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**THE PERMA MODEL DIMENSION, LIFE SATISFACTION, AND  
HAPPINESS AMONG UNDERGRADUATES IN PAKISTAN;  
GRATITUDE AS A MEDIATOR**



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## Abstract

Positive emotions, engagement, relationship, meaning and accomplishment (PERMA) with gratitude as mediator play important role in life satisfaction and happiness. However, less evidences are available in Pakistani context, especially among undergraduate university students. Therefore, the aim of current research is to measure the PERMA model dimensions, life satisfaction and happiness among undergraduates in Pakistan; gratitude as a mediator. A total sample of 384 undergraduate university students, aged from 18 to 22 years ( $M = 20.46$ ,  $SD = 1.07$ ) from first and second semester were selected through convenient sampling from three universities (University of Punjab Lahore, Government College University Faisalabad, and Islamia University of Bahawalpur) in Punjab, Pakistan. Four research instruments were employed in current study: (i) PERMA-Profiler to measure positive emotion, engagement, relationship, meaning, and accomplishment; (ii) Gratitude Questionnaire; (iii) Subjective Happiness Scale and (iv) Riverside Life Satisfaction Scale. The data were analyzed using SPSS and the results of bivariate correlation showed that positive emotion, engagement, relationship, meaning, and accomplishment have significant positive association with gratitude, life satisfaction, and happiness. While gratitude has also significant positive association with life satisfaction and happiness. The mediation analysis was performed through Process by Hayes and results found that gratitude has significant positive complementary partially mediation in association of positive emotion, engagement, relationship, meaning and accomplishment with life satisfaction and happiness. The gender differences were measured through Independent Sample T-test and results confirmed that female undergraduate university students were significantly higher in positive emotion, engagement, relationship, meaning accomplishment, gratitude, life satisfaction, and happiness than male students. This study therefore is crucial for applications, providing guidelines to address undergraduate students' life satisfaction and happiness. It offers valuable insights for key stakeholders, including academicians and policymakers, enhancing their understanding of students' holistic wellbeing. Additionally, it serves as a valuable resource for clinical psychologists and mental health professionals, guiding therapeutic interventions to enhance positive emotions, engagement, relationships, meaning, accomplishment, and gratitude, thereby promoting university students' well-being.

**Keywords:** PERMA, Gratitude, Life, Satisfaction, Happiness.

## Abstrak

Emosi positif, penglibatan, hubungan, makna, dan pencapaian (PERMA) dengan rasa syukur sebagai perantara memainkan peranan penting dalam kepuasan hidup dan kegembiraan. Namun bukti yang tersedia masih kurang dalam konteks Pakistan, terutamanya dalam kalangan pelajar universiti peringkat ijazah sarjana muda. Oleh itu, tujuan kajian ini adalah untuk mengukur dimensi model PERMA, kepuasan hidup dan kegembiraan dalam kalangan pelajar ijazah sarjana muda di Pakistan, dengan rasa syukur sebagai perantara. Jumlah sampel terdiri daripada 384 pelajar universiti peringkat ijazah sarjana muda, berumur antara 18 hingga 22 tahun ( $M = 20.46$ ,  $SD = 1.07$ ), dari semester pertama dan kedua, yang dipilih melalui persampelan rawak mudah dari tiga universiti (Universiti Punjab Lahore, Universiti Kolej Kerajaan Faisalabad, dan Universiti Islamiah Bahawalpur) di Punjab, Pakistan. Empat instrumen kajian telah digunakan dalam kajian ini: (i) *PERMA-Profiler to measure positive emotion, engagement, relationship, meaning, and accomplishment*; (ii) *Gratitude Questionnaire*; (iii) *Subjective Happiness Scale* dan (iv) *Riverside Life Satisfaction Scale*. Data telah dianalisis menggunakan SPSS dan hasil korelasi bivariat menunjukkan bahawa emosi positif, penglibatan, hubungan, makna, dan pencapaian mempunyai hubungan positif yang signifikan dengan rasa syukur, kepuasan hidup, dan kegembiraan. Rasa syukur juga menunjukkan hubungan positif yang signifikan dengan kepuasan hidup dan kegembiraan. Analisis pengantaraan telah dijalankan menggunakan *Process* oleh Hayes dan hasilnya menunjukkan bahawa rasa syukur mempunyai pengantaraan positif yang signifikan secara komplementari dan separa dalam hubungan antara emosi positif, penglibatan, hubungan, makna, dan pencapaian dengan kepuasan hidup dan kegembiraan. Perbezaan jantina diukur melalui *Independent Sample T-test* dan hasil menunjukkan bahawa pelajar perempuan ijazah sarjana muda mempunyai skor yang lebih tinggi secara signifikan dalam emosi positif, penglibatan, hubungan, makna, pencapaian, rasa syukur, kepuasan hidup, dan kegembiraan berbanding pelajar lelaki. Oleh itu, kajian ini penting dari segi aplikasi, menyediakan panduan untuk menangani kepuasan hidup dan kegembiraan pelajar ijazah sarjana muda. Ia menawarkan pandangan yang bernilai kepada pihak berkepentingan utama, termasuk ahli akademik dan pembuat dasar, dalam meningkatkan kefahaman mereka terhadap kesejahteraan holistik pelajar. Di samping itu, ia berfungsi sebagai sumber berguna kepada ahli psikologi klinikal dan profesional kesihatan mental, dalam membimbing intervensi terapeutik untuk meningkatkan emosi positif, penglibatan, hubungan, makna, pencapaian, dan kesyukuran, sekali gus mempromosikan kesejahteraan pelajar universiti.

