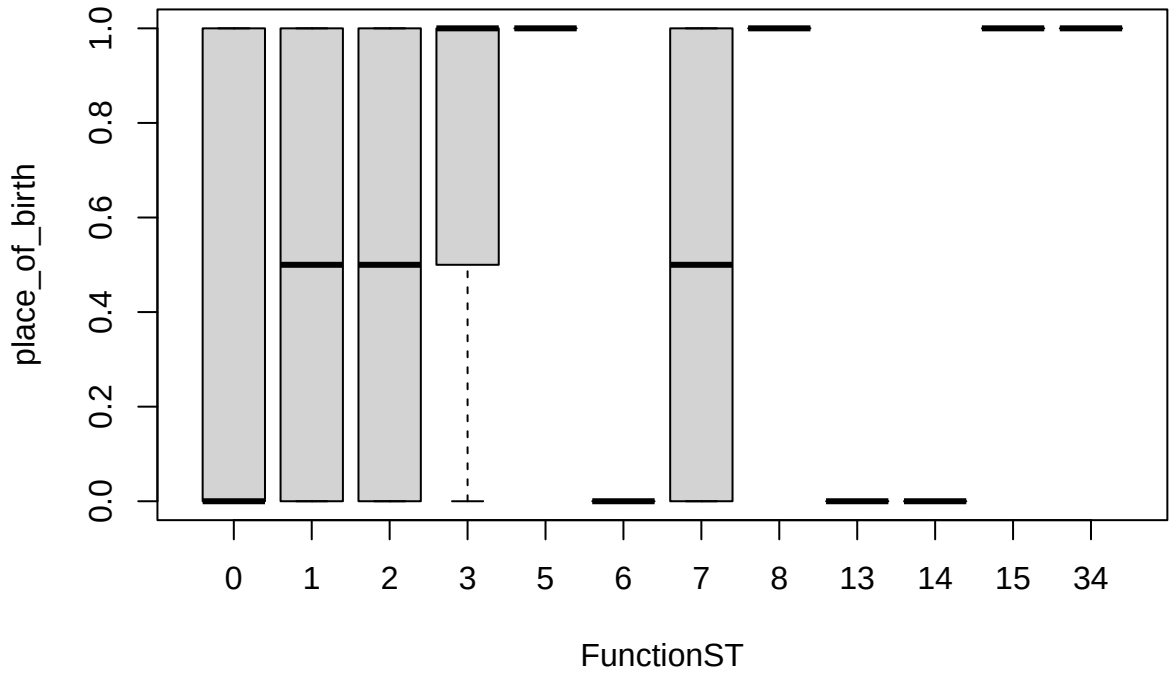
```r
boxplot(Gender ~ FunctionST, click)
```



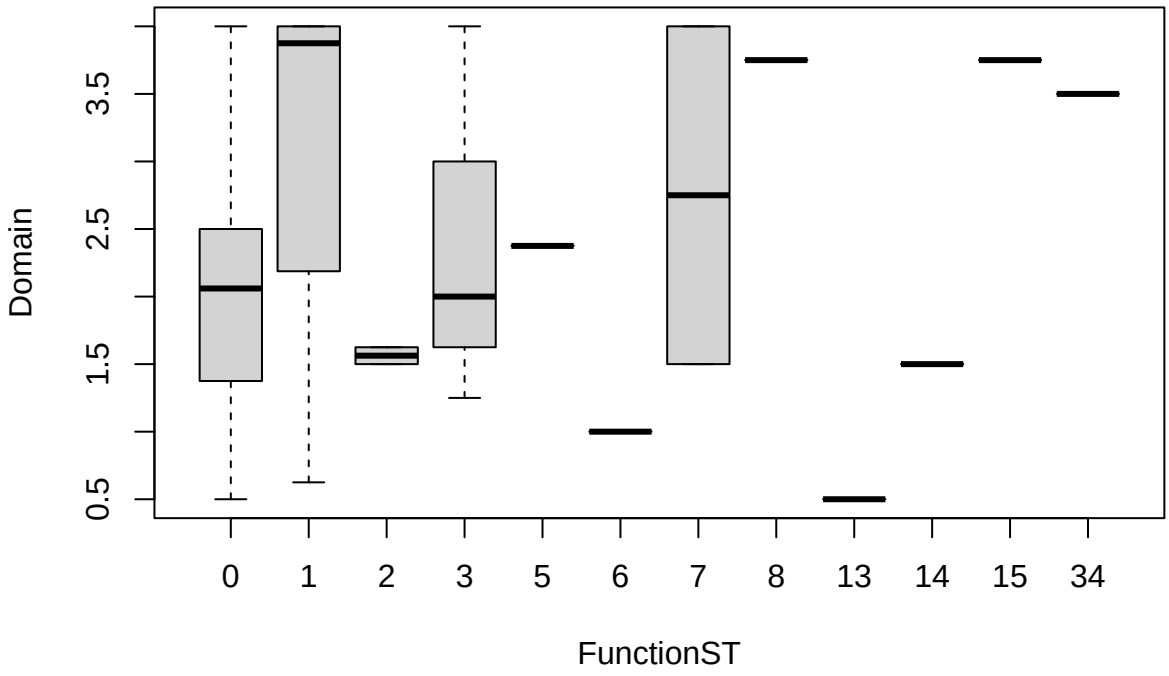

```r
boxplot(Age ~ FunctionST, click)
```



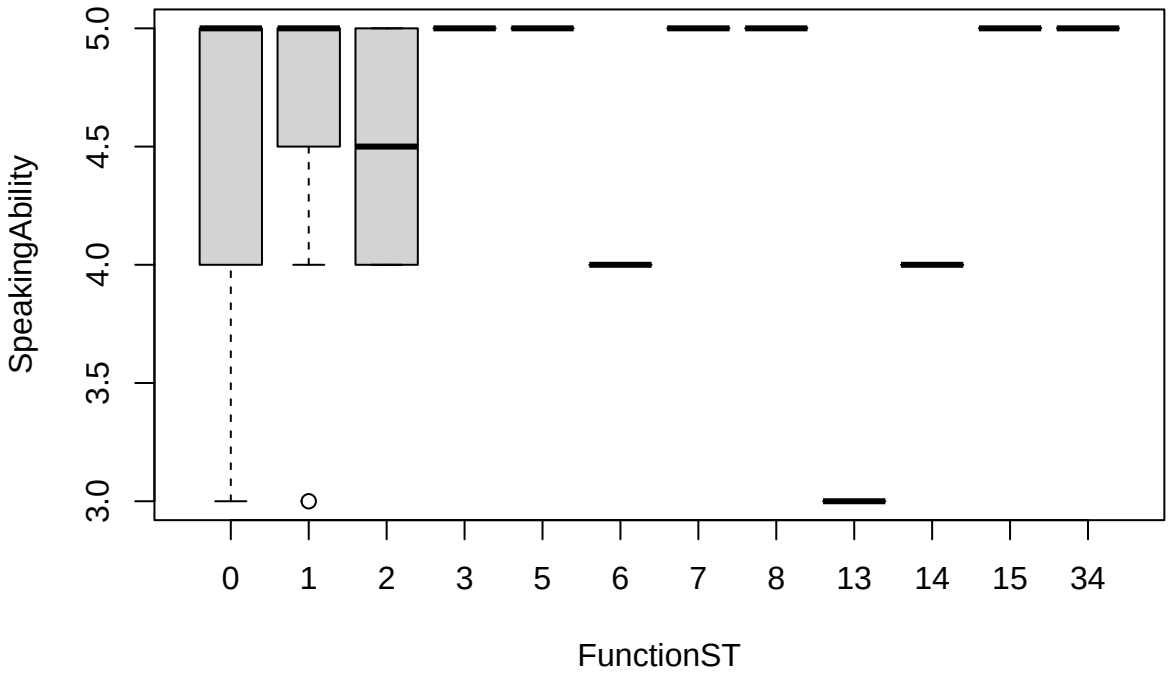

```
boxplot(place_of_birth ~ FunctionST, click)
```



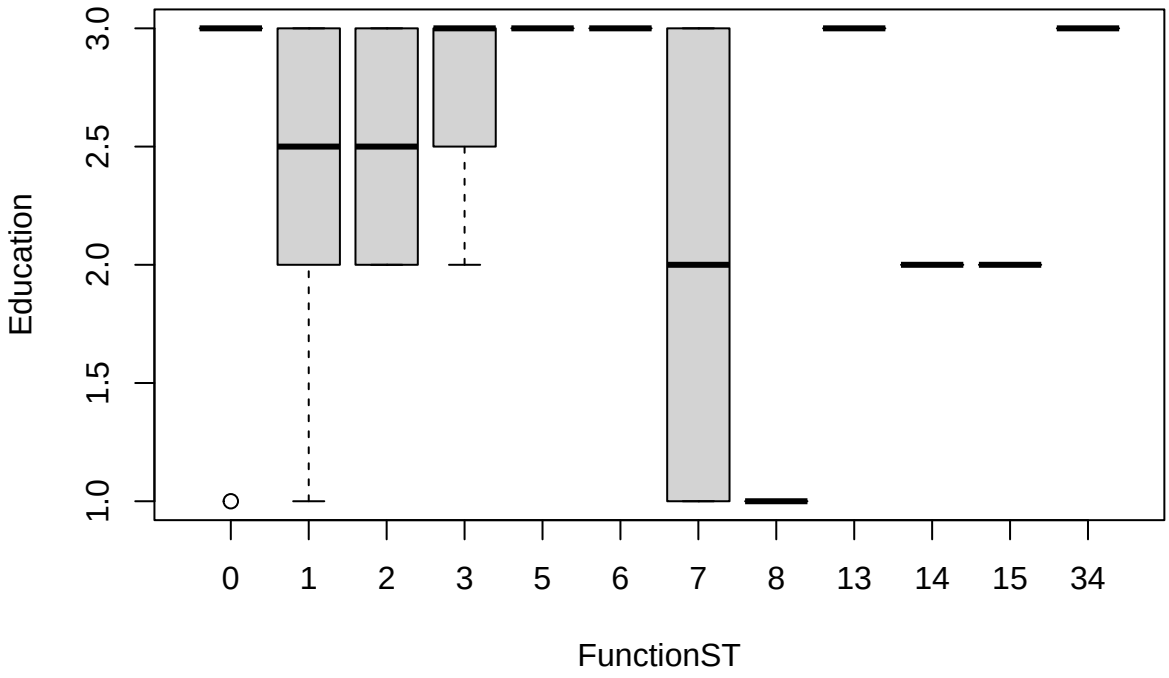

```
boxplot(Domain ~ FunctionST, click)
```




```
boxplot(SpeakingAbility ~ FunctionST, click)
```




```
boxplot(Education ~ FunctionST, click)
```




```
kruskal.test(Gender ~ FunctionST, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionST
## Kruskal-Wallis chi-squared = 9.4814, df = 11, p-value = 0.5775
```

```
kruskal.test(Age ~ FunctionST, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionST
## Kruskal-Wallis chi-squared = 16.944, df = 11, p-value = 0.1095
```

```
kruskal.test(place_of_birth ~ FunctionST, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionST
## Kruskal-Wallis chi-squared = 8.1579, df = 11, p-value = 0.6991
```

```r
kruskal.test(Domain ~ FunctionST, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionST
## Kruskal-Wallis chi-squared = 9.8064, df = 11, p-value = 0.5479
```

```r
kruskal.test(SpeakingAbility ~ FunctionST, data = click)
```

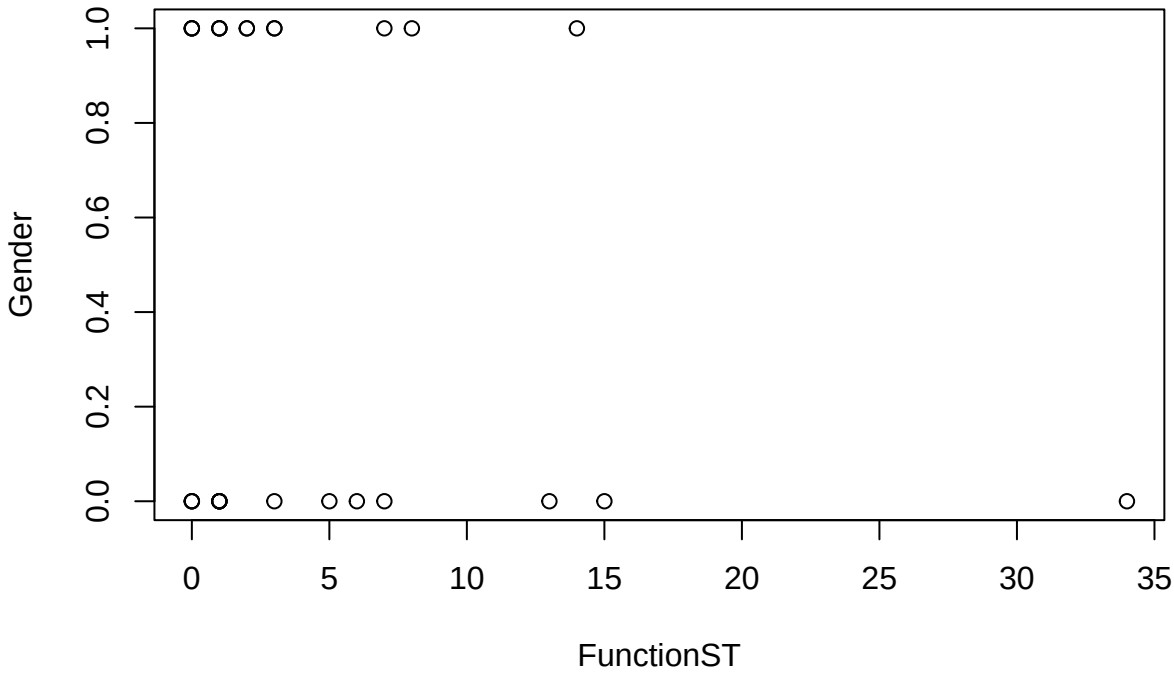
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionST
## Kruskal-Wallis chi-squared = 10.959, df = 11, p-value = 0.4467
```

```r
kruskal.test(Education ~ FunctionST, data = click)
```

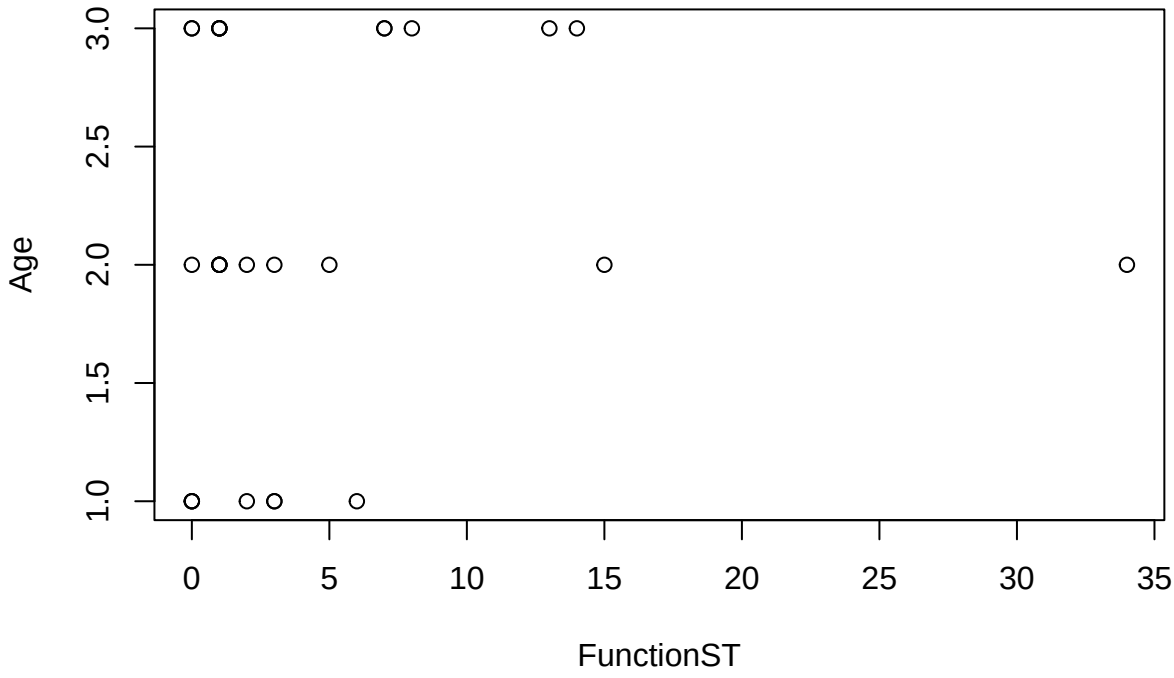
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionST
## Kruskal-Wallis chi-squared = 13.255, df = 11, p-value = 0.277
```

Function ST without non-clickers

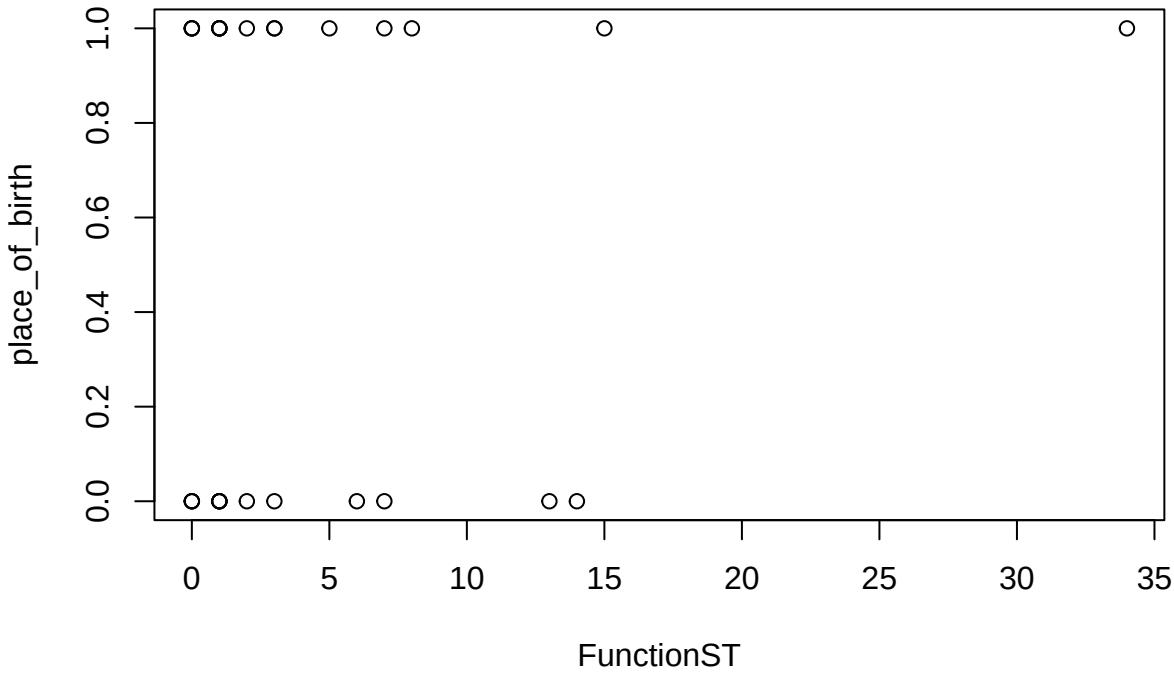
```r
plot(Gender ~ FunctionST, data = clicksonly)
```



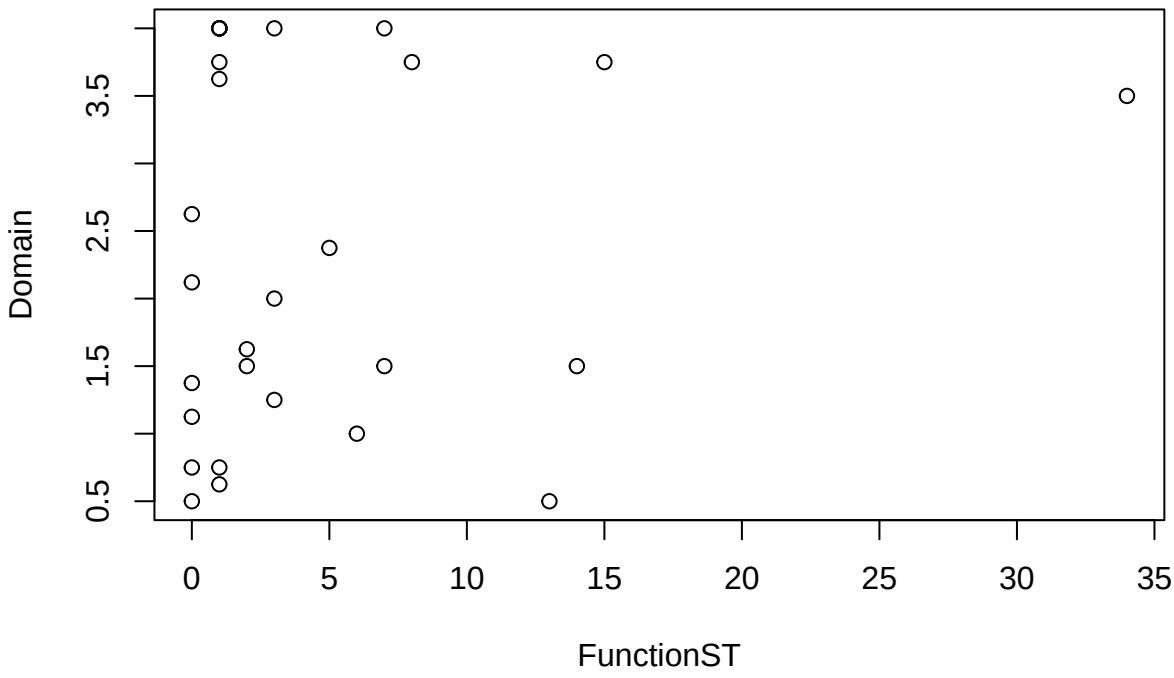

```
plot(Age ~ FunctionST, data = clicksonly)
```



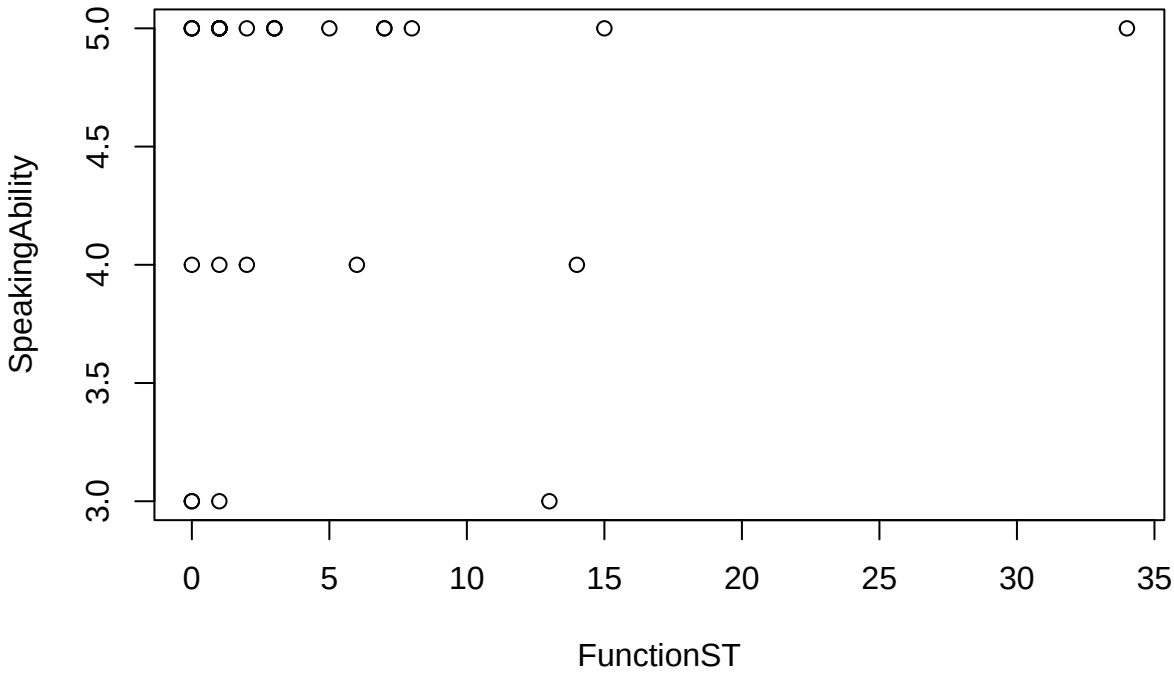

```
plot(place_of_birth ~ FunctionST, data = clicksonly)
```



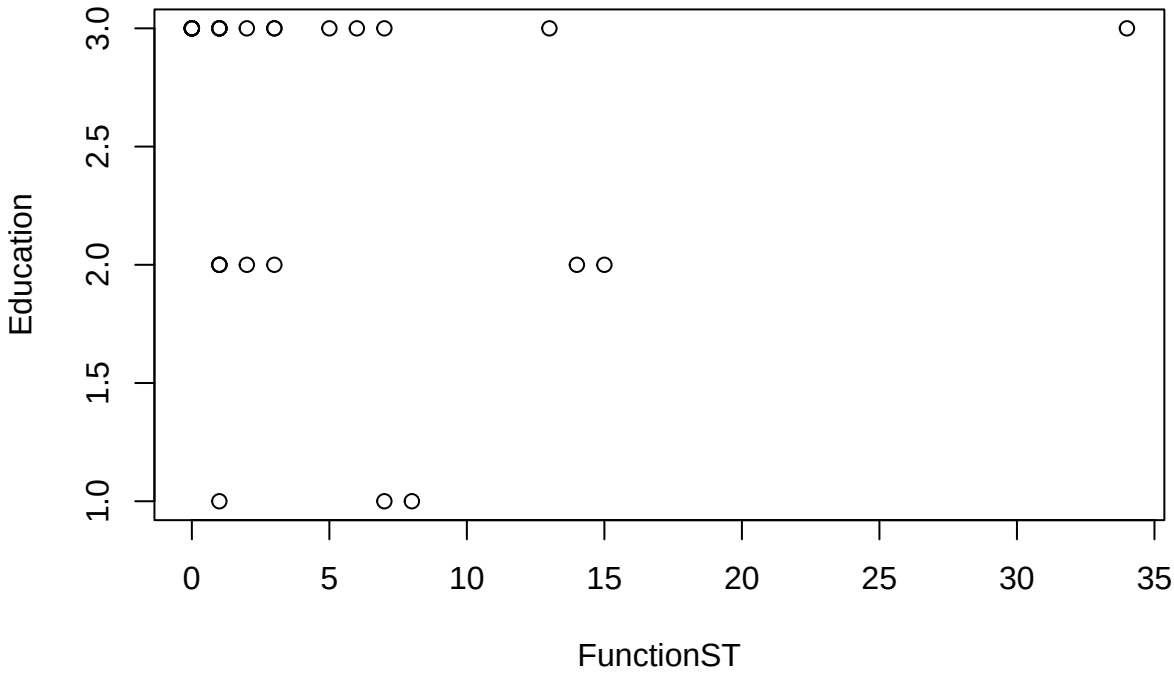

```
plot(Domain ~ FunctionST, data = clicksonly)
```




```
plot(SpeakingAbility ~ FunctionST, data = clicksonly)
```




```
plot(Education ~ FunctionST, data = clicksonly)
```




```
chisq.test(clicksonly$FunctionST)
```

```
## Warning in chisq.test(clicksonly$FunctionST): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$FunctionST
## X-squared = 303.35, df = 27, p-value < 2.2e-16
```

```
aov(Gender ~ FunctionST, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ FunctionST, data = clicksonly)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.239263  6.725023
## Deg. of Freedom          1        26
##
## Residual standard error: 0.5085811
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionST, data = clicksonly)
```

```
## Call:
##    aov(formula = Age ~ FunctionST, data = clicksonly)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.296306 17.132265
## Deg. of Freedom          1        26
##
## Residual standard error: 0.811747
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionST, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionST, data = clicksonly)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.091581  6.872705
## Deg. of Freedom          1        26
##
## Residual standard error: 0.514135
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionST, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ FunctionST, data = clicksonly)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares     1.01401  47.51494
## Deg. of Freedom          1        26
##
## Residual standard error: 1.35185
## Estimated effects may be unbalanced
```

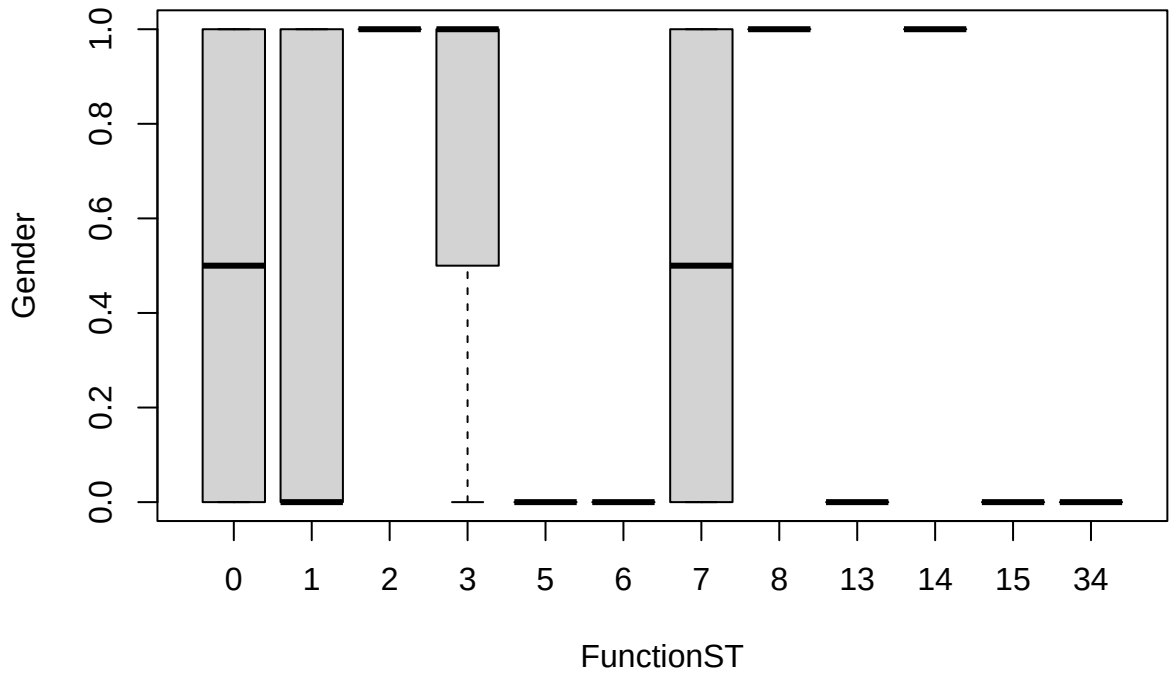
```r
aov(SpeakingAbility ~ FunctionST, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionST, data = clicksonly)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.062166 14.902120
## Deg. of Freedom          1        26
##
## Residual standard error: 0.7570723
## Estimated effects may be unbalanced
```

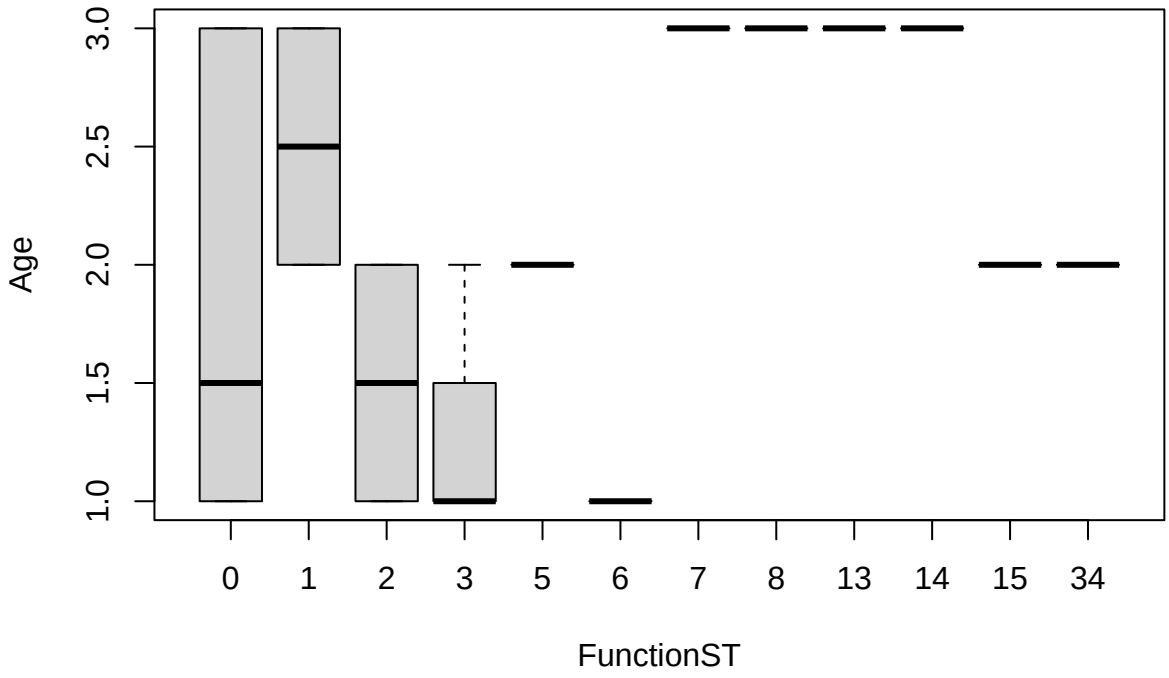
```r
aov(Education ~ FunctionST, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ FunctionST, data = clicksonly)
##
## Terms:
##                 FunctionST Residuals
## Sum of Squares    0.053037 12.911249
## Deg. of Freedom          1        26
##
## Residual standard error: 0.7046889
## Estimated effects may be unbalanced
```

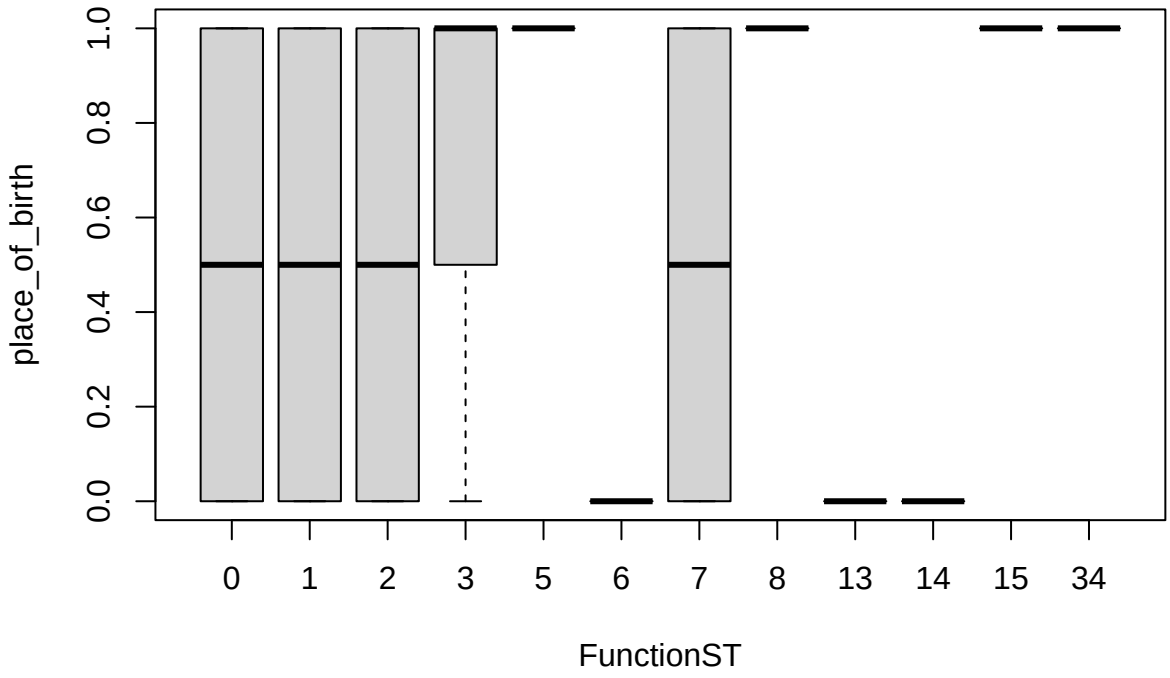
```r
boxplot(Gender ~ FunctionST, clicksonly)
```



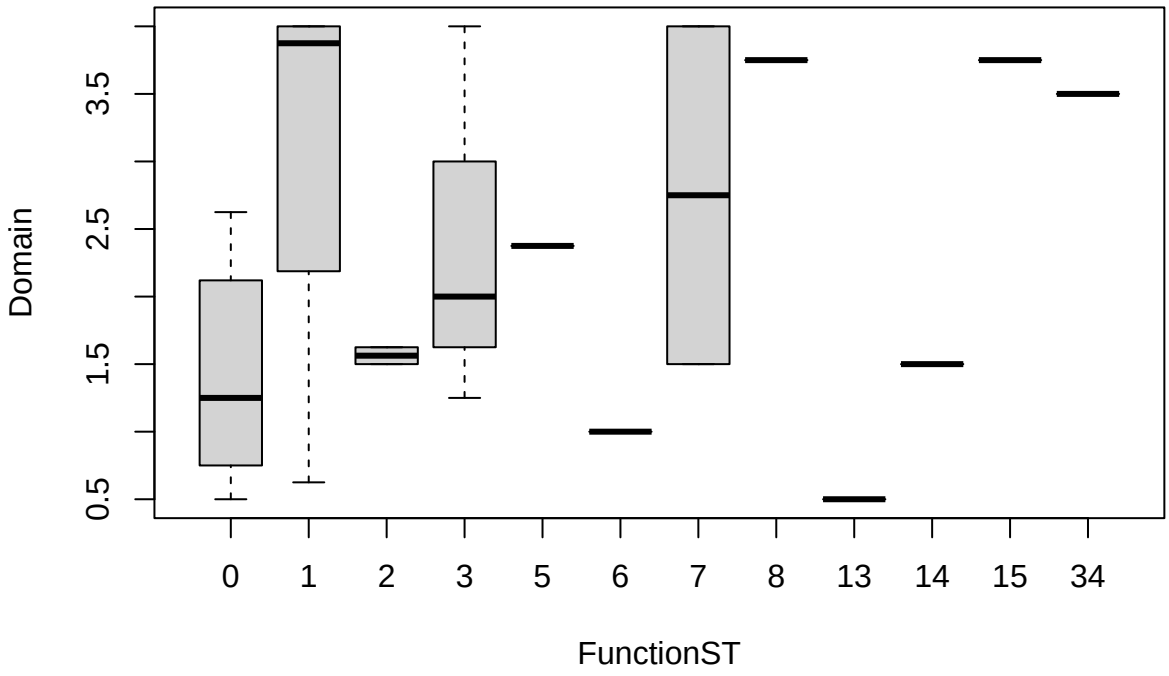

```r
boxplot(Age ~ FunctionST, clicksonly)
```



