# NPR Study

October 20, 2025

## Items

**Read Data**

## Variable Names

| Variable | Description |
|---|---|
| treatment | Binary indicator of whether a participant was randomly assigned to treatment condition (shown women feedback). |
| set_num | Indicator of which feedback set was shown (1 or 2, with different percentage values). |
| women_feedback | Binary indicator of whether women feedback was shown to participant. |
| women_count | Count of women selected across the three choices (0-3). |
| women_proportion | Proportion of women selected (DV: ranges from 0 to 1). |
| age_feedback | Binary indicator of whether age feedback was shown. |
| age_proportion | Proportion of experts under 50 years old selected. |
| location_feedback | Binary indicator of whether location feedback was shown. |
| location_proportion | Proportion of experts based on West Coast selected. |
| university_feedback | Binary indicator of whether university feedback was shown. |
| university_proportion | Proportion of experts working at a university selected. |
| choice-1 to choice-3 | The selected AI experts |
| gender | Self-selected gender. |
| race | Self-selected race. |
| age | Self-entered age. |
| gender_code | Dummy code for gender (male = 1). |
| race_code | Dummy code for race (white = 1). |

## Demographics

```
## Excluded Participants: 361


##                             Percentage gender
## 1                                Woman  55.38
## 2                                  Man  43.72
## 3                           Non-binary   0.90
## 4 Another gender not listed here:   0.00


##                               Percentage  Race
## 1 American Indian or Alaskan Native   0.80
## 2           Asian / Pacific Islander   7.24
## 3         Black or African American  13.17
## 4                 Hispanic / Latinx   6.53
## 5               White / Caucasian  72.26


## # A tibble: 1 x 2
##   mean_age sd_age
##      <dbl>  <dbl>
## 1     43.8   13.3


## Treatment condition:  50.05 %


## Control condition:  49.95 %


## Set 1:  51.96 %


## Set 2:  48.04 %


## Mean proportion of women selected:  0.399


## SD proportion of women selected:  0.268


## # A tibble: 2 x 4
##   treatment  mean    sd     n
##       <dbl> <dbl> <dbl> <int>
## 1         0 0.337 0.251   497
## 2         1 0.462 0.270   498


##
##   Welch Two Sample t-test
##
## data:  women_proportion by treatment
## t = -7.5755, df = 987.99, p-value = 8.21e-14
## alternative hypothesis: true difference in means between group 0 and group 1 is not equal to 0
## 95 percent confidence interval:
##  -0.15758254 -0.09273866
## sample estimates:
## mean in group 0 mean in group 1
##       0.3366868       0.4618474
```

## Primary Analysis

```r
# Primary model: Effect of treatment on proportion of women selected
# As preregistered: includes treatment (gender feedback) and Set1 indicator
r1 <- lm(women_proportion ~ treatment + set_num, data=d0)

# Display the summary with robust standard errors
robust_summary(r1)
```

```
##
## Call:
## lm(formula = women_proportion ~ treatment + set_num, data = d0)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.47378 -0.14045 -0.01473  0.19288  0.67437
##
## Coefficients:
##             Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.30320    0.02645  11.463  < 2e-16 ***
## treatment    0.12572    0.01652   7.609 6.41e-14 ***
## set_num      0.02243    0.01656   1.354    0.176
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2605 on 992 degrees of freedom
## Multiple R-squared:  0.05638,    Adjusted R-squared:  0.05448
## F-statistic: 29.63 on 2 and 992 DF,  p-value: 3.161e-13
```

```r
robust_confint(r1)
```

```
##                   2.5 %     97.5 %
## (Intercept)  0.25128993 0.35510255
## treatment    0.09329955 0.15814715
## set_num     -0.01007038 0.05493507
```

