moderated_regressions

2024-04-13

```r
overall.resource <- rowSums(data[c(118:144,147:202)], na.rm=TRUE)
summary(overall.resource) #202.3
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    45.0   164.0   202.0   202.3   239.0   359.0
```

```r
overall.hindrance <- rowSums(data[c(203:247,249:287)], na.rm=TRUE)
summary(overall.hindrance) #159.2
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    25.0    92.0   120.0   130.6   159.2   332.0
```

```r
overall.challenge <- rowSums(data[c(288:307,309:372)], na.rm=TRUE)
summary(overall.challenge) #204.2
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    31.0   166.8   205.0   204.2   241.0   376.0
```

```r
#centered predictors
overall.resource_center <- overall.resource - 202.3
overall.hindrance_center <- overall.hindrance - 159.2
overall.challenge_center <- overall.challenge - 204.2
```

```r
cr_burn_m1 <- lm(burnout ~ overall.challenge_center, data = data)
summary(cr_burn_m1)
```

```
##
## Call:
## lm(formula = burnout ~ overall.challenge_center, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.14223 -0.56798 -0.02587  0.57037  2.30705
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              3.0765676  0.0344929  89.194  < 2e-16 ***
## overall.challenge_center 0.0028800  0.0006104   4.718 3.01e-06 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8221 on 566 degrees of freedom
## Multiple R-squared:  0.03784,    Adjusted R-squared:  0.03614
## F-statistic: 22.26 on 1 and 566 DF,  p-value: 3.005e-06
```

```
cr_burn_m2 <- lm(burnout ~ overall.challenge_center + overall.resource, data = data)
summary(cr_burn_m2)
```

```
##
## Call:
## lm(formula = burnout ~ overall.challenge_center + overall.resource,
##     data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.14784 -0.55993 -0.02048  0.56032  2.33875
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)               3.516157   0.388100   9.060  < 2e-16 ***
## overall.challenge_center  0.004902   0.001880   2.608  0.00935 **
## overall.resource         -0.002172   0.001910  -1.137  0.25595
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8218 on 565 degrees of freedom
## Multiple R-squared:  0.04004,    Adjusted R-squared:  0.03664
## F-statistic: 11.78 on 2 and 565 DF,  p-value: 9.706e-06
```

```
cr_burn_m3 <- lm(burnout ~ overall.challenge_center + overall.resource_center + overall.challenge_cente
summary(cr_burn_m3)
```

```
##
## Call:
## lm(formula = burnout ~ overall.challenge_center + overall.resource_center +
##     overall.challenge_center * overall.resource_center, data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.11654 -0.56282 -0.01794  0.56352  2.19726
##
## Coefficients:
##                                                   Estimate Std. Error t value
## (Intercept)                                       3.039e+00  4.253e-02  71.457
## overall.challenge_center                          4.887e-03  1.877e-03   2.603
## overall.resource_center                          -2.113e-03  1.909e-03  -1.107
## overall.challenge_center:overall.resource_center  1.260e-05  8.397e-06   1.500
##                                                   Pr(>|t|)
## (Intercept)                                        < 2e-16 ***
## overall.challenge_center                           0.00949 **
## overall.resource_center                            0.26864
## overall.challenge_center:overall.resource_center   0.13410
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8209 on 564 degrees of freedom
## Multiple R-squared:  0.04385,    Adjusted R-squared:  0.03877
## F-statistic: 8.622 on 3 and 564 DF,  p-value: 1.328e-05
```

```
aov_test <- anova(cr_burn_m2, cr_burn_m3)

cr_stress_m1 <- lm(stress ~ overall.challenge_center, data = data)
summary(cr_stress_m1)
```

```
