# Regression Model

W241: Fox, George, McCleary

7/27/2022

## Load and Merge Data

## Clean data

## Create Covariates

## Create Complete Cases Dataset

## Run Bias Models

```
##
## t test of coefficients:
##
##             Estimate Std. Error  t value Pr(>|t|)
## (Intercept) -3.06025    0.24890 -12.2950   <2e-16 ***
## is_male      0.33145    0.29650   1.1179   0.2650
## is_female    0.14148    0.30974   0.4568   0.6483
## is_old      -0.18373    0.24410  -0.7527   0.4525
## is_facebook -1.80516    0.23651  -7.6324    1e-12 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## t test of coefficients:
##
##                                      Estimate Std. Error t value  Pr(>|t|)
## (Intercept)                         -3.927351   0.492539 -7.9737 1.488e-13 ***
## is_male                              0.327656   0.295453  1.1090  0.268856
## is_female                            0.156882   0.308275  0.5089  0.611420
## is_old                              -0.199845   0.242506 -0.8241  0.410943
## is_facebook                         -1.703284   0.236082 -7.2148 1.308e-11 ***
## as.factor(`Due Date`)2022-06-19      0.221024   0.511881  0.4318  0.666393
## as.factor(`Due Date`)2022-06-26      1.144953   0.495511  2.3107  0.021943 *
## as.factor(`Due Date`)2022-07-03      0.609797   0.453855  1.3436  0.180708
## as.factor(`Due Date`)2022-07-10      1.054746   0.490833  2.1489  0.032929 *
## as.factor(`Due Date`)2022-07-17      1.481407   0.494174  2.9977  0.003089 **
## as.factor(`Due Date`)2022-07-24      1.369585   0.537598  2.5476  0.011651 *
```

```
## as.factor(Researcher)Carlie McCleary  0.133717   0.313834  0.4261  0.670542
## as.factor(Researcher)Hannah George   -0.040516   0.262381 -0.1544  0.877448
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## t test of coefficients:
##
##                                     Estimate Std. Error t value  Pr(>|t|)
## (Intercept)                        -3.8553856  0.5858032 -6.5814 9.469e-10
## is_male                             0.0473827  0.3423180  0.1384  0.890117
## is_female                          -0.1069960  0.3369249 -0.3176  0.751305
## is_old                             -0.1603384  0.2815335 -0.5695  0.569951
## is_facebook                        -1.6490203  0.2759894 -5.9749 1.933e-08
## as.factor(`Due Date`)2022-06-19     0.0082511  0.5178013  0.0159  0.987310
## as.factor(`Due Date`)2022-06-26     0.7609427  0.5695395  1.3361  0.183775
## as.factor(`Due Date`)2022-07-03     0.7272858  0.4934180  1.4740  0.142816
## as.factor(`Due Date`)2022-07-10     1.0160651  0.5530661  1.8371  0.068387
## as.factor(`Due Date`)2022-07-17     1.4866866  0.5571165  2.6685  0.008552
## as.factor(`Due Date`)2022-07-24     1.7614418  0.7072951  2.4904  0.013974
## as.factor(Researcher)Carlie McCleary  0.1072154  0.4227948  0.2536  0.800200
## as.factor(Researcher)Hannah George    0.2240437  0.3332383  0.6723  0.502527
##
## (Intercept)                        ***
## is_male
## is_female
## is_old
## is_facebook                        ***
## as.factor(`Due Date`)2022-06-19
## as.factor(`Due Date`)2022-06-26
## as.factor(`Due Date`)2022-07-03
## as.factor(`Due Date`)2022-07-10    .
## as.factor(`Due Date`)2022-07-17    **
## as.factor(`Due Date`)2022-07-24    *
## as.factor(Researcher)Carlie McCleary
## as.factor(Researcher)Hannah George
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

## Run Reliability Models