# Robustness

```
##
## Call:
## lm(formula = women_proportion ~ women_feedback + age_feedback +
##     location_feedback + university_feedback - 1, data = d0)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.46888 -0.13555 -0.00335  0.19779  0.66331
##
## Coefficients:
##                     Estimate Std. Error t value Pr(>|t|)
## women_feedback       0.23526    0.01477  15.933  < 2e-16 ***
## age_feedback         0.12033    0.01892   6.361 3.05e-10 ***
## location_feedback    0.11330    0.01944   5.827 7.64e-09 ***
## university_feedback  0.10306    0.01662   6.202 8.17e-10 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2608 on 991 degrees of freedom
## Multiple R-squared:  0.7069, Adjusted R-squared:  0.7057
## F-statistic: 597.6 on 4 and 991 DF,  p-value: < 2.2e-16


##                           2.5 %     97.5 %
## women_feedback       0.20627992 0.2642305
## age_feedback         0.08320829 0.1574499
## location_feedback    0.07513812 0.1514526
## university_feedback  0.07045351 0.1356711


##
##
## Dropout Robustness Check (PREREGISTERED):

## ========================================

## No dropouts detected after condition assignment.
## All participants who were assigned to conditions completed their expert selections.
```

## Secondary Analysis: Other Attributes

```
## Effect of age feedback:


##
## Call:
## lm(formula = age_proportion ~ age_feedback, data = d0)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -0.1787 -0.1787 -0.1532  0.1546  0.8213
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   0.15323    0.01854   8.265 4.44e-16 ***
## age_feedback  0.02550    0.01983   1.286    0.199
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2071 on 993 degrees of freedom
## Multiple R-squared:  0.001654,   Adjusted R-squared:  0.0006482
## F-statistic: 1.645 on 1 and 993 DF,  p-value: 0.2


##                   2.5 %     97.5 %
## (Intercept)   0.11684546 0.18960615
## age_feedback -0.01341179 0.06440373


##
## Effect of location feedback:


##
## Call:
## lm(formula = location_proportion ~ location_feedback, data = d0)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.25947 -0.25947  0.07386  0.07386  0.74053
##
## Coefficients:
##                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)        0.21303    0.01901  11.206   <2e-16 ***
## location_feedback  0.04644    0.02075   2.238   0.0254 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2406 on 993 degrees of freedom
## Multiple R-squared:  0.004305,   Adjusted R-squared:  0.003302
## F-statistic: 4.293 on 1 and 993 DF,  p-value: 0.03853


##                        2.5 %     97.5 %
## (Intercept)       0.175726054 0.25033911
## location_feedback 0.005727032 0.08715599
```

```
##
## Effect of university feedback:


##
## Call:
## lm(formula = university_proportion ~ university_feedback, data = d0)
##
## Residuals:
##      Min      1Q   Median      3Q      Max
## -0.24713 -0.24713  0.08621  0.08621  0.81604
##
## Coefficients:
##                    Estimate Std. Error t value Pr(>|t|)
## (Intercept)         0.18396    0.01519  12.111  < 2e-16 ***
## university_feedback 0.06317    0.01775   3.559  0.00039 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.2481 on 993 degrees of freedom
## Multiple R-squared:  0.01178,    Adjusted R-squared:  0.01079
## F-statistic: 11.84 on 1 and 993 DF,  p-value: 0.0006044


##                        2.5 %     97.5 %
## (Intercept)         0.1541490 0.21376244
## university_feedback 0.0283375 0.09800389
```