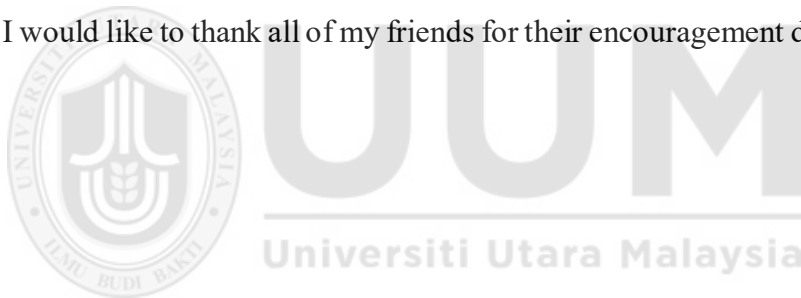
**Kata kunci:** PERMA, Rasa Syukur, Kepuasan Hidup, Kegembiraan

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## List of Abbreviations

$\alpha$	Cronbach's alpha
B	Standardized Regression Coefficient
CI	Confidence Intervals
COVID-19	Coronavirus Disease, 2019
f	Frequency
F	F-statistic
GQ	Gratitude Questionnaire
M'	Mediator
M	Mean
N	Sample
p	Probability (level of significance)
PERMA	Positive emotion, engagement, relationship, meaning, and accomplishment
r	Pearson Product Moment Correlation
Coefficient	
RLS	Riverside Life Satisfaction Scale
SD	Standard Deviation
SHS	Subjective Happiness Scale
SPSS	Statistical Package for the Social Sciences
X	Independent Variable
Y	Dependent Variable
%	Percentage

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Physical health and wellbeing are both equally important to live a healthier and happier life (Ahmed, Sultana, Alam, Griffiths, & Hiramoni, 2022). The very important worldwide problem is regarding the health of our society is the reducing the range of wellbeing (Hussain, Khan, Gul, & Asad, 2018). Nearly 1 billion people worldwide suffer from a mental condition today (World Health Organization, 2020) and estimated 800,000 people annually commit suicide in worldwide, nearly twice as many as are killed by malaria (World Health Organization, 2022a). In the United States, over 57.8 million adults, which is more than one in five, were living with a mental illness (National Institute of Mental Health, 2021). Mental health has emerged as a significant public health concern with broad implications for the economy and society throughout the European Union (EU). It is estimated that over 84 million individuals within the EU are grappling with mental health issues (Amand-Eeckhout, 2023).