```
##
## t test of coefficients:
##
##             Estimate Std. Error  t value Pr(>|t|)
## (Intercept) 44.43614    0.17928 247.8579  < 2e-16 ***
## is_male     -0.36850    0.19439  -1.8957  0.05948 .
## is_female   -0.26844    0.19376  -1.3854  0.16751
## is_old       0.15239    0.15282   0.9972  0.31989
## is_facebook -0.35729    0.14615  -2.4446  0.01539 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## t test of coefficients:
##
##                                     Estimate Std. Error  t value Pr(>|t|)
## (Intercept)                        44.312954   0.275190 161.0265  < 2e-16 ***
## is_male                            -0.355335   0.193433  -1.8370  0.06780 .
## is_female                          -0.264884   0.191703  -1.3817  0.16870
## is_old                              0.150001   0.152472   0.9838  0.32649
## is_facebook                        -0.389680   0.155847  -2.5004  0.01327 *
## as.factor(`Due Date`)2022-06-19     0.178592   0.251971   0.7088  0.47934
## as.factor(`Due Date`)2022-06-26     0.336176   0.325829   1.0318  0.30352
## as.factor(`Due Date`)2022-07-03     0.187874   0.245503   0.7653  0.44508
## as.factor(`Due Date`)2022-07-10     0.567195   0.273673   2.0725  0.03959 *
## as.factor(`Due Date`)2022-07-17     0.453186   0.278838   1.6253  0.10579
## as.factor(`Due Date`)2022-07-24     0.116915   0.309155   0.3782  0.70573
## as.factor(Researcher)Carlie McCleary -0.510918   0.203391  -2.5120  0.01285 *
## as.factor(Researcher)Hannah George   0.078789   0.170965   0.4608  0.64544
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
##
## t test of coefficients:
##
##                                     Estimate Std. Error  t value Pr(>|t|)
## (Intercept)                        44.074498   0.322827 136.5269  < 2e-16 ***
## is_male                            -0.285891   0.225801  -1.2661  0.20765
## is_female                          -0.149634   0.218919  -0.6835  0.49545
## is_old                              0.404954   0.175378   2.3090  0.02246 *
## is_facebook                        -0.359696   0.170062  -2.1151  0.03626 *
## as.factor(`Due Date`)2022-06-19     0.178327   0.271603   0.6566  0.51257
## as.factor(`Due Date`)2022-06-26     0.099082   0.346295   0.2861  0.77522
## as.factor(`Due Date`)2022-07-03     0.073851   0.265711   0.2779  0.78149
## as.factor(`Due Date`)2022-07-10     0.515530   0.366864   1.4052  0.16225
## as.factor(`Due Date`)2022-07-17     0.474717   0.315285   1.5057  0.13449
## as.factor(`Due Date`)2022-07-24     0.340260   0.427736   0.7955  0.42772
## as.factor(Researcher)Carlie McCleary -0.460350   0.261542  -1.7601  0.08065 .
## as.factor(Researcher)Hannah George   0.172614   0.213694   0.8078  0.42065
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

