

WAL Data Analysis

```
usethis::use_git_config(user.name = "hanastepnick", user.email = "hana.stepnick@duke.edu")
```

```
library(tidyverse)
```

```
## -- Attaching packages -----  
  
## v tibble 3.0.3      v purrr 0.3.4  
## v tidyr  1.1.1      v dplyr 1.0.1  
## v readr  1.3.1      v forcats 0.5.0  
  
## -- Conflicts -----  
## x lubridate::as.difftime() masks base::as.difftime()  
## x lubridate::date()        masks base::date()  
## x dplyr::filter()          masks stats::filter()  
## x readr::guess_encoding()  masks rvest::guess_encoding()  
## x lubridate::intersect()   masks base::intersect()  
## x dplyr::lag()             masks stats::lag()  
## x purrr::pluck()           masks rvest::pluck()  
## x lubridate::setdiff()     masks base::setdiff()  
## x lubridate::union()       masks base::union()
```

```
library(infer)
```

```
wal <- read_csv("wal.csv")
```

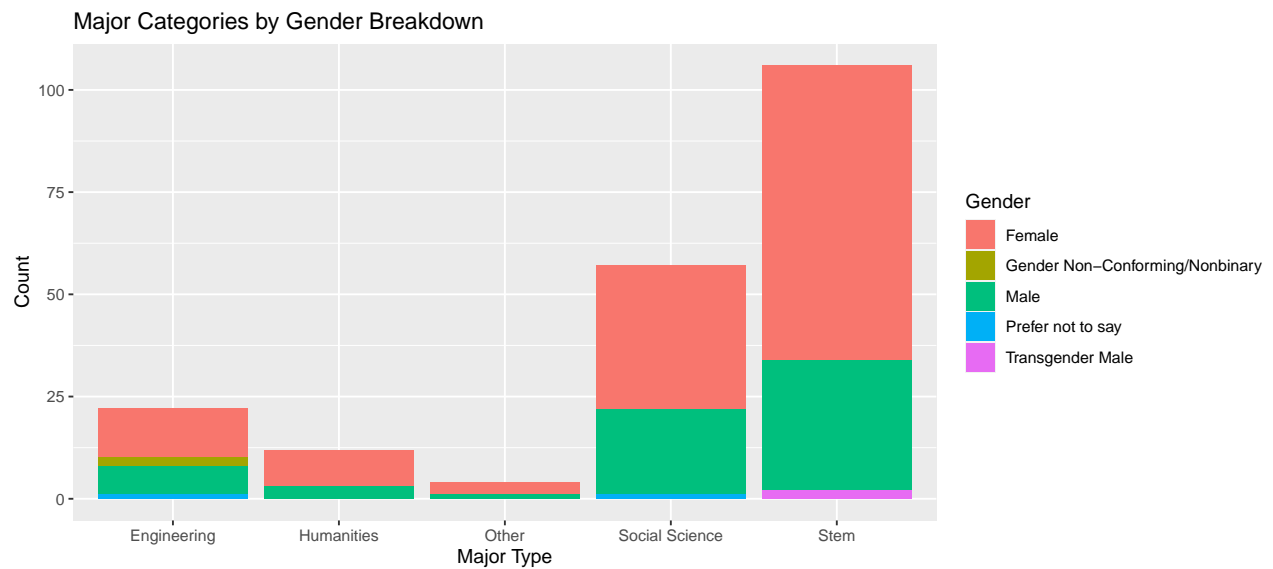
```
## Parsed with column specification:  
## cols(  
##   year = col_character(),  
##   major = col_character(),  
##   major_type = col_character(),  
##   hispanic = col_character(),  
##   race = col_character(),  
##   ask_question = col_double(),  
##   answer_question = col_double(),  
##   reach_male = col_double(),  
##   reach_female = col_double(),  
##   lead_group = col_double(),  
##   disagree = col_double(),  
##   accountable = col_double(),  
##   breakdown = col_double(),  
##   gender = col_character(),  
##   school = col_character()  
## )
```

```
majors <- wal %>%  
  distinct(major)
```