##
## Call:
## lm(formula = stress ~ overall.challenge_center, data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.8336 -0.7458 -0.1144  0.6063  2.3467
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              2.8072704  0.0371882  75.488   <2e-16 ***
## overall.challenge_center 0.0011559  0.0006581   1.756   0.0796 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8863 on 566 degrees of freedom
## Multiple R-squared:  0.00542,    Adjusted R-squared:  0.003663
## F-statistic: 3.084 on 1 and 566 DF,  p-value: 0.07959
```

```
cr_stress_m2 <- lm(stress ~ overall.challenge_center + overall.resource_center, data = data)
summary(cr_stress_m2)
```

```
##
## Call:
## lm(formula = stress ~ overall.challenge_center + overall.resource_center,
##     data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.8363 -0.7460 -0.1151  0.6200  2.3621
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              2.807336   0.037213  75.440   <2e-16 ***
## overall.challenge_center 0.002138   0.002028   1.054    0.292
## overall.resource_center -0.001056   0.002061  -0.512    0.609
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8869 on 565 degrees of freedom
## Multiple R-squared:  0.005881,    Adjusted R-squared:  0.002362
## F-statistic: 1.671 on 2 and 565 DF,  p-value: 0.1889
```

```
cr_stress_m3 <- lm(stress ~ overall.challenge_center + overall.resource_center + overall.challenge_cent
summary(cr_stress_m3)
```

```
##
```

```
## Call:
## lm(formula = stress ~ overall.challenge_center + overall.resource_center +
##     overall.challenge_center * overall.resource_center, data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.8270 -0.7422 -0.1060  0.6042  2.3197
##
## Coefficients:
##                                               Estimate Std. Error t value
## (Intercept)                                  2.796e+00  4.598e-02  60.808
## overall.challenge_center                     2.134e-03  2.030e-03   1.051
## overall.resource_center                     -1.038e-03  2.063e-03  -0.503
## overall.challenge_center:overall.resource_center 3.777e-06  9.078e-06   0.416
##                                              Pr(>|t|)
## (Intercept)                                   <2e-16 ***
## overall.challenge_center                       0.294
## overall.resource_center                        0.615
## overall.challenge_center:overall.resource_center  0.678
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8875 on 564 degrees of freedom
## Multiple R-squared:  0.006186,   Adjusted R-squared:  0.0009
## F-statistic:  1.17 on 3 and 564 DF,  p-value: 0.3204
```

```r
anova(cr_stress_m2, cr_stress_m3)
```

```
## Analysis of Variance Table
##
## Model 1: stress ~ overall.challenge_center + overall.resource_center
## Model 2: stress ~ overall.challenge_center + overall.resource_center +
##     overall.challenge_center * overall.resource_center
##   Res.Df    RSS Df Sum of Sq      F Pr(>F)
## 1    565 444.40
## 2    564 444.26  1   0.13637 0.1731 0.6775
```

```r
cr_eng_m1 <- lm(engagement ~ overall.challenge_center, data = data)
summary(cr_eng_m1)
```

```
##
## Call:
## lm(formula = engagement ~ overall.challenge_center, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.17865 -0.48845  0.04284  0.50833  1.94756
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              3.9377285  0.0304092 129.491   <2e-16 ***
## overall.challenge_center 0.0048648  0.0005382   9.039   <2e-16 ***
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7247 on 566 degrees of freedom
## Multiple R-squared:  0.1262,	Adjusted R-squared:  0.1246
## F-statistic: 81.71 on 1 and 566 DF,  p-value: < 2.2e-16
```

```r
cr_eng_m2 <- lm(engagement ~ overall.challenge_center + overall.resource_center, data = data)
summary(cr_eng_m2)
```

```