Visualization
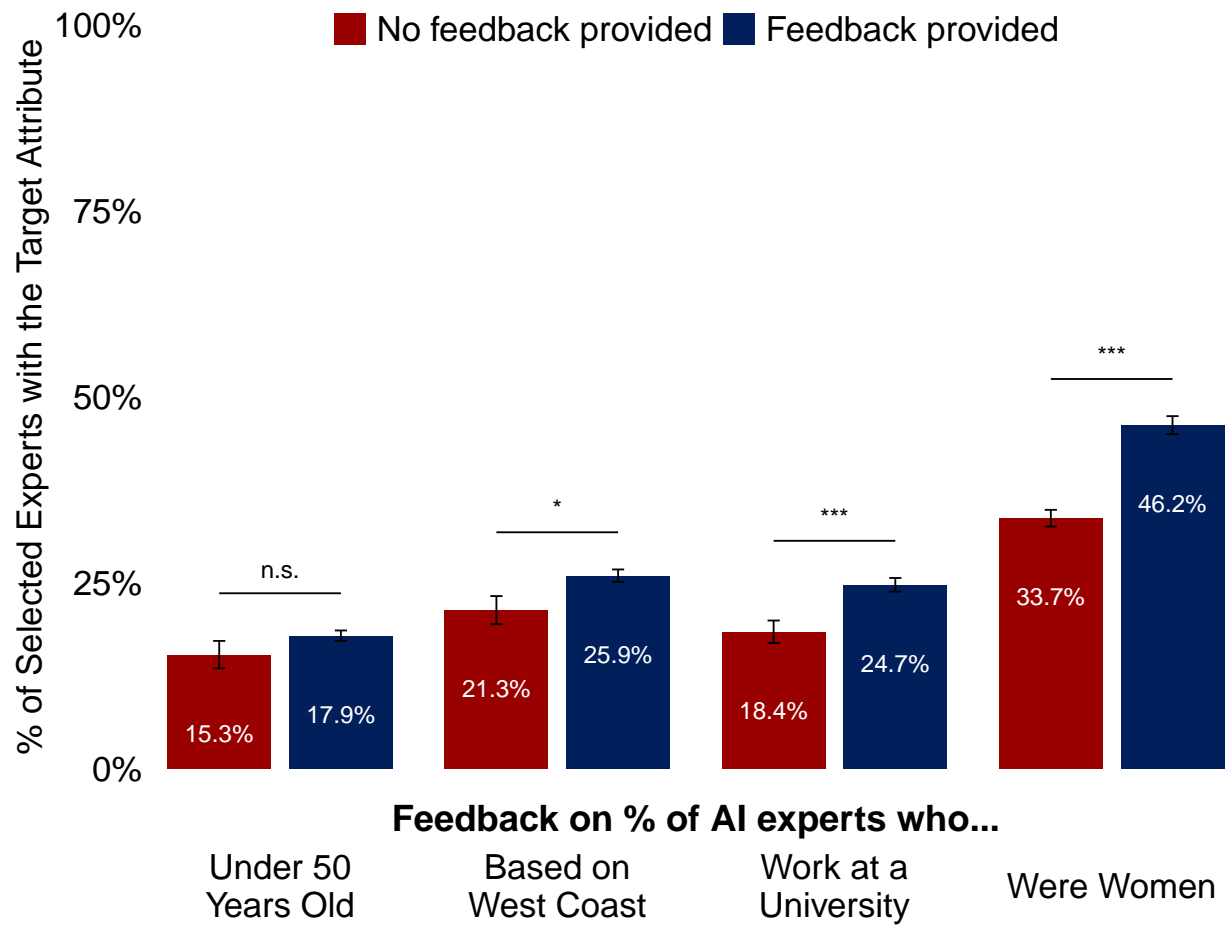
# System of Simultaneous Equations

```
## Wald Tests for Cross-Equation Comparisons:

## =========================================

## Test 1: Women Feedback Effect vs. Age Feedback Effect

## ----------------------------------------------------------

## Linear hypothesis test (Theil's F test)
##
## Hypothesis:
## ageeq_age_feedback - womeneq_women_feedback = 0
##
## Model 1: restricted model
## Model 2: unrestricted_age
##
##   Res.Df Df      F     Pr(>F)
## 1   1981
## 2   1980  1 785.45 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


##
##
## Test 2: Women Feedback Effect vs. Location Feedback Effect

## -------------------------------------------------------------

## Linear hypothesis test (Theil's F test)
##
## Hypothesis:
## locationeq_location_feedback - womeneq_women_feedback = 0
##
## Model 1: restricted model
## Model 2: unrestricted_location
##
##   Res.Df Df      F     Pr(>F)
## 1   1981
## 2   1980  1 280.65 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


##
##
## Test 3: Women Feedback Effect vs. University Feedback Effect

## ----------------------------------------------------------------
```

```
## Linear hypothesis test (Theil's F test)
##
## Hypothesis:
## universityeq_university_feedback - womeneq_women_feedback = 0
##
## Model 1: restricted model
## Model 2: unrestricted_university
##
##   Res.Df Df      F    Pr(>F)
## 1   1981
## 2   1980  1 337.17 < 2.2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1


##
##
## Summary of Wald Tests:

## =====================

##                            Test F_Statistic P_Value Significant
##           Women vs. Age Feedback      785.45  <2e-16         Yes
##      Women vs. Location Feedback      280.65  <2e-16         Yes
##   Women vs. University Feedback      337.17  <2e-16         Yes
```