moderated_mediation_R

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Notes

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- (2) The author accepts no responsibility for the topicality, correctness, completeness or quality of the information provided.

Step 1: Read Data

```
# read csv data
data<-read.csv("Study_3.csv")</pre>
head(data)
##
    Cond PriceTag
                         GSR
                                 CEISStd SelfCks
## 1
       1 4 0.04129204 -0.458422966 4.25
## 2
      1
                1 0.71280000 -0.161709072
                                            3.25
## 3
      -1
                5 0.51721612 -0.829315333
                                            1.00
## 4 -1
               5 0.51300000 -0.001940052
                                            1.00
## 5
      -1
                5 0.23382540 1.498747525
                                            1.50
## 6
      -1
                1 0.32940000 0.169241040
                                            1.50
# test if the interaction item in c path is significant
result1<-lm(PriceTag~Cond+CEISStd+Cond*CEISStd,data=data)
summary(result1)
##
## Call:
## lm(formula = PriceTag ~ Cond + CEISStd + Cond * CEISStd, data = data)
## Residuals:
##
      Min
               1Q Median
                              3Q
                                     Max
## -3.1813 -2.0889 -0.1638 2.0164 3.8420
##
## Coefficients:
               Estimate Std. Error t value Pr(>|t|)
##
## (Intercept) 3.62344 0.14930 24.270 <2e-16 ***
                                    0.191
## Cond
                0.02849
                           0.14930
                                            0.8488
## CEISStd
                0.02514
                           0.15222
                                    0.165
                                            0.8690
                        0.15222 2.336 0.0204 *
## Cond:CEISStd 0.35560
## Signif. codes: 0 '***' 0.001 '**' 0.05 '.' 0.1 ' ' 1
```

```
## Residual standard error: 2.124 on 206 degrees of freedom
## Multiple R-squared: 0.02764, Adjusted R-squared: 0.01348
## F-statistic: 1.952 on 3 and 206 DF, p-value: 0.1223
```