## Stargazer Outputs for Bias Models

## Stargazer Outputs for Reliability Models

Table 1: Average Bias Regression Models

| | *Dependent variable:* | | |
|---|---|---|---|
| | Value | | |
| | (1) | (2) | (3) |
| is_male | 0.331 | 0.328 | 0.047 |
| | (0.295) | (0.286) | (0.336) |
| is_female | 0.141 | 0.157 | −0.107 |
| | (0.297) | (0.288) | (0.337) |
| is_old | −0.184 | −0.200 | −0.160 |
| | (0.241) | (0.233) | (0.273) |
| is_facebook | −1.805*** | −1.703*** | −1.649*** |
| | (0.249) | (0.244) | (0.263) |
| as.factor(‘Due Date‘)2022-06-19 | | 0.221 | 0.008 |
| | | (0.417) | (0.448) |
| as.factor(‘Due Date‘)2022-06-26 | | 1.145*** | 0.761 |
| | | (0.433) | (0.499) |
| as.factor(‘Due Date‘)2022-07-03 | | 0.610 | 0.727 |
| | | (0.417) | (0.445) |
| as.factor(‘Due Date‘)2022-07-10 | | 1.055** | 1.016* |
| | | (0.439) | (0.532) |
| as.factor(‘Due Date‘)2022-07-17 | | 1.481*** | 1.487*** |
| | | (0.421) | (0.459) |
| as.factor(‘Due Date‘)2022-07-24 | | 1.370*** | 1.761*** |
| | | (0.450) | (0.582) |
| as.factor(Researcher)Carlie McCleary | | 0.134 | 0.107 |
| | | (0.289) | (0.360) |
| as.factor(Researcher)Hannah George | | −0.041 | 0.224 |
| | | (0.281) | (0.338) |
| Constant | −3.060*** | −3.927*** | −3.855*** |
| | (0.254) | (0.412) | (0.470) |
| Observations | 200 | 200 | 148 |
| $R^2$ | 0.217 | 0.299 | 0.308 |
| Adjusted $R^2$ | 0.201 | 0.254 | 0.247 |
| Residual Std. Error | 1.698 (df = 195) | 1.641 (df = 187) | 1.602 (df = 135) |
| F Statistic | 13.523*** (df = 4; 195) | 6.645*** (df = 12; 187) | 5.017*** (df = 12; 135) |
| *Note:* | | | *p<0.1; **p<0.05; ***p<0.01 |

Table 2: Average Reliability Regression Models

| | *Dependent variable:* | | |
|---|---|---|---|
| | Value | | |
| | (1) | (2) | (3) |
| is_male | −0.369** | −0.355* | −0.286 |
| | (0.186) | (0.182) | (0.206) |
| is_female | −0.268 | −0.265 | −0.150 |
| | (0.187) | (0.183) | (0.207) |
| is_old | 0.152 | 0.150 | 0.405** |
| | (0.152) | (0.148) | (0.168) |
| is_facebook | −0.357** | −0.390** | −0.360** |
| | (0.157) | (0.155) | (0.162) |
| as.factor(‘Due Date‘)2022-06-19 | | 0.179 | 0.178 |
| | | (0.265) | (0.275) |
| as.factor(‘Due Date‘)2022-06-26 | | 0.336 | 0.099 |
| | | (0.275) | (0.306) |
| as.factor(‘Due Date‘)2022-07-03 | | 0.188 | 0.074 |
| | | (0.265) | (0.273) |
| as.factor(‘Due Date‘)2022-07-10 | | 0.567** | 0.516 |
| | | (0.279) | (0.327) |
| as.factor(‘Due Date‘)2022-07-17 | | 0.453* | 0.475* |
| | | (0.268) | (0.282) |
| as.factor(‘Due Date‘)2022-07-24 | | 0.117 | 0.340 |
| | | (0.286) | (0.357) |
| as.factor(Researcher)Carlie McCleary | | −0.511*** | −0.460** |
| | | (0.184) | (0.221) |
| as.factor(Researcher)Hannah George | | 0.079 | 0.173 |
| | | (0.179) | (0.207) |
| Constant | 44.436*** | 44.313*** | 44.074*** |
| | (0.160) | (0.262) | (0.288) |
| Observations | 200 | 200 | 148 |
| $R^2$ | 0.051 | 0.135 | 0.164 |
| Adjusted $R^2$ | 0.031 | 0.079 | 0.090 |
| Residual Std. Error | 1.070 (df = 195) | 1.043 (df = 187) | 0.984 (df = 135) |
| F Statistic | 2.598** (df = 4; 195) | 2.427*** (df = 12; 187) | 2.207** (df = 12; 135) |
| *Note:* | | | *p<0.1; **p<0.05; ***p<0.01 |