Similarly, in Australia, mental illness stands as a significant health issue, with approximately 43% of individuals aged 16–85 anticipated to encounter a mental disorder at some point in their lives (Australian Bureau of Statistics, 2023). As per the World Health Organization (2022b), in the African Region, over 116 million individuals were already projected to be coping with mental health conditions before the pandemic, and access to quality mental health care remains limited for a large portion of the population in Africa. While in the Asia continent, reports indicate that more than 450 million individuals are



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## Appendix A

### Informed Consent

I am Aqsa Waseem, student of MA Psychology from Universiti of Utara Malaysia. I am conducting a research for education purpose and my targeting population is undergraduate university students with age range of 18-25 Years. Kindly fill this form and your participation will be highly appreciated. Report as you feel correctly because your true response will help to better understand the issues under the investigation of this study. Response will be kept confidential. All details will be used only for research purpose.

Regards,

Aqsa Waseem

MA Psychology

Universiti of Utara Malaysia

Email Address: [waseemaqsa11@gmail.com](mailto:waseemaqsa11@gmail.com)

**Please read carefully and then mark (Yes or No)**

- 1) I confirm that I have read and understood the inform consent sheet

Yes      No

- 2) I am voluntarily participating in this research. And I know I can withdraw this research whenever I want and it won't affect my legal rights.

Yes      No

- 3) I know that all personal information obtained from me will be kept confidential and will only be used for research purposes

Yes      No

- 4) I fully agree to participate in this research

Yes      No

## Appendix B

### Demographic Information

Age: -----

Gender:        Male    Female

Education: BS (Hons) / ADP Program

Institute Name: -----

Department -----

Semester -----

Family System: Separate Family    Joint Family

Family monthly Income (in Pakistani rupees): less than 50000 / 51000 to 1 lac / above  
1 lac

Any physical/psychological disability        Yes        No



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Universiti Utara Malaysia

## Appendix C

### PERMA Model Questionnaire

Sr. No	Statements										
1	How often do you feel joyful?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
2	How often do you feel positive?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
3	To what extent do you feel contented?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
4	How often do you become absorbed in what you are doing?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
5	To what extent do you feel excited and interested in things?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
6	How often do you lose track of time while doing something you enjoy?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
7	To what extent do you receive help and support from others when you need it?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
8	To what extent have you been feeling loved?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
9	How satisfied are you with your personal relationships?										

	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
10	To what extent do you lead a purposeful and meaningful life?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
11	To what extent do you feel that what you do in your life is valuable and worthwhile?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
12	To what extent do you generally feel you have a sense of direction in your life?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
13	How much of the time do you feel you are making progress towards accomplishing your goals?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
14	How often do you achieve the important goals you have set for yourself?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level
15	How often are you able to handle your responsibilities?										
	0 = extremely low level	1	2	3	4	5	6	7	8	9	10 = extremely high level

## Appendix D

### Gratitude Questionnaire

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.

Strongly Disagree = 1      Disagree = 2      Slightly Disagree = 3      Neutral = 4  
Slightly Agree = 5      Agree = 6      Strongly Agree = 7

Sr. No	Statement	1	2	3	4	5	6	7
1	I have so much in life to be thankful for.	1	2	3	4	5	6	7
2	If I had to list everything that I felt grateful for, it would be a very long list.	1	2	3	4	5	6	7
3	When I look at the world, I don't see much to be grateful for.	1	2	3	4	5	6	7
4	I am grateful to a wide variety of people.	1	2	3	4	5	6	7
5	As I get older I find myself more able to appreciate the people, events, and situations that have been part of my life history.	1	2	3	4	5	6	7
6	Long amounts of time can go by before I feel grateful to something or someone.	1	2	3	4	5	6	7

## Appendix E

### Satisfaction with Life Scale

*Instructions:* Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below, indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