Step 2: Run PROCESS and Model 8 using PROCESS

```
# run PROCESS
# put the process.R in the same folder as this RMD file.
source("process.R")
##
##
##
          Written by Andrew F. Hayes, Ph.D. www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3
##
##
##
## PROCESS is now ready for use.
## Copyright 2020-2023 by Andrew F. Hayes ALL RIGHTS RESERVED
## Workshop schedule at http://haskayne.ucalgary.ca/CCRAM
# run model 8 using PROCESS in R
process(data = data, y = "PriceTag", x = "Cond", m = "GSR", w = "CEISStd",
model = 8)
##
## **************** PROCESS for R Version 4.3.1 *************
##
##
          Written by Andrew F. Hayes, Ph.D. www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3
##
##
##
## Model : 8
     Y : PriceTag
##
##
     X : Cond
##
     M: GSR
##
     W : CEISStd
##
## Sample size: 210
##
## Random seed: 535844
##
## Outcome Variable: GSR
##
## Model Summary:
```

```
MSE F
                                                 df2
##
           R
                                              df1
                 R-sa
##
       0.1855
                0.0344
                         0.1930
                                  2.4461
                                           3.0000 206.0000
                                                             0.0650
##
## Model:
                                                   LLCI
##
              coeff
                          se
                                  t
                                             р
                                                            ULCI
             0.4034
## constant
                      0.0309
                              13.0661
                                        0.0000
                                                 0.3426
                                                          0.4643
## Cond
             0.0089
                      0.0309
                             0.2874
                                        0.7741
                                                -0.0520
                                                          0.0697
## CEISStd
                                        0.3494
            -0.0295
                      0.0315
                              -0.9379
                                                -0.0916
                                                          0.0325
## Int 1
            -0.0717
                      0.0315
                              -2.2784
                                        0.0237
                                                -0.1338
                                                         -0.0097
##
## Product terms key:
## Int 1 : Cond x CEISStd
## Test(s) of highest order unconditional interaction(s):
        R2-chng
                      F
                             df1
                                      df2
##
                                                 р
        0.0243
                  5.1912
                           1.0000 206.0000
## X*W
## -----
## Focal predictor: Cond (X)
       Moderator: CEISStd (W)
##
##
## Conditional effects of the focal predictor at values of the moderator(s):
                effect
##
      CEISStd
                        se
                                 t
                                               р
                                                    LLCI
                                                               ULCI
##
                0.0713
                         0.0420
                                  1.6979
      -0.8706
                                           0.0910
                                                   -0.0115
                                                             0.1541
##
      -0.0533
                0.0127
                         0.0310
                                  0.4098
                                           0.6824
                                                   -0.0484
                                                             0.0738
##
       0.9523
               -0.0594
                         0.0423
                                 -1.4061
                                           0.1612
                                                   -0.1428
## Outcome Variable: PriceTag
##
## Model Summary:
##
           R
                           MSE
                                      F
                                              df1
                                                       df2
                 R-sq
##
       0.2259
                0.0510
                         4.4246
                                  2.7561
                                           4.0000 205.0000
                                                             0.0290
##
## Model:
##
              coeff
                          se
                                  t
                                           р
                                                   LLCI
                                                            ULCI
                              19.6359
                                        0.0000
## constant
             3.9260
                      0.1999
                                                3.5318
                                                          4.3202
                      0.1479 0.2377
                                                -0.2564
## Cond
             0.0351
                                        0.8124
                                                         0.3267
## GSR
            -0.7499
                      0.3336 -2.2477
                                        0.0257
                                                -1.4077
                                                         -0.0921
             0.0030
## CEISStd
                      0.1511 0.0199
                                        0.9842
                                                -0.2948
                                                         0.3008
                      0.1526 1.9774
                                        0.0493
                                                 0.0009
## Int 1
             0.3018
                                                          0.6027
##
## Product terms kev:
## Int 1 : Cond x CEISStd
## Test(s) of highest order unconditional interaction(s):
##
        R2-chng
                      F
                             df1
                                      df2
                                                 р
## X*W
        0.0181
                  3.9100
                           1.0000 205.0000
                                             0.0493
## Focal predictor: Cond (X)
## Moderator: CEISStd (W)
```

```
##
## Conditional effects of the focal predictor at values of the moderator(s):
##
      CEISStd
               effect
                                                    LLCI
                                                            ULCI
                           se
                                     t
      -0.8706
              -0.2276
                        0.2025
                                -1.1238
                                         0.2624
                                                 -0.6270
                                                           0.1717
##
##
      -0.0533
               0.0191
                        0.1484
                                 0.1284
                                         0.8979
                                                 -0.2735
                                                           0.3117
##
       0.9523
               0.3226
                        0.2034
                                 1.5861
                                         0.1142
                                                 -0.0784
                                                           0.7235
##
## Bootstrapping progress:
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>>>>>>>>>>>>>>>	i 73% i
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>>>>>>>>>>>	j 75% j
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##
## ******** DIRECT AND INDIRECT EFFECTS OF X ON Y ***********
##
##
 Conditional direct effect(s) of X on Y:
##
   CEISStd
        effect
              se
                    t
                        р
                           LLCI
                                ULCI
                 -1.1238
##
   -0.8706
       -0.2276
             0.2025
                      0.2624
                          -0.6270
                               0.1717
##
   -0.0533
        0.0191
             0.1484
                 0.1284
                      0.8979
                          -0.2735
                               0.3117
   0.9523
        0.3226
             0.2034
                 1.5861
##
                      0.1142
                          -0.0784
                               0.7235
##
## Conditional indirect effects of X on Y:
##
## INDIRECT EFFECT:
##
## Cond
     ->
       GSR
           ->
             PriceTag
##
   CEISStd
        Effect
             BootSE BootLLCI
                     BootULCI
##
   -0.8706
       -0.0535
             0.0371
                      0.0125
##
                 -0.1301
##
   -0.0533
        -0.0095
             0.0226
                 -0.0538
                      0.0404
##
   0.9523
        0.0446
             0.0334
                 -0.0043
                      0.1228
##
   Index of moderated mediation:
##
       Index
           BootSE
              BootLLCI
##
                   BootULCI
## CEISStd
      0.0538
           0.0302
               0.0012
                    0.1176
##
 *************** ANALYSTS NOTES AND ERRORS ***************
##
##
## Level of confidence for all confidence intervals in output: 95
```

```
##
## Number of bootstraps for percentile bootstrap confidence intervals: 5000
##
## W values in conditional tables are the 16th, 50th, and 84th percentiles.
```