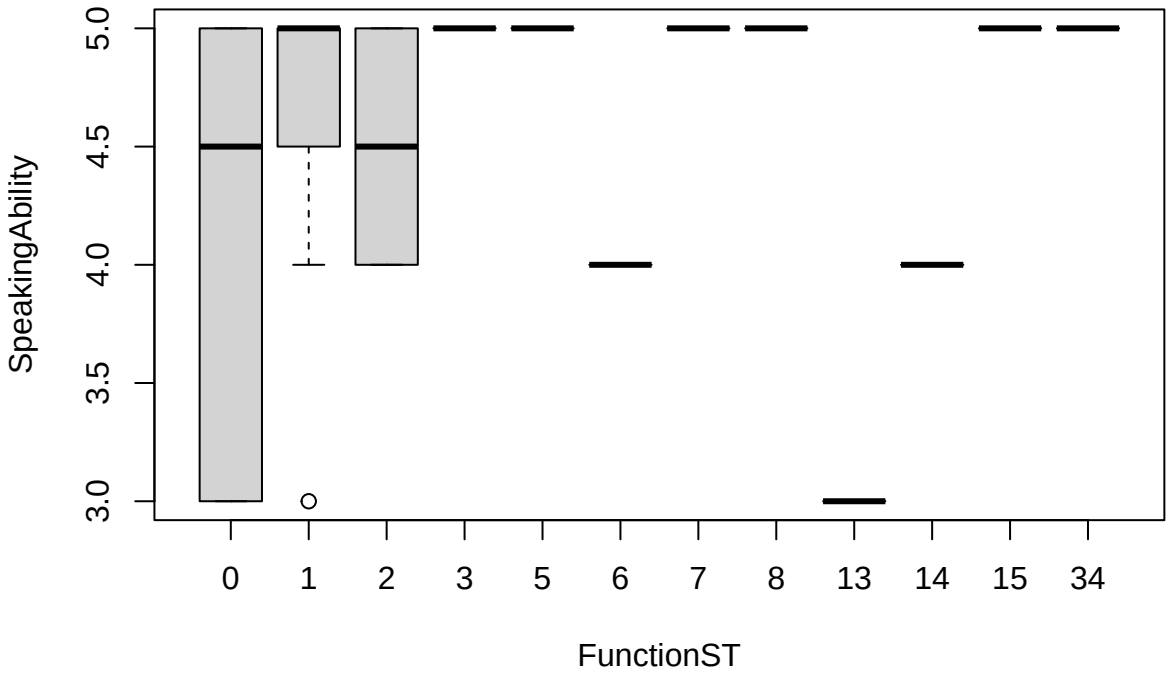

```
boxplot(place_of_birth ~ FunctionST, clicksonly)
```



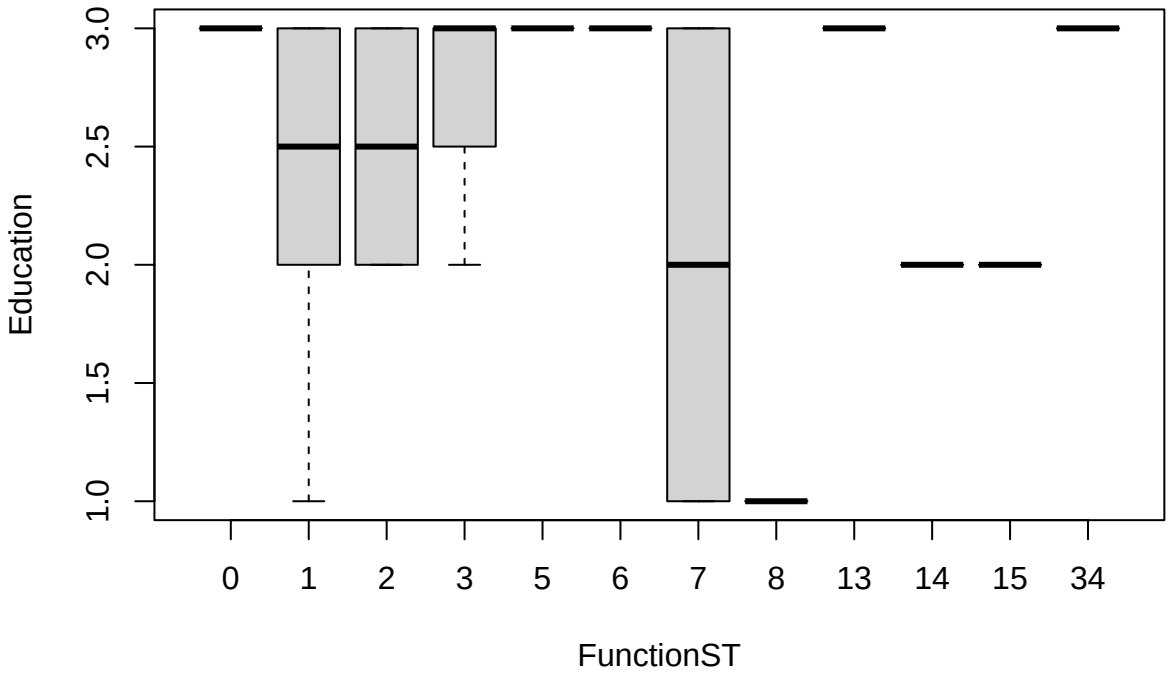

```
boxplot(Domain ~ FunctionST, clicksonly)
```




```
boxplot(SpeakingAbility ~ FunctionST, clicksonly)
```




```
boxplot(Education ~ FunctionST, clicksonly)
```




```
kruskal.test(Gender ~ FunctionST, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionST
## Kruskal-Wallis chi-squared = 9.3923, df = 11, p-value = 0.5857
```

```
kruskal.test(Age ~ FunctionST, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionST
## Kruskal-Wallis chi-squared = 14.585, df = 11, p-value = 0.2023
```

```
kruskal.test(place_of_birth ~ FunctionST, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionST
## Kruskal-Wallis chi-squared = 6.9692, df = 11, p-value = 0.8016
```

```r
kruskal.test(Domain ~ FunctionST, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionST
## Kruskal-Wallis chi-squared = 10.777, df = 11, p-value = 0.4622
```

```r
kruskal.test(SpeakingAbility ~ FunctionST, data = clicksonly)
```

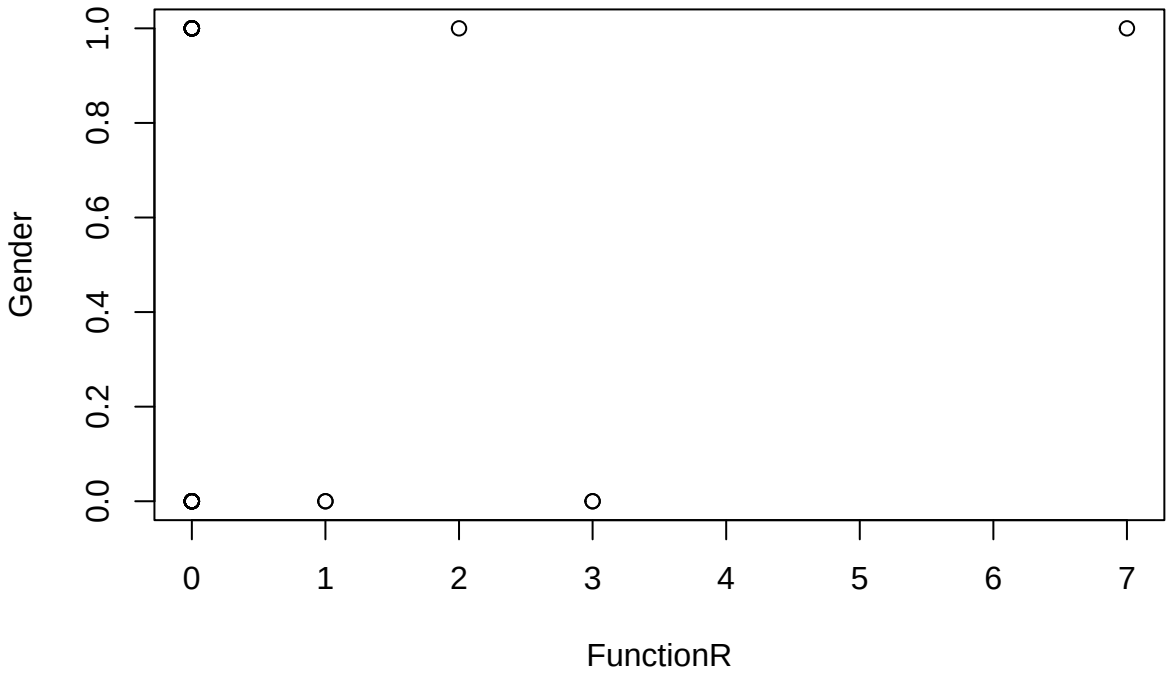
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionST
## Kruskal-Wallis chi-squared = 10.963, df = 11, p-value = 0.4464
```

```r
kruskal.test(Education ~ FunctionST, data = clicksonly)
```

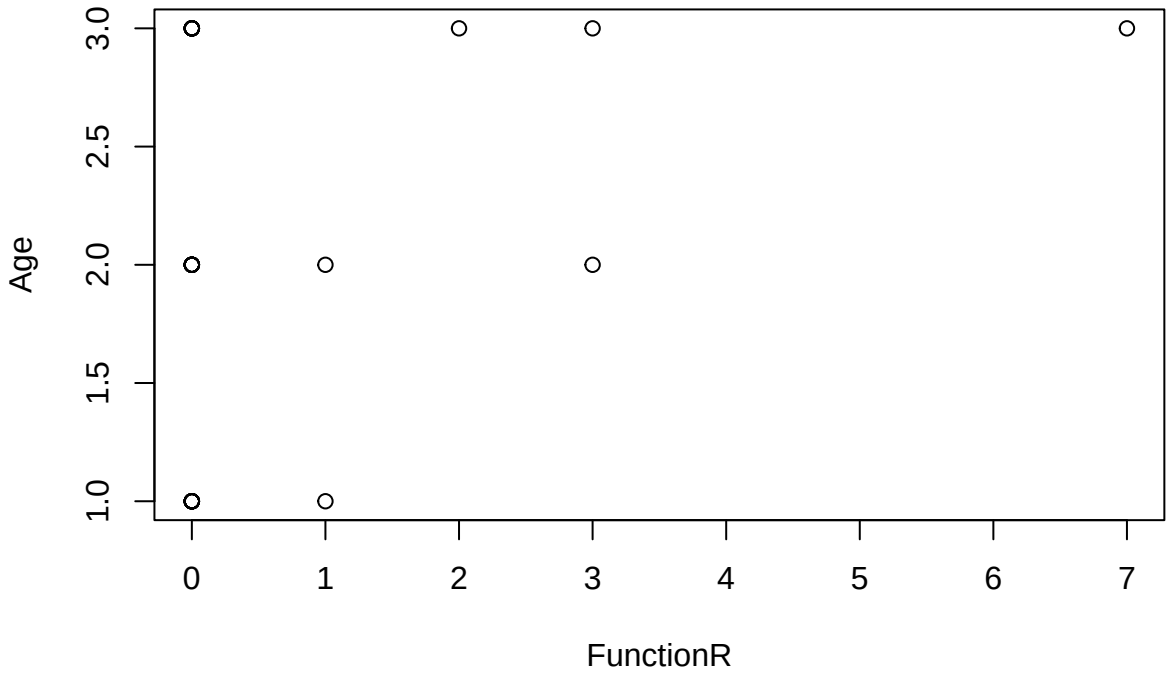
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionST
## Kruskal-Wallis chi-squared = 11.936, df = 11, p-value = 0.3685
```

Function R with non-clickers

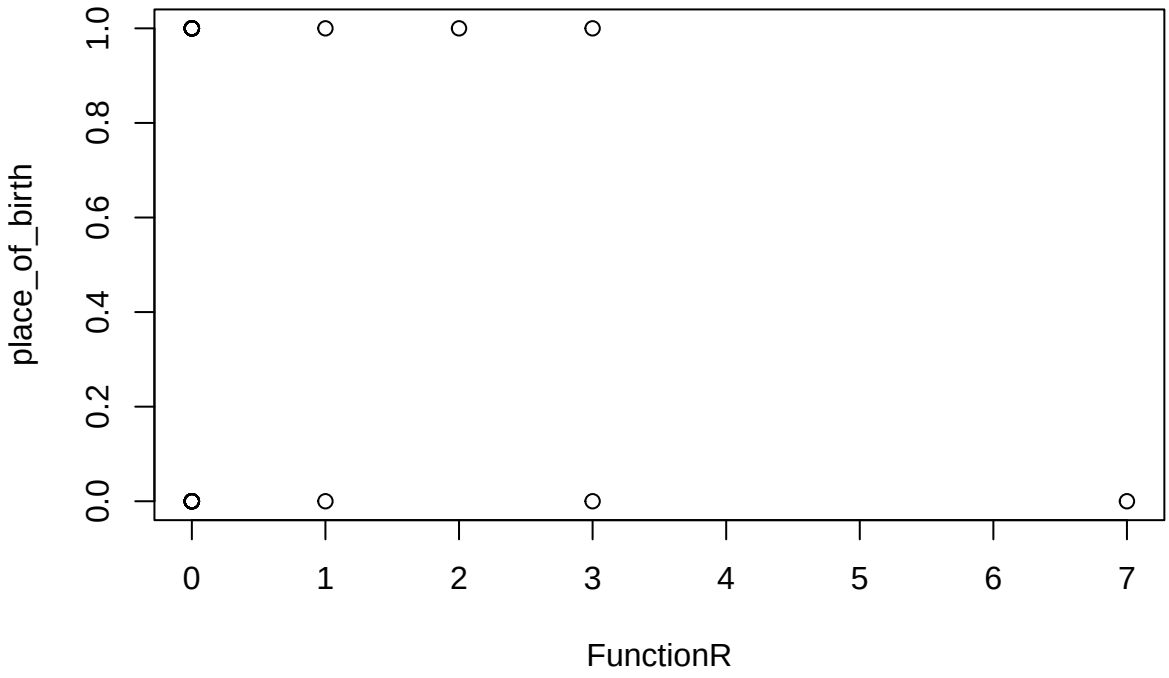
```r
plot(Gender ~ FunctionR, data = click)
```



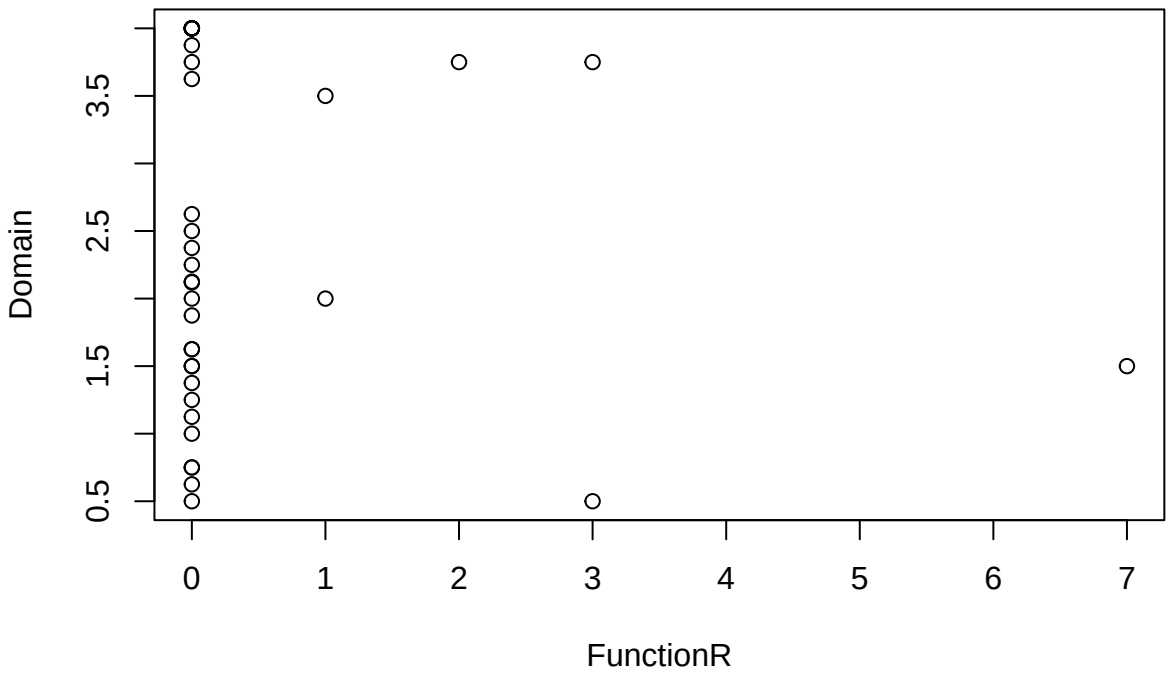

```
plot(Age ~ FunctionR, data = click)
```



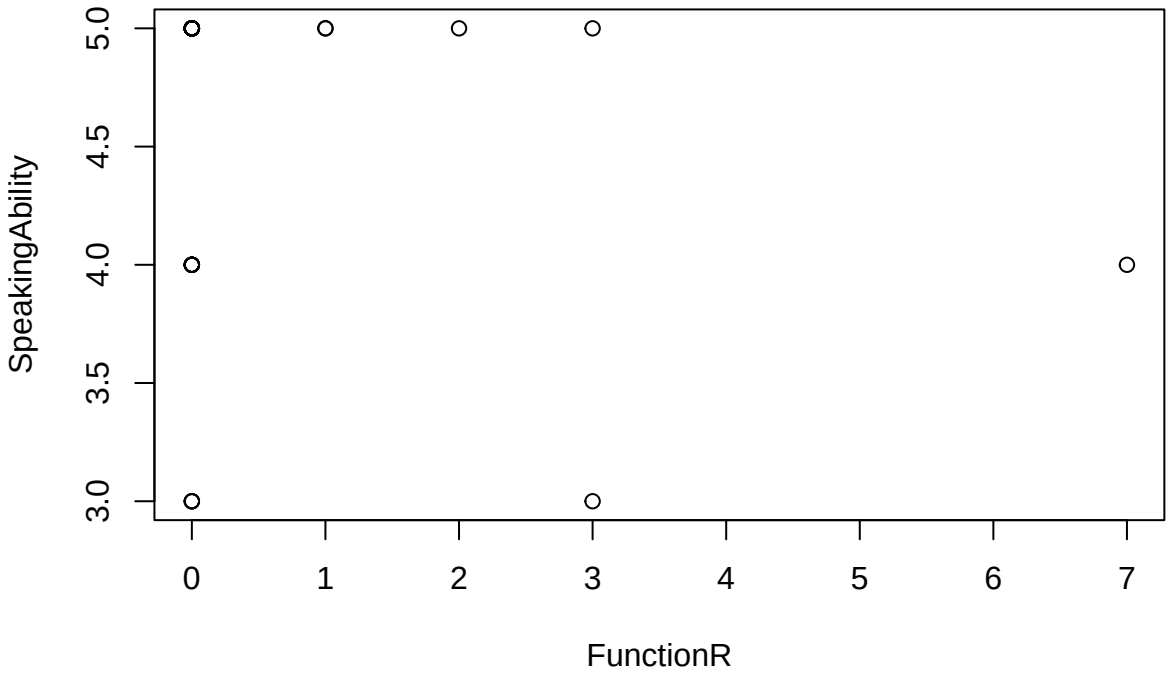

```
plot(place_of_birth ~ FunctionR, data = click)
```



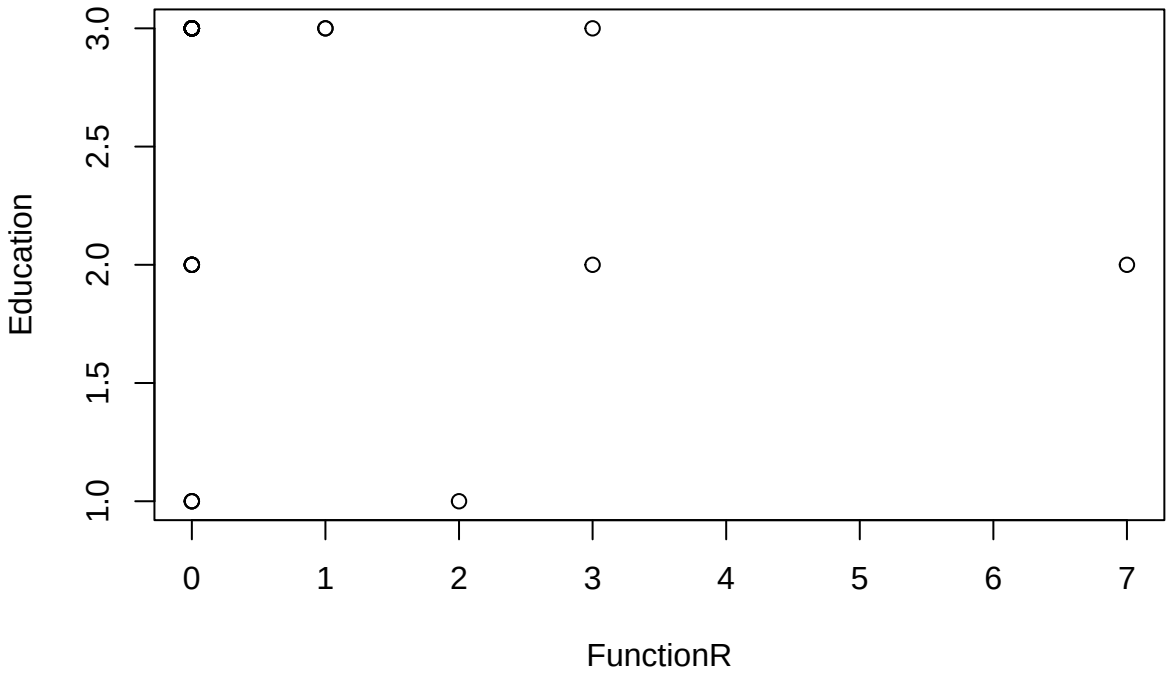

```
plot(Domain ~ FunctionR, data = click)
```




```
plot(SpeakingAbility ~ FunctionR, data = click)
```




```
plot(Education ~ FunctionR, data = click)
```




```
chisq.test(click$FunctionR)
```

```
## Warning in chisq.test(click$FunctionR): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$FunctionR
## X-squared = 137.59, df = 35, p-value = 4.233e-14
```

```
aov(Gender ~ FunctionR, data = click)
```

```
## Call:
##    aov(formula = Gender ~ FunctionR, data = click)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.014548  8.957674
## Deg. of Freedom         1        34
##
## Residual standard error: 0.5132845
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionR, data = click)
```

```
## Call:
##    aov(formula = Age ~ FunctionR, data = click)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   1.862334 22.137666
## Deg. of Freedom         1        34
##
## Residual standard error: 0.8069125
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionR, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionR, data = click)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.063287  8.908935
## Deg. of Freedom         1        34
##
## Residual standard error: 0.5118862
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionR, data = click)
```

```
## Call:
##    aov(formula = Domain ~ FunctionR, data = click)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares    0.27679  54.22407
## Deg. of Freedom         1        34
##
## Residual standard error: 1.262864
## Estimated effects may be unbalanced
```

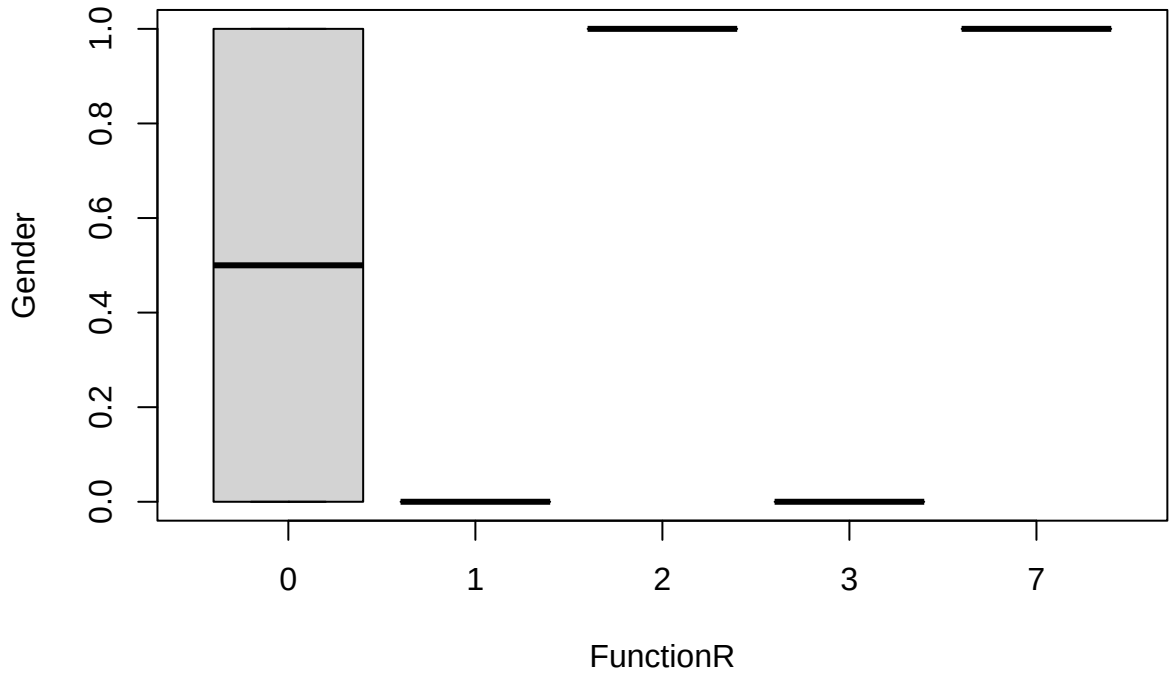
```r
aov(SpeakingAbility ~ FunctionR, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionR, data = click)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.456225 16.432664
## Deg. of Freedom         1        34
##
## Residual standard error: 0.6952076
## Estimated effects may be unbalanced
```

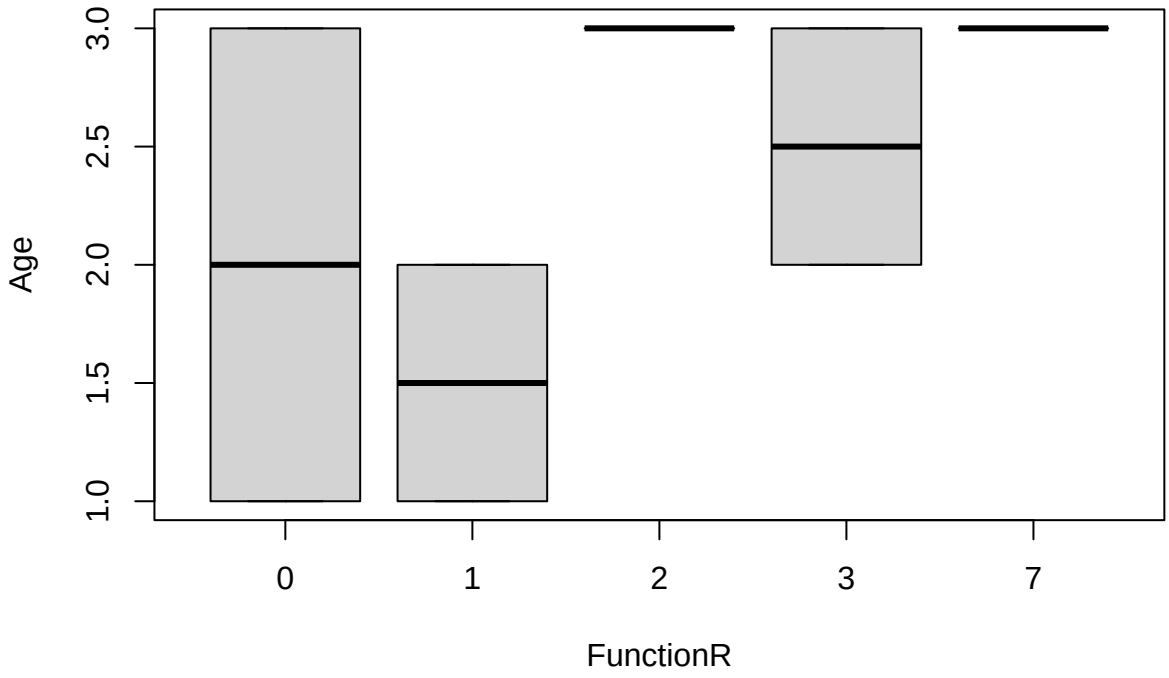
```r
aov(Education ~ FunctionR, data = click)
```

```
## Call:
##    aov(formula = Education ~ FunctionR, data = click)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.736319 16.013681
## Deg. of Freedom         1        34
##
## Residual standard error: 0.6862876
## Estimated effects may be unbalanced
```

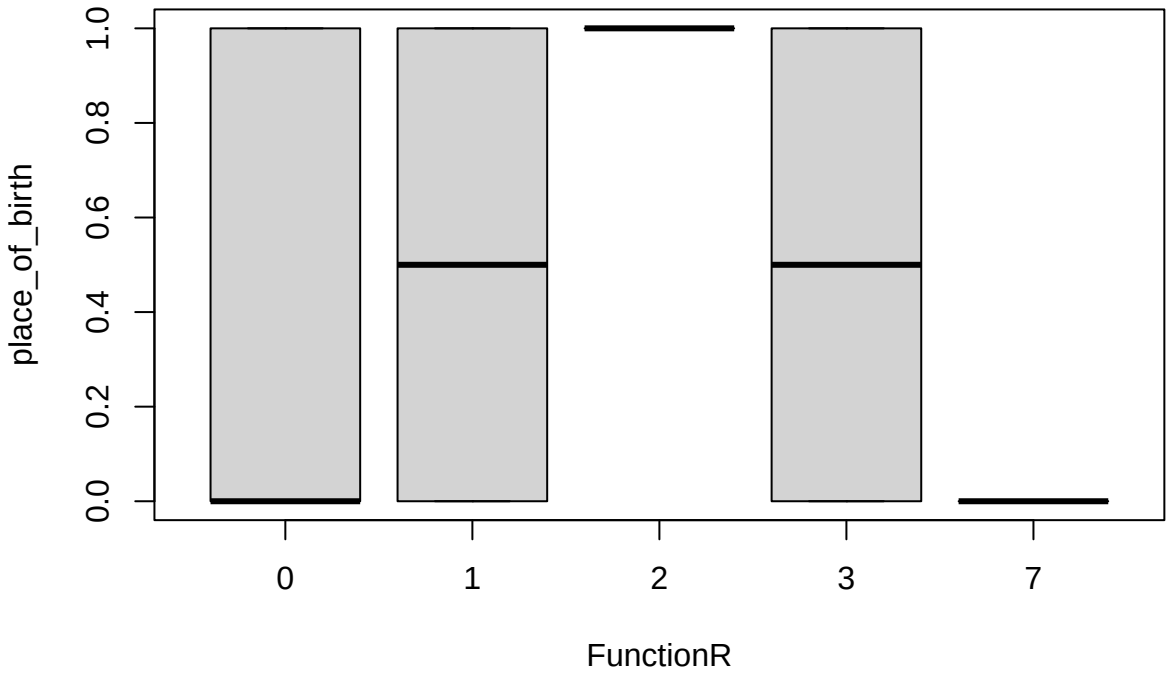
```r
boxplot(Gender ~ FunctionR, click)
```



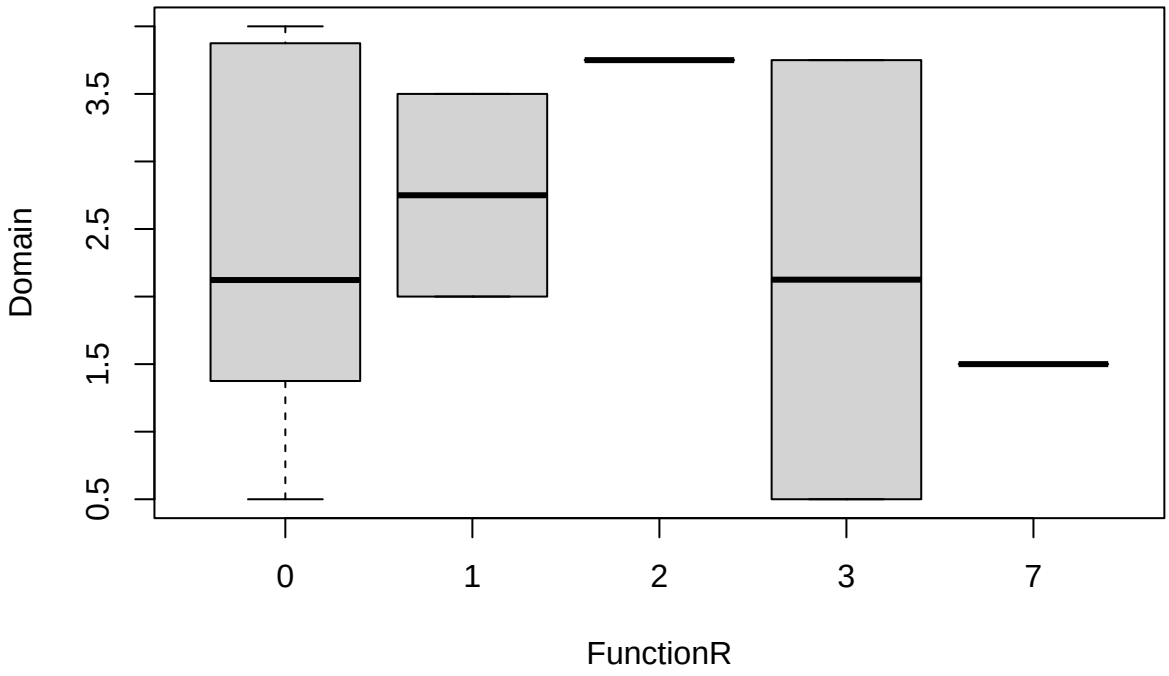

```r
boxplot(Age ~ FunctionR, click)
```



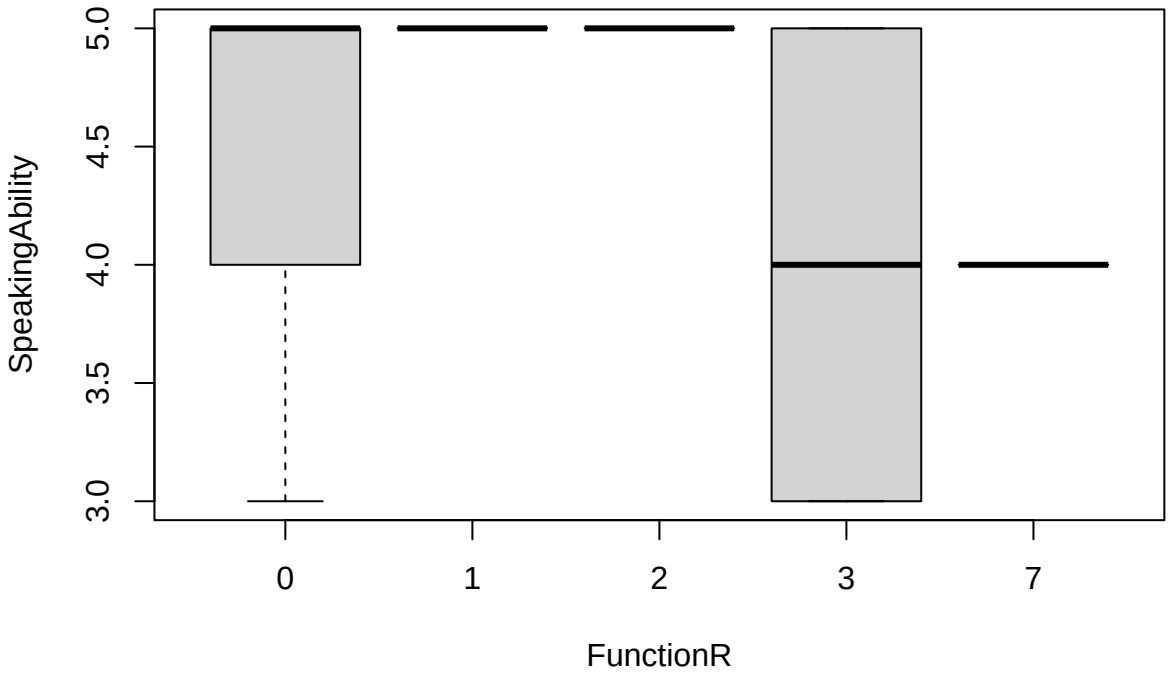

```
boxplot(place_of_birth ~ FunctionR, click)
```



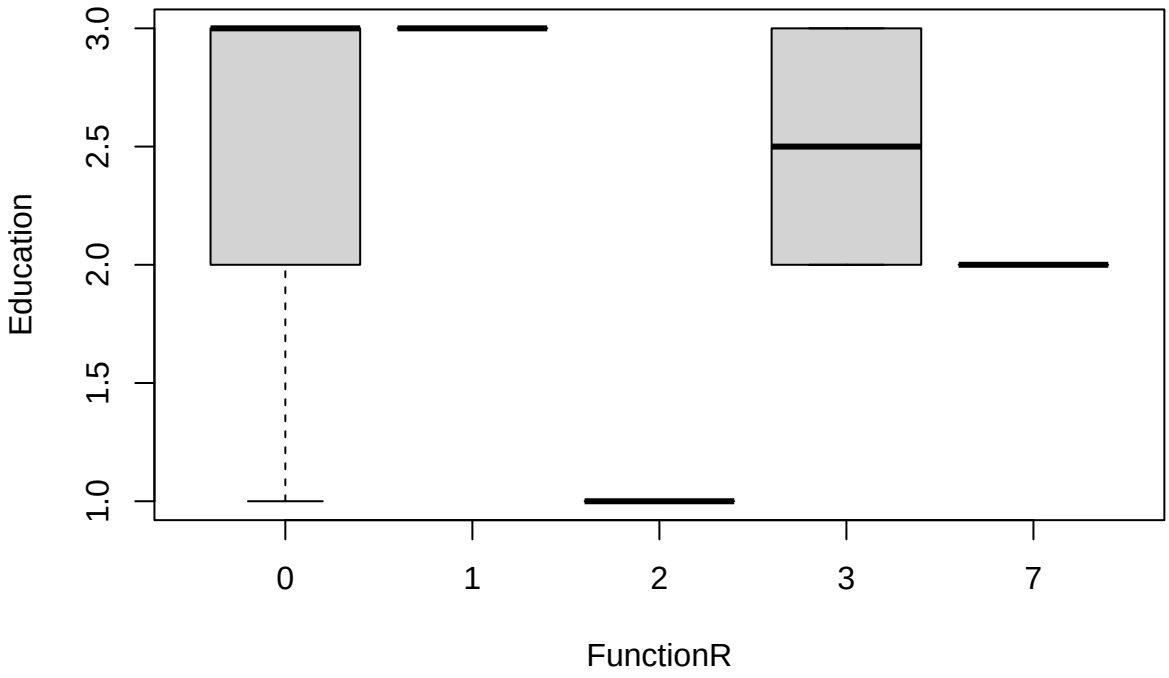

```
boxplot(Domain ~ FunctionR, click)
```




```
boxplot(SpeakingAbility ~ FunctionR, click)
```




```
boxplot(Education ~ FunctionR, click)
```




```
kruskal.test(Gender ~ FunctionR, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionR
## Kruskal-Wallis chi-squared = 5.743, df = 4, p-value = 0.2192
```

```
kruskal.test(Age ~ FunctionR, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionR
## Kruskal-Wallis chi-squared = 4.5694, df = 4, p-value = 0.3344
```

```
kruskal.test(place_of_birth ~ FunctionR, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionR
## Kruskal-Wallis chi-squared = 1.9721, df = 4, p-value = 0.7409
```

```r
kruskal.test(Domain ~ FunctionR, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionR
## Kruskal-Wallis chi-squared = 1.5567, df = 4, p-value = 0.8165
```

```r
kruskal.test(SpeakingAbility ~ FunctionR, data = click)
```