##
## Call:
## lm(formula = engagement ~ overall.challenge_center + overall.resource_center,
##     data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.24757 -0.44561  0.02106  0.50377  2.05256
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)               3.937310   0.030007 131.212  < 2e-16 ***
## overall.challenge_center -0.001375   0.001636  -0.840    0.401
## overall.resource_center   0.006705   0.001662   4.033 6.25e-05 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7152 on 565 degrees of freedom
## Multiple R-squared:  0.1506,	Adjusted R-squared:  0.1476
## F-statistic: 50.09 on 2 and 565 DF,  p-value: < 2.2e-16
```

```r
cr_eng_m3 <- lm(engagement ~ overall.challenge_center + overall.resource_center + overall.challenge_cen
summary(cr_eng_m3)
```

```
##
## Call:
## lm(formula = engagement ~ overall.challenge_center + overall.resource_center +
##     overall.challenge_center * overall.resource_center, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.13608 -0.44285  0.04568  0.49986  2.11889
##
## Coefficients:
##                                                   Estimate Std. Error t value
## (Intercept)                                      3.990e+00  3.689e-02 108.132
## overall.challenge_center                        -1.354e-03  1.629e-03  -0.831
## overall.resource_center                          6.623e-03  1.656e-03   4.000
## overall.challenge_center:overall.resource_center -1.757e-05  7.284e-06  -2.412
##                                                  Pr(>|t|)
## (Intercept)                                       < 2e-16 ***
## overall.challenge_center                           0.4061
## overall.resource_center                          7.17e-05 ***
## overall.challenge_center:overall.resource_center   0.0162 *
```

```
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7121 on 564 degrees of freedom
## Multiple R-squared:  0.1593, Adjusted R-squared:  0.1548
## F-statistic: 35.62 on 3 and 564 DF,  p-value: < 2.2e-16
```

```r
anova(cr_eng_m2, cr_eng_m3)
```

```
## Analysis of Variance Table
##
## Model 1: engagement ~ overall.challenge_center + overall.resource_center
## Model 2: engagement ~ overall.challenge_center + overall.resource_center +
##     overall.challenge_center * overall.resource_center
##   Res.Df    RSS Df Sum of Sq      F  Pr(>F)
## 1    565 288.96
## 2    564 286.01  1    2.9497 5.8167 0.01619 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
hr_burn_m1 <- lm(burnout ~ overall.hindrance_center, data = data)
summary(hr_burn_m1)
```

```
##
## Call:
## lm(formula = burnout ~ overall.hindrance_center, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.13591 -0.57171 -0.01545  0.59889  2.09771
##
## Coefficients:
##                           Estimate Std. Error t value Pr(>|t|)
## (Intercept)              3.1461346  0.0391796  80.300  < 2e-16 ***
## overall.hindrance_center 0.0024335  0.0006341   3.838 0.000138 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8274 on 566 degrees of freedom
## Multiple R-squared:  0.02536,    Adjusted R-squared:  0.02364
## F-statistic: 14.73 on 1 and 566 DF,  p-value: 0.0001383
```

```r
hr_burn_m2 <- lm(burnout ~ overall.hindrance_center + overall.resource_center, data = data)
summary(hr_burn_m2)
```

```
##
## Call:
## lm(formula = burnout ~ overall.hindrance_center + overall.resource_center,
##     data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
```

```
## -2.12332 -0.56370 -0.02907  0.58262  2.17927
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)             3.1208983  0.0402285  77.579   <2e-16 ***
## overall.hindrance_center 0.0015537  0.0007193   2.160   0.0312 *
## overall.resource_center  0.0018053  0.0007083   2.549   0.0111 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8234 on 565 degrees of freedom
## Multiple R-squared:  0.03644,    Adjusted R-squared:  0.03303
## F-statistic: 10.68 on 2 and 565 DF,  p-value: 2.794e-05
```