Distribution of all major breakdowns:

```
ggplot(data = wal, mapping = aes(x = major_type, fill = gender)) +  
  geom_bar() +
```

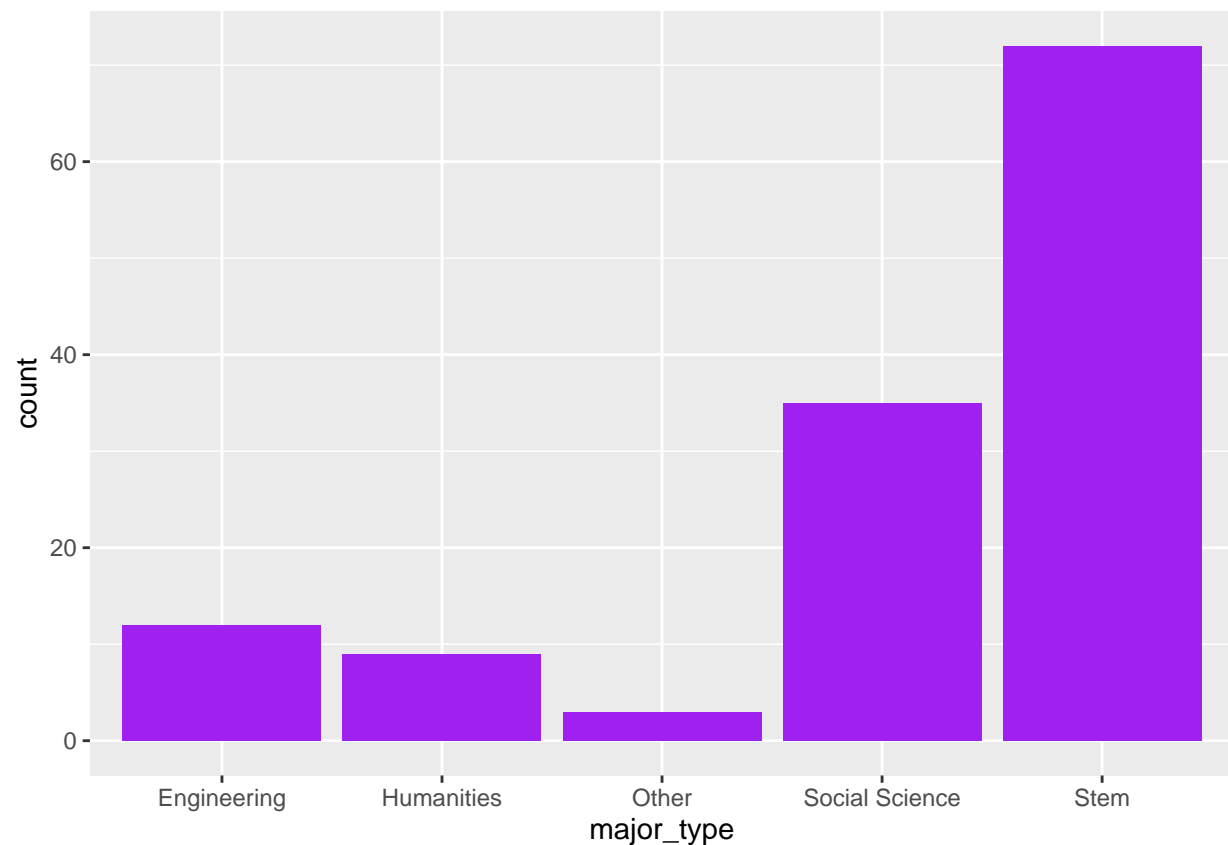
```
labs(title = "Major Categories by Gender Breakdown", x = "Major Type", y = "Count", fill = "Gender")
```



Distribution of major breakdowns for females:

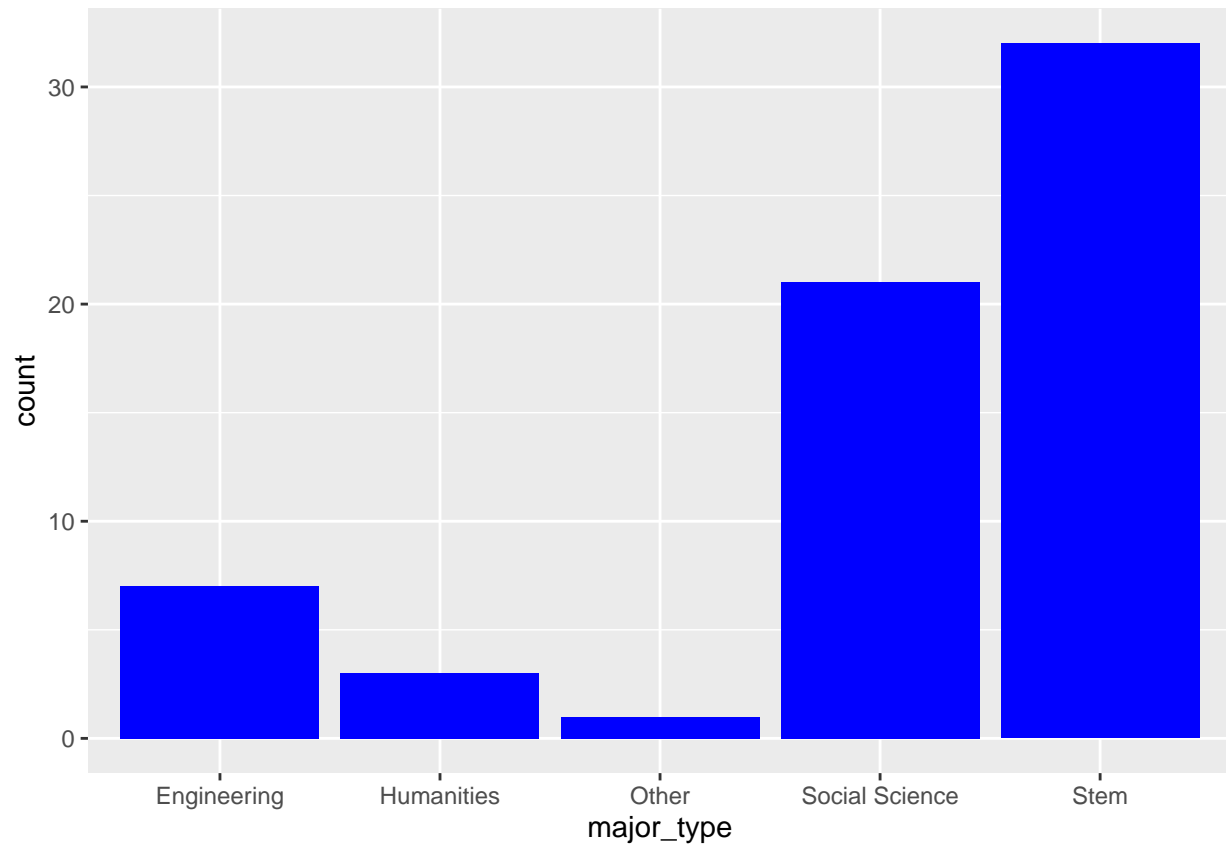
```
wal_female <- wal %>%
  filter(gender == "Female")

ggplot(data = wal_female, mapping = aes(x = major_type)) +
  geom_bar(fill = "purple")
```



Distribution of major breakdowns for males:

```
wal_male <- wal %>%  
  filter(gender == "Male")  
  
ggplot(data = wal_male, mapping = aes(x = major_type)) +  
  geom_bar(fill = "blue")
```



