Who is Smarter Preliminary Analysis

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The Data

The survey data used in this report was gathered from students during the Spring semester of 2019 at Utah Valley University.

Cleaning the Data

Exporting data from qualtrics results in a lot of useless information (such as geographical location) that needs to be removed. Also, because the survey questions are not "forced response", a lot of elements are missing from the data set. The unneccessary variables were removed as well as the NAs with the following scripts:

- survey_tidying_script.R
- removing_missing_values_SP2019.R

Analyzing the data

Because we don't have data about the GPA yet, I ran a chi-squared (two-variable), to determine if their was a relationship between gender and perceived intelligence (measured with a factored question "who is smarter, you or your group member?". The results of the chi-squared are as follows:

```
##
##    Cell Contents
## |-------------------------|
## |                   Count |
## |         Expected Values |
## |             Row Percent |
## |          Column Percent |
## |            Std Residual |
## |-------------------------|
##
## Total Observations in Table:  524
##
##              | df$Who_is_smarter.
##   df$gender2 |        1  |        2  | Row Total |
## -------------|-----------|-----------|-----------|
##            F |       79  |      153  |      232  |
##              |   95.191  |  136.809  |           |
##              |   34.052% |   65.948% |   44.275% |
##              |   36.744% |   49.515% |           |
##              |   -1.659  |    1.384  |           |
## -------------|-----------|-----------|-----------|
##            M |      136  |      156  |      292  |
##              |  119.809  |  172.191  |           |
##              |   46.575% |   53.425% |   55.725% |
##              |   63.256% |   50.485% |           |
##              |    1.479  |   -1.234  |           |
## -------------|-----------|-----------|-----------|
## Column Total |      215  |      309  |      524  |
```

```
##              |   41.031% |   58.969% |           |
## -------------|-----------|-----------|-----------|
##
##
## Statistics for All Table Factors
##
##
## Pearson's Chi-squared test
## ------------------------------------------------------------
## Chi^2 =  8.380402     d.f. =  1     p =  0.003792886
##
## Pearson's Chi-squared test with Yates' continuity correction
## ------------------------------------------------------------
## Chi^2 =  7.870792     d.f. =  1     p =  0.005023963
##
##
## Fisher's Exact Test for Count Data
## ------------------------------------------------------------
## Sample estimate odds ratio:  0.5928807
##
## Alternative hypothesis: true odds ratio is not equal to 1
## p =  0.004225989
## 95% confidence interval:  0.4081039 0.8582259
##
## Alternative hypothesis: true odds ratio is less than 1
## p =  0.002450615
## 95% confidence interval:  0 0.8110263
##
## Alternative hypothesis: true odds ratio is greater than 1
## p =  0.9986221
## 95% confidence interval:  0.4323979 Inf
##
##
##
##        Minimum expected frequency: 95.19084
```