



# PROCESS 调节效应检验结果的解读

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对 PROCESS 调节效应分析结果的解释:

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 4.2 beta \*\*\*\*\*

Written by Andrew F. Hayes, Ph.D. www.afhayes.com  
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

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Model : 1  
Y : Y  
X : X  
W : W1

Sample  
Size: 718

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OUTCOME VARIABLE:  
Y

Model Summary

	R	R-sq	MSE	F	df1	df2	p
	.7946	.6314	.3701	407.7018	3.0000	714.0000	.0000

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0347	.0227	-1.5254	.1276	-.0793	.0100
X	.5285	.0228	23.1368	.0000	.4837	.5733
W1	-.0504	.0227	-2.2195	.0268	-.0950	-.0058
Int_1	.5505	.0222	24.7830	.0000	.5069	.5941

批注[张庆垚 1]: 交互项的回归系数

Product terms key:

Int\_1 : X x W1

批注[张庆垚 2]: 交互项是谁与谁的交互项

Test(s) of highest order unconditional interaction(s):



	R2-chng	F	df1	df2	p
X*W	.3171	614.1947	1.0000	714.0000	.0000

批注[张庆堃 3]: 交互项带来的 R2 变化量

Focal predict: X (X) |  
 Mod var: W1 (W) |

批注[张庆堃 4]: 核心自变量

批注[张庆堃 5]: 调节变量

Conditional effects of the focal predictor at values of the moderator(s):

批注[张庆堃 6]: 简单斜率/简单效应

W1	Effect	se	t	p	LLCI	ULCI
-.9975	-.0206	.0328	-.6285	.5299	-.0849	.0437
.0045	.5310	.0228	23.2513	.0000	.4861	.5758
1.0065	1.0826	.0310	34.9249	.0000	1.0217	1.1434

Moderator value(s) defining Johnson-Neyman significance region(s):

批注[张庆堃 7]: Johnson-Neyman 技术检验结果

Value	% below	% above
-1.0818	13.5097	86.4903
-.8513	19.7772	80.2228

批注[张庆堃 8]: 简单斜率达到显著水平时的 W1 的临界值, 见下文标黄处

Conditional effect of focal predictor at values of the moderator:

W1	Effect	se	t	p	LLCI	ULCI
-3.0142	-1.1307	.0720	-15.7012	.0000	-1.2721	-.9893
-2.6523	-.9315	.0644	-14.4555	.0000	-1.0580	-.8050
-2.2905	-.7323	.0570	-12.8492	.0000	-.8442	-.6204
-1.9286	-.5331	.0497	-10.7203	.0000	-.6308	-.4355
-1.5668	-.3340	.0427	-7.8120	.0000	-.4179	-.2500
-1.2049	-.1348	.0362	-3.7223	.0002	-.2058	-.0637
<b>-1.0818</b>	<b>-.0670</b>	<b>.0341</b>	<b>-1.9633</b>	<b>.0500</b>	<b>-.1340</b>	<b>.0000</b>
<b>-.8513</b>	<b>.0599</b>	<b>.0305</b>	<b>1.9633</b>	<b>.0500</b>	<b>.0000</b>	<b>.1198</b>
-.8430	.0644	.0304	2.1203	.0343	.0048	.1241
-.4812	.2636	.0258	10.2222	.0000	.2130	.3143
-.1193	.4628	.0232	19.9902	.0000	.4174	.5083
.2425	.6620	.0232	28.5903	.0000	.6165	.7075
.6044	.8612	.0258	33.3835	.0000	.8105	.9118
.9662	1.0604	.0304	34.8836	.0000	1.0007	1.1201
1.3281	1.2596	.0362	34.7773	.0000	1.1885	1.3307
1.6899	1.4588	.0428	34.1125	.0000	1.3748	1.5427
2.0518	1.6580	.0497	33.3272	.0000	1.5603	1.7556
2.4137	1.8572	.0570	32.5756	.0000	1.7452	1.9691
2.7755	2.0563	.0645	31.9024	.0000	1.9298	2.1829
3.1374	2.2555	.0720	31.3133	.0000	2.1141	2.3970
3.4992	2.4547	.0797	30.8012	.0000	2.2983	2.6112
3.8611	2.6539	.0874	30.3556	.0000	2.4823	2.8256

批注[张庆堃 9]: J-N 结果表明, 当 W1 足够低时, X 对 Y 有显著的负向预测作用! 这一信息是选点法未能提供的。

批注[张庆堃 10]: 当 w1 处于-1.0818 到-0.8513 之间时, 简单斜率不显著,  $p \geq 0.05$

Data for visualizing the conditional effect of the focal predictor:



Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/  
  X          W1          Y          .  
BEGIN DATA.  
  -.9847    -.9975     .0359  
   .0131    -.9975     .0153  
  1.0108    -.9975    -.0052  
  -.9847     .0045    -.5577  
   .0131     .0045    -.0280  
  1.0108     .0045     .5018  
  -.9847     1.0065   -1.1514  
   .0131     1.0065    -.0713  
  1.0108     1.0065     1.0088  
END DATA.  
GRAPH/SCATTERPLOT=  
  X          WITH      Y          BY          W1          .
```

批注[张庆垚 11]: 复制要完整

\*\*\*\*\* ANALYSIS NOTES AND ERRORS \*\*\*\*\*

Level of confidence for all confidence intervals in output:  
95.0000

W values in conditional tables are the mean and +/- SD from the mean.

----- END MATRIX -----