Asking question:

```
mean(wal_female$ask_question, na.rm = FALSE)
```

```
## [1] 3.633588
```

```
mean(wal_male$ask_question, na.rm = FALSE)
```

```
## [1] 3.71875
```

```
wal_male_female <- wal %>%  
  filter(gender == "Female" | gender == "Male")
```

```
t_ask <- wal_male_female %>%  
  t_test(ask_question ~ gender,  
    order = c("Female", "Male"),  
    alternative = "less",  
    conf_int = FALSE)
```

```
t_ask
```

```
## # A tibble: 1 x 4
```

```
##   statistic t_df p_value alternative
```

```
##      <dbl> <dbl>      <dbl> <chr>
## 1      -0.492  113.      0.312 less
```

Answering question:

```
mean(wal_female$answer_question, na.rm = FALSE)
```

```
## [1] 3.335878
```

```
mean(wal_male$answer_question, na.rm = FALSE)
```

```
## [1] 3.609375
```

```
t_answer <- wal_male_female %>%
  t_test(answer_question ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)
t_answer
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -1.56  114.  0.0612 less
```

Reach out to male prof:

```
mean(wal_female$reach_male, na.rm = FALSE)
```

```
## [1] 3.473282
```

```
mean(wal_male$reach_male, na.rm = FALSE)
```

```
## [1] 4.34375
```

```
t_reach_male <- wal_male_female %>%
  t_test(reach_male ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)
t_reach_male
```

```
## # A tibble: 1 x 4
##   statistic t_df      p_value alternative
##       <dbl> <dbl>         <dbl> <chr>
## 1      -5.77  152. 0.0000000220 less
```

Reach out to female prof:

```
mean(wal_female$reach_female, na.rm = FALSE)
```

```
## [1] 4.381679
```

```
mean(wal_male$reach_female, na.rm = FALSE)
```

```
## [1] 4.359375
```

```
t_reach_female <- wal_male_female %>%
  t_test(reach_female ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
```

```
      conf_int = FALSE)
t_reach_female
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl>   <chr>
## 1    -0.156  105.    0.438 less
```

Comfort with leading a group:

```
mean(wal_female$lead_group, na.rm = FALSE)
```

```
## [1] 3.877863
```

```
mean(wal_male$lead_group, na.rm = FALSE)
```

```
## [1] 3.75
```

```
t_lead <- wal_male_female %>%
  t_test(lead_group ~ gender,
        order = c("Male", "Female"),
        alternative = "less",
        conf_int = FALSE)
t_lead
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl>   <chr>
## 1    -0.814  108.    0.209 less
```

Comfort with disagreeing with group:

```
mean(wal_female$disagree, na.rm = FALSE)
```

```
## [1] 3.610687
```

```
mean(wal_male$disagree, na.rm = FALSE)
```

```
## [1] 3.546875
```

```
t_disagree <- wal_male_female %>%
  t_test(disagree ~ gender,
        order = c("Male", "Female"),
        alternative = "less",
        conf_int = FALSE)
t_disagree
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl>   <chr>
## 1    -0.373  116.    0.355 less
```

Comfort with keeping others accountable:

```
mean(wal_female$accountable, na.rm = FALSE)
```

```
## [1] 3.351145
```

```
mean(wal_male$accountable, na.rm = FALSE)
```

```
## [1] 3.375
```

```
t_accountable <- wal_male_female %>%
  t_test(accountable ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)
t_accountable
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl>   <chr>
## 1    -0.137  131.    0.445 less
```

Perceptions of major breakdowns:

```
wal_stem <- wal %>%
  filter(major_type == "Stem")

mean(wal_stem$breakdown, na.rm = FALSE)
```

```
## [1] 5.028302
```

```
wal_humanities <- wal %>%
  filter(major_type == "Humanities")

mean(wal_humanities$breakdown, na.rm = FALSE)
```

```
## [1] 5.083333
```

```
wal_social_science <- wal %>%
  filter(major_type == "Social Science")

mean(wal_social_science$breakdown, na.rm = FALSE)
```

```
## [1] 4.929825
```

```
wal_engineering <- wal %>%
  filter(major_type == "Engineering")

mean(wal_engineering$breakdown, na.rm = FALSE)
```

```
## [1] 4.227273
```

```
wal_stem_engineering <- wal %>%
  filter(major_type == "Engineering" | major_type == "Stem")

mean(wal_stem_engineering$breakdown, na.rm = FALSE)
```

```
## [1] 4.890625
```