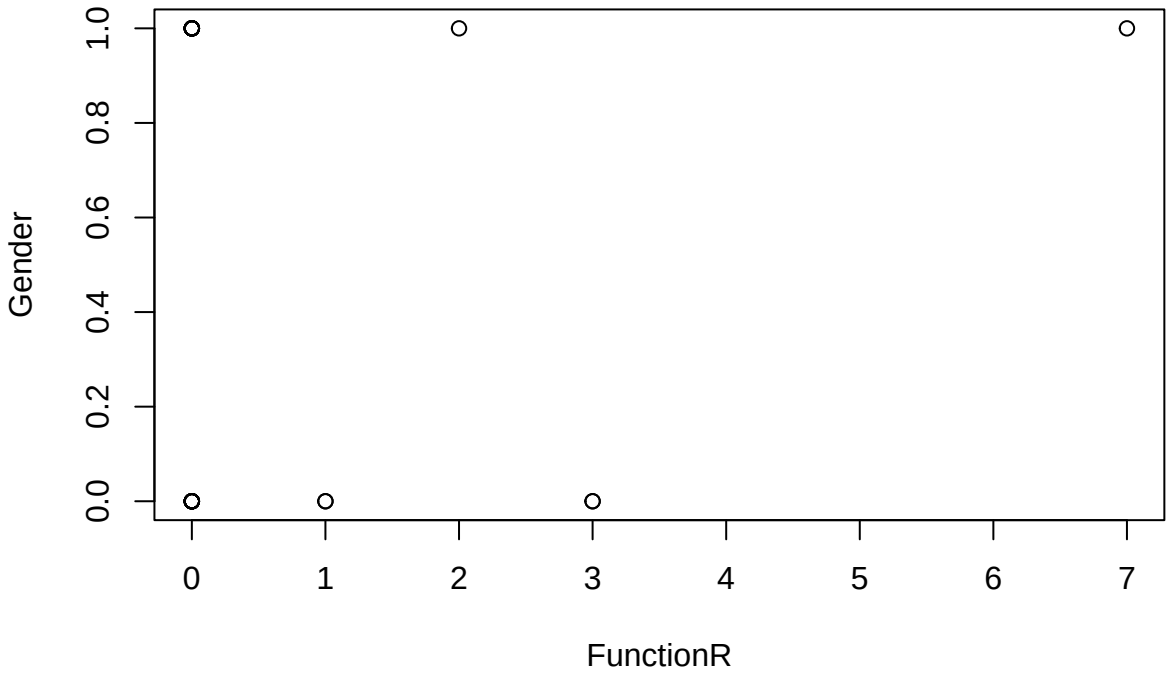
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionR
## Kruskal-Wallis chi-squared = 3.3611, df = 4, p-value = 0.4993
```

```r
kruskal.test(Education ~ FunctionR, data = click)
```

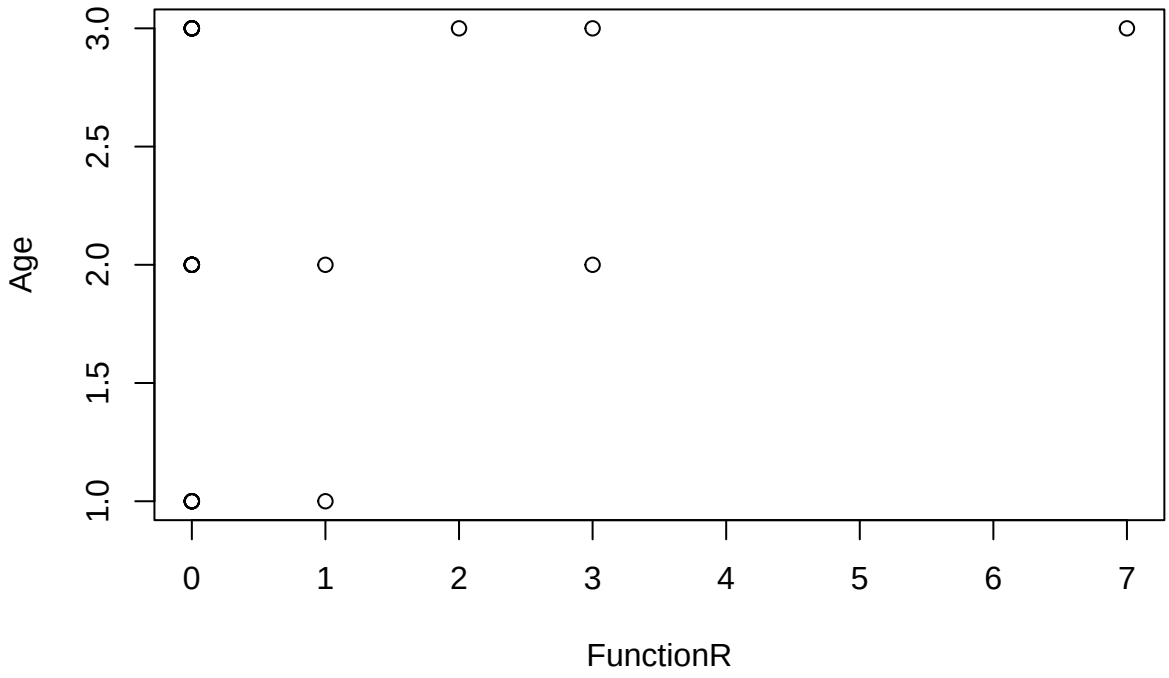
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionR
## Kruskal-Wallis chi-squared = 6.2163, df = 4, p-value = 0.1836
```

Function R without non-clickers

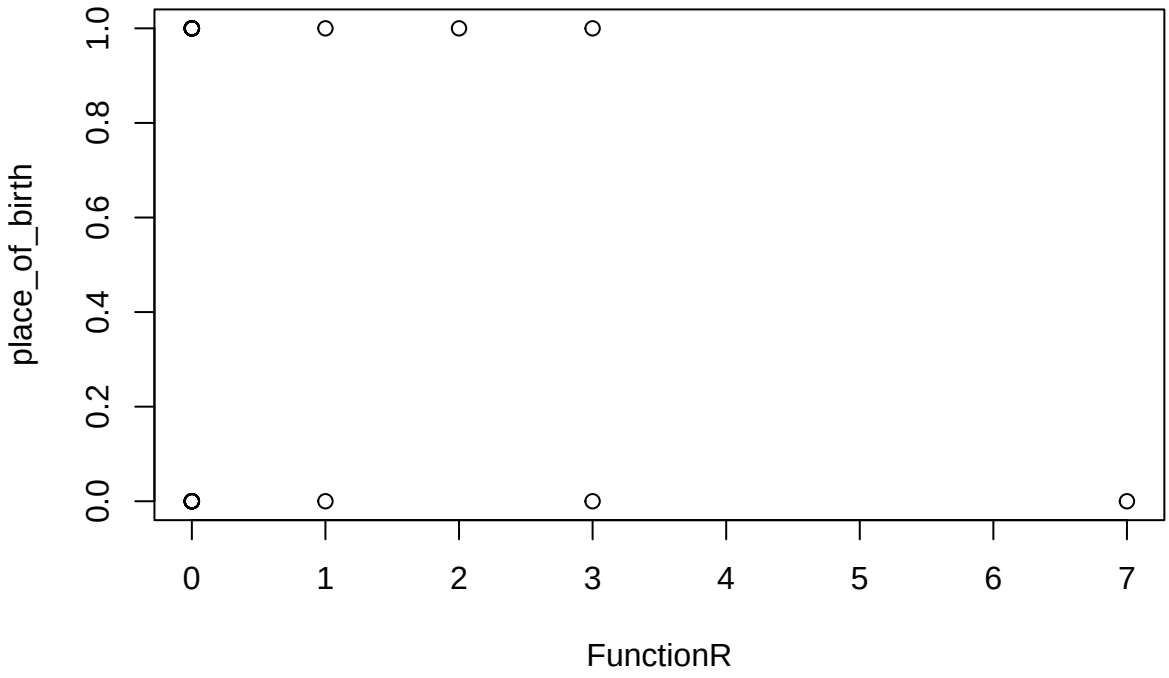
```r
plot(Gender ~ FunctionR, data = clicksonly)
```



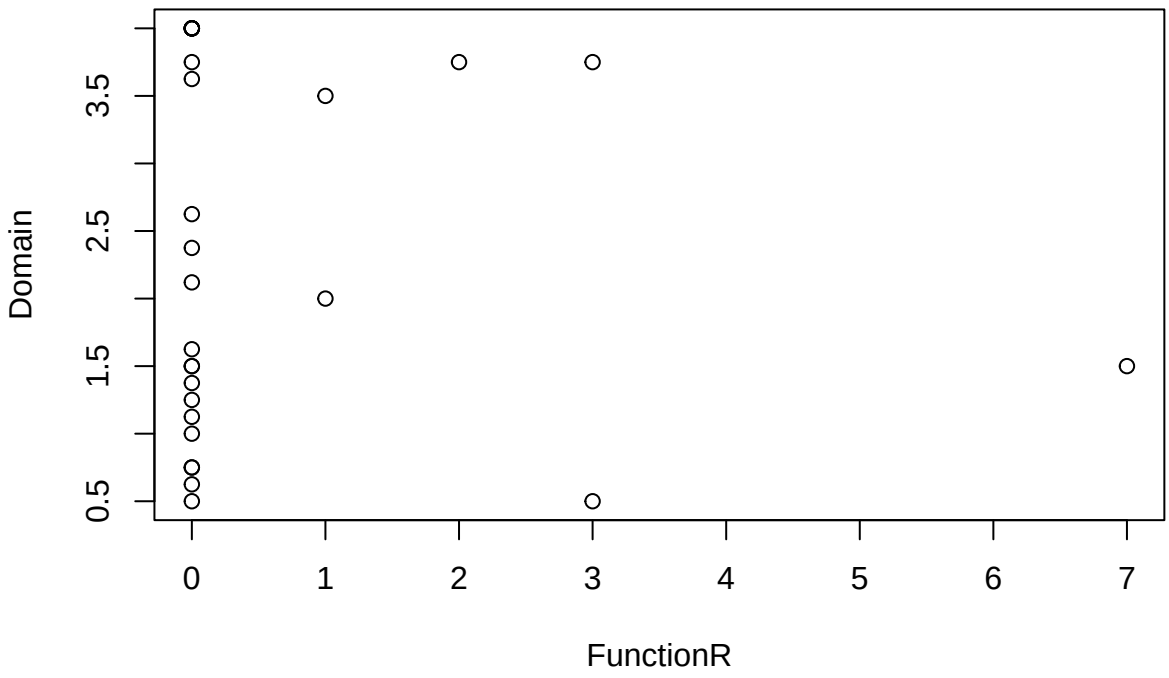

```
plot(Age ~ FunctionR, data = clicksonly)
```



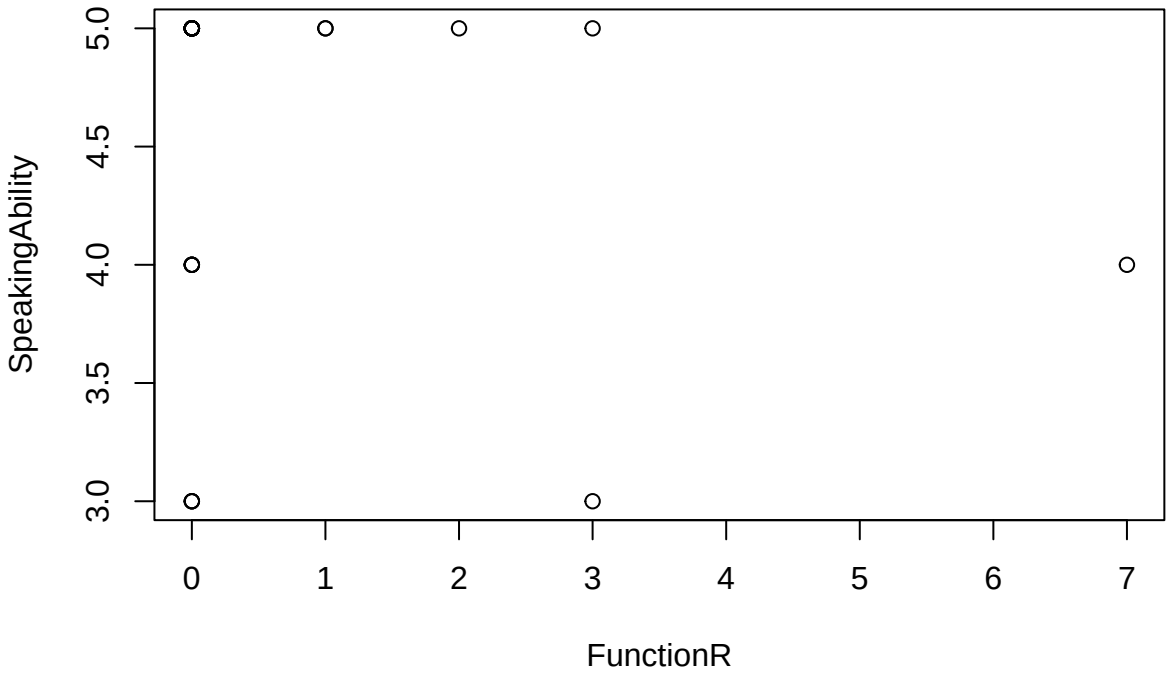

```
plot(place_of_birth ~ FunctionR, data = clicksonly)
```



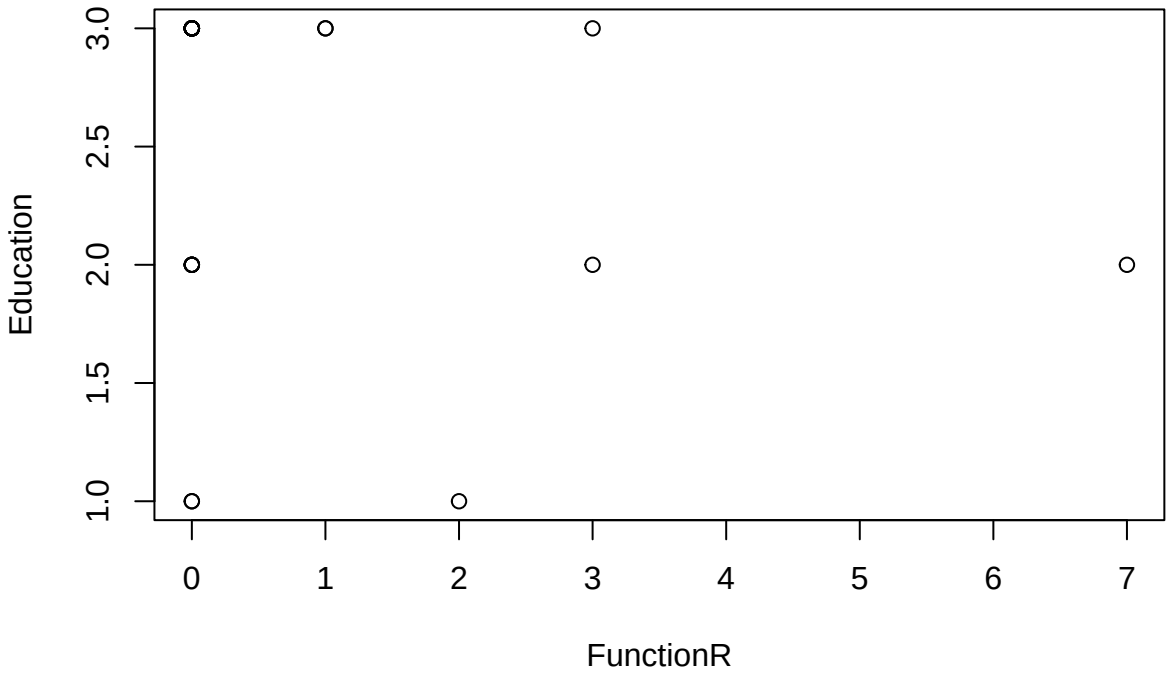

```
plot(Domain ~ FunctionR, data = clicksonly)
```




```
plot(SpeakingAbility ~ FunctionR, data = clicksonly)
```




```
plot(Education ~ FunctionR, data = clicksonly)
```




```
chisq.test(clicksonly$FunctionR)
```

```
## Warning in chisq.test(clicksonly$FunctionR): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$FunctionR
## X-squared = 103.24, df = 27, p-value = 7.528e-11
```

```
aov(Gender ~ FunctionR, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ FunctionR, data = clicksonly)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.019556  6.944729
## Deg. of Freedom         1        26
##
## Residual standard error: 0.516822
## Estimated effects may be unbalanced
```

```r
aov(Age ~ FunctionR, data = clicksonly)
```

```
## Call:
##    aov(formula = Age ~ FunctionR, data = clicksonly)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   1.172161 16.256410
## Deg. of Freedom         1        26
##
## Residual standard error: 0.7907253
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ FunctionR, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ FunctionR, data = clicksonly)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.154029  6.810256
## Deg. of Freedom         1        26
##
## Residual standard error: 0.5117938
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ FunctionR, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ FunctionR, data = clicksonly)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares    0.19710  48.33185
## Deg. of Freedom         1        26
##
## Residual standard error: 1.363421
## Estimated effects may be unbalanced
```

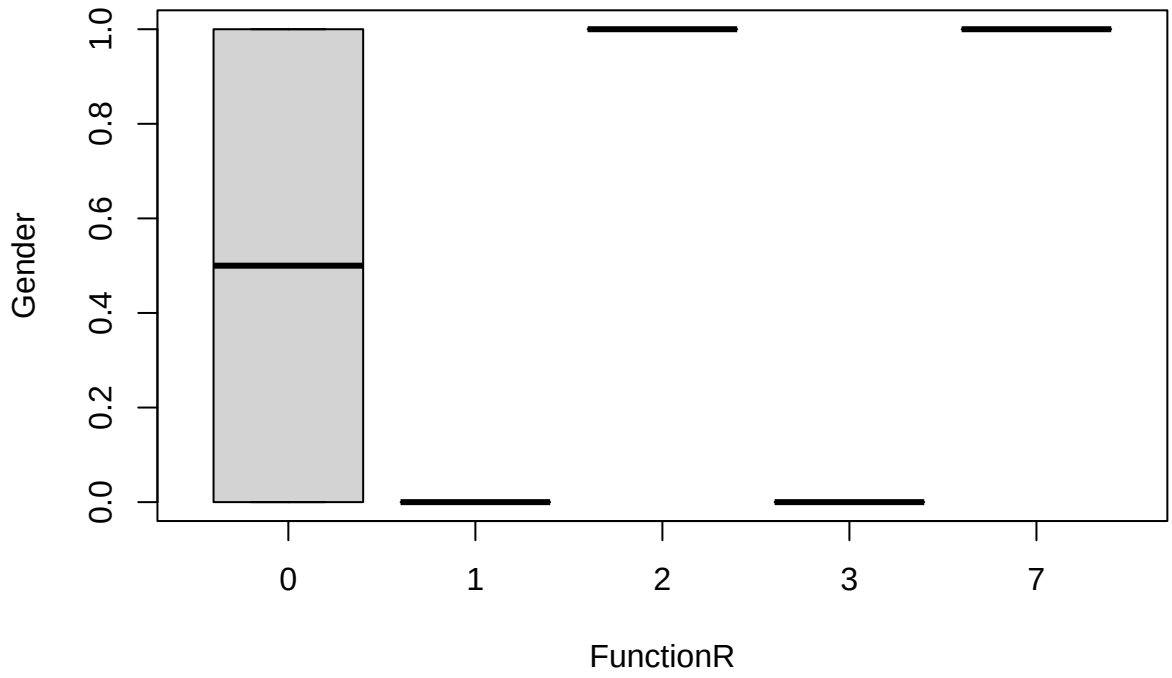
```r
aov(SpeakingAbility ~ FunctionR, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ FunctionR, data = clicksonly)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.416138 14.548148
## Deg. of Freedom         1        26
##
## Residual standard error: 0.7480268
## Estimated effects may be unbalanced
```

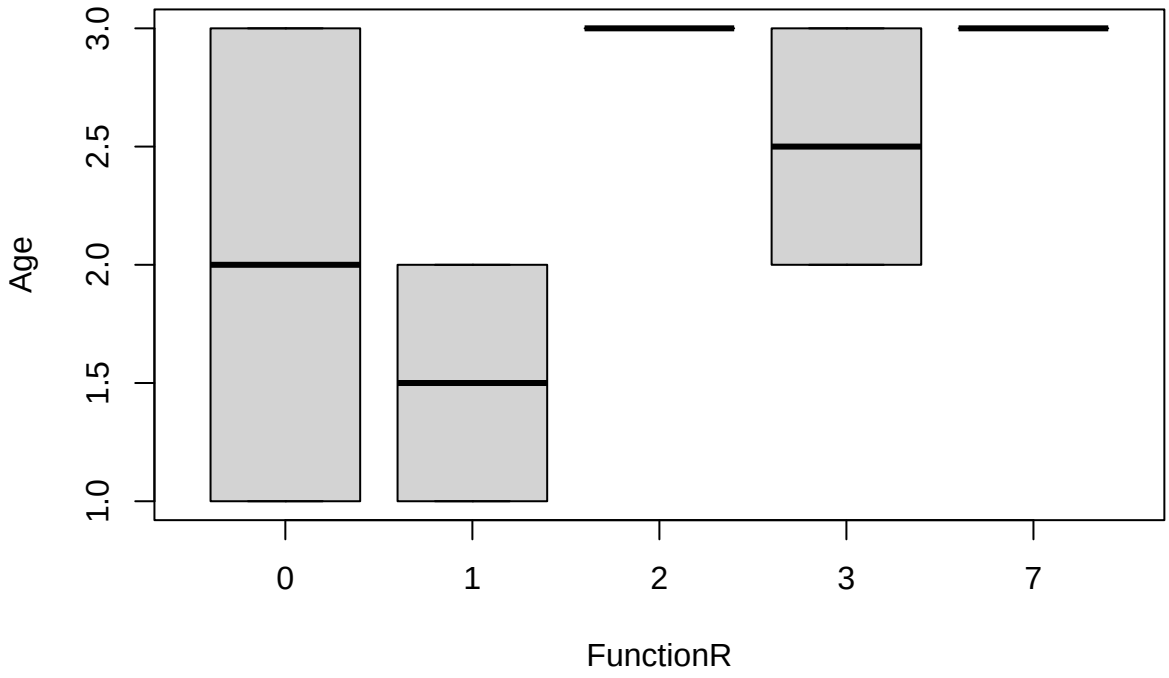
```r
aov(Education ~ FunctionR, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ FunctionR, data = clicksonly)
##
## Terms:
##                 FunctionR Residuals
## Sum of Squares   0.595055 12.369231
## Deg. of Freedom         1        26
##
## Residual standard error: 0.6897388
## Estimated effects may be unbalanced
```

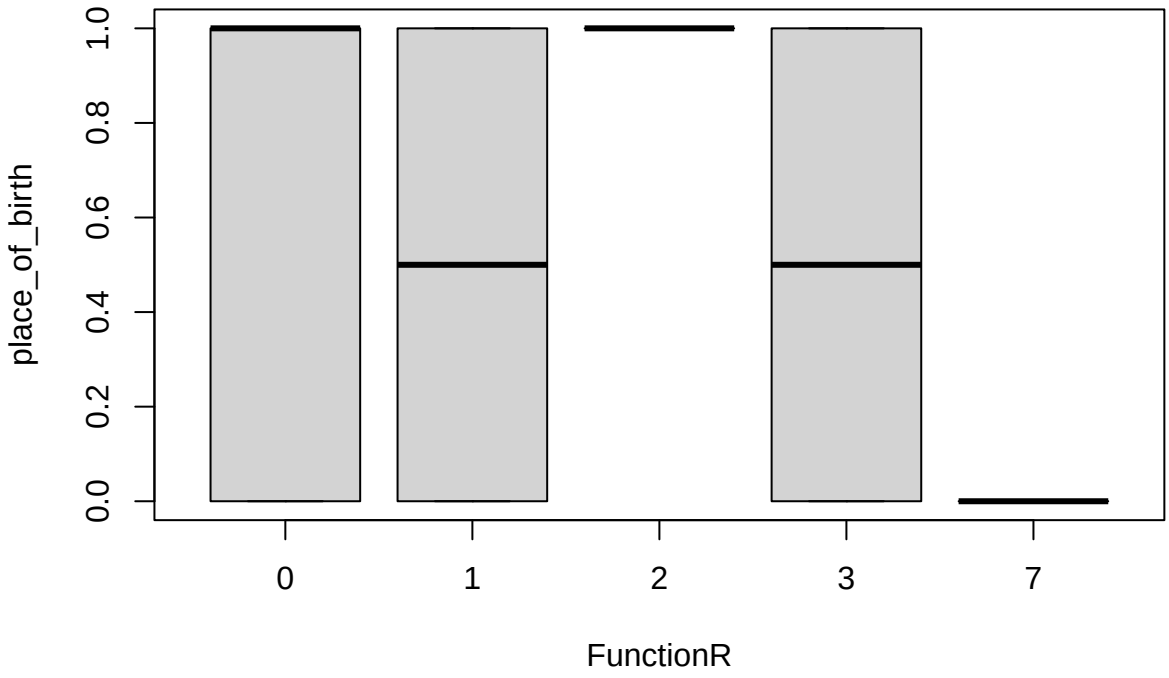
```r
boxplot(Gender ~ FunctionR, clicksonly)
```



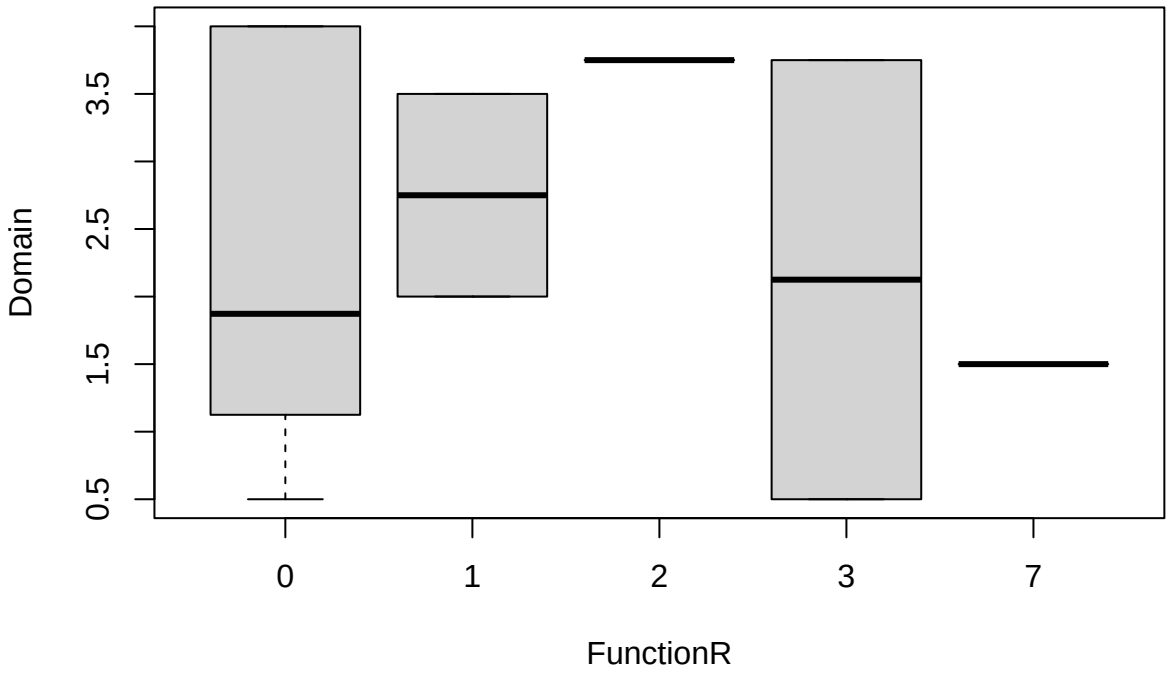

```r
boxplot(Age ~ FunctionR, clicksonly)
```



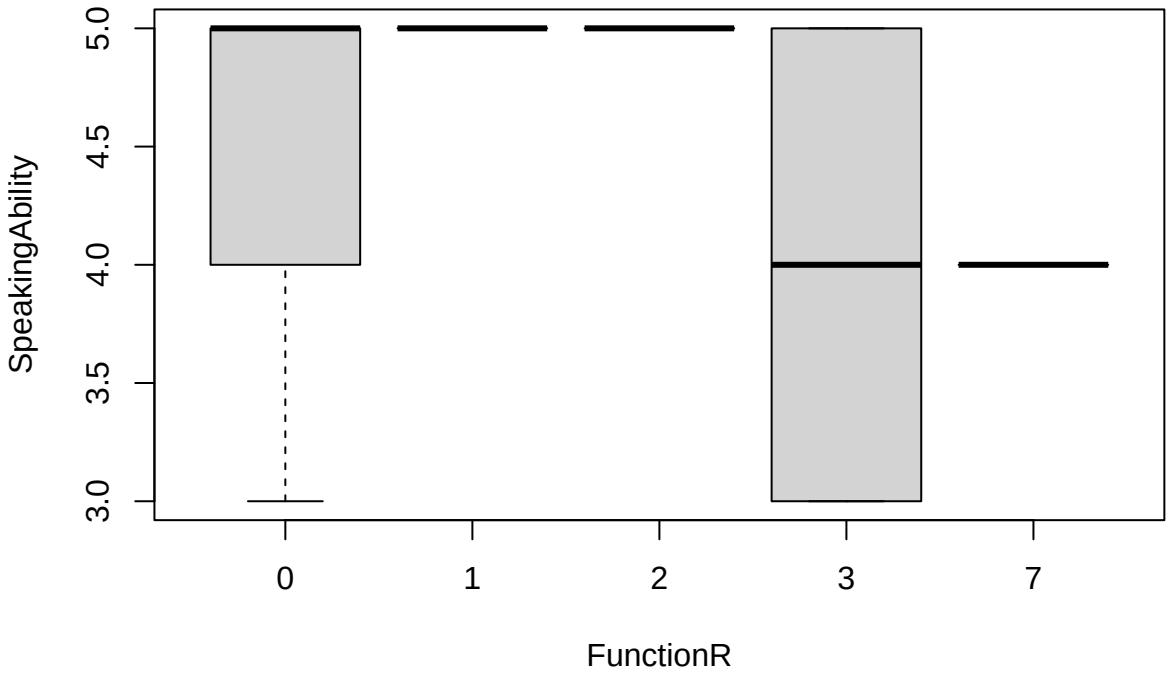

```
boxplot(place_of_birth ~ FunctionR, clicksonly)
```



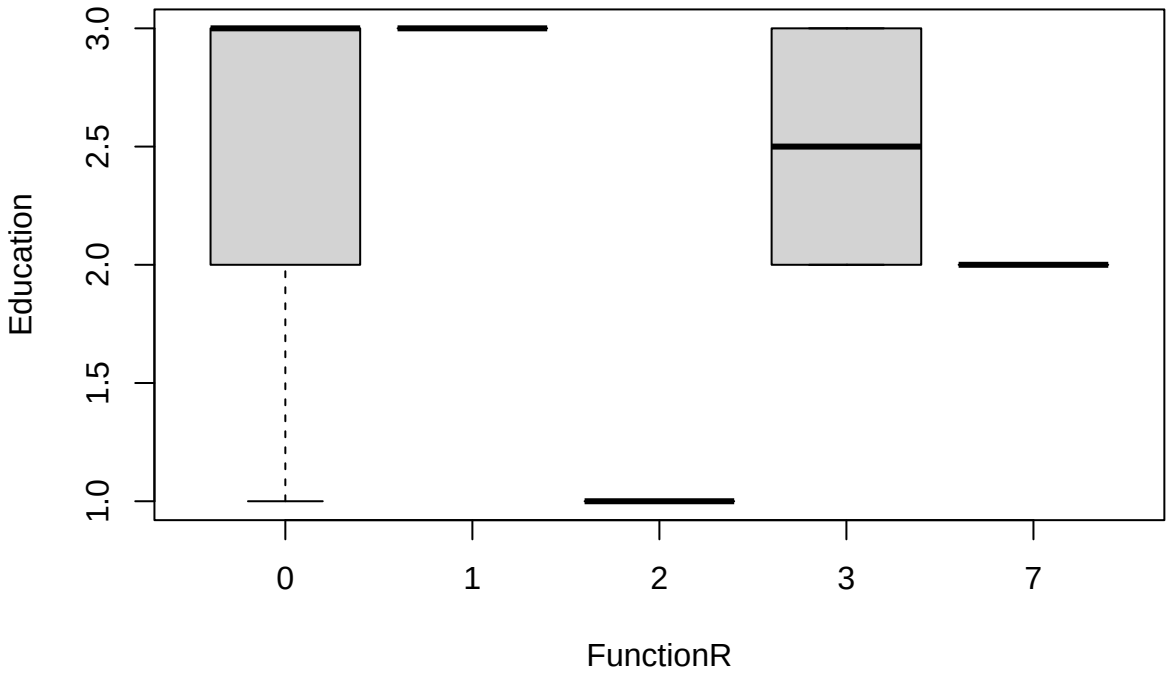

```
boxplot(Domain ~ FunctionR, clicksonly)
```




```
boxplot(SpeakingAbility ~ FunctionR, clicksonly)
```




```
boxplot(Education ~ FunctionR, clicksonly)
```




```
kruskal.test(Gender ~ FunctionR, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by FunctionR
## Kruskal-Wallis chi-squared = 5.6769, df = 4, p-value = 0.2246
```

```
kruskal.test(Age ~ FunctionR, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by FunctionR
## Kruskal-Wallis chi-squared = 4.1891, df = 4, p-value = 0.381
```

```
kruskal.test(place_of_birth ~ FunctionR, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by FunctionR
## Kruskal-Wallis chi-squared = 1.9762, df = 4, p-value = 0.7401
```

```r
kruskal.test(Domain ~ FunctionR, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by FunctionR
## Kruskal-Wallis chi-squared = 1.199, df = 4, p-value = 0.8783
```

```r
kruskal.test(SpeakingAbility ~ FunctionR, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by FunctionR
## Kruskal-Wallis chi-squared = 3.1571, df = 4, p-value = 0.5319
```

```r
kruskal.test(Education ~ FunctionR, data = clicksonly)
```

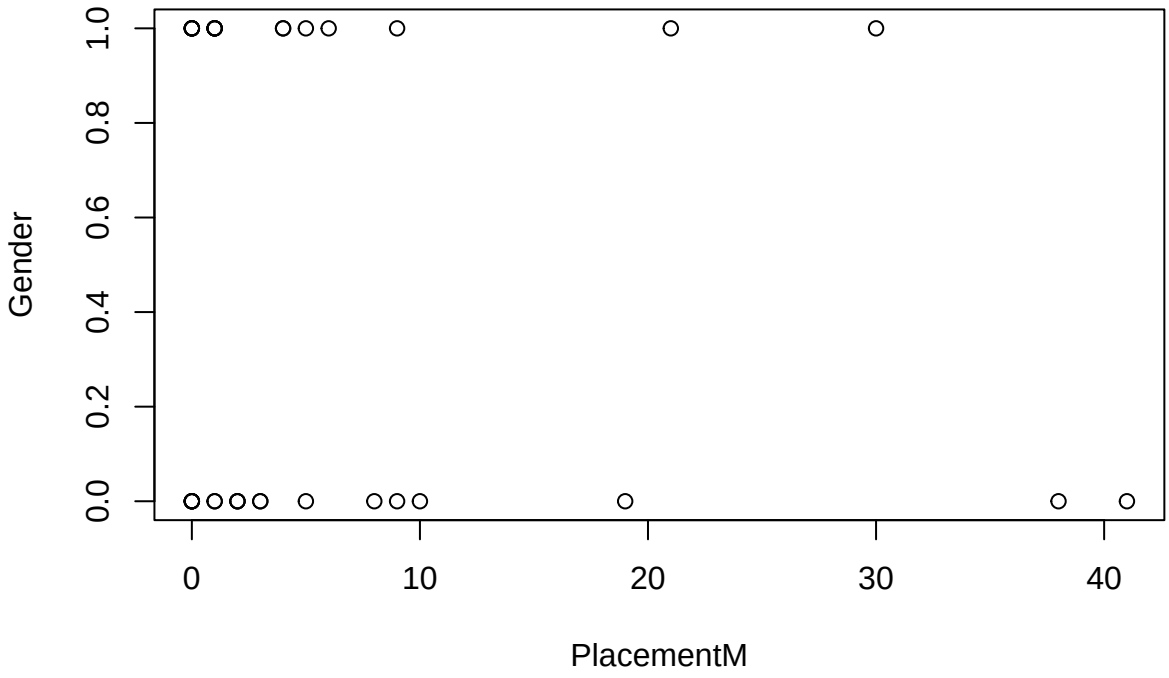
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by FunctionR
## Kruskal-Wallis chi-squared = 5.6104, df = 4, p-value = 0.2302
```

Hypothesis 3:

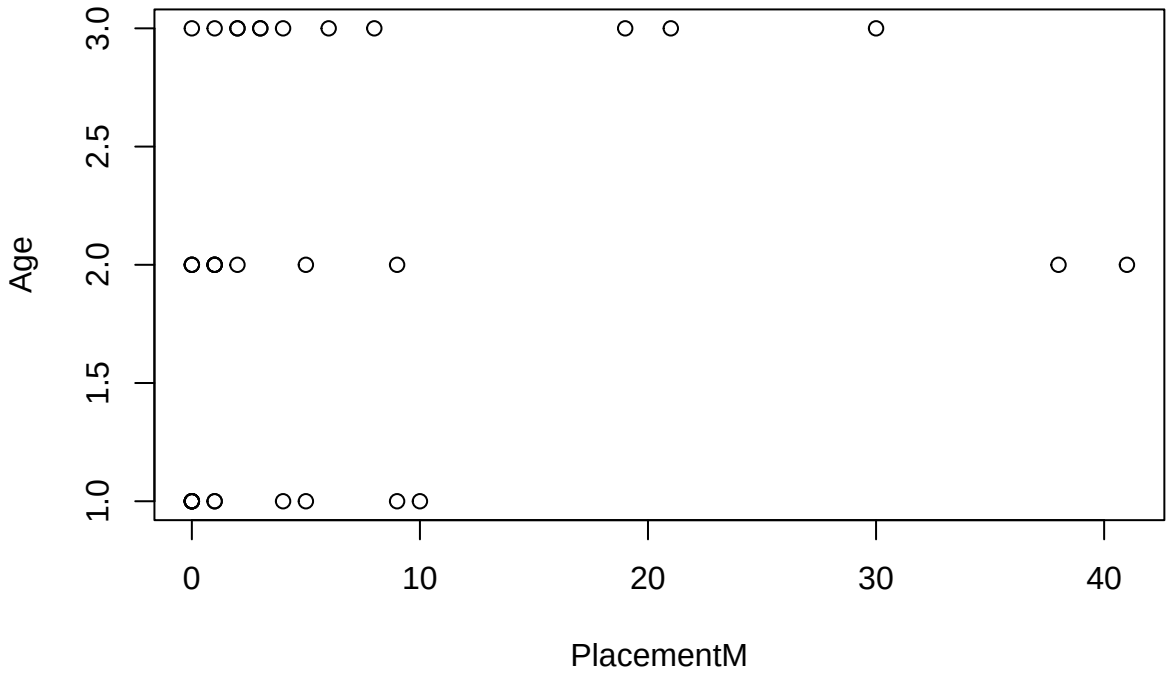
There will not be a statistically significant difference in the placement of clicks based on the following variables: gender, age, place of birth, domain, speaking ability, and education.

Placement M with non-clickers

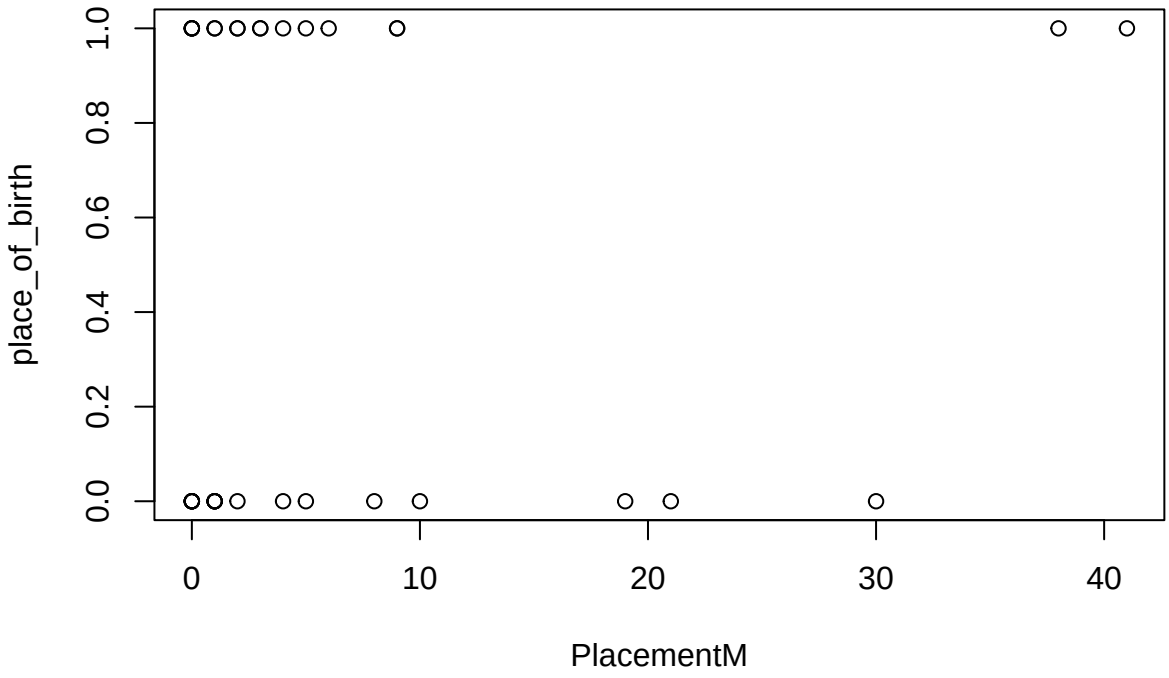
```r
plot(Gender ~ PlacementM, data = click)
```



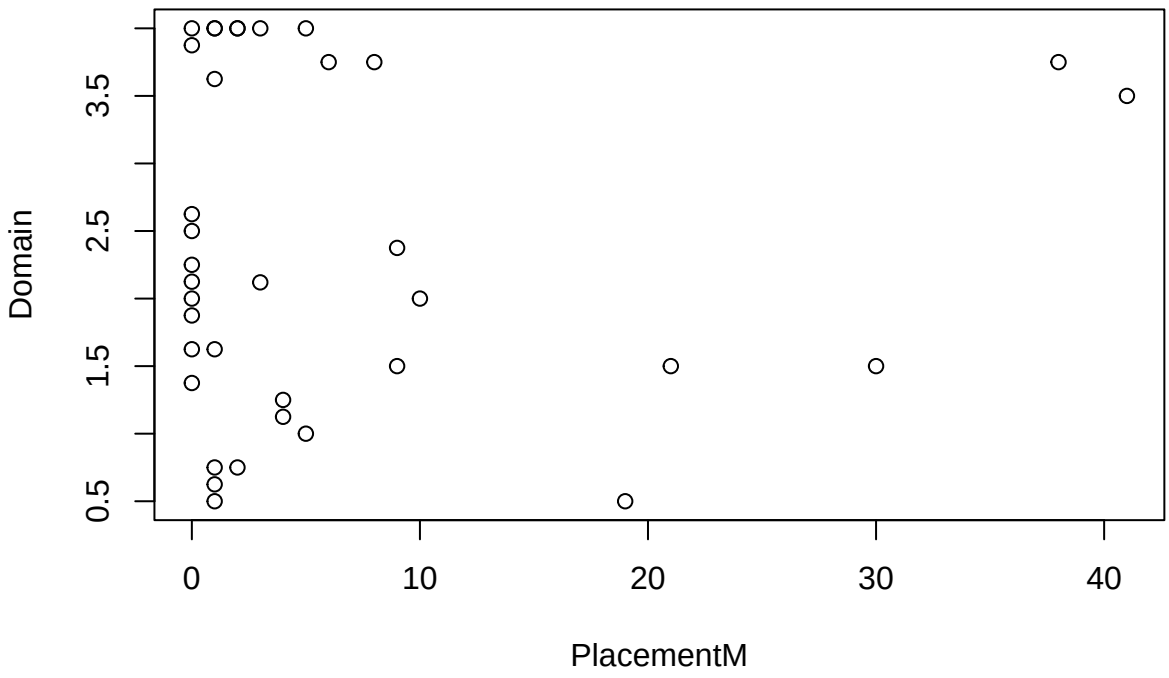