```r
hr_burn_m3 <- lm(burnout ~ overall.hindrance_center + overall.resource_center + overall.hindrance_cente
summary(hr_burn_m3)
```

```
##
## Call:
## lm(formula = burnout ~ overall.hindrance_center + overall.resource_center +
##     overall.hindrance_center * overall.resource_center, data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.15552 -0.57598 -0.01376  0.54285  2.25992
##
## Coefficients:
##                                                    Estimate Std. Error t value
## (Intercept)                                        3.190e+00  4.785e-02  66.667
## overall.hindrance_center                           2.458e-03  7.943e-04   3.095
## overall.resource_center                            4.845e-04  8.658e-04   0.560
## overall.hindrance_center:overall.resource_center  -2.938e-05  1.119e-05  -2.625
##                                                    Pr(>|t|)
## (Intercept)                                        < 2e-16 ***
## overall.hindrance_center                           0.00206 **
## overall.resource_center                            0.57596
## overall.hindrance_center:overall.resource_center   0.00889 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8191 on 564 degrees of freedom
## Multiple R-squared:  0.04807,    Adjusted R-squared:  0.04301
## F-statistic: 9.493 on 3 and 564 DF,  p-value: 3.983e-06
```

```r
anova(hr_burn_m2, hr_burn_m3)
```

```
## Analysis of Variance Table
##
## Model 1: burnout ~ overall.hindrance_center + overall.resource_center
## Model 2: burnout ~ overall.hindrance_center + overall.resource_center +
##     overall.hindrance_center * overall.resource_center
##   Res.Df    RSS Df Sum of Sq      F  Pr(>F)
## 1    565 383.05
```

```
## 2     564 378.43  1    4.6248 6.8927 0.00889 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
hr_stress_m1 <- lm(stress ~ overall.hindrance_center, data = data)
summary(hr_stress_m1)
```

```
##
## Call:
## lm(formula = stress ~ overall.hindrance_center, data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.8121 -0.7200 -0.0884  0.6043  2.2777
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)             2.8553075  0.0418576  68.215   <2e-16 ***
## overall.hindrance_center 0.0016791  0.0006775   2.478   0.0135 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8839 on 566 degrees of freedom
## Multiple R-squared:  0.01074,    Adjusted R-squared:  0.008988
## F-statistic: 6.143 on 1 and 566 DF,  p-value: 0.01349
```

```
hr_stress_m2 <- lm(stress ~ overall.hindrance_center + overall.resource_center, data = data)
summary(hr_stress_m2)
```

```
##
## Call:
## lm(formula = stress ~ overall.hindrance_center + overall.resource_center,
##     data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -1.81761 -0.72833 -0.08537  0.60341  2.29045
##
## Coefficients:
##                          Estimate Std. Error t value Pr(>|t|)
## (Intercept)             2.8515608  0.0432198  65.978   <2e-16 ***
## overall.hindrance_center 0.0015485  0.0007728   2.004   0.0456 *
## overall.resource_center  0.0002680  0.0007610   0.352   0.7248
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8846 on 565 degrees of freedom
## Multiple R-squared:  0.01095,    Adjusted R-squared:  0.007452
## F-statistic: 3.129 on 2 and 565 DF,  p-value: 0.04454
```

```
hr_stress_m3 <- lm(stress ~ overall.hindrance_center + overall.resource_center + overall.hindrance_cent
summary(hr_stress_m3)
```

```
##
## Call:
## lm(formula = stress ~ overall.hindrance_center + overall.resource_center +
##     overall.hindrance_center * overall.resource_center, data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -1.7104 -0.7210 -0.0859  0.6115  2.4066