Engineering vs SS Gender Breakdown:

```
wal_engineering_ss <- wal %>%
  filter(major_type == "Engineering" | major_type == "Social Science")
```

```
t_engineering_ss_breakdown <- wal_engineering_ss %>%
  t_test(breakdown ~ major_type,
    order = c("Engineering", "Social Science"),
    alternative = "less",
    conf_int = FALSE)
```

```
t_engineering_ss_breakdown
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -2.32  48.8  0.0122 less
```

Trinity vs. Pratt analyses:

Trinity:

```
trinity_female <- wal %>%
  filter(school == "Trinity") %>%
  filter(gender == "Female")
```

```
trinity_male <- wal %>%
  filter(school == "Trinity") %>%
  filter(gender == "Male")
```

```
mean(trinity_female$ask_question, na.rm = FALSE)
```

```
## [1] 3.655462
```

```
mean(trinity_male$ask_question, na.rm = FALSE)
```

```
## [1] 3.719298
```

```
wal_trinity <- wal %>%
  filter(school == "Trinity") %>%
  filter(gender == "Male" | gender == "Female")
```

```
t_ask_trinity <- wal_trinity %>%
  t_test(ask_question ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)
```

```
t_ask_trinity
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -0.353  100.   0.362 less
```

```
mean(trinity_female$answer_question, na.rm = FALSE)
```

```
## [1] 3.319328
```

```
mean(trinity_male$answer_question, na.rm = FALSE)
```

```
## [1] 3.614035
```

```
t_answer_trinity <- wal_trinity %>%
  t_test(answer_question ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)
```

```
t_answer_trinity
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -1.61  104.  0.0555 less

mean(trinity_female$reach_male, na.rm = FALSE)

## [1] 3.420168

mean(trinity_male$reach_male, na.rm = FALSE)

## [1] 4.45614

t_reachmale_trinity <- wal_trinity %>%
  t_test(reach_male ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)

t_reachmale_trinity

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -7.20  155.  1.20e-11 less

mean(trinity_female$reach_female, na.rm = FALSE)

## [1] 4.361345

mean(trinity_male$reach_female, na.rm = FALSE)

## [1] 4.473684

t_reachfemale_trinity <- wal_trinity %>%
  t_test(reach_female ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)

t_reachfemale_trinity

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -0.827  102.  0.205 less

mean(trinity_female$lead_group, na.rm = FALSE)

## [1] 3.957983

mean(trinity_male$lead_group, na.rm = FALSE)

## [1] 3.701754

t_leadgroup_trinity <- wal_trinity %>%
  t_test(lead_group ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
    conf_int = FALSE)
```



```

t_leadgroup_trinity

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##     <dbl> <dbl>   <dbl> <chr>
## 1     -1.63  98.0  0.0533 less
mean(trinity_female$disagree, na.rm = FALSE)

## [1] 3.655462
mean(trinity_male$disagree, na.rm = FALSE)

## [1] 3.526316
t_disagree_trinity <- wal_trinity %>%
  t_test(disagree ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
    conf_int = FALSE)

t_disagree_trinity

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##     <dbl> <dbl>   <dbl> <chr>
## 1     -0.736 107.   0.232 less
mean(trinity_female$accountable, na.rm = FALSE)

## [1] 3.378151
mean(trinity_male$accountable, na.rm = FALSE)

## [1] 3.421053
t_accountable_trinity <- wal_trinity %>%
  t_test(accountable ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)

t_accountable_trinity

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##     <dbl> <dbl>   <dbl> <chr>
## 1     -0.237 125.   0.406 less
Pratt:
pratt_female <- wal %>%
  filter(school == "Pratt") %>%
  filter(gender == "Female")

pratt_male <- wal %>%
  filter(school == "Pratt") %>%
  filter(gender == "Male")