```
plot(Age ~ PlacementM, data = click)
```



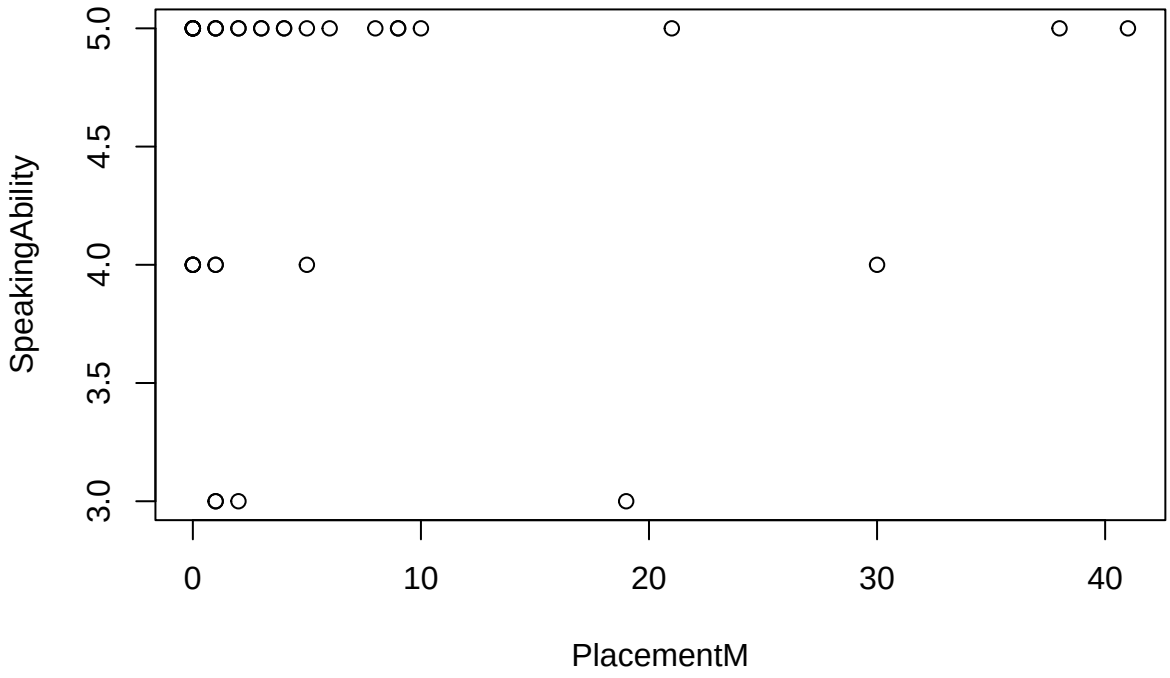

```
plot(place_of_birth ~ PlacementM, data = click)
```



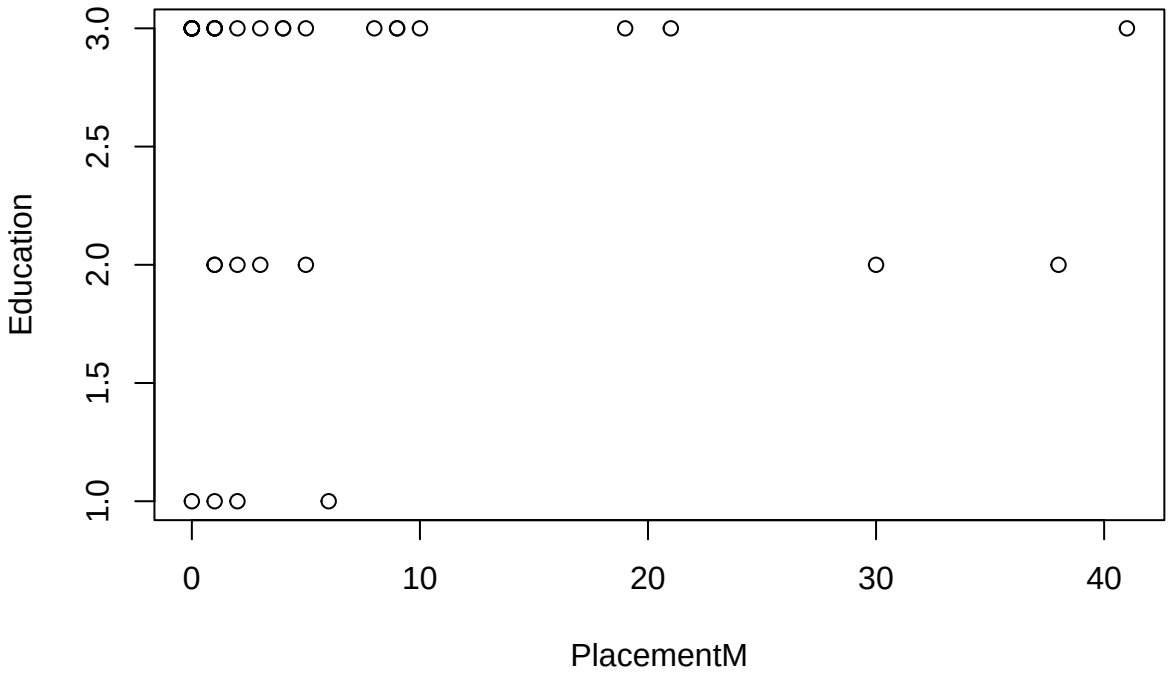

```
plot(Domain ~ PlacementM, data = click)
```




```
plot(SpeakingAbility ~ PlacementM, data = click)
```




```
plot(Education ~ PlacementM, data = click)
```




```
chisq.test(click$PlacementM)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$PlacementM
## X-squared = 610.11, df = 35, p-value < 2.2e-16
```

```
aov(Gender ~ PlacementM, data = click)
```

```
## Call:
##    aov(formula = Gender ~ PlacementM, data = click)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.144956  8.827266
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5095346
## Estimated effects may be unbalanced
```

```
aov(Age ~ PlacementM, data = click)
```

```
## Call:
```

```
##    aov(formula = Age ~ PlacementM, data = click)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    1.232143 22.767857
## Deg. of Freedom          1        34
##
## Residual standard error: 0.8183171
## Estimated effects may be unbalanced
```

```
aov(place_of_birth ~ PlacementM, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ PlacementM, data = click)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.069042  8.903180
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5117209
## Estimated effects may be unbalanced
```

```
aov(Domain ~ PlacementM, data = click)
```

```
## Call:
##    aov(formula = Domain ~ PlacementM, data = click)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares     0.12309  54.37777
## Deg. of Freedom          1        34
##
## Residual standard error: 1.264653
## Estimated effects may be unbalanced
```

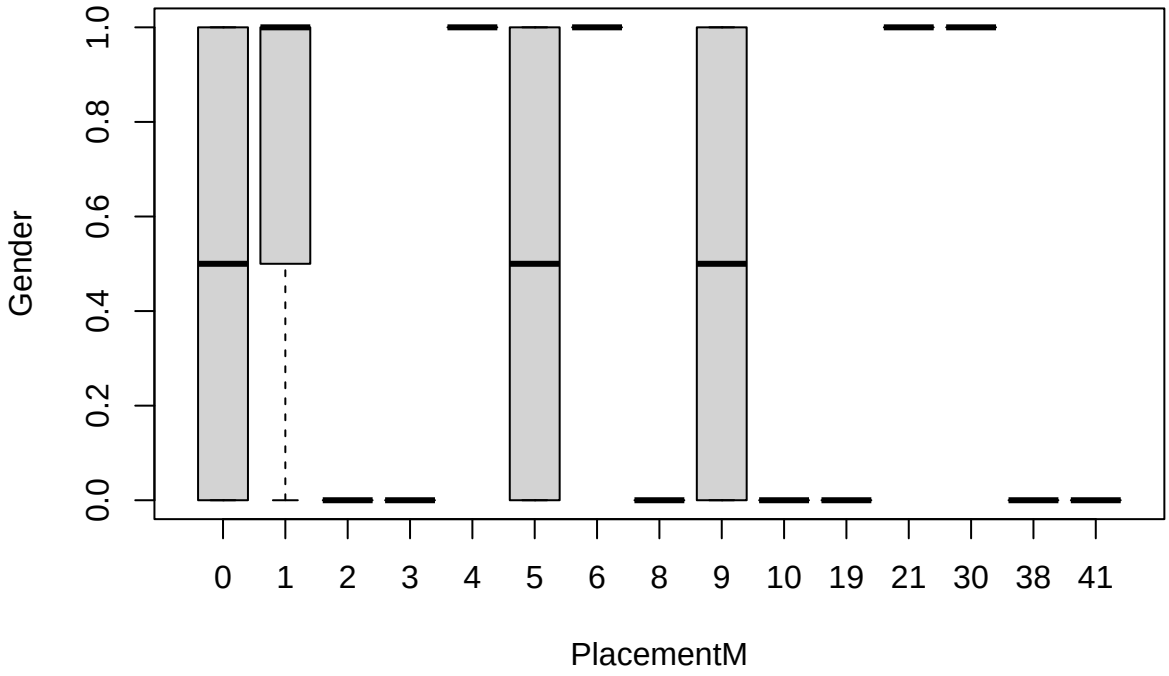
```
aov(SpeakingAbility ~ PlacementM, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ PlacementM, data = click)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.086985 16.801904
## Deg. of Freedom          1        34
##
## Residual standard error: 0.7029748
## Estimated effects may be unbalanced
```

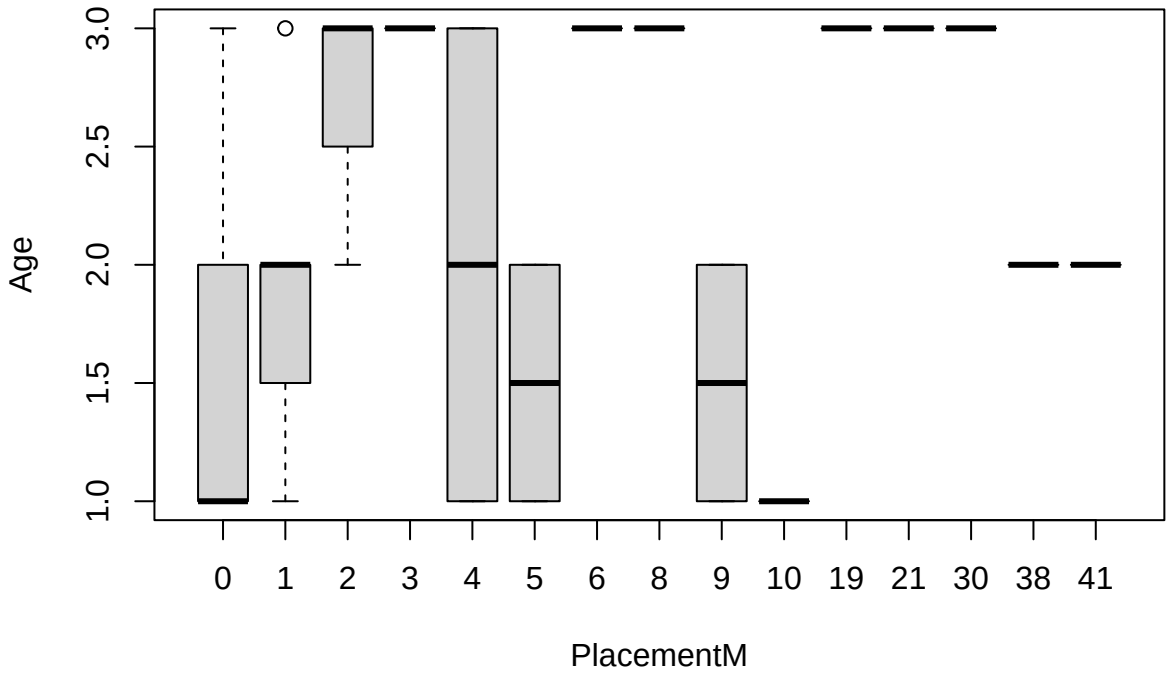
```
aov(Education ~ PlacementM, data = click)
```

```
## Call:
##    aov(formula = Education ~ PlacementM, data = click)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.002329 16.747671
## Deg. of Freedom          1        34
##
## Residual standard error: 0.7018394
## Estimated effects may be unbalanced
```

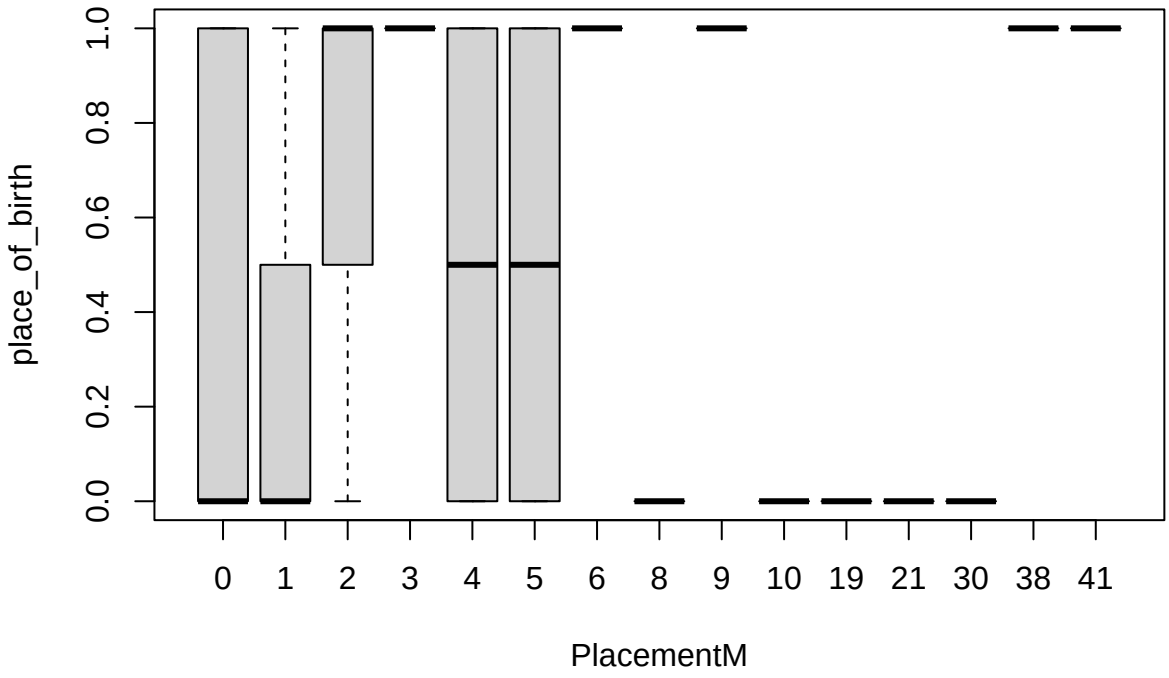
```
boxplot(Gender ~ PlacementM, click)
```



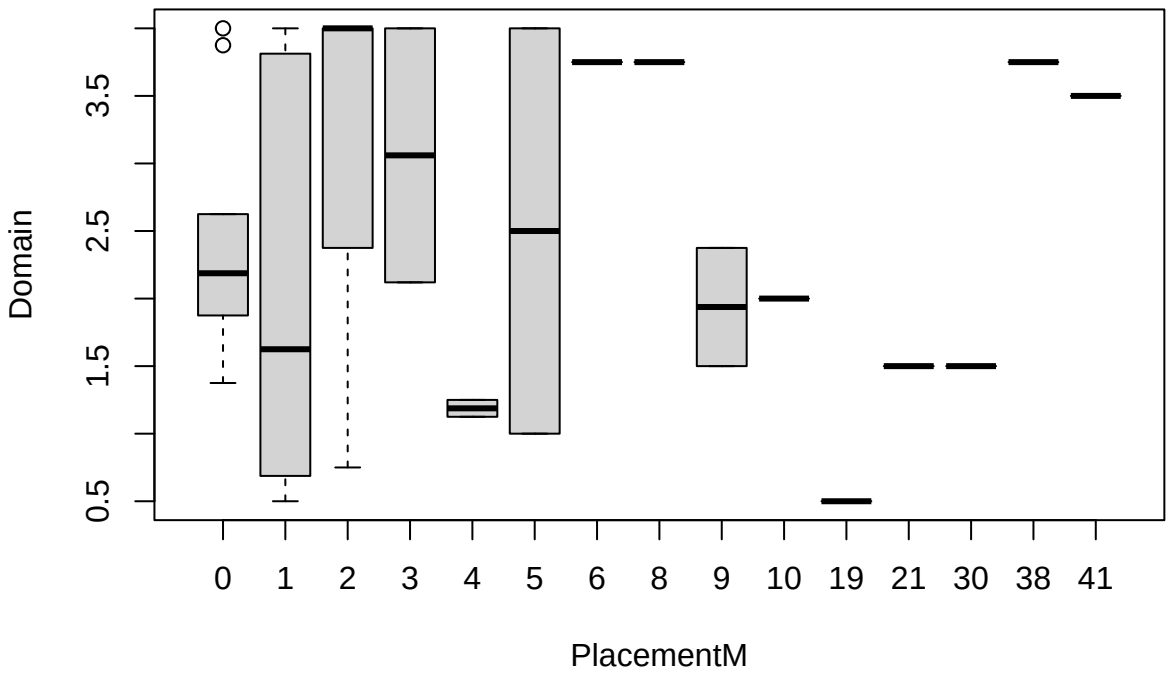

```
boxplot(Age ~ PlacementM, click)
```



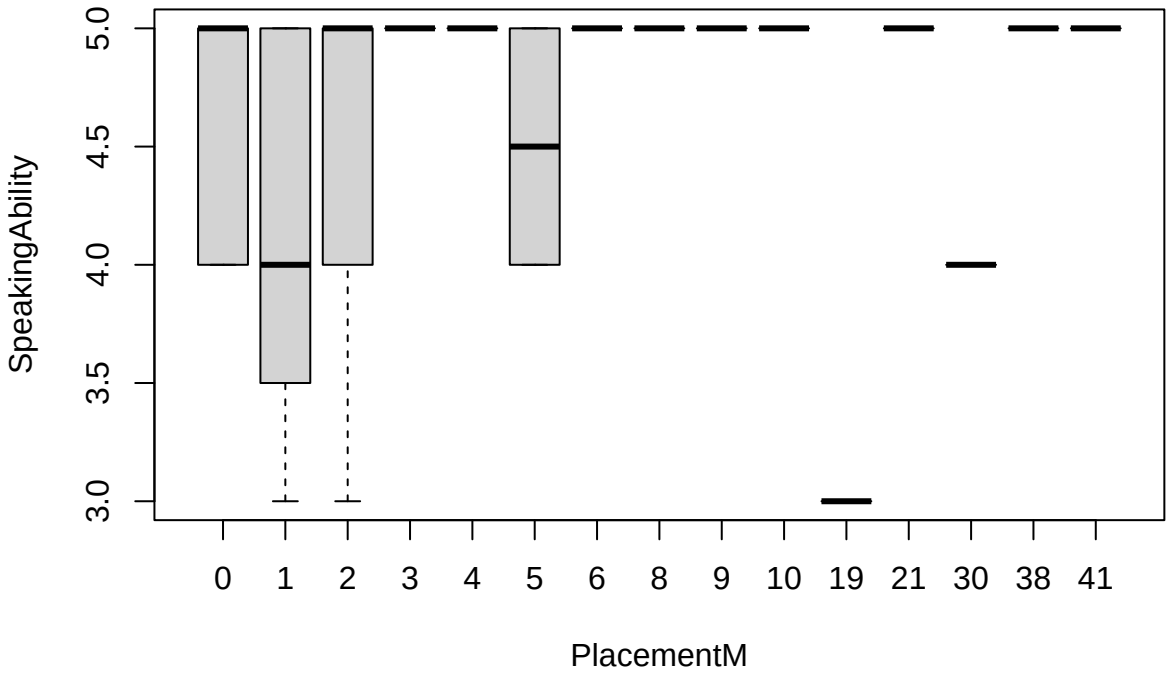

```
boxplot(place_of_birth ~ PlacementM, click)
```



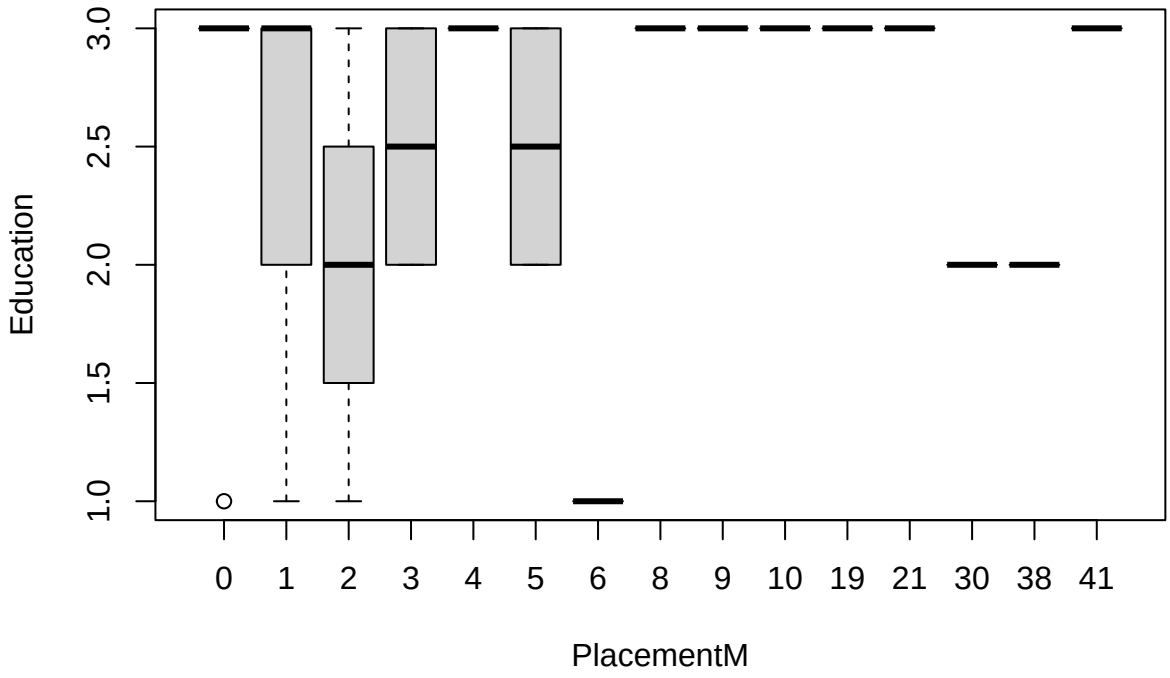

```
boxplot(Domain ~ PlacementM, click)
```




```
boxplot(SpeakingAbility ~ PlacementM, click)
```




```
boxplot(Education ~ PlacementM, click)
```




```
kruskal.test(Gender ~ PlacementM, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by PlacementM
## Kruskal-Wallis chi-squared = 15.774, df = 14, p-value = 0.3274
```

```
kruskal.test(Age ~ PlacementM, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by PlacementM
## Kruskal-Wallis chi-squared = 18.924, df = 14, p-value = 0.1679
```

```
kruskal.test(place_of_birth ~ PlacementM, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by PlacementM
## Kruskal-Wallis chi-squared = 13.563, df = 14, p-value = 0.4827
```

```r
kruskal.test(Domain ~ PlacementM, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by PlacementM
## Kruskal-Wallis chi-squared = 10.371, df = 14, p-value = 0.7346
```

```r
kruskal.test(SpeakingAbility ~ PlacementM, data = click)
```

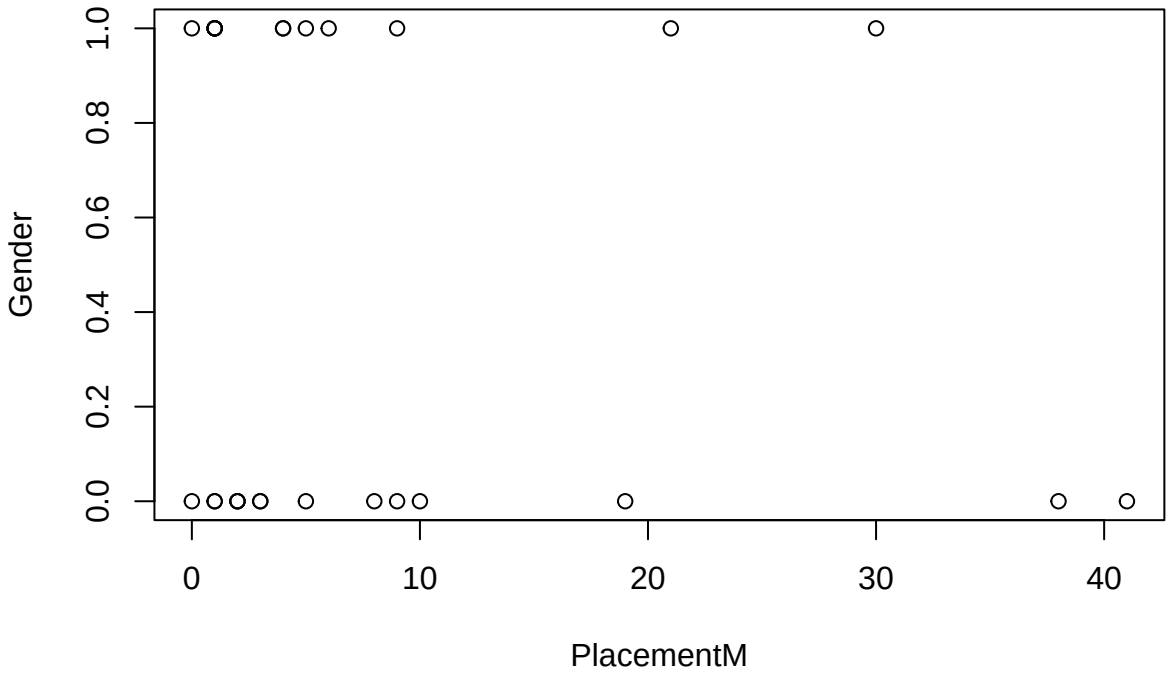
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by PlacementM
## Kruskal-Wallis chi-squared = 12.605, df = 14, p-value = 0.5578
```

```r
kruskal.test(Education ~ PlacementM, data = click)
```

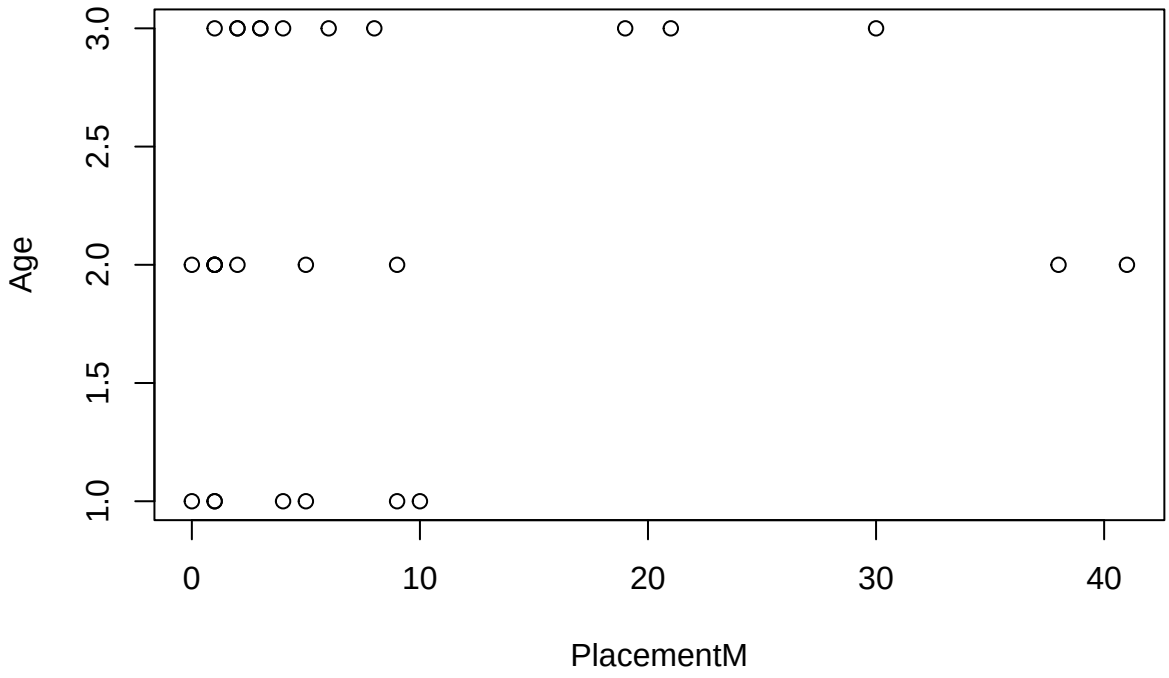
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by PlacementM
## Kruskal-Wallis chi-squared = 14.608, df = 14, p-value = 0.4055
```

Placement M without non-clickers

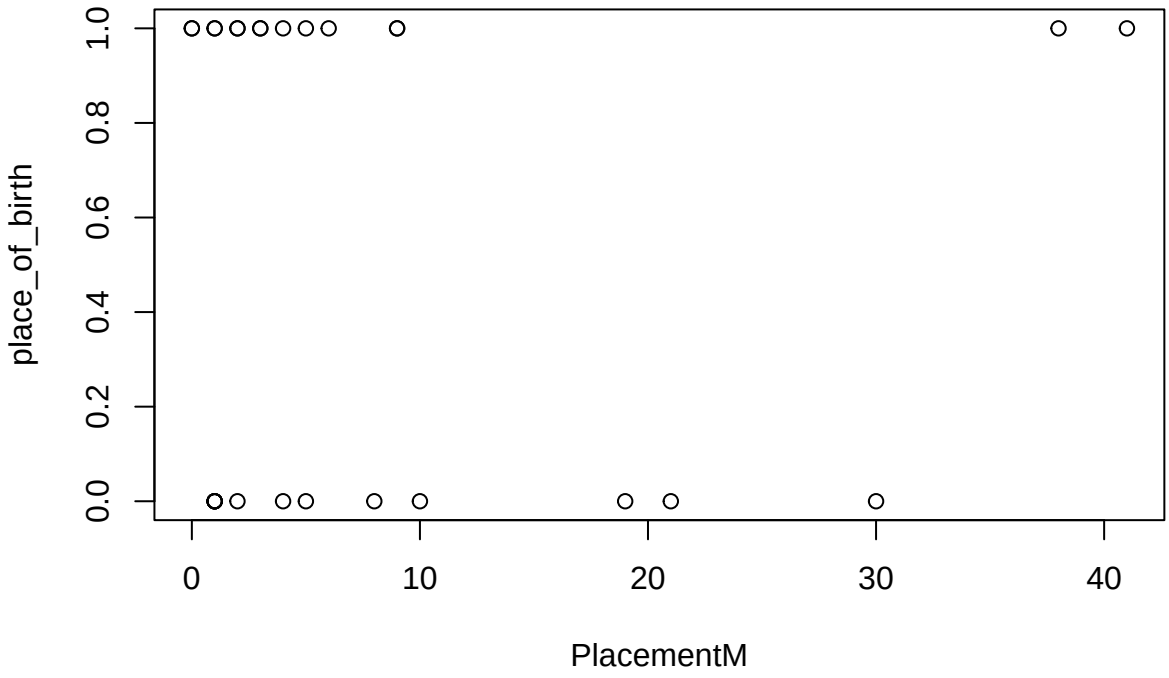
```r
plot(Gender ~ PlacementM, data = clicksonly)
```



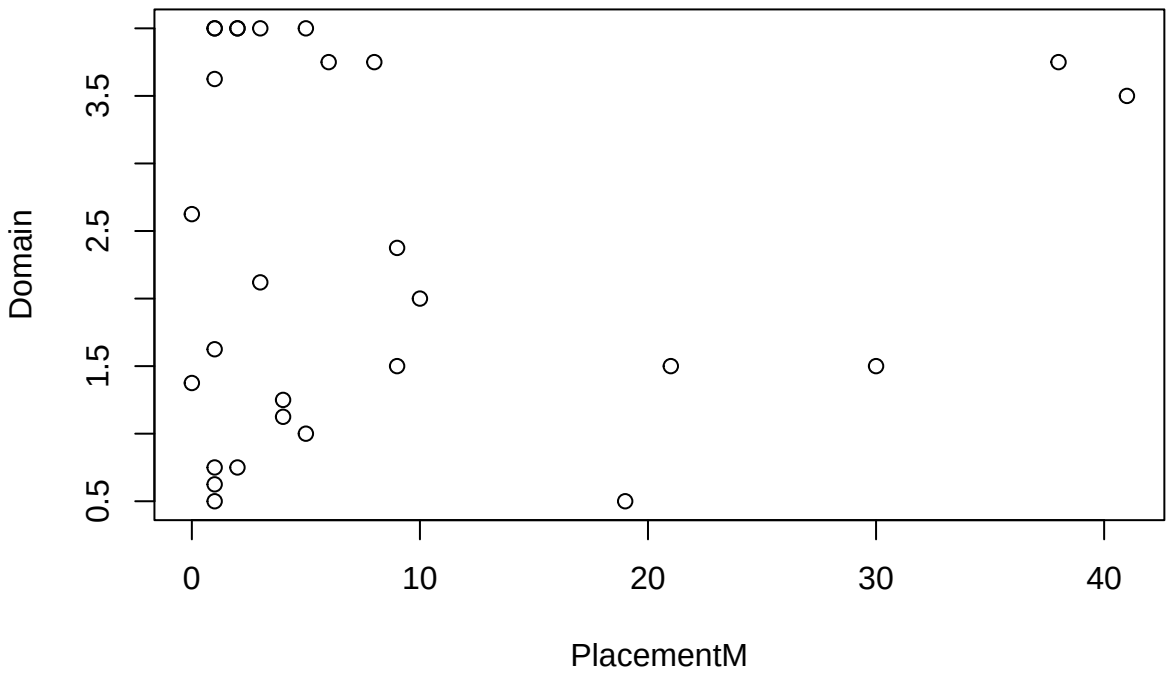

```
plot(Age ~ PlacementM, data = clicksonly)
```



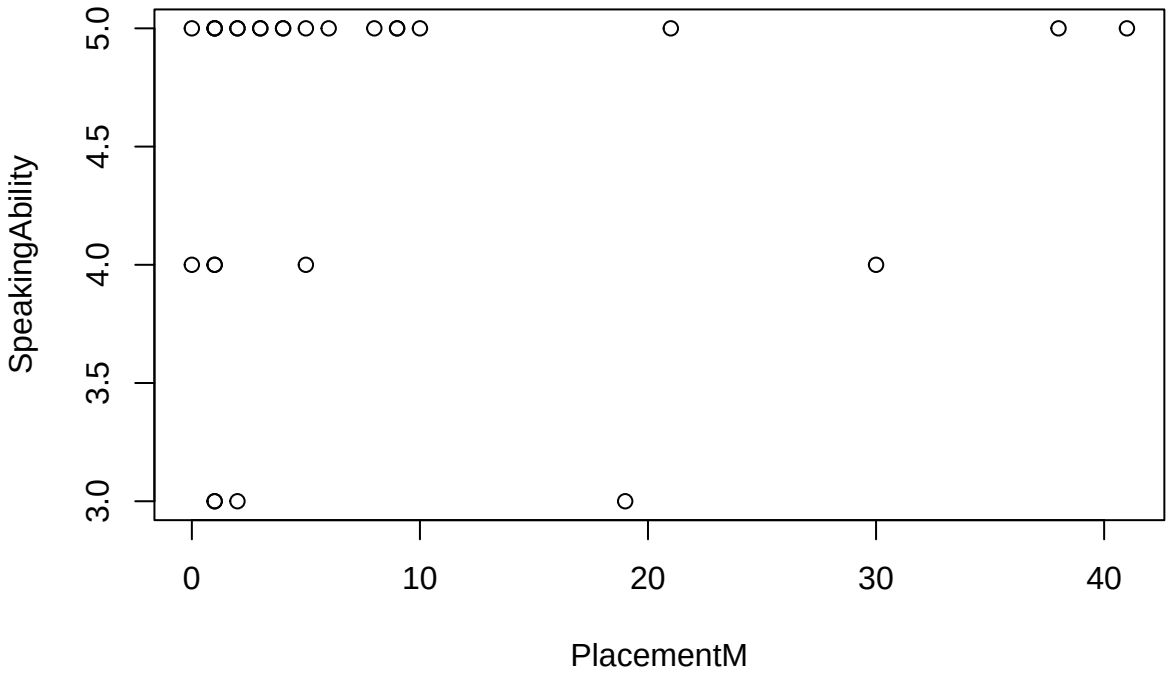

