Additional Materials for
Assessing Moderation Effects, Main Effects, and Simple Effects without Collinearity Problems in Moderated Regression Models

: The Microsoft Excel Spreadsheet and the Computer Code Calculating the Statistics in *MRA*, *SSA*, and the Sequential CI Approach

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These materials have been supplied by the authors to aid in the understanding of their paper.

1. The Excel Sheet Calculating the Statistics

	A	B	C	D	E
1	**Input Data**				
2					
3		# of Sample	# of Predictors		
4		10,203	3		
5		X1	X2		
6	Lower Bound	1	1		
7	Upper Bound	7	7		
8	Mean	2.898	5.2077		
9					
10	Var-Cov	beta 1	beta 2	delta 12	
11	beta 1	0.000656			
12	beta 2	0.0003	0.00023		
13	delta 12	-0.00011	-0.00005	0.000021	
14	Coefficient	-0.04655	0.250	0.03426	
15					
16					
17	**Calculator of Standard Error**				
18					
19	delta 12				
20	X1	X2	SE		
21	1	1	0.034452866		
22	1	7	0.103513284		
23	7	1	0.161626112		
24	7	7	0.116081868		
25		Average	0.01155		
26					
27	Simple Effect of X1				
28	X1	Mean of X2	SE		
29	1	5.2077	0.082036986		
30	7	5.2077	0.114181837		
31		Average	0.032703137		
32					
33	beta 1				
34	X2	SE			
35	7	0.241170064			
36	1	0.103513284			

37	7	1.131382782
38	1	0.116081868
39	Average	0.044226333
40		
41		
42		

	A	B	C	D	E
43	beta 2				
44	X1	SE			
45	7	0.241170064			
46	7	0.724592989			
47	1	0.161626112			
48	1	0.116081868			
49	Average	0.034540862			
50					
51					
52	**Output**				
53					
54	delta 12	Estimate	SE	t-value	p-value
55	MRA	0.03426	0.00458	7.476	0.00000
56	Sequential CI APP	0.03426	0.01155	2.967	0.00301
57					
58	Simple Effect of X1	Estimate	SE	t-value	p-value
59	SSA	0.13187	0.00893	14.759	0.00000
60	Sequential CI APP	0.13187	0.03270	4.032	0.00006
61					
62	beta 1	Estimate	SE	t-value	p-value
63	MRA	-0.04655	0.02561	-1.817	0.06917
64	Sequential CI APP	-0.04655	0.04423	-1.053	0.29258
65					
66	beta 2	Estimate	SE	t-value	p-value
67	MRA	0.250	0.01517	16.485	0.00000
68	Sequential CI APP	0.250	0.03454	7.238	0.00000
69					

2. The Computer Code

```
A22=$B$7;    A23=$B$7;    A24=$B$8;    A25=$B$8
B22=$C$7;    B23=$C$8;    B24=$C$7;    B25=$C$8
C22=($B$12*(A22^2)+$C$13*(B22^2)+$D$14*(A22^2)*(B22^2)+2*$B$13*(A22)*(B22)
        +2*$B$14*(A22^2)*(B22)+2*$C$14*(A22)*(B22^2))^(1/2)
C23=($B$12*(A23^2)+$C$13*(B23^2)+$D$14*(A23^2)*(B23^2)+2*$B$13*(A23)*(B23)
        +2*$B$14*(A23^2)*(B23)+2*$C$14*(A23)*(B23^2))^(1/2)
C24=($B$12*(A24^2)+$C$13*(B24^2)+$D$14*(A24^2)*(B24^2)+2*$B$13*(A24)*(B24)
        +2*$B$14*(A24^2)*(B24)+2*$C$14*(A24)*(B24^2))^(1/2)
C25=($B$12*(A25^2)+$C$13*(B25^2)+$D$14*(A25^2)*(B25^2)+2*$B$13*(A25)*(B25)
      +2*$B$14*(A25^2)*(B25)+2*$C$14*(A25)*(B25^2))^(1/2)
C26=SUM(C22:C25)/((B8-B7)*(C8-C7))

A30=$B$7;    A31=$B$8;    B30=$C$9;    B31=$C$9
C30=($B$12*(A30^2)+$C$13*(B30^2)+$D$14*(A30^2)*(B30^2)+2*$B$13*(A30)*(B30)
        +2*$B$14*(A30^2)*(B30)+2*$C$14*(A30)*(B30^2))^(1/2)
C31=($B$12*(A31^2)+$C$13*(B31^2)+$D$14*(A31^2)*(B31^2)+2*$B$13*(A31)*(B31)
        +2*$B$14*(A31^2)*(B31)+2*$C$14*(A31)*(B31^2))^(1/2)
C32=SUM(C30:C31)/(B8-B7)

A36=$C$8;    A37=$C$7;    A38=$C$8;    A39=$C$7
B36=C22*A36;    B37=C23*A37;    B38=C24*A38;    B39=C25*A39
B40=SUM(B36:B39)/((B8-B7)*(C8-C7))

A44 =$B$8;    A45 =$B$8;    A46 =$B$7;    A47 =$B$7
B44 =C22*A44;    B45 =C23*A45;    B46 =C24*A46;    B47 =C25*A47
B48 =SUM(B44:B47)/((B8-B7)*(C8-C7))

B54 =$D$15;    C54 =$D$14^(1/2);    D54 =$B$54/$C$54
E54 =T.DIST.2T(ABS($D$54),$B$5-$C$5-1)
B55 =$D$15;    C55 =$C$26;    D55 =$B$55/$C$55
E55 =T.DIST.2T(ABS($D$55),$B$5-$C$5-1)

B59 =$B$15+$D$15*$C$9;    C59 =(B12+2*C9*B14+(C9^2)*D14)^(1/2)
D59 =$B$59/$C$59;    E59 =T.DIST.2T(ABS($D$59),$B$5-$C$5-1)
B60 =$B$15+$D$15*$C$9;    C60 =$C$32
```

D60 =$B$60/$C$60; E60 =T.DIST.2T(ABS($D$60),$B$5-$C$5-1)

B64 =$B$15; C64 =$B$12^(1/2)

D64 =B64/C64; E64 =T.DIST.2T(ABS(D64),B5-C5-1)

B65 =$B$15; C65 =$B$40

D65 =$B$65/$C$65; E65 =T.DIST.2T(ABS($D$65),$B$5-$C$5-1)

B69 =$C$15; C69 =$C$13^(1/2); D69 =$B$69/$C$69;

E69 =T.DIST.2T(ABS($D$69),$B$5-$C$5-1)

B70 =$C$15; C70 =$B$48; D70 =$B$70/$C$70

E70 =T.DIST.2T(ABS($D$70),$B$5-$C$5-1)