##
## Coefficients:
##                                                 Estimate Std. Error t value
## (Intercept)                                    2.957e+00  5.107e-02  57.903
## overall.hindrance_center                       2.939e-03  8.479e-04   3.466
## overall.resource_center                       -1.761e-03  9.242e-04  -1.906
## overall.hindrance_center:overall.resource_center -4.515e-05  1.195e-05  -3.779
##                                                 Pr(>|t|)
## (Intercept)                                     < 2e-16 ***
## overall.hindrance_center                        0.000569 ***
## overall.resource_center                         0.057204 .
## overall.hindrance_center:overall.resource_center 0.000174 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.8744 on 564 degrees of freedom
## Multiple R-squared:  0.03538,    Adjusted R-squared:  0.03025
## F-statistic: 6.895 on 3 and 564 DF,  p-value: 0.0001449
```

```r
anova(hr_stress_m2, hr_stress_m3)
```

```
## Analysis of Variance Table
##
## Model 1: stress ~ overall.hindrance_center + overall.resource_center
## Model 2: stress ~ overall.hindrance_center + overall.resource_center +
##     overall.hindrance_center * overall.resource_center
##   Res.Df    RSS Df Sum of Sq     F    Pr(>F)
## 1    565 442.13
## 2    564 431.21  1    10.918 14.28 0.0001743 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
hr_eng_m1 <- lm(engagement ~ overall.hindrance_center, data = data)
summary(hr_eng_m1)
```

```
##
## Call:
## lm(formula = engagement ~ overall.hindrance_center, data = data)
##
## Residuals:
##       Min       1Q   Median       3Q      Max
## -2.18603 -0.52067  0.03724  0.54935  2.00709
##
## Coefficients:
##                  Estimate Std. Error t value Pr(>|t|)
```

```
## (Intercept)                3.9682458  0.0366070 108.401   <2e-16 ***
## overall.hindrance_center 0.0010732  0.0005925   1.811   0.0706 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.773 on 566 degrees of freedom
## Multiple R-squared:  0.005763,   Adjusted R-squared:  0.004006
## F-statistic: 3.281 on 1 and 566 DF,  p-value: 0.07062
```

```r
hr_eng_m2 <- lm(engagement ~ overall.hindrance_center + overall.resource_center, data = data)
summary(hr_eng_m2)
```

```
##
## Call:
## lm(formula = engagement ~ overall.hindrance_center + overall.resource_center,
##     data = data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -2.06045 -0.45357  0.03325  0.49002  1.92982
##
## Coefficients:
##                            Estimate Std. Error t value Pr(>|t|)
## (Intercept)               3.8796802  0.0346395 112.002  < 2e-16 ***
## overall.hindrance_center -0.0020146  0.0006194  -3.253  0.00121 **
## overall.resource_center   0.0063355  0.0006099  10.387  < 2e-16 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.709 on 565 degrees of freedom
## Multiple R-squared:  0.1652, Adjusted R-squared:  0.1622
## F-statistic:  55.9 on 2 and 565 DF,  p-value: < 2.2e-16
```

```r
hr_eng_m3 <- lm(engagement ~ overall.hindrance_center + overall.resource_center + overall.hindrance_cen
summary(hr_eng_m3)
```

```