- 7 - Strongly agree
- 6 - Moderately agree
- 5 - Slightly agree
- 4 - Neither agree nor disagree
- 3 - Slightly disagree
- 2 - Slightly disagree
- 1 - Strongly disagree

Sr. No	Statement	1	2	3	4	5	6	7
1	I like how my life is going.	1	2	3	4	5	6	7
2	If I could live my life over, I would change many things.	1	2	3	4	5	6	7
3	I am content with my life.	1	2	3	4	5	6	7
4	Those around me seem to be living better lives than my own.	1	2	3	4	5	6	7
5	I am satisfied with where I am in life right now.	1	2	3	4	5	6	7
6	I want to change the path my life is on.	1	2	3	4	5	6	7



## Appendix F

### The Subjective Happiness Scale

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

Sr. No	Statement	1	2	3	4	5	6	7
1	In general, I consider myself:	Not a very happy person	2	3	4	5	6	A very happy person
2	Compared to most of my peers, I consider myself:	less happy	2	3	4	5	6	More happy
3	Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?	Not at all	2	3	4	5	6	A great Deal
4	Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?	Not at all	2	3	4	5	6	A great Deal

## Appendix G

### Output of Data Analysis

Notes		
Output Created		13-FEB-2025 00:52:51
Comments		
	Data	D:\Aqsa Waseem Thesis\Data
		Sheet Aqsa Waseem.sav
	Active Dataset	DataSet3
Input	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	384
	Definition of Missing	User-defined missing values are treated as missing.
Missing Value Handling	Cases Used	Statistics are based on all cases with valid data.
		FREQUENCIES
		VARIABLES=Gender Education
Syntax		Institute_Name Department
		Semester Family_System
		Family_Monthly_Income
		/ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

### Frequency Table

Gender				
	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	199	51.8	51.8	51.8
Female	185	48.2	48.2	100.0
Total	384	100.0	100.0	

#### Education

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid BS Hons	384	100.0	100.0	100.0

#### Institute Name

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid GCUF	127	33.1	33.1	33.1
IUB	127	33.1	33.1	66.1
PU	130	33.9	33.9	100.0
Total	384	100.0	100.0	

#### Department

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Psychology	68	17.7	17.7	17.7
Social Work	70	18.2	18.2	35.9
Sports Sciences	66	17.2	17.2	53.1
Physic	57	14.8	14.8	68.0
Chemistry	58	15.1	15.1	83.1
Mathematics	65	16.9	16.9	100.0
Total	384	100.0	100.0	

#### Semester

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1	189	49.2	49.2	49.2
2	195	50.8	50.8	100.0
Total	384	100.0	100.0	

### Family System

	Frequency	Percent	Valid Percent	Cumulative Percent
Nuclear Family	211	54.9	54.9	54.9
Valid Joint Family	173	45.1	45.1	100.0
Total	384	100.0	100.0	

### Family Monthly Income

	Frequency	Percent	Valid Percent	Cumulative Percent
less than 50000	115	29.9	29.9	29.9
51000 to 1 lac	164	42.7	42.7	72.7
Valid Above 1 lac to 2 Lac	62	16.1	16.1	88.8
Above 2 Lac	43	11.2	11.2	100.0
Total	384	100.0	100.0	

## Descriptive

### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic
Age	384	18	22	20.46	1.071	-.340	-.289
Overall PERMA	384	7	145	90.23	26.461	-.879	.480
Positive emotions	384	3	29	18.53	6.310	-.830	.121
Engagement	384	2	29	18.48	6.393	-.824	.060
Relationship	384	1	30	17.88	7.196	-.654	-.397
Meaning	384	2	30	18.15	6.569	-.702	-.084
Accomplishment	384	1	30	17.27	6.915	-.563	-.404
GQ	384	7	42	31.03	7.218	-1.569	2.604
SH	384	4	28	19.54	6.069	-.959	-.010
LS	384	6	41	30.49	8.417	-1.296	.874
Valid N (listwise)	384						

