Problem Set 2

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#Part 1: The Replication Project

Question 1:

a) RQ: To what extent has the decrease in the racial pay gap over time been influenced by the different economic sources and trajectories of men and women?

b) The authors are focused on the intersection of race and gender in producing wage gaps, and their proposal of a new theoretical framework aims to establish reasonable expectations for wage disparities between different races/genders. Importantly, the authors try to create a framework that can account for changes in the racial pay gap over time

c)

d)

e)

Part 2: Regression

```
# loading data into environment

sat_df <- read.dta("sat_math.dta")
```

Question 1: Descriptive Statistics

a) Create a table

```
sat_df %>% # creating new variable 'gender' to group by
  mutate(gender = ifelse(female == 1, "female", "male")) %>% group_by(gender) # grouping the new table
```

```
## # A tibble: 1,000 x 9
## # Groups:   gender [2]
##    sat_math female black other meduy feduy hours    IQ gender
##       <dbl>  <int> <int> <int> <int> <int> <int> <dbl> <chr>
##  1     577.      1     1     0    12    10    36  58.9 female
```

```
##  2     582.      0     0     0    10    14    47  66.8 male
##  3     551.      1     0     0     6    15    29  48.0 female
##  4     580.      0     0     0    16     9    40  51.5 male
##  5     302.      0     0     0     9     9    50  34.6 male
##  6     501.      0     0     0    13     9    42  51.5 male
##  7     560.      1     0     0    17    13    31  57.7 female
##  8     527.      1     0     0    11     9    29  41.6 female
##  9     506.      0     0     0    13    13    47  44.4 male
## 10     480.      1     0     1    11    16    42  40.4 female
## # ... with 990 more rows
```

```
# creating a table using psych package
describe.by(sat_df, sat_df$gender)
```

```
## Warning: describe.by is deprecated. Please use the describeBy function
```

```
## Warning in describeBy(x = x, group = group, mat = mat, type = type, ...): no
## grouping variable requested
```

```
##          vars    n   mean    sd median trimmed   mad    min    max  range skew
## sat_math    1 1000 524.72 82.90 522.22  523.96 80.72 272.18 794.99 522.82 0.09
## female      2 1000   0.50  0.50   0.00    0.49  0.00   0.00   1.00   1.00 0.02
## black       3 1000   0.20  0.40   0.00    0.13  0.00   0.00   1.00   1.00 1.48
## other       4 1000   0.10  0.30   0.00    0.00  0.00   0.00   1.00   1.00 2.72
## meduy       5 1000  12.00  3.40  12.00   11.96  2.97   2.00  23.00  21.00 0.13
## feduy       6 1000  11.78  3.39  12.00   11.71  2.97   1.00  24.00  23.00 0.28
## hours       7 1000  39.91  6.24  40.00   39.84  5.93  20.00  61.00  41.00 0.11
## IQ          8 1000  49.65 12.88  49.65   49.54 13.04  13.85  88.59  74.74 0.11
##          kurtosis   se
## sat_math    -0.09 2.62
## female      -2.00 0.02
## black        0.20 0.01
## other        5.40 0.01
## meduy       -0.09 0.11
## feduy        0.19 0.11
## hours       -0.02 0.20
## IQ          -0.13 0.41
```