##
## Call:
## lm(formula = engagement ~ overall.hindrance_center + overall.resource_center +
##     overall.hindrance_center * overall.resource_center, data = data)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -2.0638 -0.4538  0.0330  0.4890  1.9611
##
## Coefficients:
##                                                    Estimate Std. Error t value
## (Intercept)                                        3.888e+00  4.144e-02  93.809
## overall.hindrance_center                          -1.907e-03  6.880e-04  -2.771
## overall.resource_center                            6.178e-03  7.500e-04   8.237
## overall.hindrance_center:overall.resource_center  -3.509e-06  9.695e-06  -0.362
##                                                    Pr(>|t|)
## (Intercept)                                         < 2e-16 ***
```

```
## overall.hindrance_center                             0.00577 **
## overall.resource_center                              1.24e-15 ***
## overall.hindrance_center:overall.resource_center  0.71751
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.7095 on 564 degrees of freedom
## Multiple R-squared:  0.1654, Adjusted R-squared:  0.1609
## F-statistic: 37.25 on 3 and 564 DF,  p-value: < 2.2e-16
```

```r
anova(hr_eng_m2, hr_eng_m3)
```

```
## Analysis of Variance Table
##
## Model 1: engagement ~ overall.hindrance_center + overall.resource_center
## Model 2: engagement ~ overall.hindrance_center + overall.resource_center +
##     overall.hindrance_center * overall.resource_center
##   Res.Df    RSS Df Sum of Sq      F Pr(>F)
## 1    565 284.01
## 2    564 283.94  1  0.065961 0.131 0.7175
```

```r
options(scipen=999)  ## Suppresses scientific notation

#Challenge-Resource-Burnout

# b weights
chal.2.burn <- round(summary(cr_burn_m2)$coefficients[2, 1],2)
res.2.burn <- round(summary(cr_burn_m2)$coefficients[3, 1],2)

int.cr.3.burn <- round(summary(cr_burn_m3)$coefficients[4, 1],2)

#r squared
cr_burn_m2_r <- round(summary(cr_burn_m2)$r.squared,2)
cr_burn_m3_r <- round(summary(cr_burn_m3)$r.squared,2)

## R square change
cr_burn_anova <- anova(cr_burn_m2, cr_burn_m3)
cr_burn_r_square_change <- round(cr_burn_m3_r - cr_burn_m2_r,2)

#Challenge-Resource-Stress

# b weights
chal.2.stress <- round(summary(cr_stress_m2)$coefficients[2, 1],2)
res.2.stress <- round(summary(cr_stress_m2)$coefficients[3, 1],2)

int.cr.3.stress <- round(summary(cr_stress_m3)$coefficients[4, 1],2)

#r squared
cr_stress_m2_r <- round(summary(cr_stress_m2)$r.squared,2)
cr_stress_m3_r <- round(summary(cr_stress_m3)$r.squared,2)

## R square change
cr_stress_anova <- anova(cr_stress_m2, cr_stress_m3)
```

```r
cr_stress_r_square_change <- round(cr_stress_m3_r - cr_stress_m2_r,2)

#Challenge-Resource-Engagement

# b weights
chal.2.eng <- round(summary(cr_eng_m2)$coefficients[2, 1],2)
res.2.eng <- round(summary(cr_eng_m2)$coefficients[3, 1],2)

int.cr.3.eng <- round(summary(cr_eng_m3)$coefficients[4, 1],2)

#r squared
cr_eng_m2_r <- round(summary(cr_eng_m2)$r.squared,2)
cr_eng_m3_r <- round(summary(cr_eng_m3)$r.squared,2)

## R square change
cr_eng_anova <- anova(cr_eng_m2, cr_eng_m3)
cr_eng_r_square_change <- round(cr_eng_m3_r - cr_eng_m2_r,2)
```

```r
options(scipen=999)  ## Suppresses scientific notation

#Hindrance-Resource-Burnout

# b weights
hind.2.burn <- round(summary(hr_burn_m2)$coefficients[2, 1],2)
res.2hr.burn <- round(summary(hr_burn_m2)$coefficients[3, 1],2)

int.hr.3.burn <- round(summary(hr_burn_m3)$coefficients[4, 1],2)

#r squared
hr_burn_m2_r <- round(summary(hr_burn_m2)$r.squared,2)
hr_burn_m3_r <- round(summary(hr_burn_m3)$r.squared,2)

## R square change
hr_burn_anova <- anova(hr_burn_m2, hr_burn_m3)
hr_burn_r_square_change <- round(hr_burn_m3_r - hr_burn_m2_r,2)

#Hindrance-Resource-Stress

# b weights
hind.2.stress <- round(summary(hr_stress_m2)$coefficients[2, 1],2)