```

```

mean(pratt_female$ask_question, na.rm = FALSE)

## [1] 3.416667
mean(pratt_male$ask_question, na.rm = FALSE)

## [1] 3.714286
wal_pratt <- wal %>%
  filter(school == "Pratt") %>%
  filter(gender == "Male" | gender == "Female")

t_ask_pratt <- wal_pratt %>%
  t_test(ask_question ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_ask_pratt

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -0.480  11.0   0.320 less
mean(pratt_female$answer_question, na.rm = FALSE)

## [1] 3.5
mean(pratt_male$answer_question, na.rm = FALSE)

## [1] 3.571429
t_answer_pratt <- wal_pratt %>%
  t_test(answer_question ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_answer_pratt

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -0.114   8.56  0.456 less
mean(pratt_female$reach_male, na.rm = FALSE)

## [1] 4
mean(pratt_male$reach_male, na.rm = FALSE)

## [1] 3.428571
t_reachmale_pratt <- wal_pratt %>%
  t_test(reach_male ~ gender,
        order = c("Male", "Female"),
        alternative = "less",
        conf_int = FALSE)

```

```

t_reachmale_pratt

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl>   <dbl> <chr>
## 1    -0.869  9.96   0.203 less

mean(pratt_female$reach_female, na.rm = FALSE)

## [1] 4.583333

mean(pratt_male$reach_female, na.rm = FALSE)

## [1] 3.428571

t_reachfemale_pratt <- wal_pratt %>%
  t_test(reach_female ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
    conf_int = FALSE)

t_reachfemale_pratt

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl>   <dbl> <chr>
## 1    -1.81  9.11   0.0521 less

mean(pratt_female$lead_group, na.rm = FALSE)

## [1] 3.083333

mean(pratt_male$lead_group, na.rm = FALSE)

## [1] 4.142857

t_leadgroup_pratt <- wal_pratt %>%
  t_test(lead_group ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)

t_leadgroup_pratt

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl>   <dbl> <chr>
## 1    -1.66  7.82   0.0679 less

mean(pratt_female$disagree, na.rm = FALSE)

## [1] 3.166667

mean(pratt_male$disagree, na.rm = FALSE)

## [1] 3.714286

t_disagree_pratt <- wal_pratt %>%
  t_test(disagree ~ gender,
    order = c("Female", "Male"),

```

```

    alternative = "less",
    conf_int = FALSE)

t_disagree_pratt

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl>   <chr>
## 1    -0.825  8.45    0.216 less

mean(pratt_female$accountable, na.rm = FALSE)

## [1] 3.083333

mean(pratt_male$accountable, na.rm = FALSE)

## [1] 3

t_accountable_pratt <- wal_pratt%>%
  t_test(accountable ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
    conf_int = FALSE)

t_accountable_pratt

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl>   <chr>
## 1    -0.143  6.25    0.445 less

Stem:

stem_female <- wal %>%
  filter(major_type == "Stem") %>%
  filter(gender == "Female")

stem_male <- wal %>%
  filter(major_type == "Stem") %>%
  filter(gender == "Male")

mean(stem_female$ask_question, na.rm = FALSE)

## [1] 3.722222

mean(stem_male$ask_question, na.rm = FALSE)

## [1] 3.46875

wal_stem <- wal %>%
  filter(major_type == "Stem") %>%
  filter(gender == "Male" | gender == "Female")

t_ask_stem <- wal_stem %>%
  t_test(ask_question ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
    conf_int = FALSE)