```
plot(place_of_birth ~ PlacementM, data = clicksonly)
```



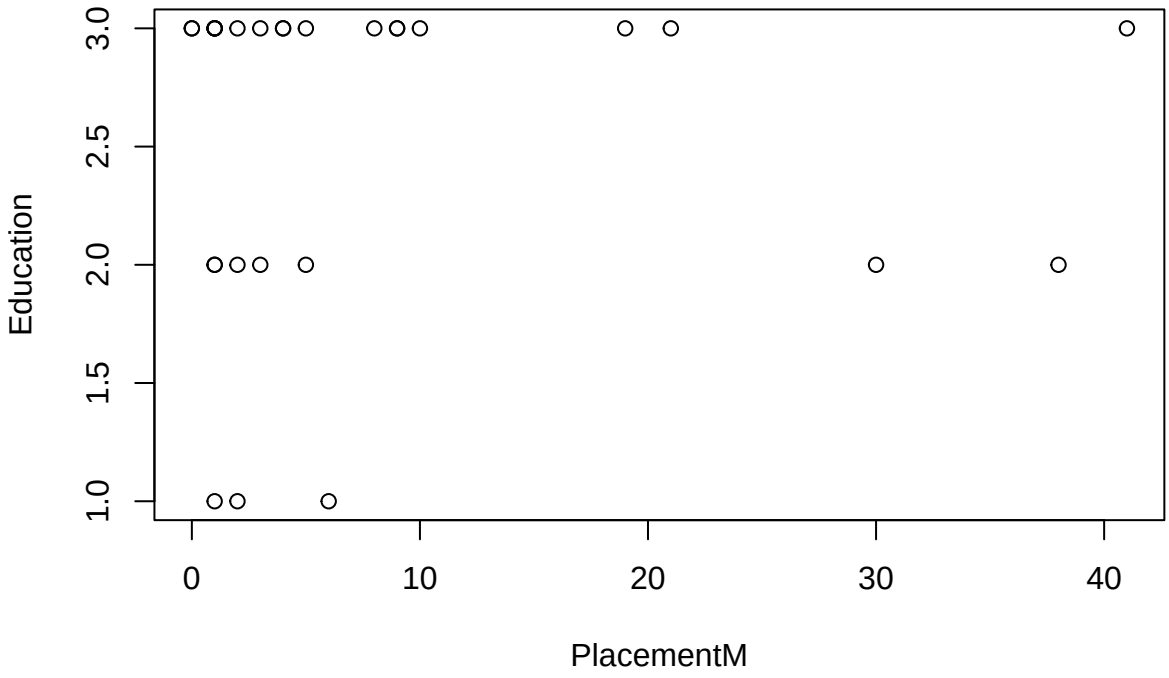

```
plot(Domain ~ PlacementM, data = clicksonly)
```




```
plot(SpeakingAbility ~ PlacementM, data = clicksonly)
```




```
plot(Education ~ PlacementM, data = clicksonly)
```




```
chisq.test(clicksonly$PlacementM)
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$PlacementM
## X-squared = 423.86, df = 27, p-value < 2.2e-16
```

```
aov(Gender ~ PlacementM, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ PlacementM, data = clicksonly)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.138417  6.825869
## Deg. of Freedom          1        26
##
## Residual standard error: 0.5123802
## Estimated effects may be unbalanced
```

```
aov(Age ~ PlacementM, data = clicksonly)
```

```
## Call:
```

```
##    aov(formula = Age ~ PlacementM, data = clicksonly)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares     0.38449  17.04408
## Deg. of Freedom          1        26
##
## Residual standard error: 0.8096552
## Estimated effects may be unbalanced
```

```
aov(place_of_birth ~ PlacementM, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ PlacementM, data = clicksonly)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.000999  6.963286
## Deg. of Freedom          1        26
##
## Residual standard error: 0.517512
## Estimated effects may be unbalanced
```

```
aov(Domain ~ PlacementM, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ PlacementM, data = clicksonly)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares     0.28829  48.24067
## Deg. of Freedom          1        26
##
## Residual standard error: 1.362134
## Estimated effects may be unbalanced
```

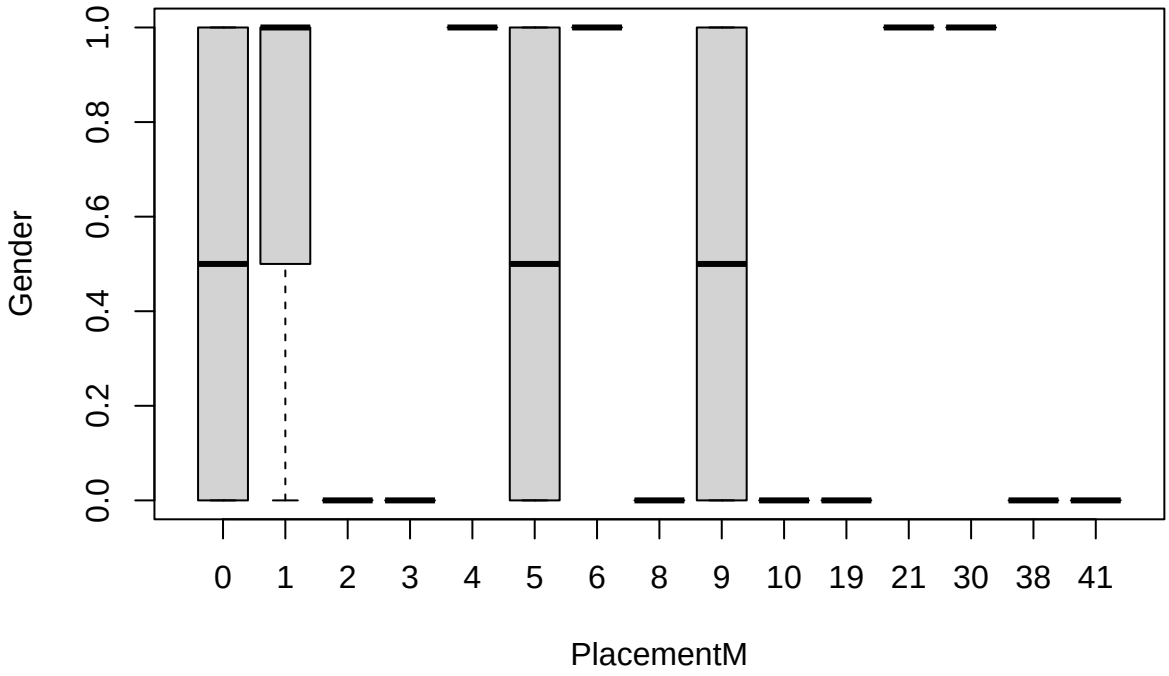
```
aov(SpeakingAbility ~ PlacementM, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ PlacementM, data = clicksonly)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.151372 14.812914
## Deg. of Freedom          1        26
##
## Residual standard error: 0.7548029
## Estimated effects may be unbalanced
```

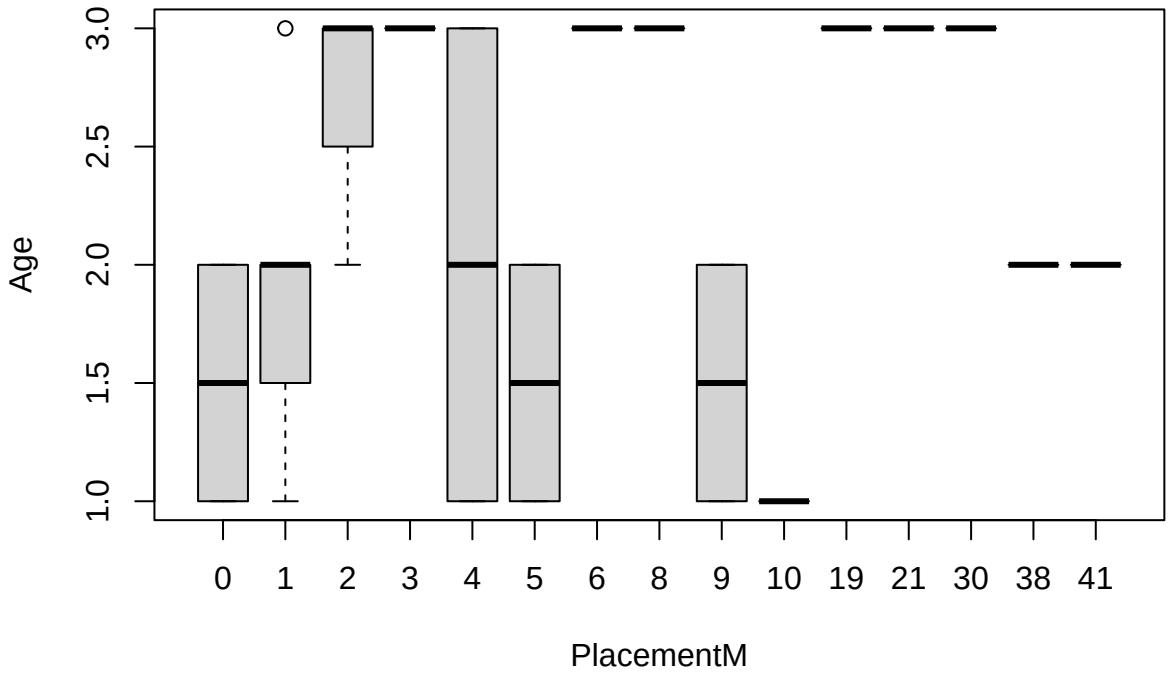
```
aov(Education ~ PlacementM, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ PlacementM, data = clicksonly)
##
## Terms:
##                 PlacementM Residuals
## Sum of Squares    0.017887 12.946399
## Deg. of Freedom          1        26
##
## Residual standard error: 0.7056475
## Estimated effects may be unbalanced
```

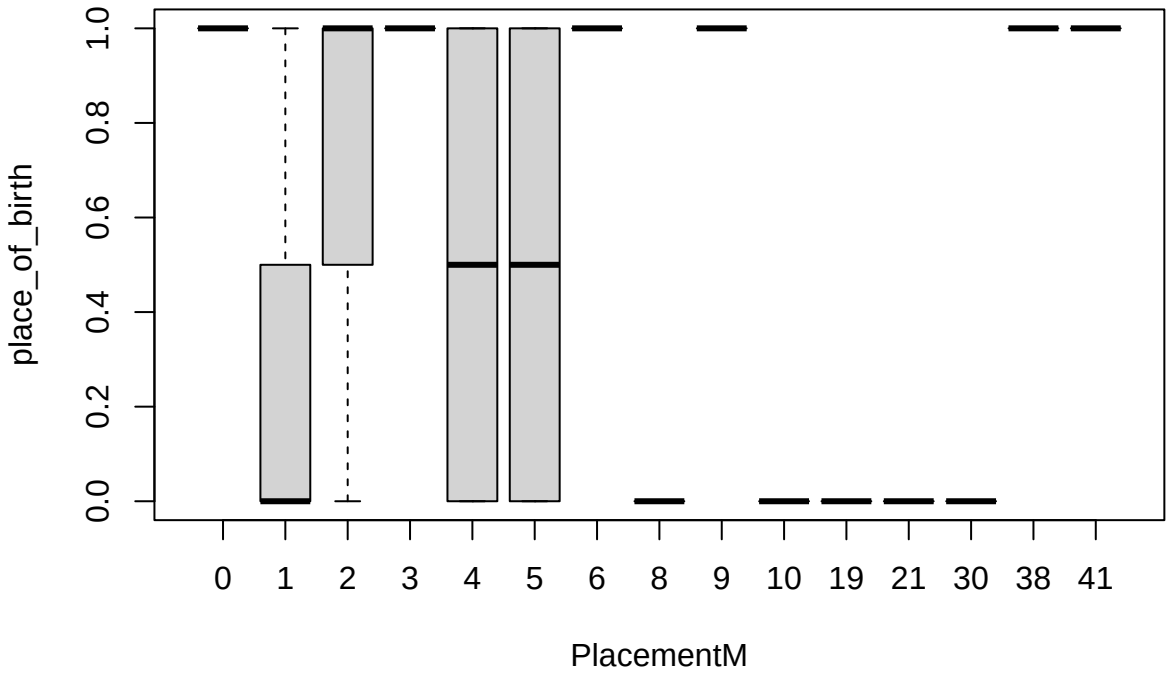
```
boxplot(Gender ~ PlacementM, clicksonly)
```



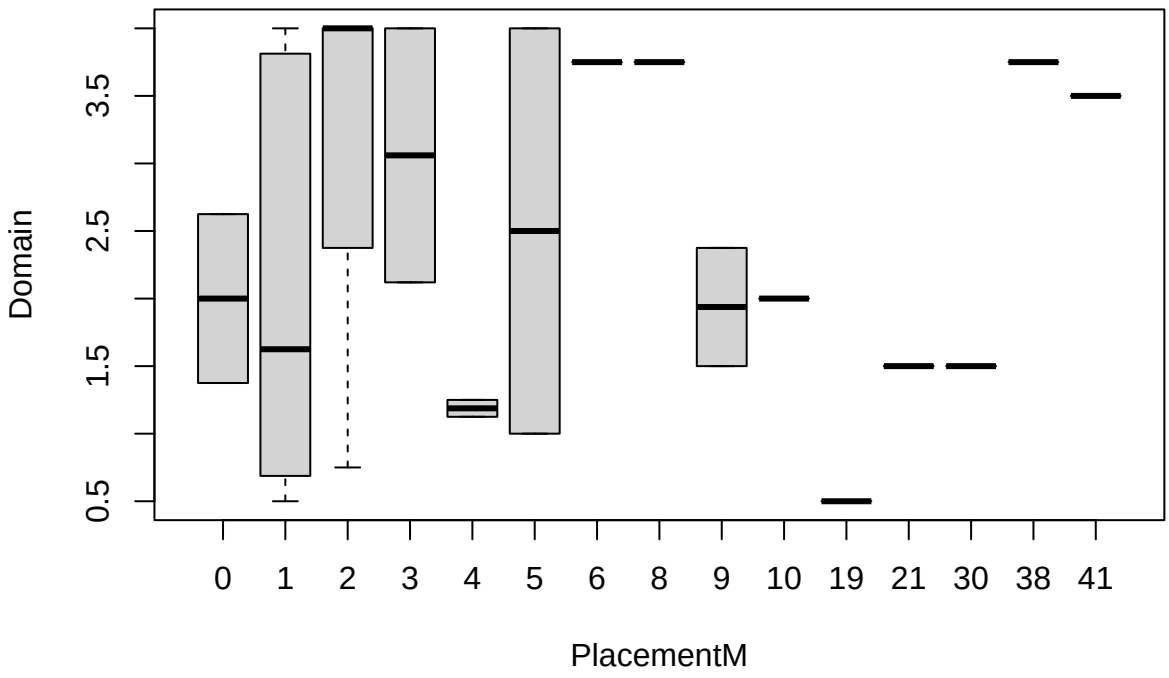

```
boxplot(Age ~ PlacementM, clicksonly)
```



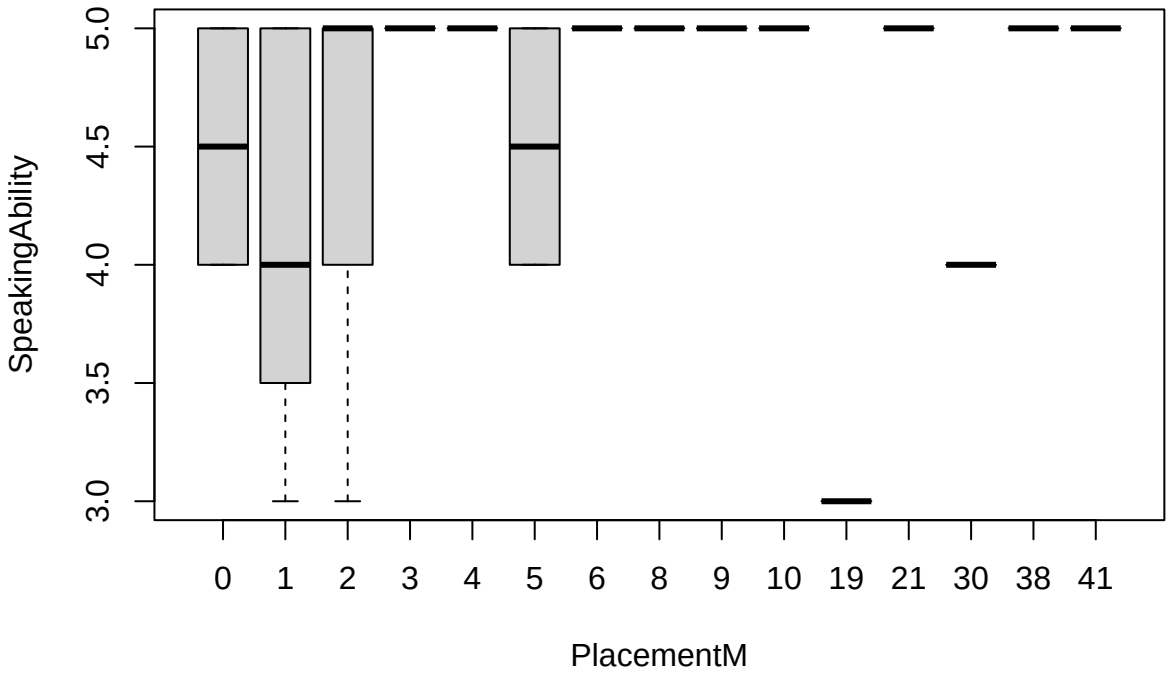

```
boxplot(place_of_birth ~ PlacementM, clicksonly)
```



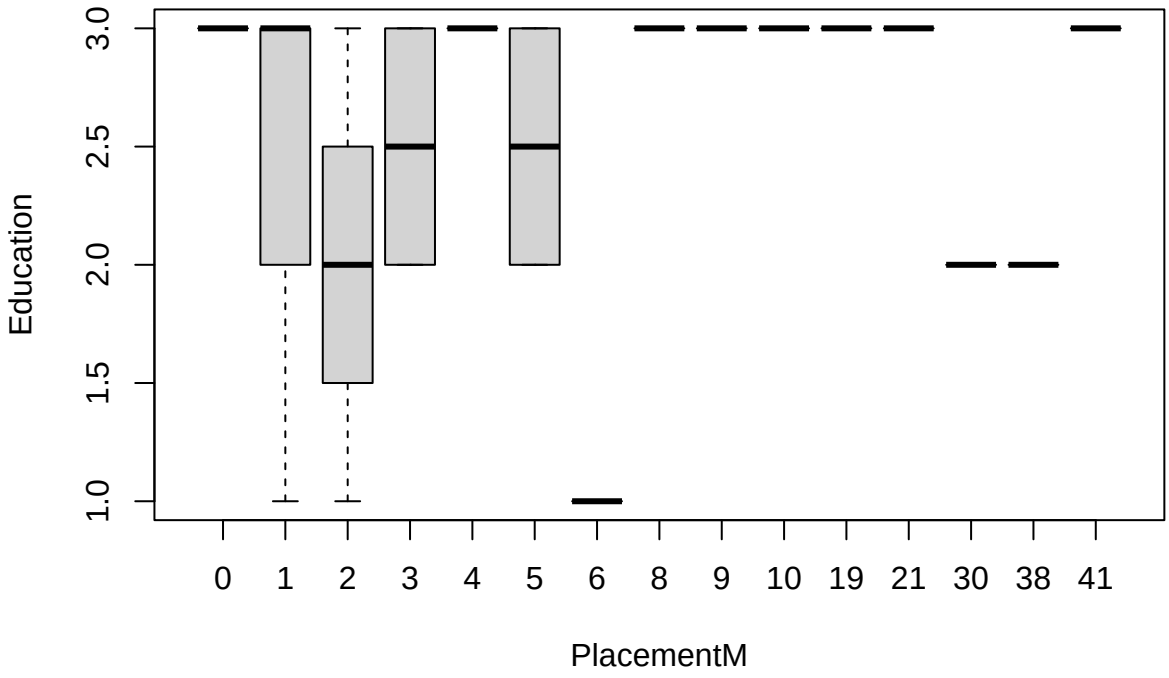

```
boxplot(Domain ~ PlacementM, clicksonly)
```




```
boxplot(SpeakingAbility ~ PlacementM, clicksonly)
```




```
boxplot(Education ~ PlacementM, clicksonly)
```




```
kruskal.test(Gender ~ PlacementM, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by PlacementM
## Kruskal-Wallis chi-squared = 15.646, df = 14, p-value = 0.3355
```

```
kruskal.test(Age ~ PlacementM, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by PlacementM
## Kruskal-Wallis chi-squared = 16.73, df = 14, p-value = 0.2709
```

```
kruskal.test(place_of_birth ~ PlacementM, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by PlacementM
## Kruskal-Wallis chi-squared = 15, df = 14, p-value = 0.3782
```

```r
kruskal.test(Domain ~ PlacementM, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by PlacementM
## Kruskal-Wallis chi-squared = 8.4897, df = 14, p-value = 0.8623
```

```r
kruskal.test(SpeakingAbility ~ PlacementM, data = clicksonly)
```

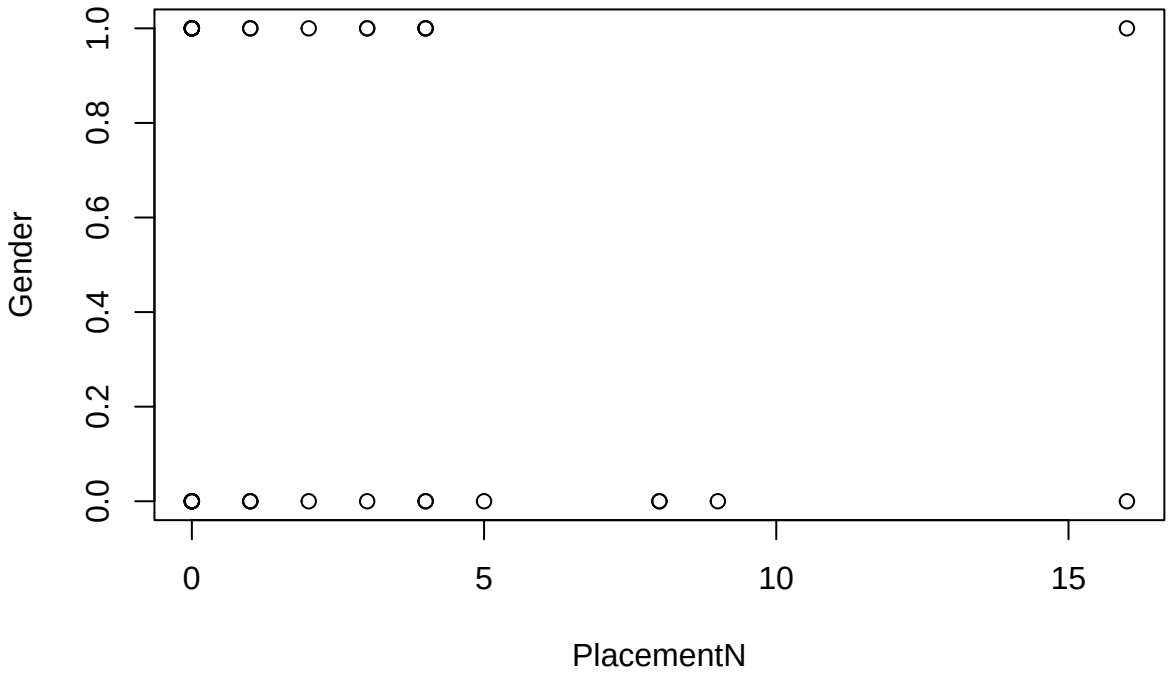
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by PlacementM
## Kruskal-Wallis chi-squared = 11.916, df = 14, p-value = 0.613
```

```r
kruskal.test(Education ~ PlacementM, data = clicksonly)
```

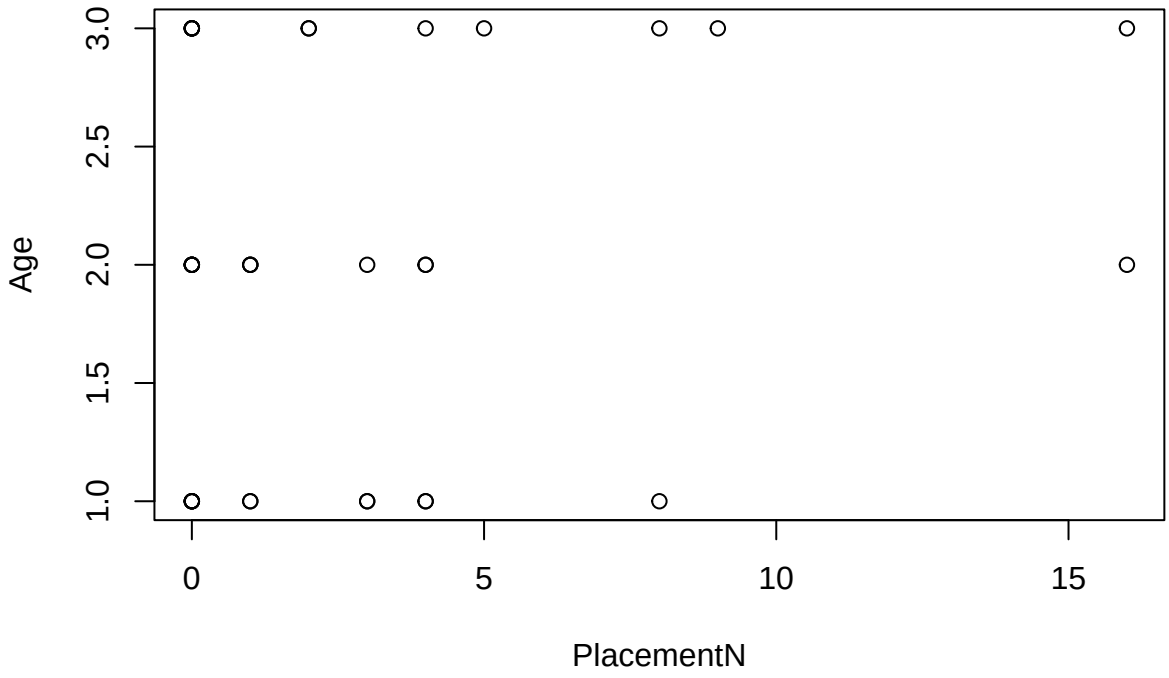
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by PlacementM
## Kruskal-Wallis chi-squared = 13.022, df = 14, p-value = 0.5248
```

Placement N with non-clickers

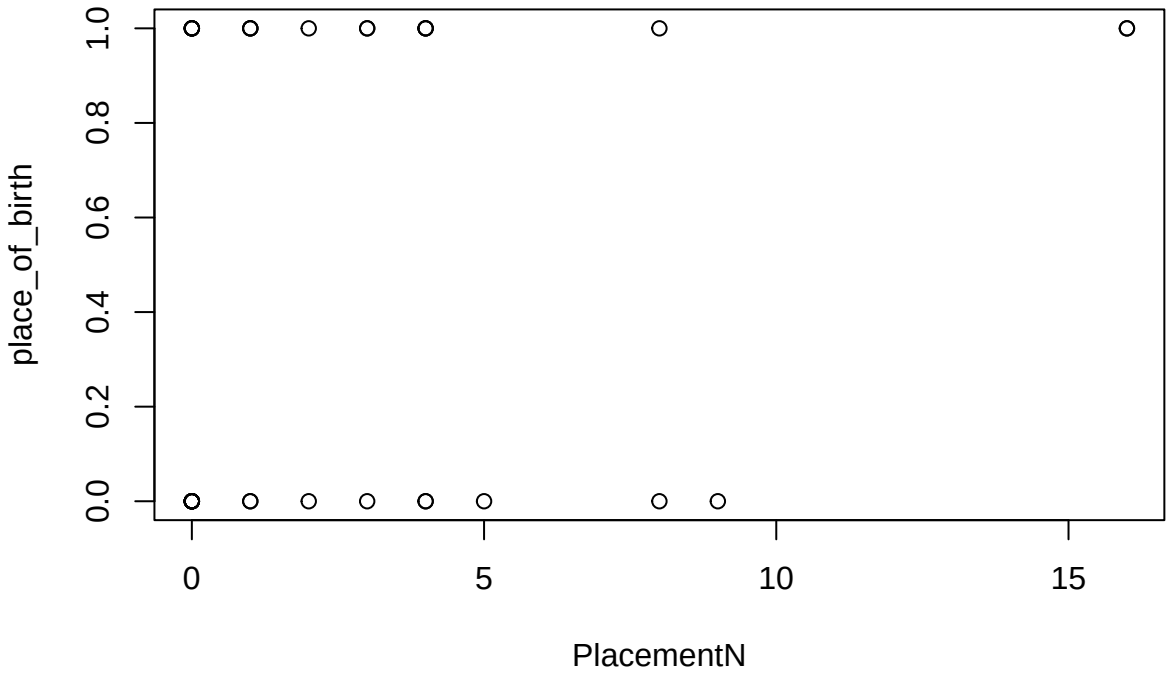
```r
plot(Gender ~ PlacementN, data = click)
```



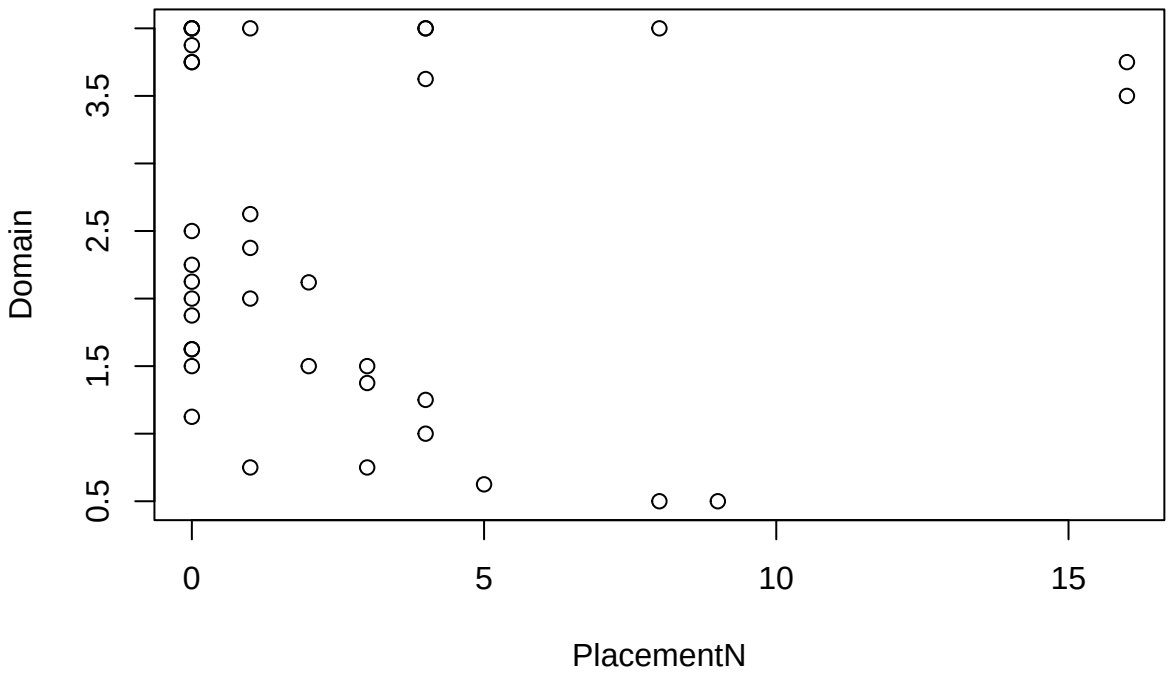

```
plot(Age ~ PlacementN, data = click)
```



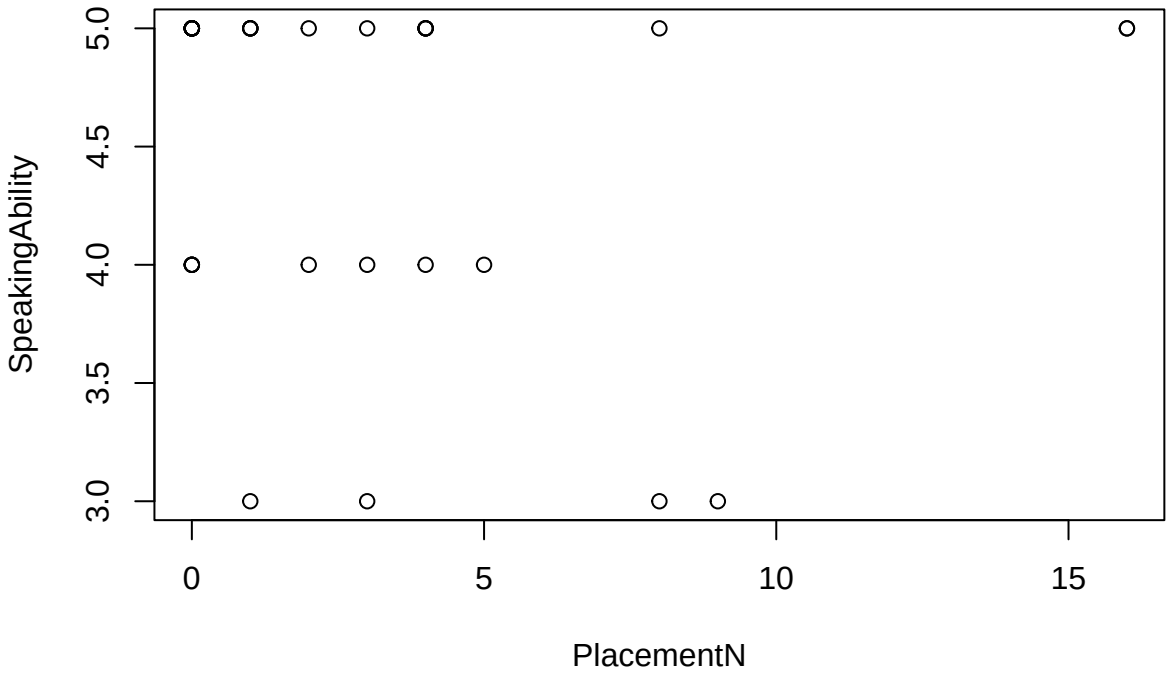

```
plot(place_of_birth ~ PlacementN, data = click)
```



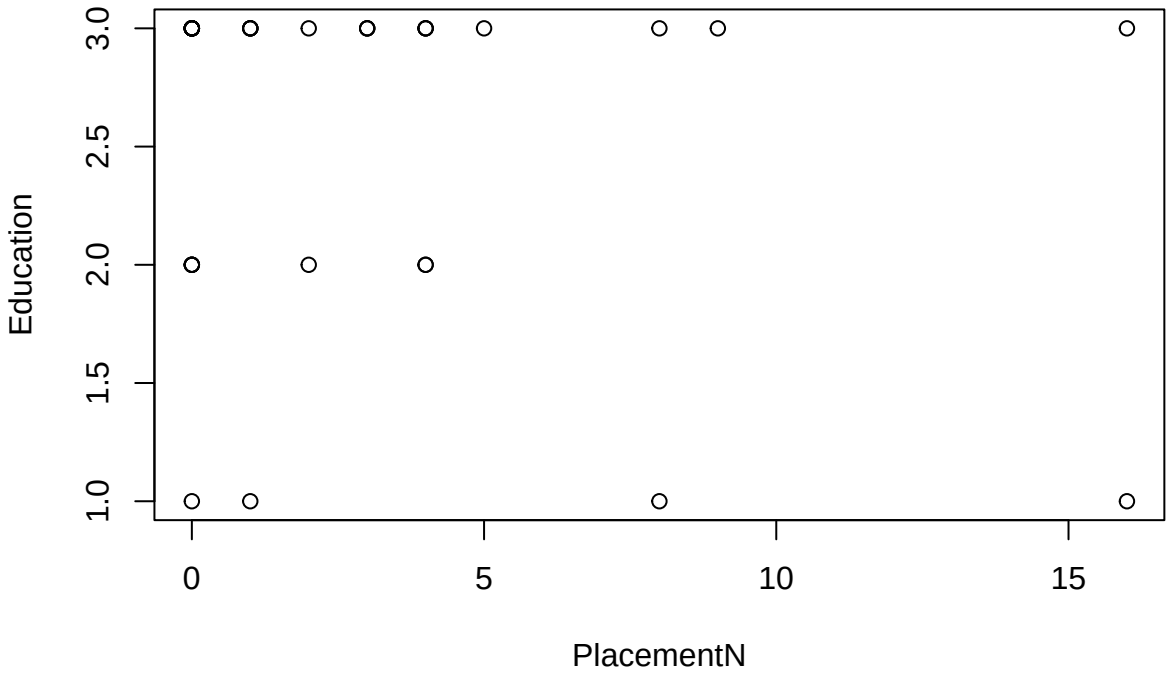

```
plot(Domain ~ PlacementN, data = click)
```




```
plot(SpeakingAbility ~ PlacementN, data = click)
```




```
plot(Education ~ PlacementN, data = click)
```




```
chisq.test(click$PlacementN)
```

```
## Warning in chisq.test(click$PlacementN): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$PlacementN
## X-squared = 211.76, df = 35, p-value < 2.2e-16
```

```
aov(Gender ~ PlacementN, data = click)
```

```
## Call:
##    aov(formula = Gender ~ PlacementN, data = click)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.144587  8.827635
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5095452
## Estimated effects may be unbalanced
```

```r
aov(Age ~ PlacementN, data = click)
```

```
## Call:
##    aov(formula = Age ~ PlacementN, data = click)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.822818 23.177182
## Deg. of Freedom          1        34
##
## Residual standard error: 0.8256402
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ PlacementN, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ PlacementN, data = click)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.423204  8.549018
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5014396
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ PlacementN, data = click)
```