res.2hr.stress <- round(summary(hr_stress_m2)$coefficients[3, 1],2)

int.hr.3.stress <- round(summary(hr_stress_m3)$coefficients[4, 1],2)

#r squared
hr_stress_m2_r <- round(summary(hr_stress_m2)$r.squared,2)
hr_stress_m3_r <- round(summary(hr_stress_m3)$r.squared,2)

## R square change
hr_stress_anova <- anova(hr_stress_m2, hr_stress_m3)
hr_stress_r_square_change <- round(hr_stress_m3_r - hr_stress_m2_r,2)

#Hindrance-Resource-Engagement
```

Table 1:

DV	Step	Model	b	DeltaR
Burnout	1	Challenge	0	
		Resource	0	0.04 **
	2	Challenge X Resource	0	0

```r
# b weights
hind.2.eng <- round(summary(hr_eng_m2)$coefficients[2, 1],2)
res.2hr.eng <- round(summary(hr_eng_m2)$coefficients[3, 1],2)

int.hr.3.eng <- round(summary(hr_eng_m3)$coefficients[4, 1],2)

#r squared
hr_eng_m2_r <- round(summary(hr_eng_m2)$r.squared,2)
hr_eng_m3_r <- round(summary(hr_eng_m3)$r.squared,2)

## R square change
hr_eng_anova <- anova(hr_eng_m2, hr_eng_m3)
hr_eng_r_square_change <- round(hr_eng_m3_r - hr_eng_m2_r,2)

#I'm not touching this script - using it as a model and making two new chunks
library(kableExtra)
```

```
## Warning: package 'kableExtra' was built under R version 4.3.3
```

```r
DV <- c("Burnout","","")
Step <- c("1", "","2")
Model <- c("Challenge", "Resource", "Challenge X Resource")
b <- c(chal.2.burn,res.2.burn,int.cr.3.burn)
DeltaR <- c("",paste(cr_burn_m2_r,"**"),cr_burn_r_square_change)

regtable <- cbind(DV, Step, Model, b, DeltaR)

papaja::apa_table(regtable)
```

```r
library(kableExtra)

DV <- c("Engagement","","", "Stress","","", "Burnout","","")
Step <- c("1", "","2", "1", "","2", "1", "","2")
Model <- c("Challenge", "Resource", "Challenge X Resource", "Challenge", "Resource", "Challenge X Resou
b <- c(chal.2.eng, res.2.eng, int.cr.3.eng, chal.2.stress, res.2.stress, int.cr.3.stress, chal.2.burn, 
R2 <- c("", cr_eng_m2_r, cr_eng_m3_r, "", cr_stress_m2_r, cr_stress_m3_r, "", cr_burn_m2_r, cr_burn_m3_
DeltaR <- c("",paste(cr_eng_m2_r),cr_eng_r_square_change, "",paste(cr_stress_m2_r),cr_stress_r_square_c

regtable <- cbind(DV, Step, Model, b, R2, DeltaR)

papaja::apa_table(regtable)
```

Table 2:

DV	Step	Model	b	R2	DeltaR
Engagement	1	Challenge	0		
		Resource	0.01	0.15	0.15
	2	Challenge X Resource	0	0.16	0.01
Stress	1	Challenge	0		
		Resource	0	0.01	0.01
	2	Challenge X Resource	0	0.01	0
Burnout	1	Challenge	0		
		Resource	0	0.04	0.04
	2	Challenge X Resource	0	0.04	0

Table 3:

DV	Step	Model	b	R2	DeltaR
Engagement	1	Hindrance	0		
		Resource	0.01	0.17	0.17 **
	2	Hindrance X Resource	0	0.17	0
Stress	1	Hindrance	0		
		Resource	0	0.01	0.01 **
	2	Hindrance X Resource	0	0.04	0.03
Burnout	1	Hindrance	0		
		Resource	0	0.04	0.04 **
	2	Hindrance X Resource	0	0.05	0.01

```r
library(kableExtra)

DV <- c("Engagement","","", "Stress","","", "Burnout","","")
Step <- c("1", "","2", "1", "","2", "1", "","2")
Model <- c("Hindrance", "Resource", "Hindrance X Resource", "Hindrance", "Resource", "Hindrance X Resou
b <- c(hind.2.eng, res.2hr.eng, int.hr.3.eng, hind.2.stress, res.2hr.stress, int.hr.3.stress, hind.2.bur
R2 <- c("", hr_eng_m2_r, hr_eng_m3_r, "", hr_stress_m2_r, hr_stress_m3_r, "", hr_burn_m2_r, hr_burn_m3_
DeltaR <- c("",paste(hr_eng_m2_r,"**"),hr_eng_r_square_change, "",paste(hr_stress_m2_r,"**"),hr_stress_

regtable <- cbind(DV, Step, Model, b, R2, DeltaR)

papaja::apa_table(regtable)


# How to get delta symbol and superscript
#https://cran.r-project.org/web/packages/reporter/vignettes/reporter-super.html#:~:text=To%20get%20supe
```