```

```
t_ask_stem

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -1.04  52.8   0.151 less

mean(stem_female$answer_question, na.rm = FALSE)
```

```
## [1] 3.430556

mean(stem_male$answer_question, na.rm = FALSE)
```

```
## [1] 3.25

t_answer_stem <- wal_stem %>%
  t_test(answer_question ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
    conf_int = FALSE)
```

```
t_answer_stem

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -0.740  57.1   0.231 less

mean(stem_female$reach_male, na.rm = FALSE)
```

```
## [1] 3.375

mean(stem_male$reach_male, na.rm = FALSE)
```

```
## [1] 4.40625

t_reachmale_stem <- wal_stem %>%
  t_test(reach_male ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)
```

```
t_reachmale_stem

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -4.98  78.2 0.00000185 less

mean(stem_female$reach_female, na.rm = FALSE)
```

```
## [1] 4.5

mean(stem_male$reach_female, na.rm = FALSE)
```

```
## [1] 4.28125

t_reachfemale_stem <- wal_stem %>%
  t_test(reach_female ~ gender,
    order = c("Male", "Female"),
```

```

        alternative = "less",
        conf_int = FALSE)

t_reachfemale_stem

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -1.08  42.6   0.143 less
mean(stem_female$lead_group, na.rm = FALSE)

## [1] 3.972222
mean(stem_male$lead_group, na.rm = FALSE)

## [1] 3.5
t_leadgroup_stem <- wal_stem %>%
  t_test(lead_group ~ gender,
        order = c("Male", "Female"),
        alternative = "less",
        conf_int = FALSE)

t_leadgroup_stem

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -2.11  50.8   0.0199 less
mean(stem_female$disagree, na.rm = FALSE)

## [1] 3.680556
mean(stem_male$disagree, na.rm = FALSE)

## [1] 3.46875
t_disagree_stem <- wal_stem %>%
  t_test(disagree ~ gender,
        order = c("Male", "Female"),
        alternative = "less",
        conf_int = FALSE)

t_disagree_stem

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -0.863  54.3   0.196 less
mean(stem_female$accountable, na.rm = FALSE)

## [1] 3.513889
mean(stem_male$accountable, na.rm = FALSE)

## [1] 3.46875

```

```
t_accountable_stem <- wal_stem %>%
  t_test(accountable ~ gender,
    order = c("Male", "Female"),
    alternative = "less",
    conf_int = FALSE)
```

```
t_accountable_stem
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -0.198  69.6   0.422 less
```

Social Science:

```
ss_female <- wal %>%
  filter(major_type == "Social Science") %>%
  filter(gender == "Female")
```

```
ss_male <- wal %>%
  filter(major_type == "Social Science") %>%
  filter(gender == "Male")
```

```
mean(ss_female$ask_question, na.rm = FALSE)
```

```
## [1] 3.285714
```

```
mean(ss_male$ask_question, na.rm = FALSE)
```

```
## [1] 4
```

```
wal_ss <- wal %>%
  filter(major_type == "Social Science") %>%
  filter(gender == "Male" | gender == "Female")
```

```
t_ask_ss <- wal_ss %>%
  t_test(ask_question ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)
```

```
t_ask_ss
```

```
## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -2.57  42.8 0.00684 less
```

```
mean(ss_female$answer_question, na.rm = FALSE)
```

```
## [1] 3
```

```
mean(ss_male$answer_question, na.rm = FALSE)
```

```
## [1] 4.047619
```

```
t_answer_ss <- wal_ss %>%
  t_test(answer_question ~ gender,
    order = c("Female", "Male"),
```

```

        alternative = "less",
        conf_int = FALSE)

t_answer_ss

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -3.63  40.0 0.000396 less
mean(ss_female$reach_male, na.rm = FALSE)

## [1] 3.4
mean(ss_male$reach_male, na.rm = FALSE)

## [1] 4.666667
t_reachmale_ss <- wal_ss %>%
  t_test(reach_male ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_reachmale_ss

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -5.97  50.7 0.000000118 less
mean(ss_female$reach_female, na.rm = FALSE)

## [1] 4.114286
mean(ss_male$reach_female, na.rm = FALSE)

## [1] 4.714286
t_reachfemale_ss <- wal_ss %>%
  t_test(reach_female ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_reachfemale_ss

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##       <dbl> <dbl>   <dbl> <chr>
## 1      -3.13  52.1 0.00143 less
mean(ss_female$lead_group, na.rm = FALSE)

## [1] 3.914286
mean(ss_male$lead_group, na.rm = FALSE)

## [1] 3.904762