```
## Call:
##    aov(formula = Domain ~ PlacementN, data = click)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares     0.07883  54.42203
## Deg. of Freedom          1        34
##
## Residual standard error: 1.265167
## Estimated effects may be unbalanced
```

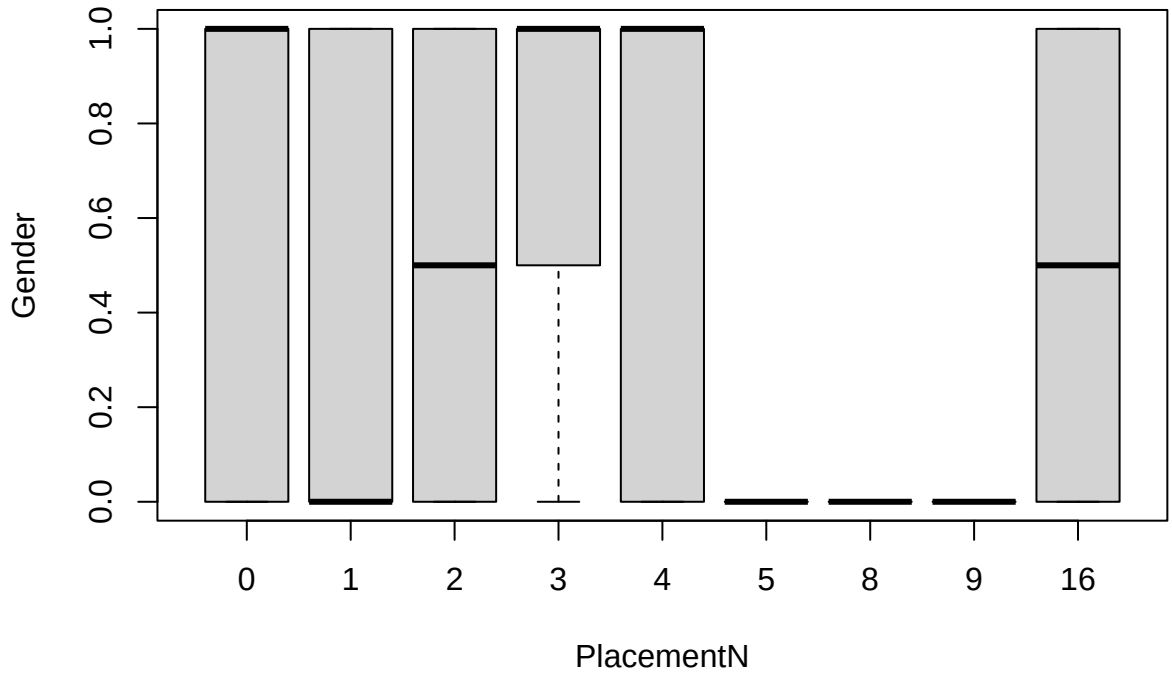
```r
aov(SpeakingAbility ~ PlacementN, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ PlacementN, data = click)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.227008 16.661881
## Deg. of Freedom          1        34
##
## Residual standard error: 0.7000395
## Estimated effects may be unbalanced
```

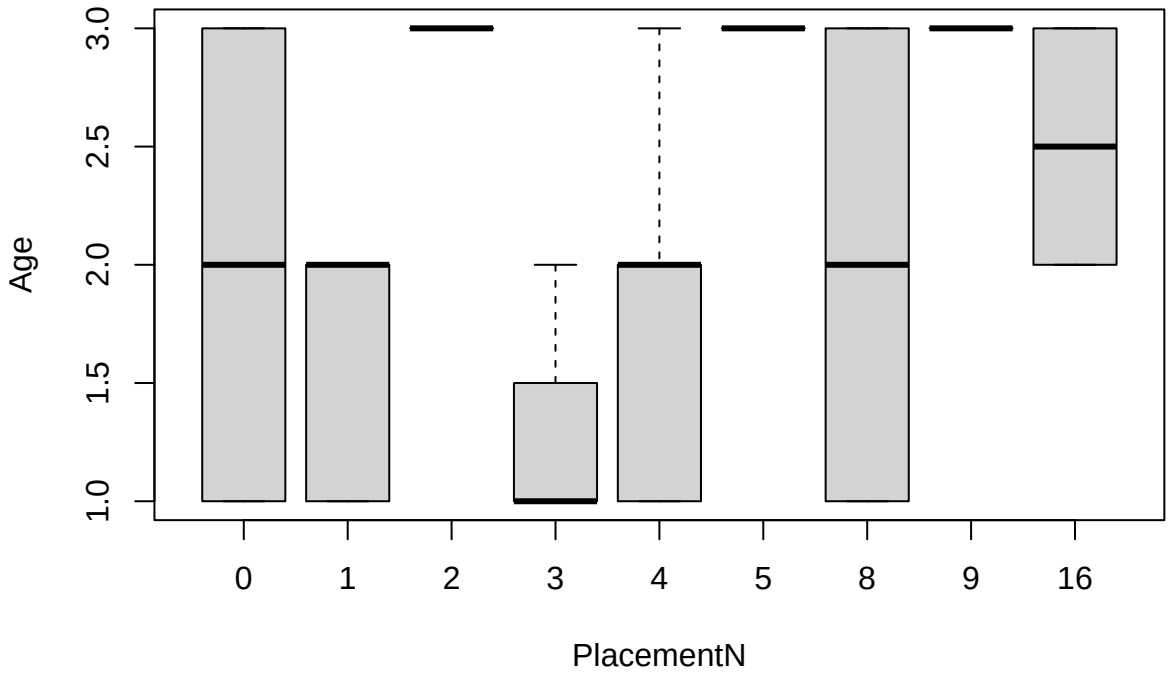
```r
aov(Education ~ PlacementN, data = click)
```

```
## Call:
##    aov(formula = Education ~ PlacementN, data = click)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.571402 16.178598
## Deg. of Freedom          1        34
##
## Residual standard error: 0.6898124
## Estimated effects may be unbalanced
```

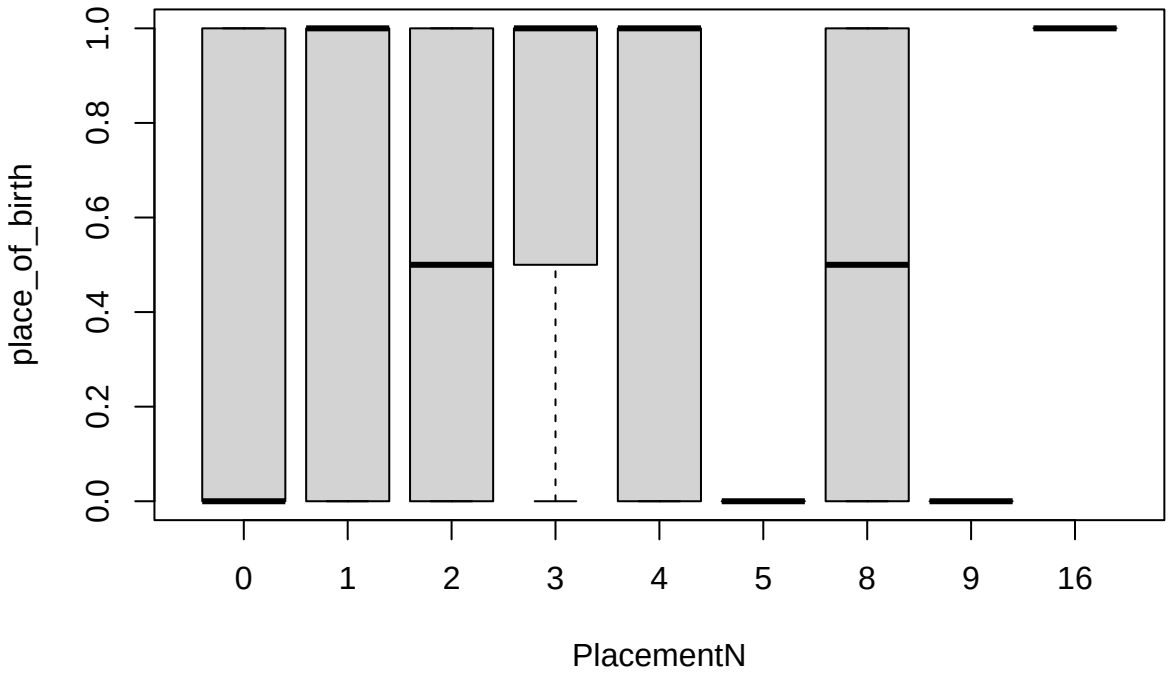
```r
boxplot(Gender ~ PlacementN, click)
```



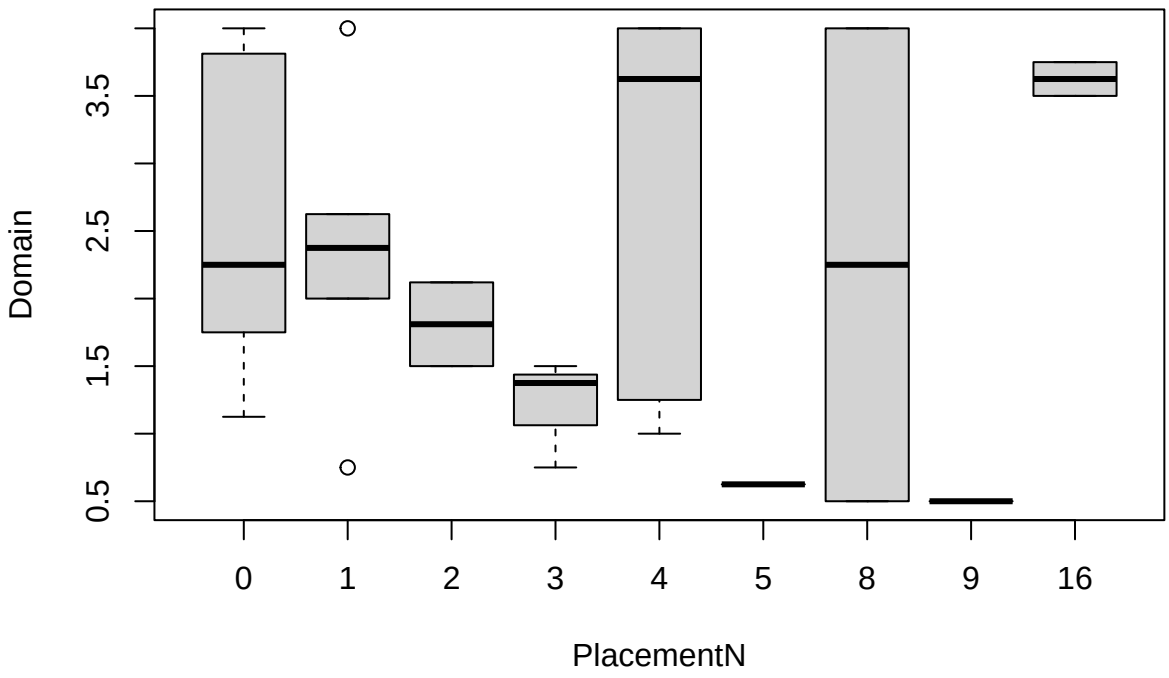

```r
boxplot(Age ~ PlacementN, click)
```



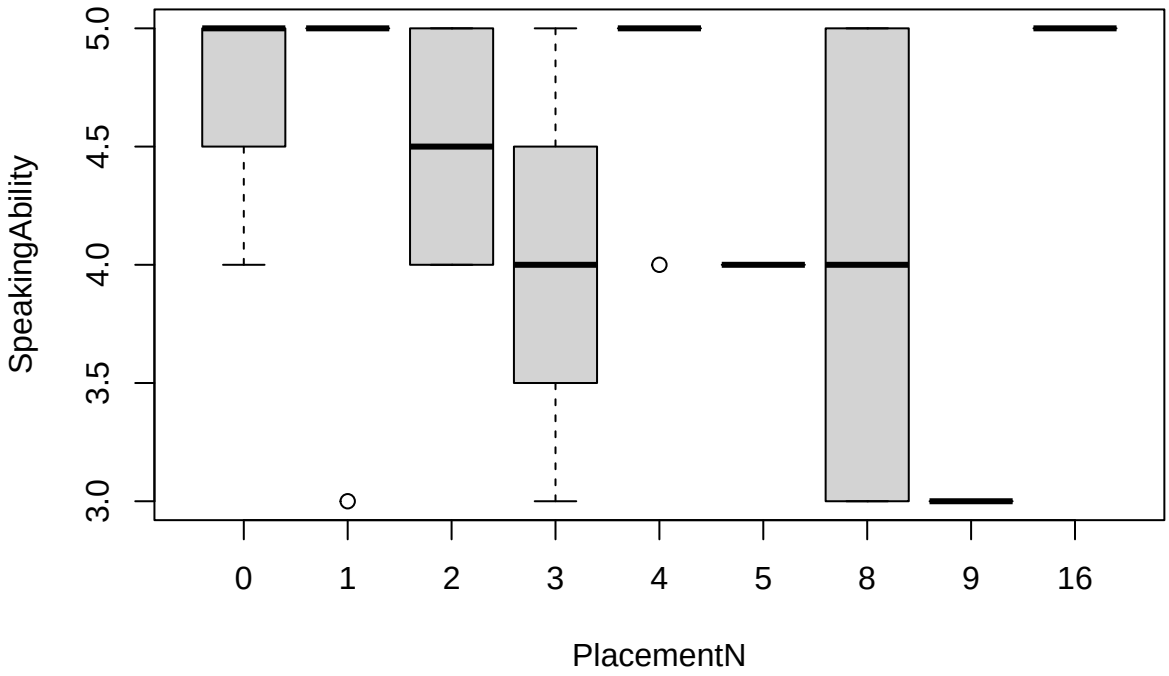

```
boxplot(place_of_birth ~ PlacementN, click)
```



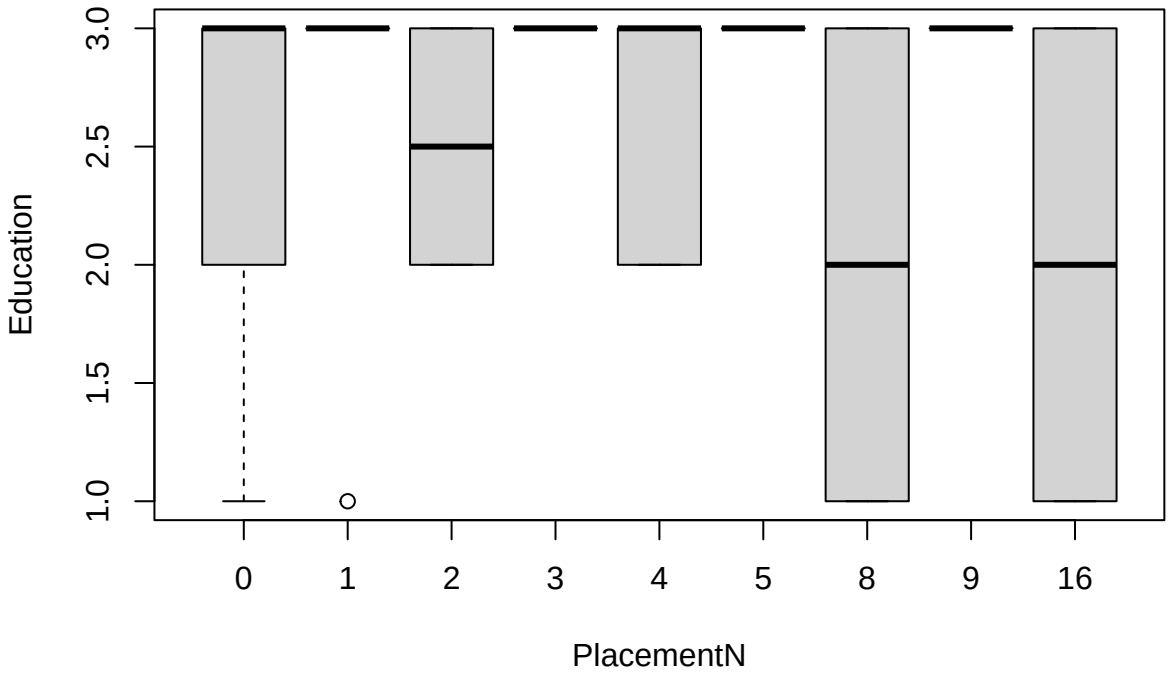

```
boxplot(Domain ~ PlacementN, click)
```




```
boxplot(SpeakingAbility ~ PlacementN, click)
```




```
boxplot(Education ~ PlacementN, click)
```




```
kruskal.test(Gender ~ PlacementN, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by PlacementN
## Kruskal-Wallis chi-squared = 4.5728, df = 8, p-value = 0.8021
```

```
kruskal.test(Age ~ PlacementN, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by PlacementN
## Kruskal-Wallis chi-squared = 9.9653, df = 8, p-value = 0.2675
```

```
kruskal.test(place_of_birth ~ PlacementN, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by PlacementN
## Kruskal-Wallis chi-squared = 6.1331, df = 8, p-value = 0.6323
```

```r
kruskal.test(Domain ~ PlacementN, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by PlacementN
## Kruskal-Wallis chi-squared = 10.339, df = 8, p-value = 0.242
```

```r
kruskal.test(SpeakingAbility ~ PlacementN, data = click)
```

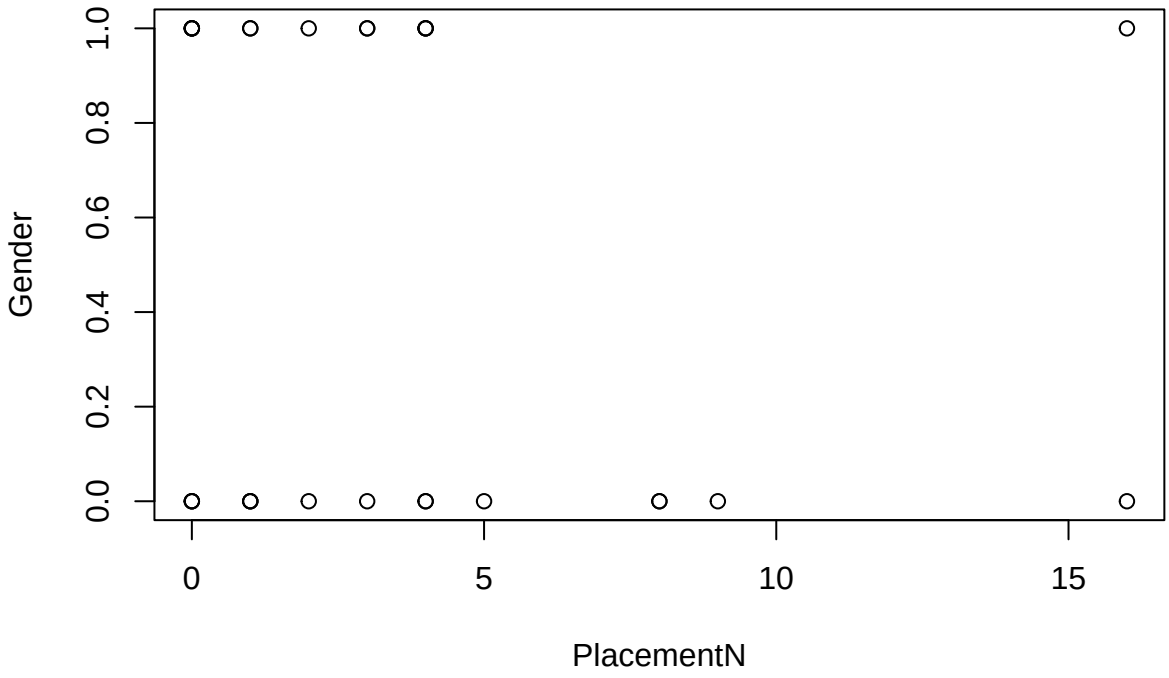
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by PlacementN
## Kruskal-Wallis chi-squared = 9.3281, df = 8, p-value = 0.3154
```

```r
kruskal.test(Education ~ PlacementN, data = click)
```

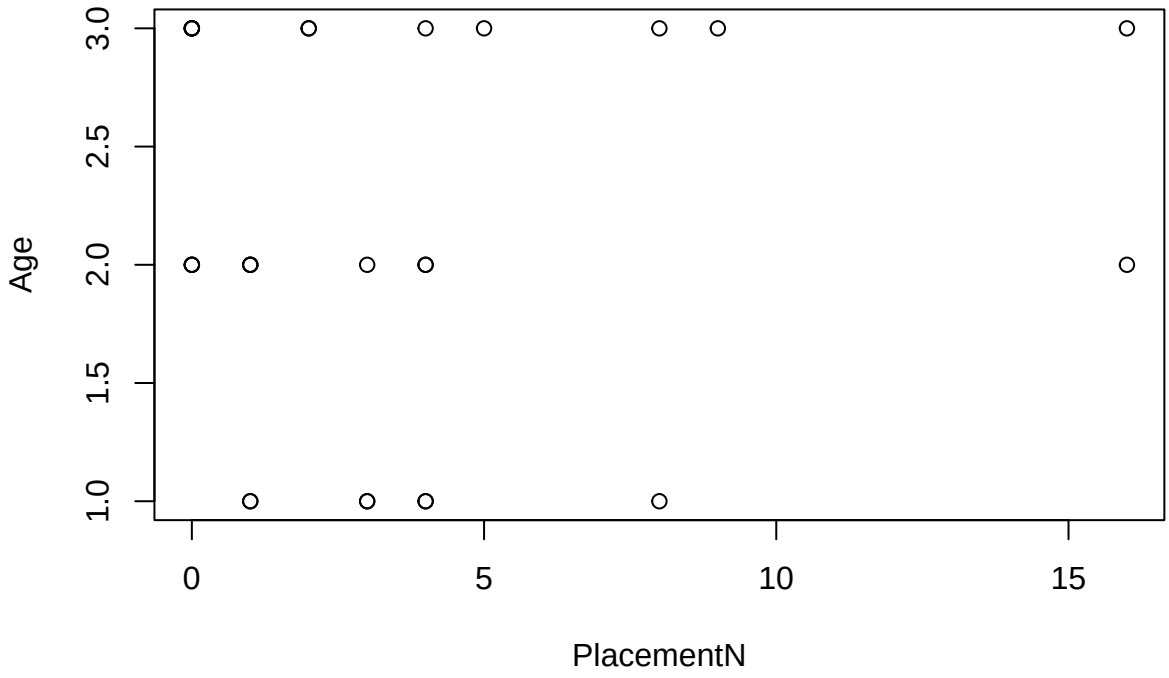
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by PlacementN
## Kruskal-Wallis chi-squared = 3.9204, df = 8, p-value = 0.8642
```

Placement N without non-clickers

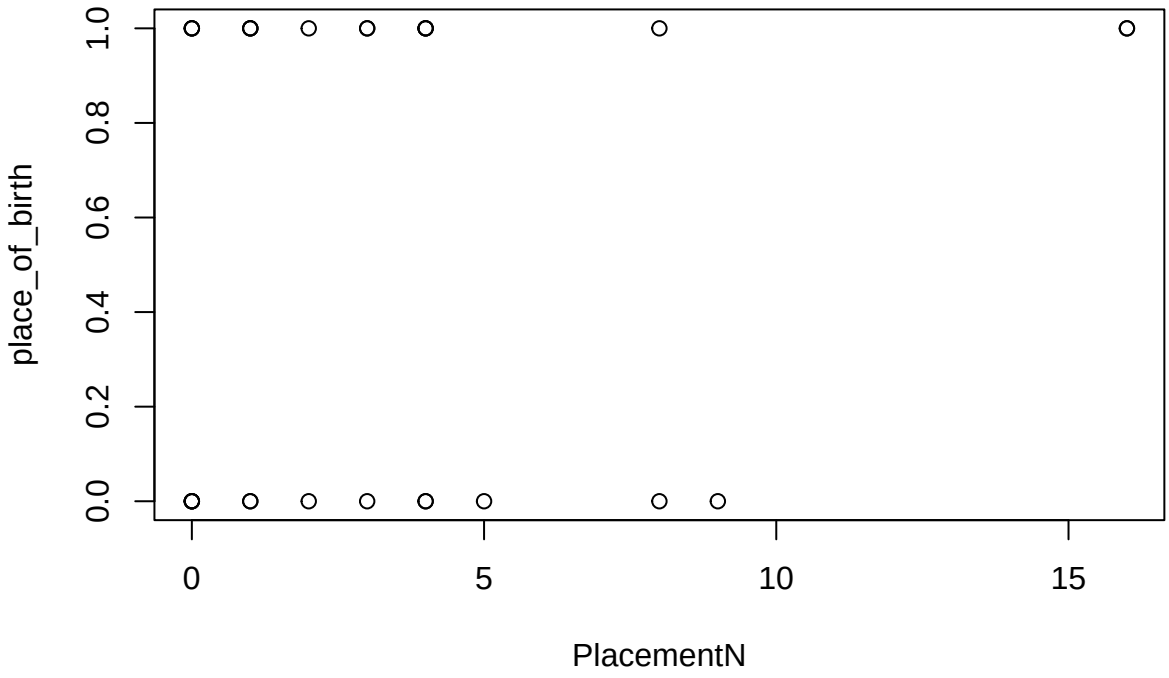
```r
plot(Gender ~ PlacementN, data = clicksonly)
```



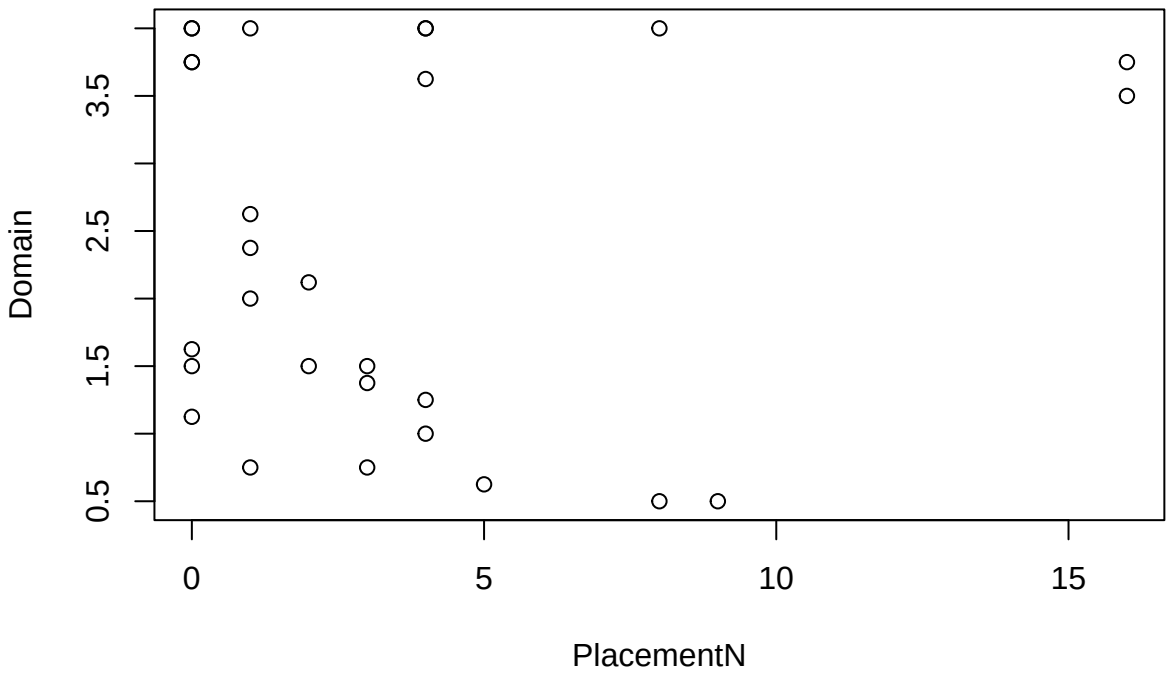

```
plot(Age ~ PlacementN, data = clicksonly)
```



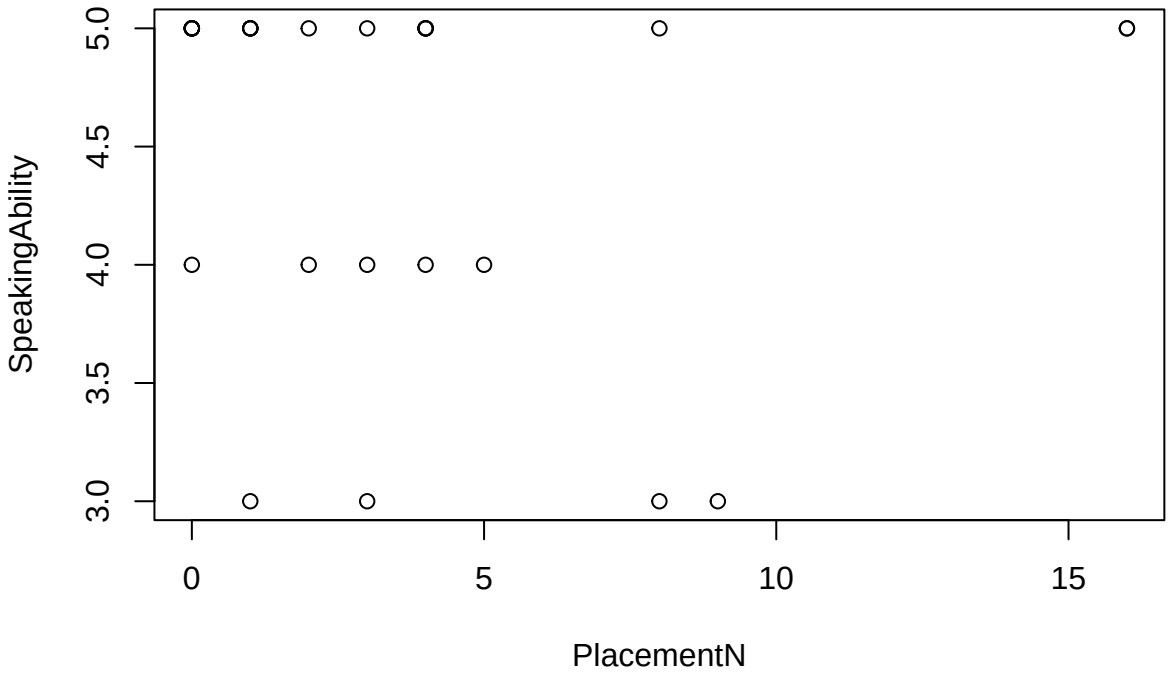

```
plot(place_of_birth ~ PlacementN, data = clicksonly)
```



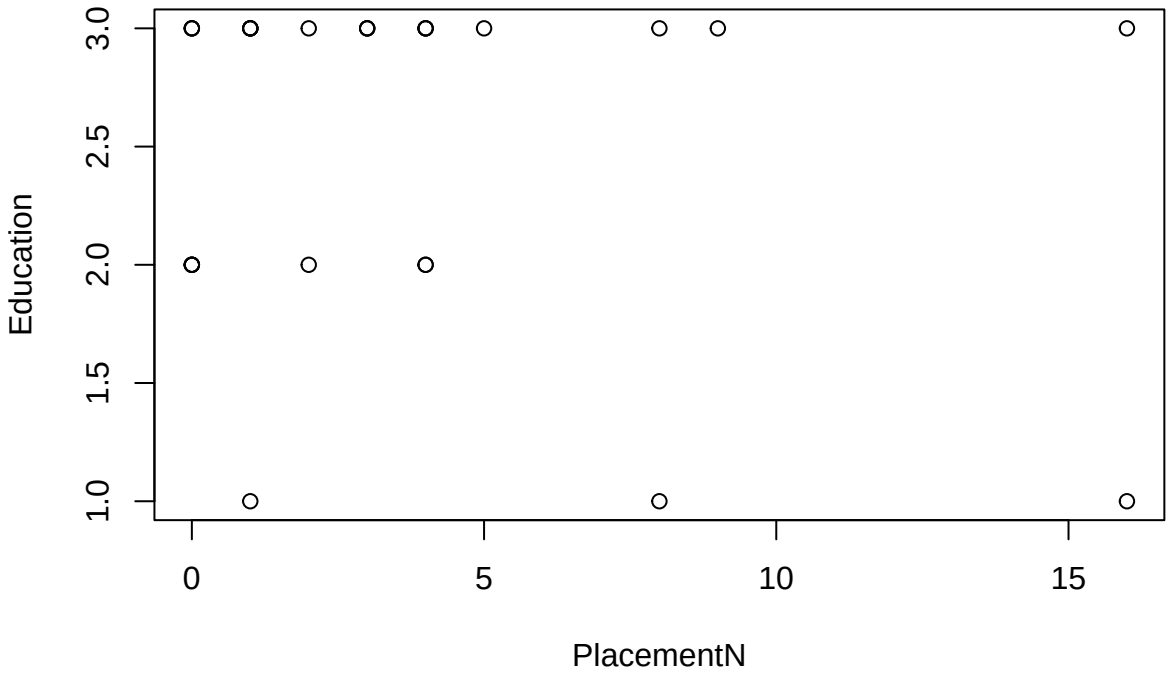

```
plot(Domain ~ PlacementN, data = clicksonly)
```




```
plot(SpeakingAbility ~ PlacementN, data = clicksonly)
```




```
plot(Education ~ PlacementN, data = clicksonly)
```




```
chisq.test(clicksonly$PlacementN)
```

```
## Warning in chisq.test(clicksonly$PlacementN): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$PlacementN
## X-squared = 142.48, df = 27, p-value < 2.2e-16
```

```
aov(Gender ~ PlacementN, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ PlacementN, data = clicksonly)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.139609  6.824677
## Deg. of Freedom          1        26
##
## Residual standard error: 0.5123354
## Estimated effects may be unbalanced
```

```r
aov(Age ~ PlacementN, data = clicksonly)
```

```
## Call:
##    aov(formula = Age ~ PlacementN, data = clicksonly)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.116949 17.311623
## Deg. of Freedom          1        26
##
## Residual standard error: 0.8159851
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ PlacementN, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ PlacementN, data = clicksonly)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.174701  6.789585
## Deg. of Freedom          1        26
##
## Residual standard error: 0.5110165
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ PlacementN, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ PlacementN, data = clicksonly)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares     0.24123  48.28772
## Deg. of Freedom          1        26
##
## Residual standard error: 1.362799
## Estimated effects may be unbalanced
```

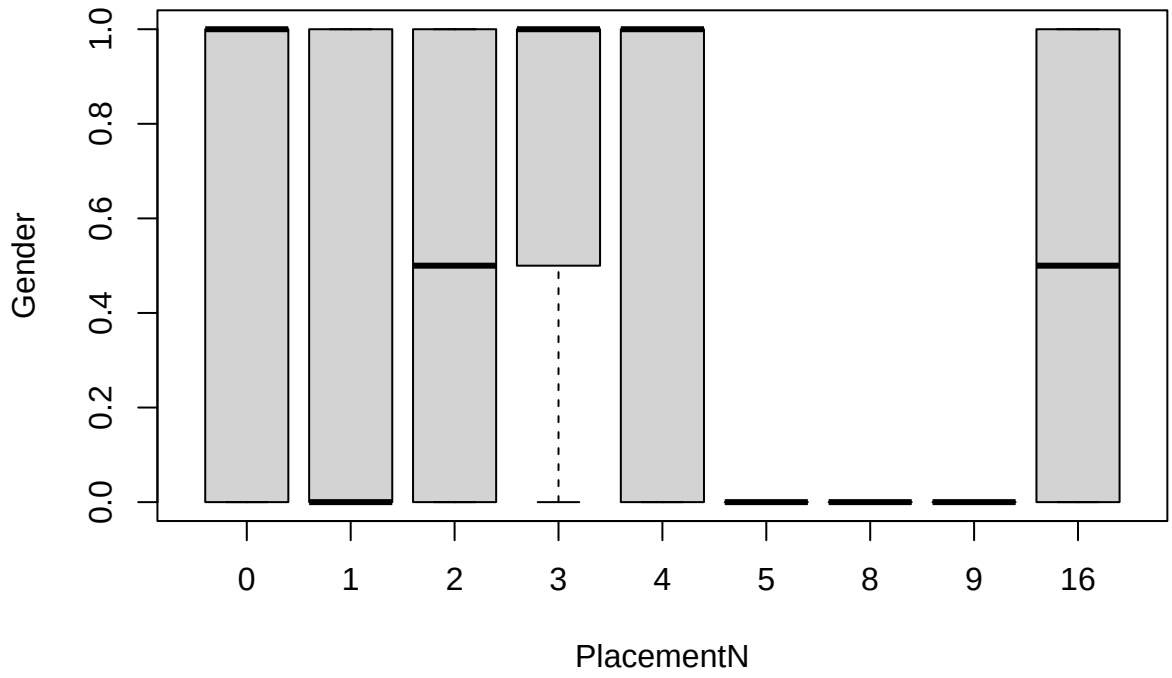
```r
aov(SpeakingAbility ~ PlacementN, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ PlacementN, data = clicksonly)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.180035 14.784250
## Deg. of Freedom          1        26
##
## Residual standard error: 0.7540723
## Estimated effects may be unbalanced
```

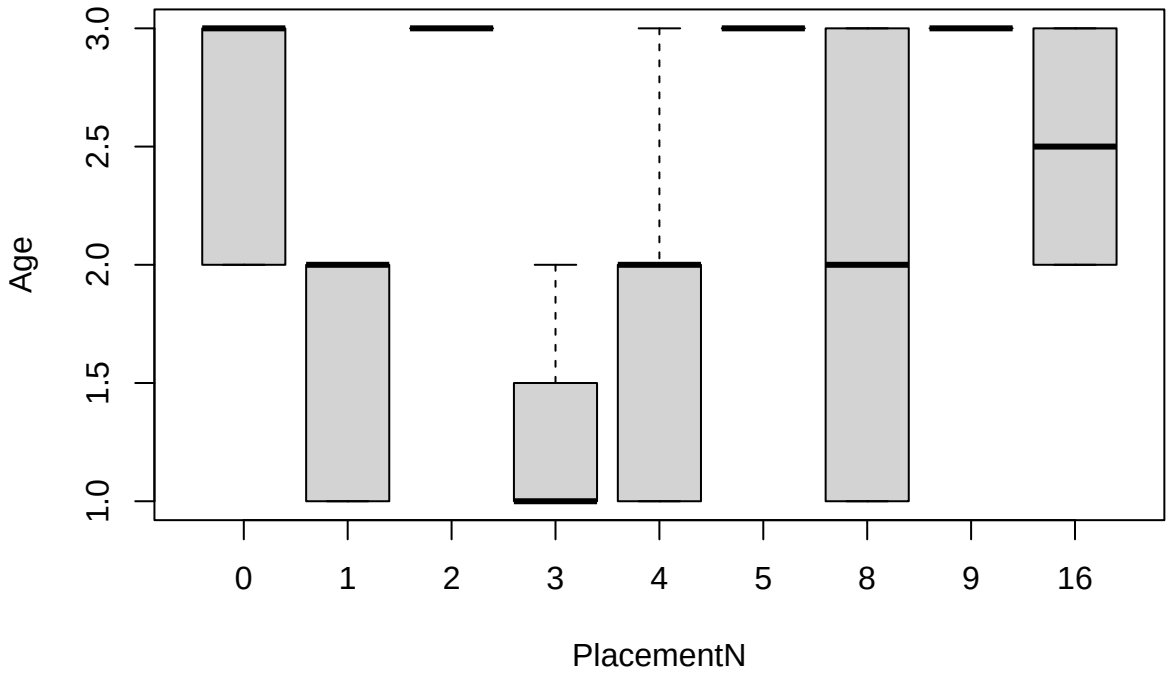
```r
aov(Education ~ PlacementN, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ PlacementN, data = clicksonly)
##
## Terms:
##                 PlacementN Residuals
## Sum of Squares    0.361956 12.602330
## Deg. of Freedom          1        26
##
## Residual standard error: 0.6962076
## Estimated effects may be unbalanced
```

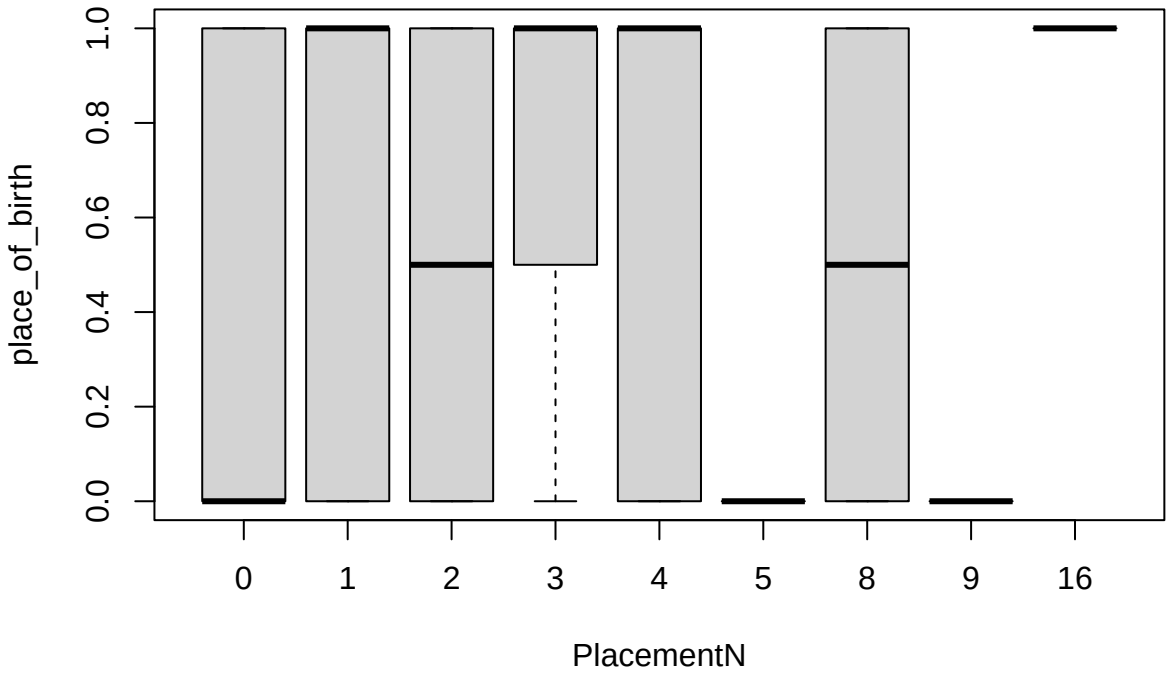
```r
boxplot(Gender ~ PlacementN, clicksonly)
```



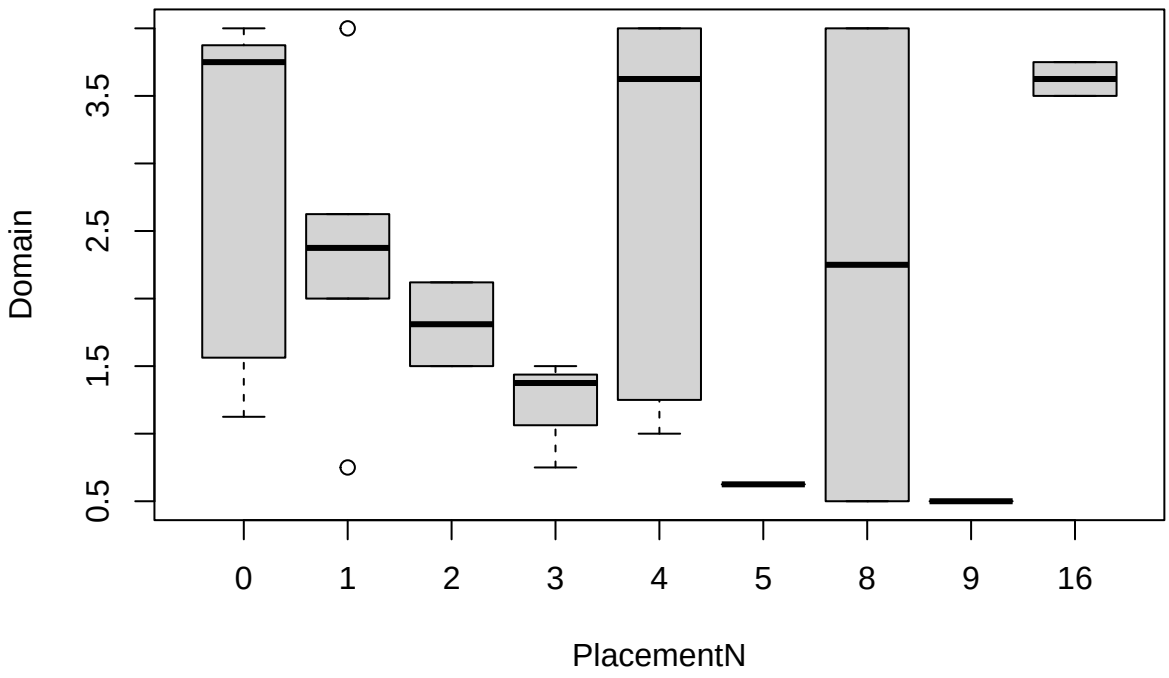

```r
boxplot(Age ~ PlacementN, clicksonly)
```



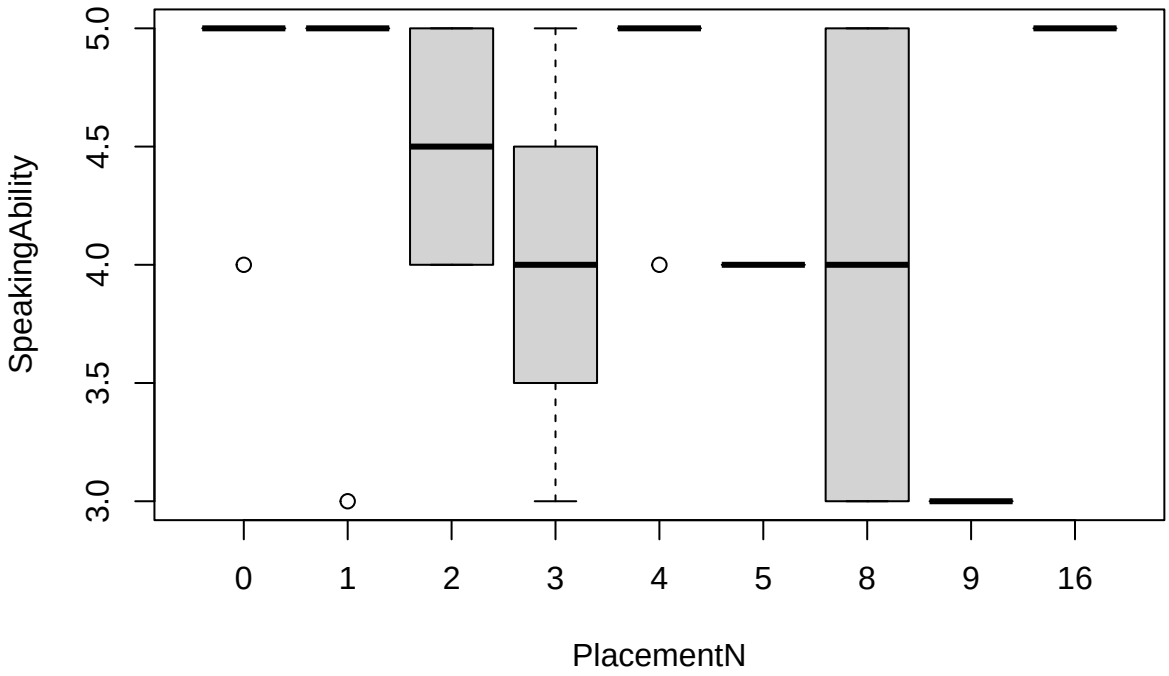

```
boxplot(place_of_birth ~ PlacementN, clicksonly)
```



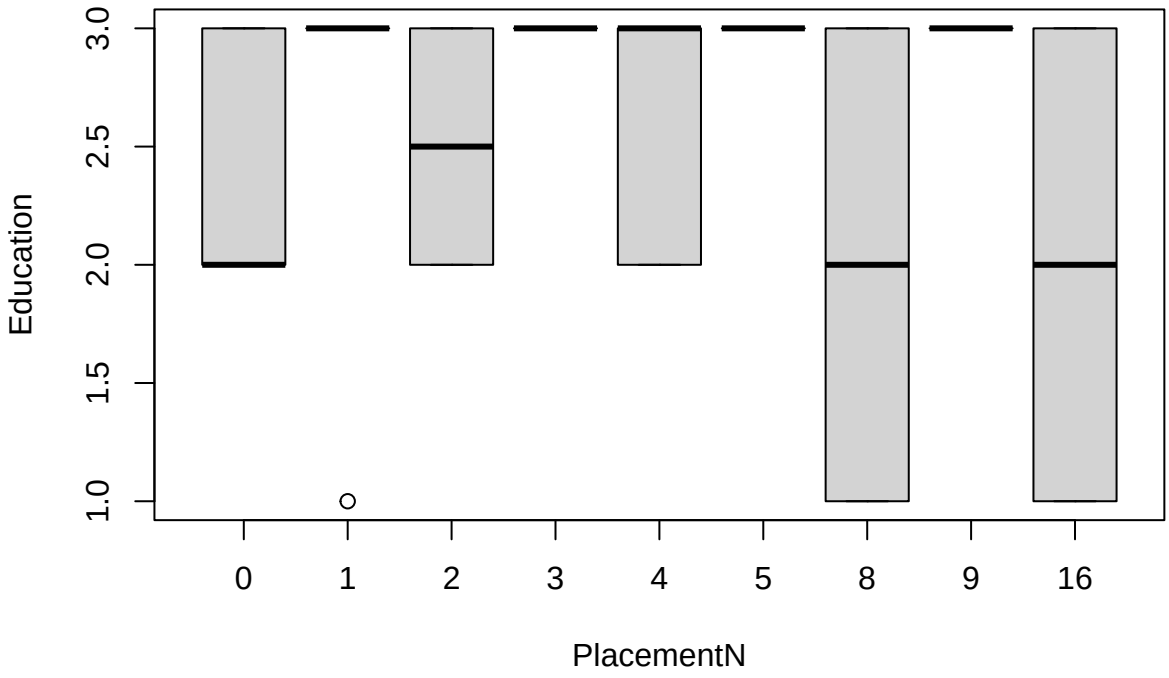

```
boxplot(Domain ~ PlacementN, clicksonly)
```




```
boxplot(SpeakingAbility ~ PlacementN, clicksonly)
```




```
boxplot(Education ~ PlacementN, clicksonly)
```




```
kruskal.test(Gender ~ PlacementN, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by PlacementN
## Kruskal-Wallis chi-squared = 4.5877, df = 8, p-value = 0.8006
```

```
kruskal.test(Age ~ PlacementN, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by PlacementN
## Kruskal-Wallis chi-squared = 13.457, df = 8, p-value = 0.09705
```

```
kruskal.test(place_of_birth ~ PlacementN, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by PlacementN
## Kruskal-Wallis chi-squared = 4.5877, df = 8, p-value = 0.8006
```

```r
kruskal.test(Domain ~ PlacementN, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by PlacementN
## Kruskal-Wallis chi-squared = 8.6918, df = 8, p-value = 0.369
```

```r
kruskal.test(SpeakingAbility ~ PlacementN, data = clicksonly)
```

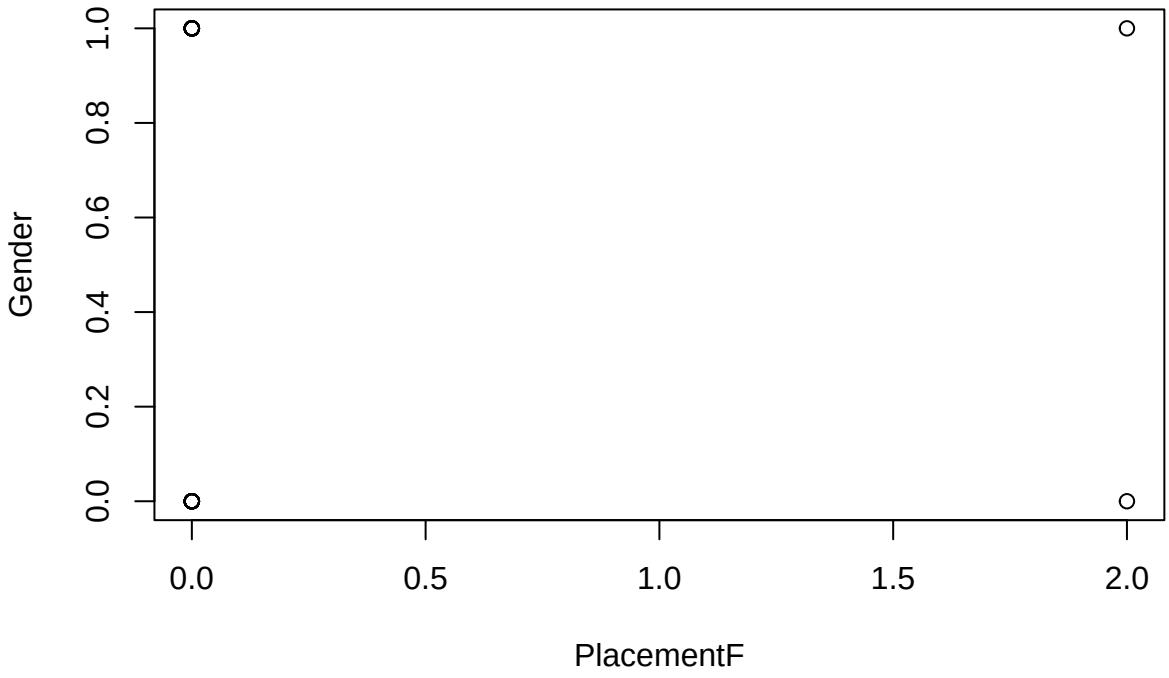
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by PlacementN
## Kruskal-Wallis chi-squared = 9.3901, df = 8, p-value = 0.3105
```

```r
kruskal.test(Education ~ PlacementN, data = clicksonly)
```

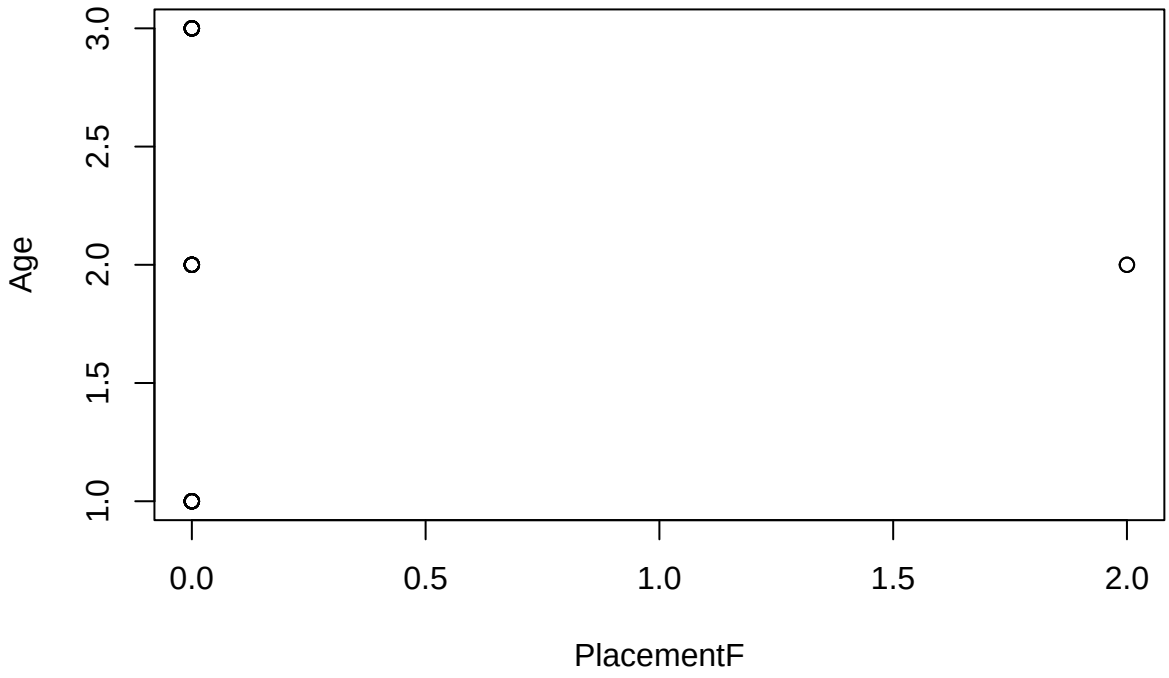
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by PlacementN
## Kruskal-Wallis chi-squared = 4.6855, df = 8, p-value = 0.7906
```

Placement F with non-clickers

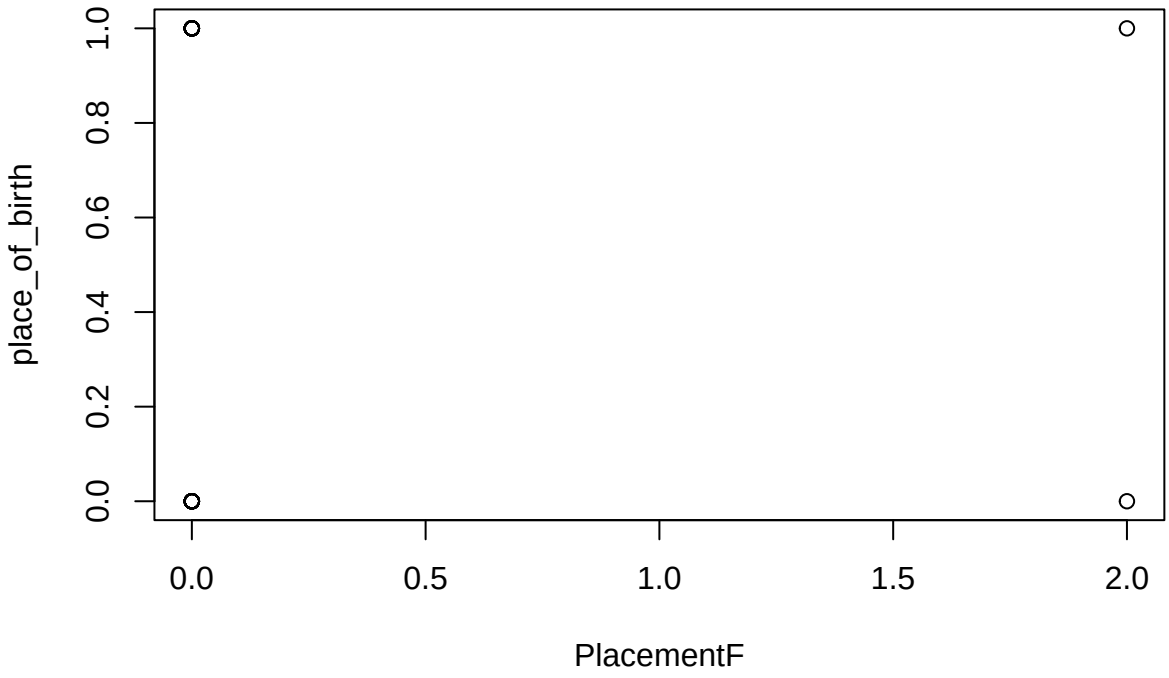
```r
plot(Gender ~ PlacementF, data = click)
```



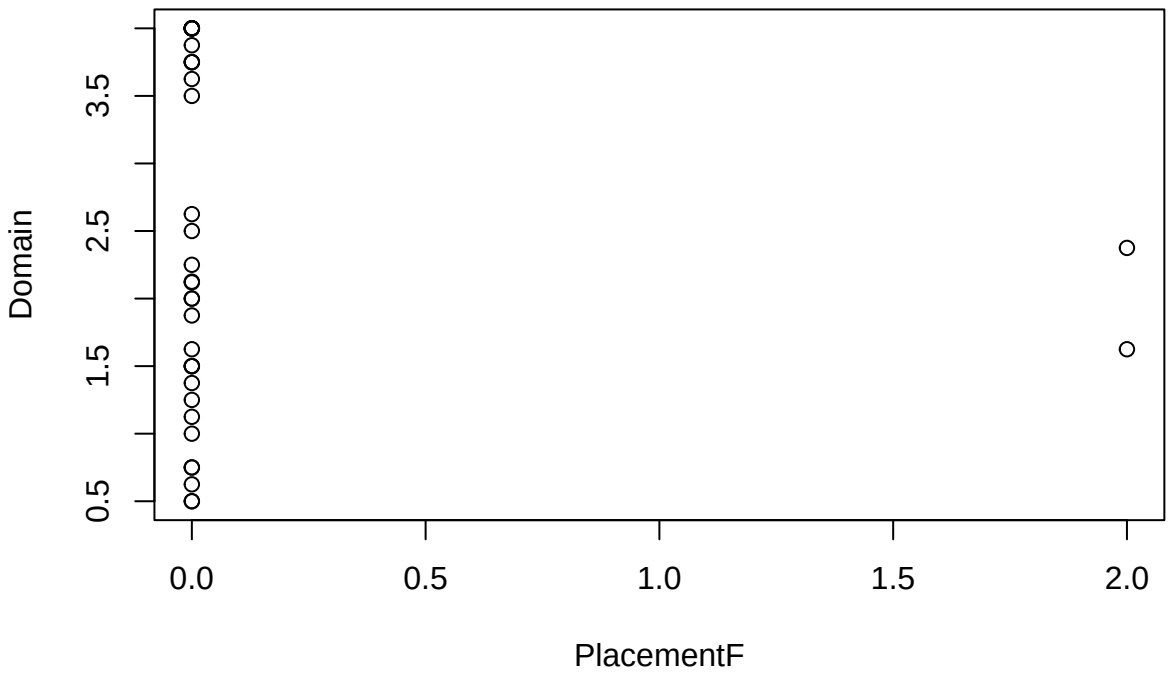

```
plot(Age ~ PlacementF, data = click)
```



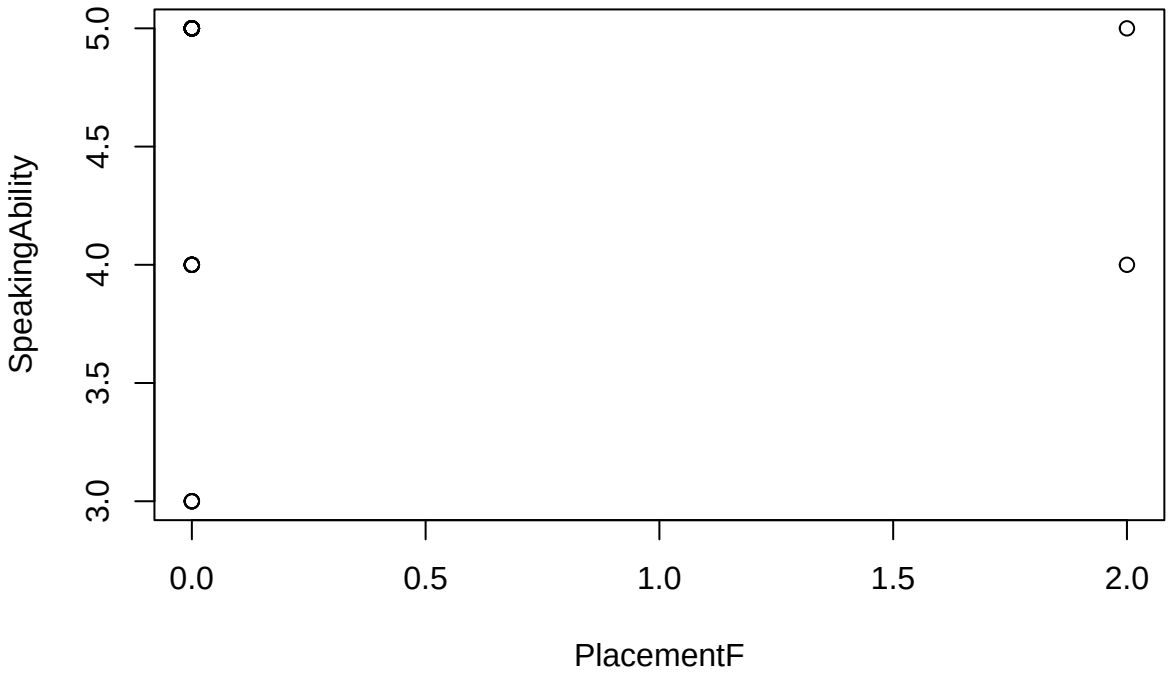

```
plot(place_of_birth ~ PlacementF, data = click)
```



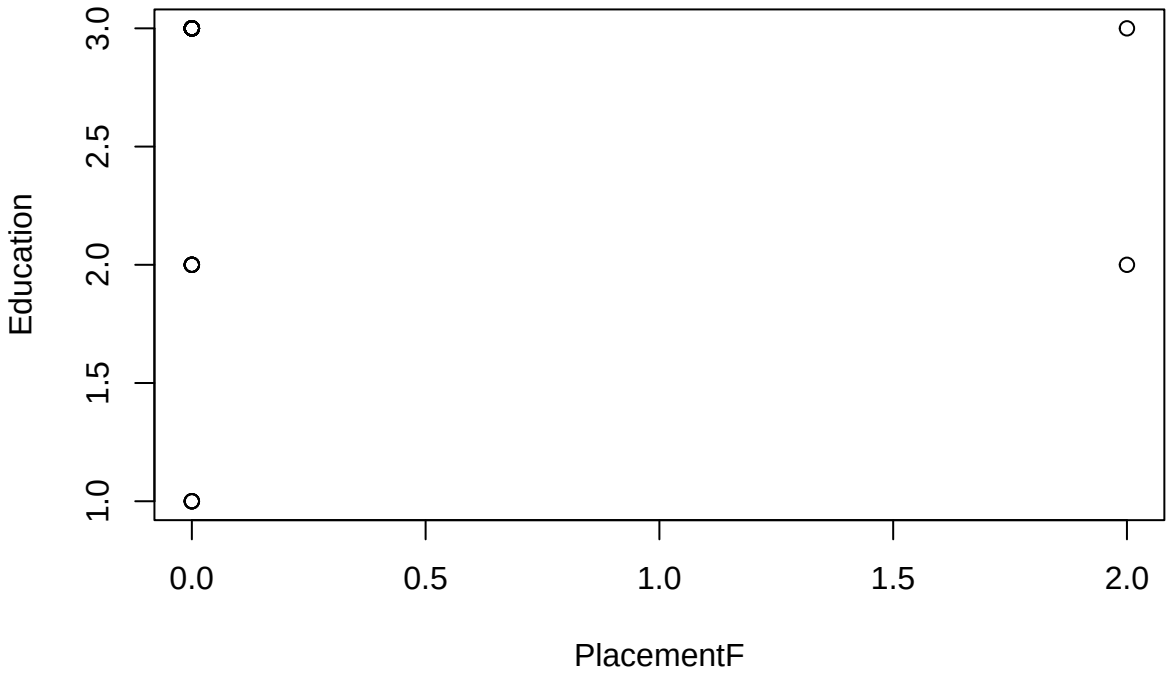

```
plot(Domain ~ PlacementF, data = click)
```




```
plot(SpeakingAbility ~ PlacementF, data = click)
```




```
plot(Education ~ PlacementF, data = click)
```




```
chisq.test(click$PlacementF)
```

```
## Warning in chisq.test(click$PlacementF): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  click$PlacementF
## X-squared = 68, df = 35, p-value = 0.0006918
```

```
aov(Gender ~ PlacementF, data = click)
```

```
## Call:
##    aov(formula = Gender ~ PlacementF, data = click)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.001634  8.970588
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5136544
## Estimated effects may be unbalanced
```

```r
aov(Age ~ PlacementF, data = click)
```

```
## Call:
##    aov(formula = Age ~ PlacementF, data = click)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares           0        24
## Deg. of Freedom          1        34
##
## Residual standard error: 0.8401681
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ PlacementF, data = click)
```

```
## Call:
##    aov(formula = place_of_birth ~ PlacementF, data = click)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.001634  8.970588
## Deg. of Freedom          1        34
##
## Residual standard error: 0.5136544
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ PlacementF, data = click)
```

```
## Call:
##    aov(formula = Domain ~ PlacementF, data = click)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares     0.30870  54.19216
## Deg. of Freedom          1        34
##
## Residual standard error: 1.262492
## Estimated effects may be unbalanced
```

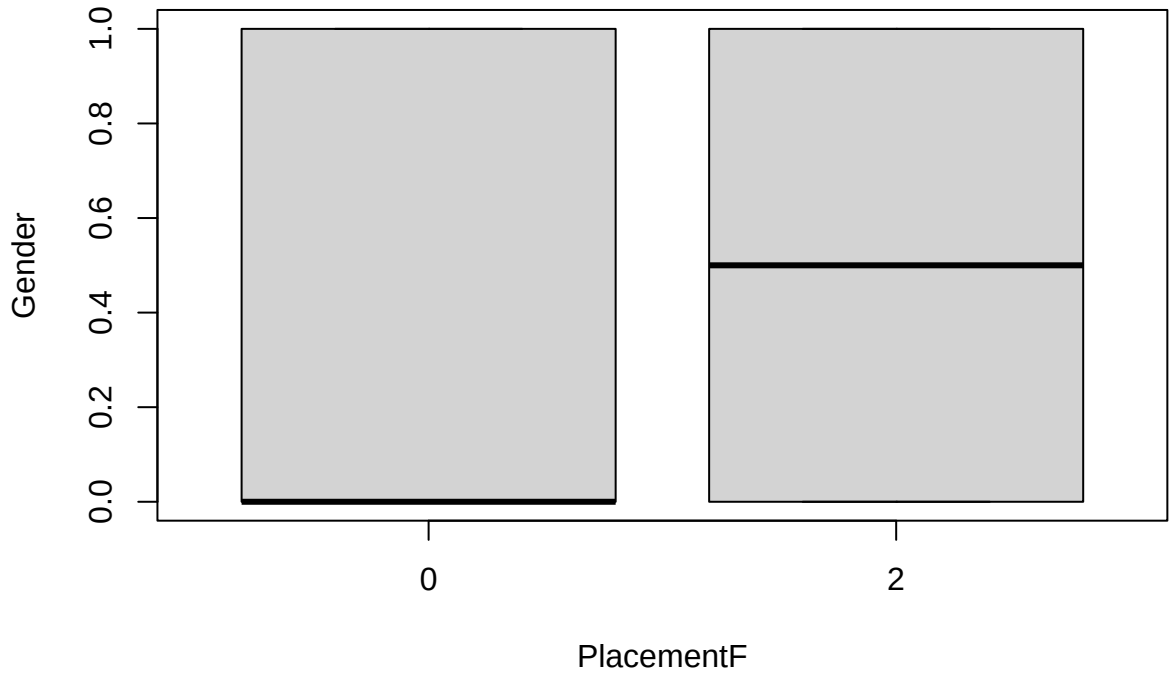
```r
aov(SpeakingAbility ~ PlacementF, data = click)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ PlacementF, data = click)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.006536 16.882353
## Deg. of Freedom          1        34
##
## Residual standard error: 0.7046558
## Estimated effects may be unbalanced
```

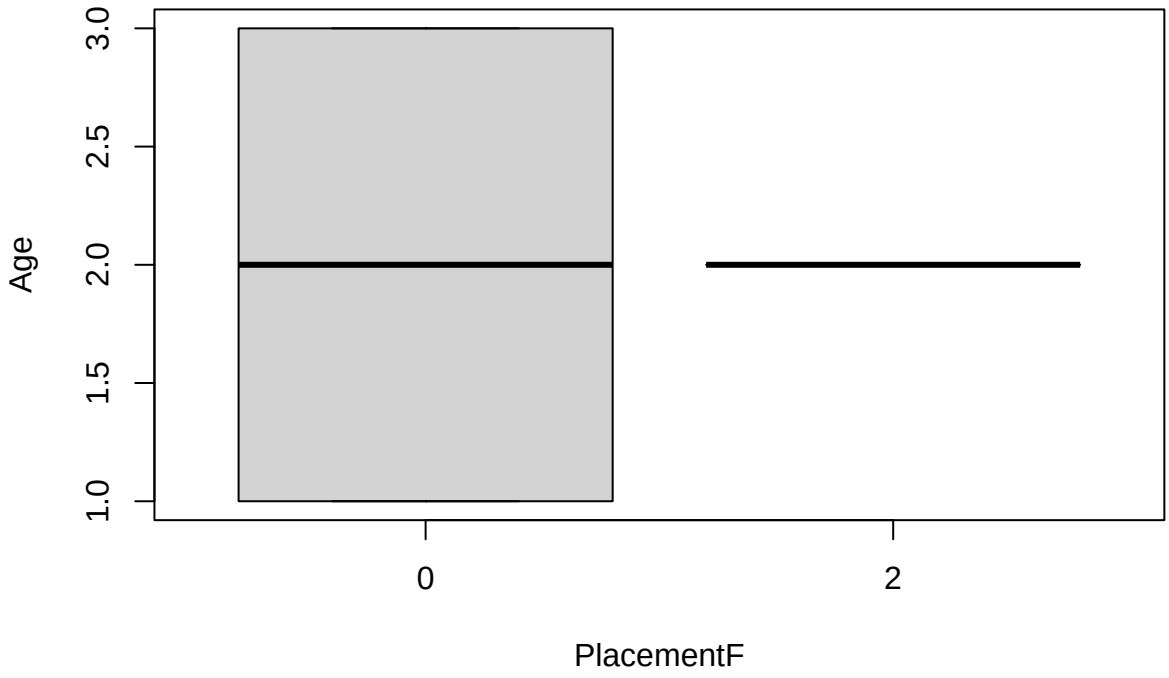
```r
aov(Education ~ PlacementF, data = click)
```

```
## Call:
##    aov(formula = Education ~ PlacementF, data = click)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.014706 16.735294
## Deg. of Freedom          1        34
##
## Residual standard error: 0.70158
## Estimated effects may be unbalanced
```

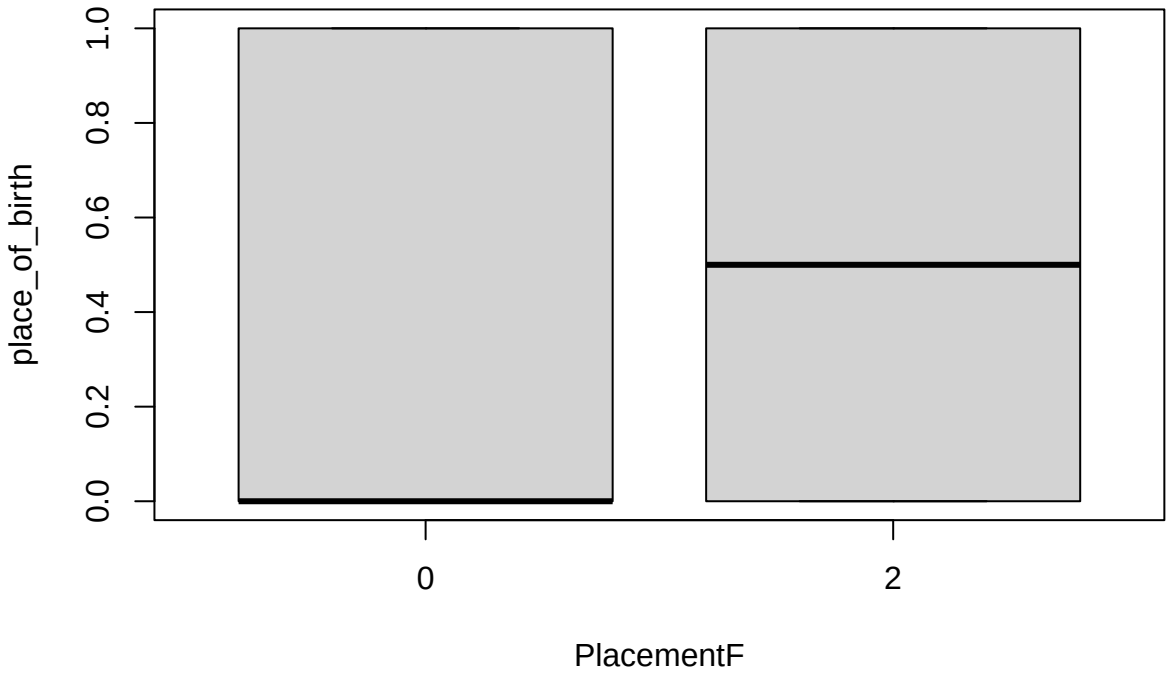
```r
boxplot(Gender ~ PlacementF, click)
```



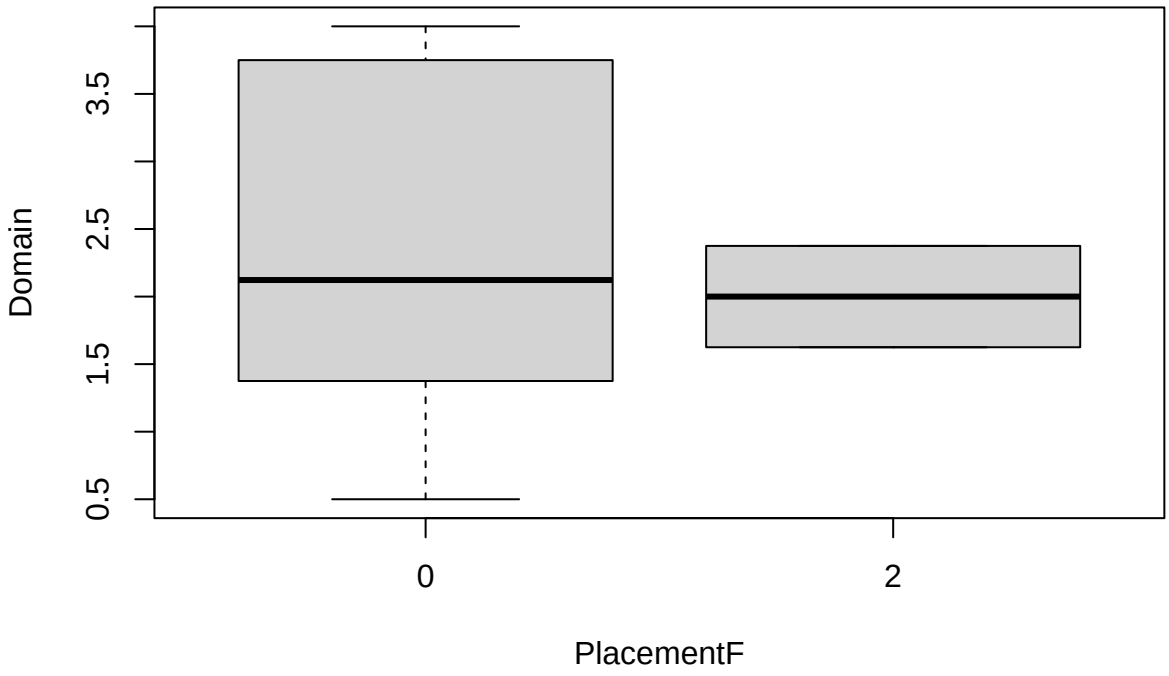

```r
boxplot(Age ~ PlacementF, click)
```



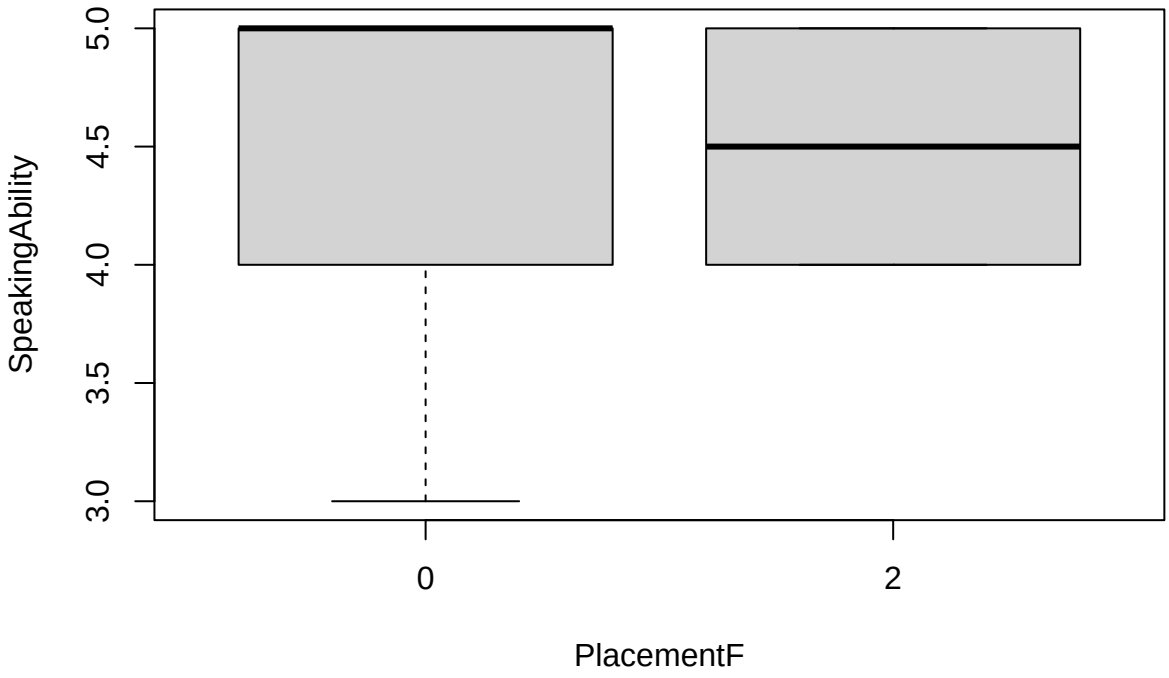