```



```

t_leadgroup_ss <- wal_ss %>%
  t_test(lead_group ~ gender,
         order = c("Male", "Female"),
         alternative = "less",
         conf_int = FALSE)

t_leadgroup_ss

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1 -0.0425 40.2 0.483 less

mean(ss_female$disagree, na.rm = FALSE)

## [1] 3.714286

mean(stem_male$disagree, na.rm = FALSE)

## [1] 3.46875

t_disagree_ss <- wal_ss %>%
  t_test(disagree ~ gender,
         order = c("Male", "Female"),
         alternative = "less",
         conf_int = FALSE)

t_disagree_ss

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1 -0.341 45.5 0.367 less

mean(ss_female$accountable, na.rm = FALSE)

## [1] 3.257143

mean(ss_male$accountable, na.rm = FALSE)

## [1] 3.47619

t_accountable_ss <- wal_ss %>%
  t_test(accountable ~ gender,
         order = c("Female", "Male"),
         alternative = "less",
         conf_int = FALSE)

t_accountable_ss

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1 -0.662 47.5 0.256 less

Humanities:

hum_female <- wal %>%
  filter(major_type == "Humanities") %>%

```

```

filter(gender == "Female")

hum_male <- wal %>%
  filter(major_type == "Humanities") %>%
  filter(gender == "Male")

mean(hum_female$ask_question, na.rm = FALSE)

## [1] 4.333333

mean(hum_male$ask_question, na.rm = FALSE)

## [1] 5

wal_hum <- wal %>%
  filter(major_type == "Humanities") %>%
  filter(gender == "Male" | gender == "Female")

t_ask_hum <- wal_hum %>%
  t_test(ask_question ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_ask_hum

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -2.83     8  0.0111 less

mean(hum_female$answer_question, na.rm = FALSE)

## [1] 3.777778

mean(hum_male$answer_question, na.rm = FALSE)

## [1] 4.333333

t_answer_hum <- wal_hum %>%
  t_test(answer_question ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_answer_hum

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -1.13   7.10  0.149 less

mean(hum_female$reach_male, na.rm = FALSE)

## [1] 3.666667

mean(hum_male$reach_male, na.rm = FALSE)

## [1] 4

```

```

t_reachmale_hum <- wal_hum %>%
  t_test(reach_male ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_reachmale_hum

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1      -1.     8  0.173 less
mean(hum_female$reach_female, na.rm = FALSE)

## [1] 4.222222
mean(hum_male$reach_female, na.rm = FALSE)

## [1] 4.666667
t_reachfemale_hum <- wal_hum %>%
  t_test(reach_female ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_reachfemale_hum

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -1.11  3.98  0.165 less
mean(hum_female$lead_group, na.rm = FALSE)

## [1] 3.777778
mean(hum_male$lead_group, na.rm = FALSE)

## [1] 4.333333
t_leadgroup_hum <- wal_hum %>%
  t_test(lead_group ~ gender,
        order = c("Female", "Male"),
        alternative = "less",
        conf_int = FALSE)

t_leadgroup_hum

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1   -0.731  3.30  0.257 less
mean(hum_female$disagree, na.rm = FALSE)

## [1] 3.222222

```

```

mean(stem_male$disagree, na.rm = FALSE)

## [1] 3.46875

t_disagree_hum <- wal_hum %>%
  t_test(disagree ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)

t_disagree_hum

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1    -1.14  3.76  0.161 less

mean(hum_female$accountable, na.rm = FALSE)

## [1] 3

mean(hum_male$accountable, na.rm = FALSE)

## [1] 3.333333

t_accountable_hum <- wal_hum %>%
  t_test(accountable ~ gender,
    order = c("Female", "Male"),
    alternative = "less",
    conf_int = FALSE)

t_accountable_hum

## # A tibble: 1 x 4
##   statistic t_df p_value alternative
##   <dbl> <dbl> <dbl> <chr>
## 1   -0.632    8.  0.272 less

```