```
boxplot(place_of_birth ~ PlacementF, click)
```



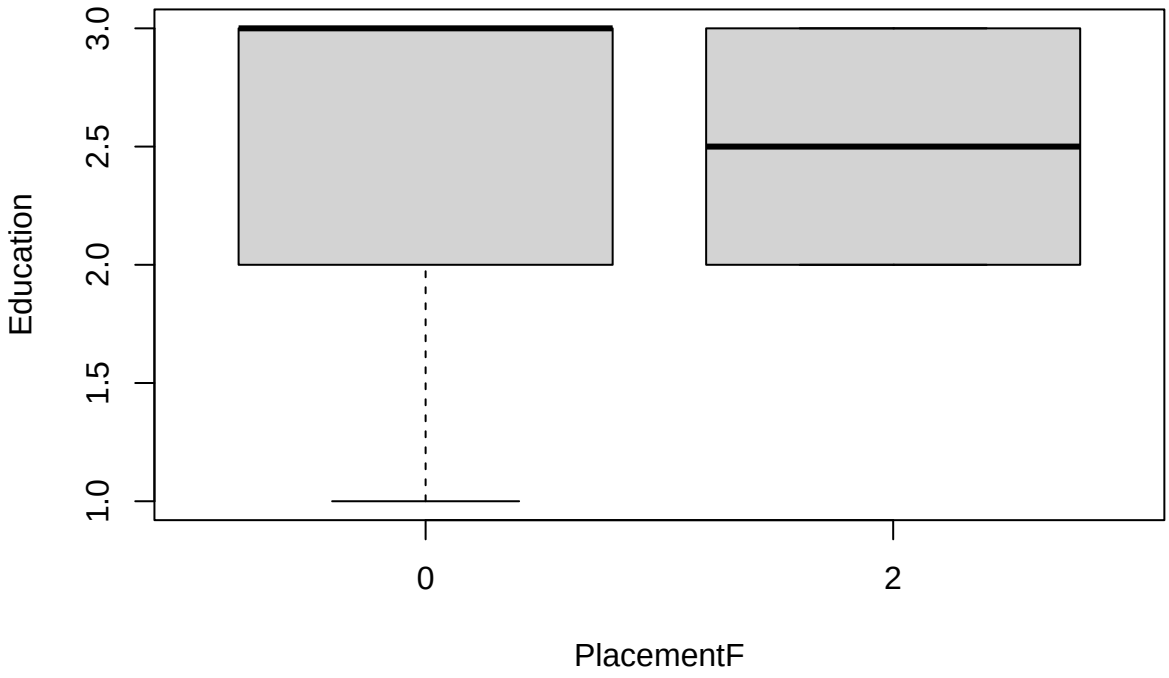

```
boxplot(Domain ~ PlacementF, click)
```




```
boxplot(SpeakingAbility ~ PlacementF, click)
```




```
boxplot(Education ~ PlacementF, click)
```




```
kruskal.test(Gender ~ PlacementF, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by PlacementF
## Kruskal-Wallis chi-squared = 0.0063741, df = 1, p-value = 0.9364
```

```
kruskal.test(Age ~ PlacementF, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by PlacementF
## Kruskal-Wallis chi-squared = 0, df = 1, p-value = 1
```

```
kruskal.test(place_of_birth ~ PlacementF, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by PlacementF
## Kruskal-Wallis chi-squared = 0.0063741, df = 1, p-value = 0.9364
```

```r
kruskal.test(Domain ~ PlacementF, data = click)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by PlacementF
## Kruskal-Wallis chi-squared = 0.030072, df = 1, p-value = 0.8623
```

```r
kruskal.test(SpeakingAbility ~ PlacementF, data = click)
```

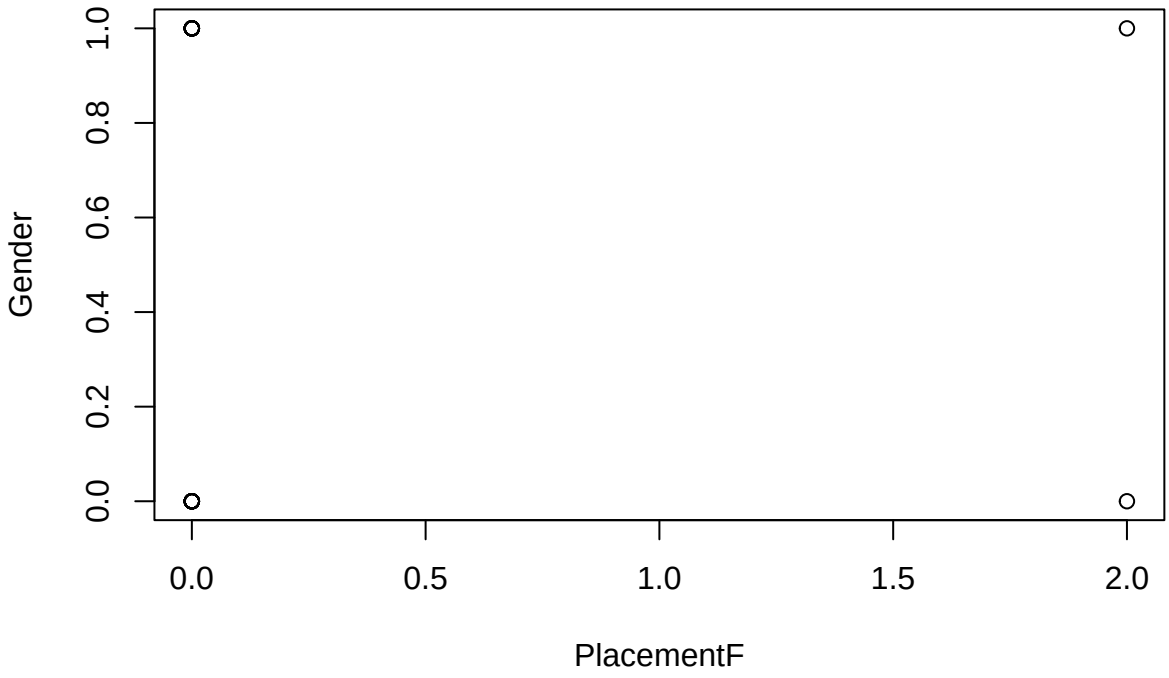
```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by PlacementF
## Kruskal-Wallis chi-squared = 0.11029, df = 1, p-value = 0.7398
```

```r
kruskal.test(Education ~ PlacementF, data = click)
```

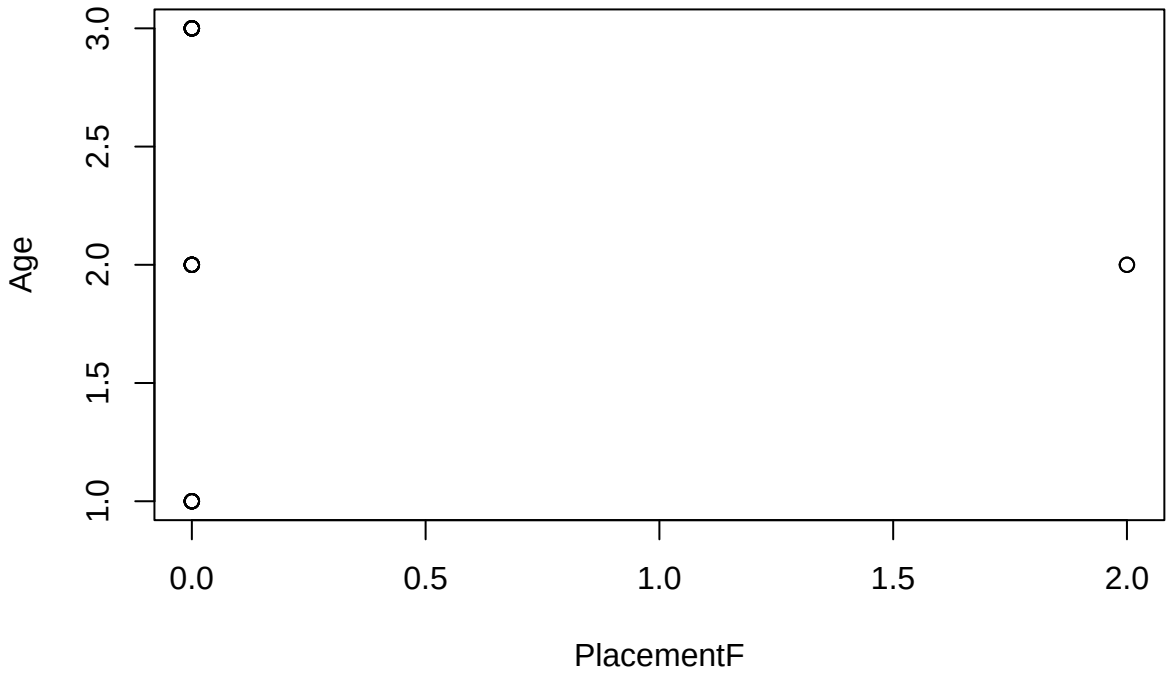
```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by PlacementF
## Kruskal-Wallis chi-squared = 0.18152, df = 1, p-value = 0.6701
```

Placement F without non-clickers

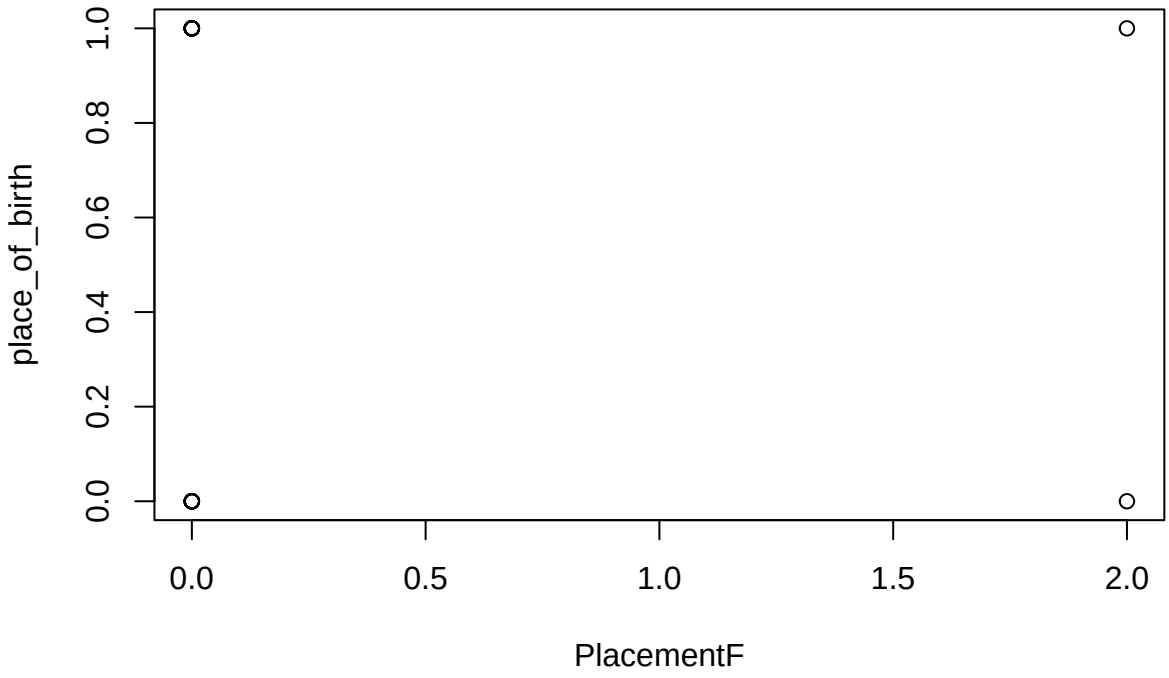
```r
plot(Gender ~ PlacementF, data = clicksonly)
```



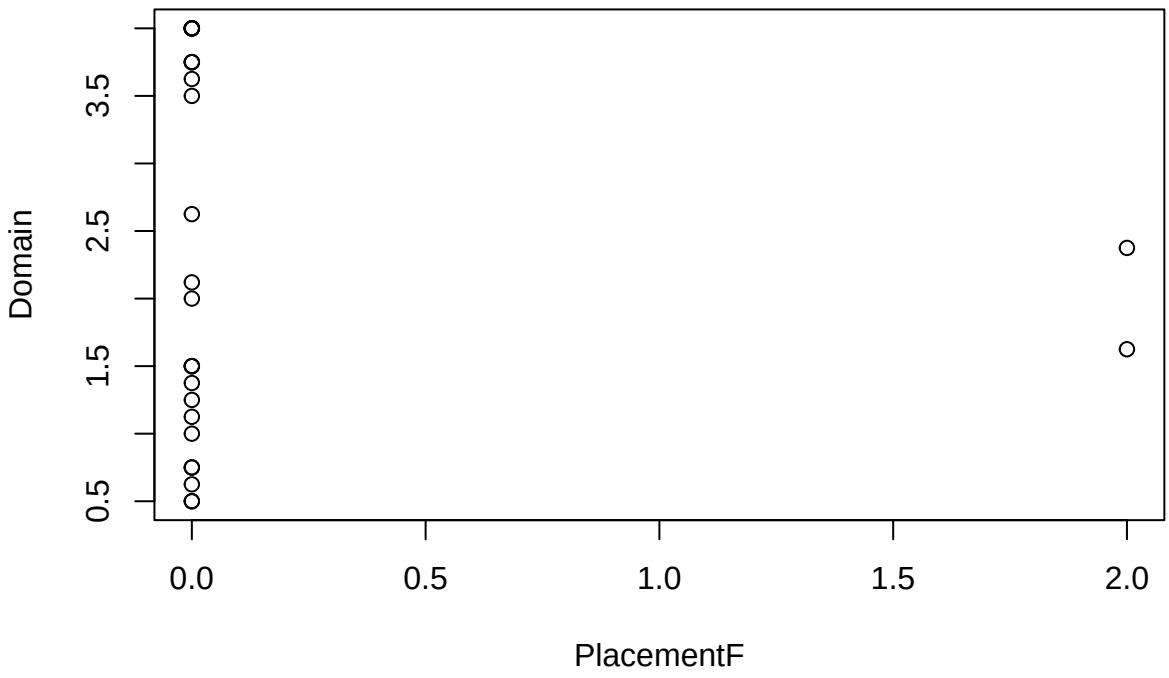

```
plot(Age ~ PlacementF, data = clicksonly)
```



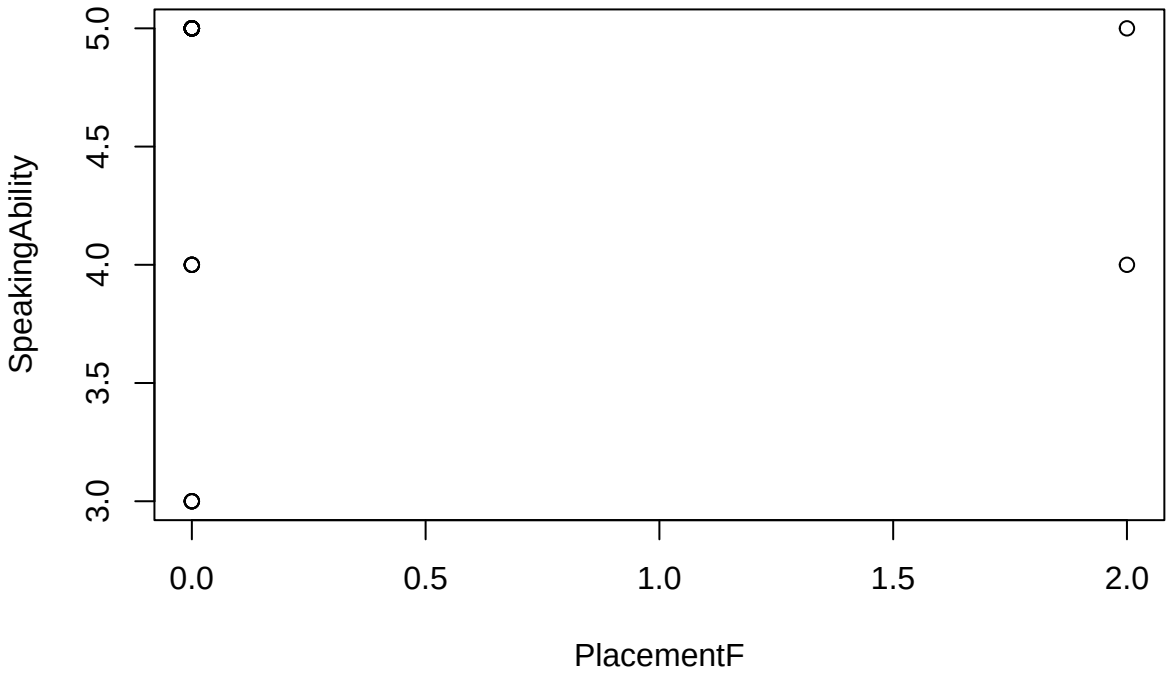

```
plot(place_of_birth ~ PlacementF, data = clicksonly)
```



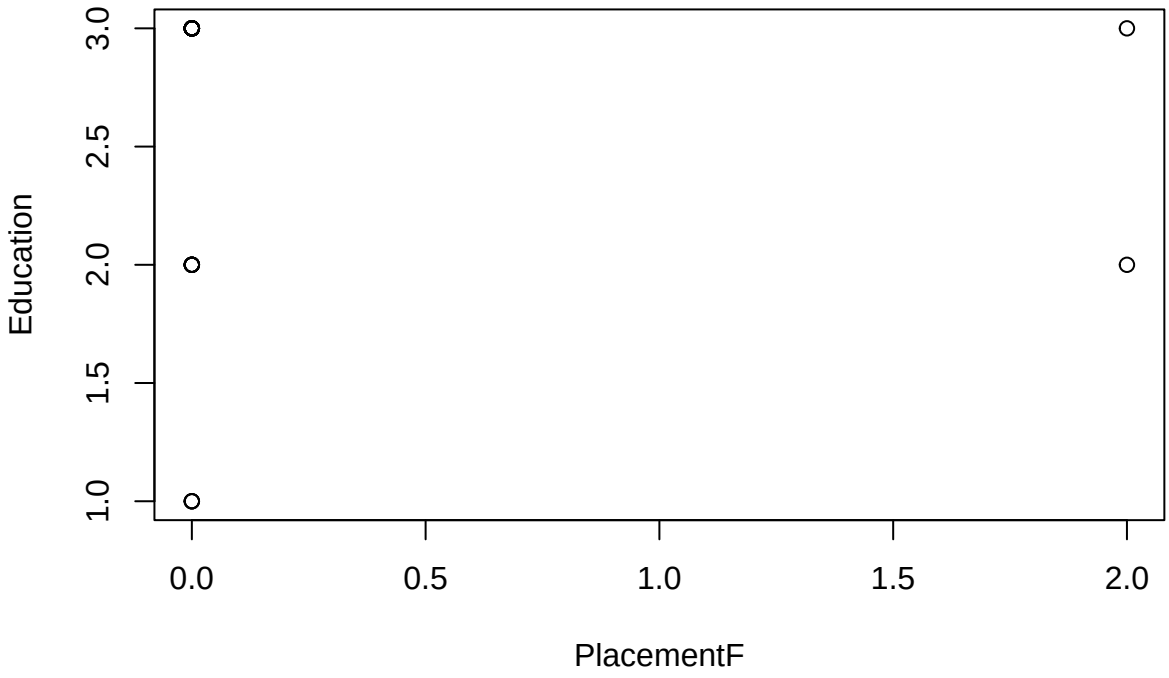

```
plot(Domain ~ PlacementF, data = clicksonly)
```




```
plot(SpeakingAbility ~ PlacementF, data = clicksonly)
```




```
plot(Education ~ PlacementF, data = clicksonly)
```




```
chisq.test(clicksonly$PlacementF)
```

```
## Warning in chisq.test(clicksonly$PlacementF): Chi-squared approximation may be
## incorrect
```

```
##
##  Chi-squared test for given probabilities
##
## data:  clicksonly$PlacementF
## X-squared = 52, df = 27, p-value = 0.002652
```

```
aov(Gender ~ PlacementF, data = clicksonly)
```

```
## Call:
##    aov(formula = Gender ~ PlacementF, data = clicksonly)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.002747  6.961538
## Deg. of Freedom          1        26
##
## Residual standard error: 0.5174471
## Estimated effects may be unbalanced
```

```r
aov(Age ~ PlacementF, data = clicksonly)
```

```
## Call:
##    aov(formula = Age ~ PlacementF, data = clicksonly)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.043956 17.384615
## Deg. of Freedom          1        26
##
## Residual standard error: 0.8177035
## Estimated effects may be unbalanced
```

```r
aov(place_of_birth ~ PlacementF, data = clicksonly)
```

```
## Call:
##    aov(formula = place_of_birth ~ PlacementF, data = clicksonly)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.002747  6.961538
## Deg. of Freedom          1        26
##
## Residual standard error: 0.5174471
## Estimated effects may be unbalanced
```

```r
aov(Domain ~ PlacementF, data = clicksonly)
```

```
## Call:
##    aov(formula = Domain ~ PlacementF, data = clicksonly)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares     0.24768  48.28127
## Deg. of Freedom          1        26
##
## Residual standard error: 1.362708
## Estimated effects may be unbalanced
```

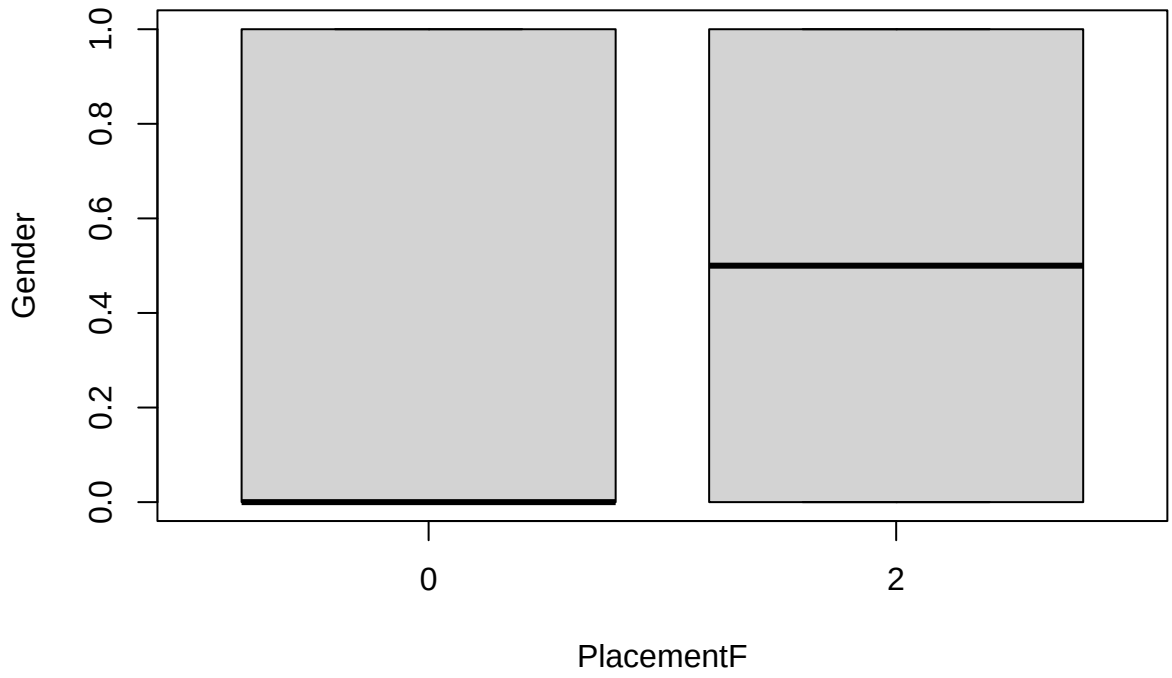
```r
aov(SpeakingAbility ~ PlacementF, data = clicksonly)
```

```
## Call:
##    aov(formula = SpeakingAbility ~ PlacementF, data = clicksonly)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.002747 14.961538
## Deg. of Freedom          1        26
##
## Residual standard error: 0.7585801
## Estimated effects may be unbalanced
```

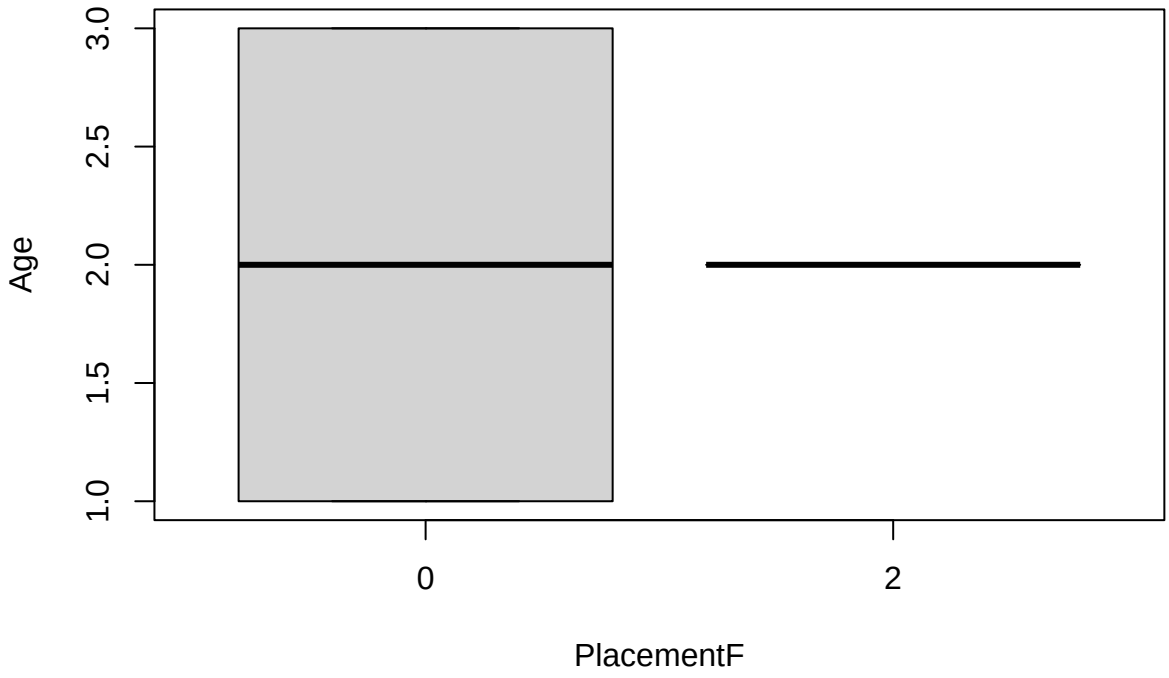
```r
aov(Education ~ PlacementF, data = clicksonly)
```

```
## Call:
##    aov(formula = Education ~ PlacementF, data = clicksonly)
##
## Terms:
##                 PlacementF Residuals
## Sum of Squares    0.002747 12.961538
## Deg. of Freedom          1        26
##
## Residual standard error: 0.70606
## Estimated effects may be unbalanced
```

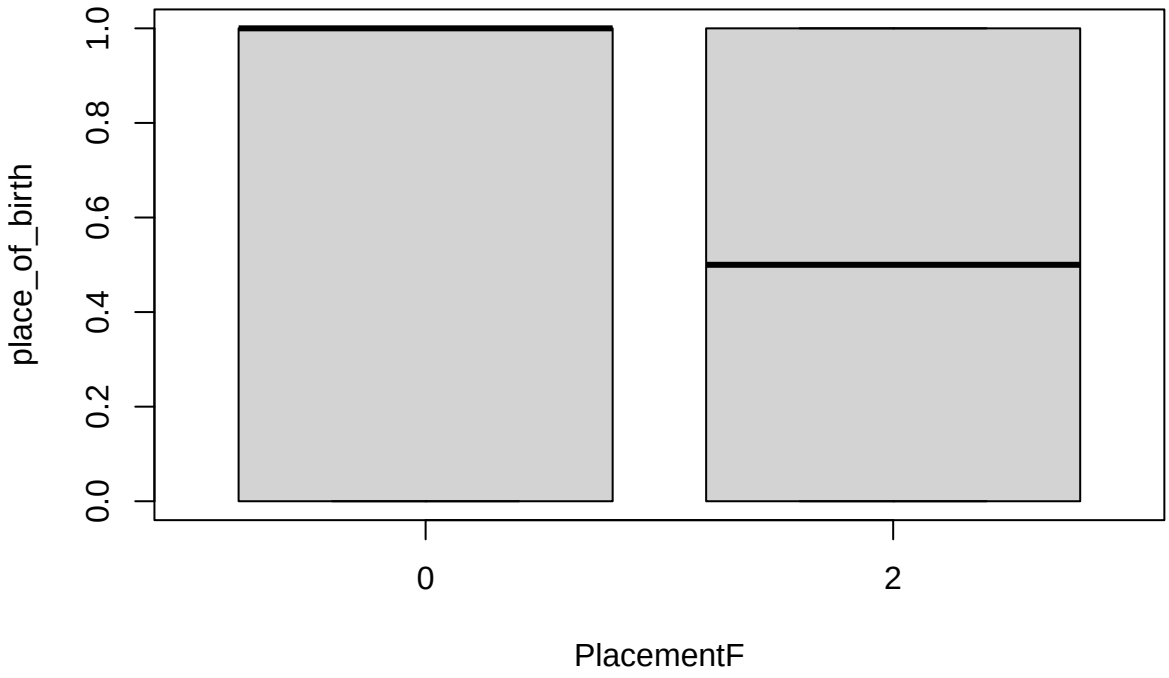
```r
boxplot(Gender ~ PlacementF, clicksonly)
```



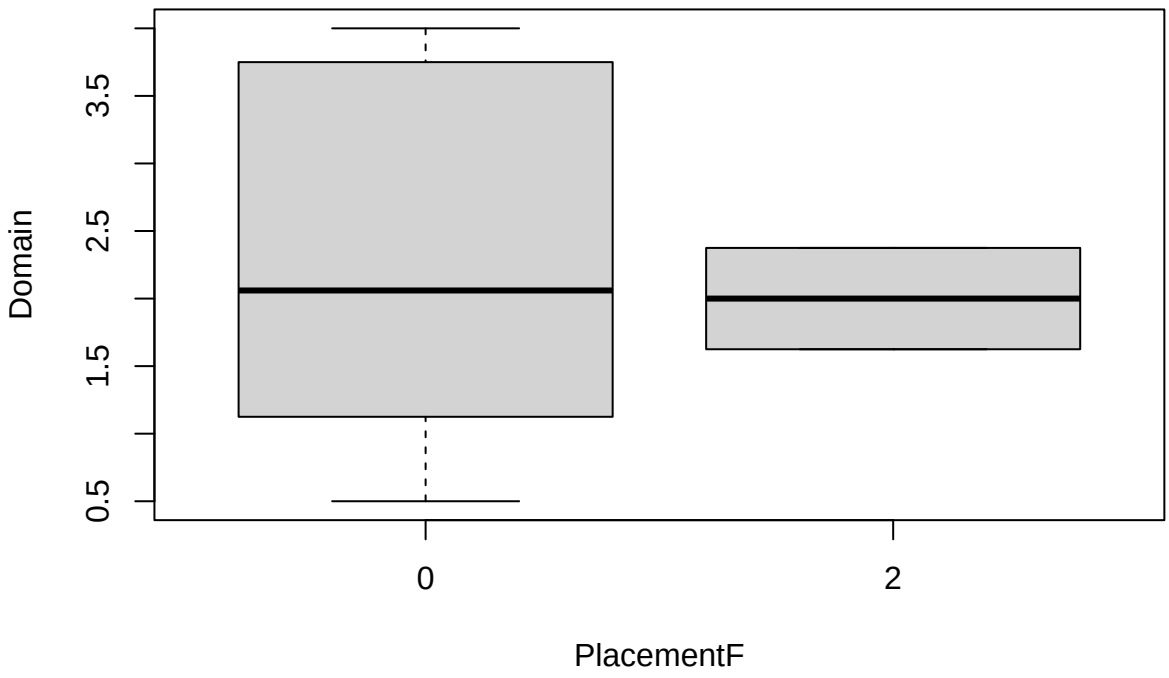

```r
boxplot(Age ~ PlacementF, clicksonly)
```



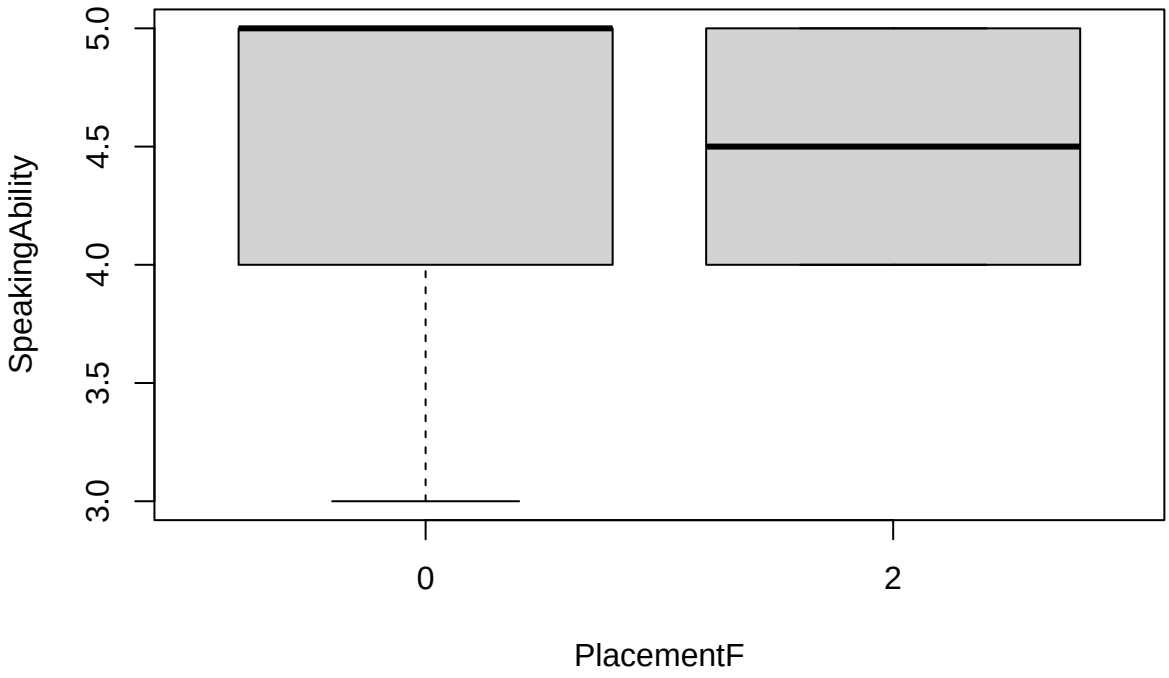

```
boxplot(place_of_birth ~ PlacementF, clicksonly)
```



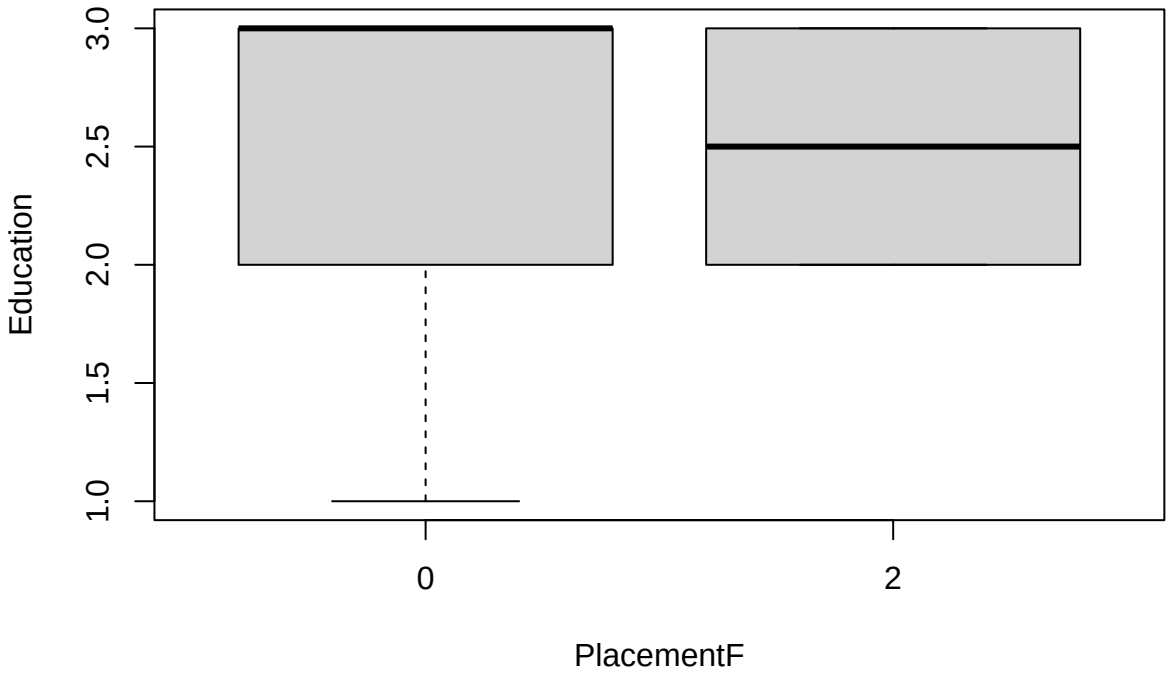

```
boxplot(Domain ~ PlacementF, clicksonly)
```




```
boxplot(SpeakingAbility ~ PlacementF, clicksonly)
```




```
boxplot(Education ~ PlacementF, clicksonly)
```




```
kruskal.test(Gender ~ PlacementF, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Gender by PlacementF
## Kruskal-Wallis chi-squared = 0.010651, df = 1, p-value = 0.9178
```

```
kruskal.test(Age ~ PlacementF, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Age by PlacementF
## Kruskal-Wallis chi-squared = 0.1448, df = 1, p-value = 0.7036
```

```
kruskal.test(place_of_birth ~ PlacementF, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  place_of_birth by PlacementF
## Kruskal-Wallis chi-squared = 0.010651, df = 1, p-value = 0.9178
```

```r
kruskal.test(Domain ~ PlacementF, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Domain by PlacementF
## Kruskal-Wallis chi-squared = 0, df = 1, p-value = 1
```

```r
kruskal.test(SpeakingAbility ~ PlacementF, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  SpeakingAbility by PlacementF
## Kruskal-Wallis chi-squared = 0.10535, df = 1, p-value = 0.7455
```

```r
kruskal.test(Education ~ PlacementF, data = clicksonly)
```

```
##
##  Kruskal-Wallis rank sum test
##
## data:  Education by PlacementF
## Kruskal-Wallis chi-squared = 0.069231, df = 1, p-value = 0.7925
```