## Reliability

**Reliability Statistics**

Cronbach's Alpha	N of Items
.914	15

**Reliability Statistics**

Cronbach's Alpha	N of Items
.816	3

**Reliability Statistics**

Cronbach's Alpha	N of Items
.829	3

**Reliability Statistics**

Cronbach's Alpha	N of Items
.830	3

**Reliability Statistics**

Cronbach's Alpha	N of Items
.827	3

**Reliability Statistics**

Cronbach's Alpha	N of Items
.795	3

**Reliability Statistics**

Cronbach's Alpha	N of Items
.867	6

**Reliability Statistics**

Cronbach's Alpha	N of Items
.907	6

**Reliability Statistics**

Cronbach's Alpha	N of Items
.886	4

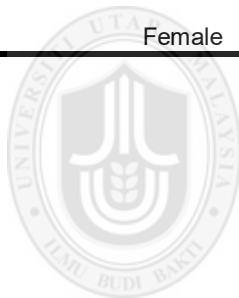
## Correlations

		Correlations							
		Positive emotions	Engagement	Relationship	Meaning	Accomplishment	GQ	SH	LS
Positive emotions	Pearson Correlation	1	.565**	.660**	.614**	.430**	.206**	.364**	.283**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
	N	384	384	384	384	384	384	384	384
Engagement	Pearson Correlation	.565**	1	.573**	.485**	.352**	.242**	.238**	.185**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
	N	384	384	384	384	384	384	384	384
Relationship	Pearson Correlation	.660**	.573**	1	.601**	.401**	.177**	.303**	.249**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001	.000	.000
	N	384	384	384	384	384	384	384	384
Meaning	Pearson Correlation	.614**	.485**	.601**	1	.547**	.163**	.326**	.274**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.001	.000	.000
	N	384	384	384	384	384	384	384	384
Accomplishment	Pearson Correlation	.430**	.352**	.401**	.547**	1	.204**	.217**	.248**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
	N	384	384	384	384	384	384	384	384
GQ	Pearson Correlation	.206**	.242**	.177**	.163**	.204**	1	.278**	.281**
	Sig. (2-tailed)	.000	.000	.001	.001	.000	.000	.000	.000
	N	384	384	384	384	384	384	384	384
SH	Pearson Correlation	.364**	.238**	.303**	.326**	.217**	.278**	1	.565**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
	N	384	384	384	384	384	384	384	384
LS	Pearson Correlation	.283**	.185**	.249**	.274**	.248**	.281**	.565**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000
	N	384	384	384	384	384	384	384	384

\*\* . Correlation is significant at the 0.01 level (2-tailed).

## T-Test

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Positive emotions	Male	199	17.52	6.905	.489
	Female	185	19.62	5.410	.398
Engagement	Male	199	17.68	6.606	.468
	Female	185	19.34	6.056	.445
Relationship	Male	199	16.93	7.711	.547
	Female	185	18.89	6.467	.475
Meaning	Male	199	17.11	7.027	.498
	Female	185	19.26	5.852	.430
Accomplishment	Male	199	16.46	7.252	.514
	Female	185	18.14	6.441	.474
GQ	Male	199	29.80	8.325	.590
	Female	185	32.35	5.522	.406
SH	Male	199	18.93	6.595	.467
	Female	185	20.19	5.389	.396
LS	Male	199	29.61	8.971	.636
	Female	185	31.44	7.687	.565



**UUM**  
Universiti Utara Malaysia

# Independent Samples Test

		t-test for Equality of Means						
		t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Positive emotions	Equal variances assumed	-3.307	382	.001	-2.104	.636	-3.355	-.853
	Equal variances not assumed	-3.336	371.514	.001	-2.104	.631	-3.344	-.864
Engagement	Equal variances assumed	-2.564	382	.011	-1.662	.648	-2.937	-.388
	Equal variances not assumed	-2.572	381.927	.010	-1.662	.646	-2.933	-.392
Relationship	Equal variances assumed	-2.684	382	.008	-1.957	.729	-3.391	-.524
	Equal variances not assumed	-2.702	378.073	.007	-1.957	.724	-3.382	-.533
Meaning	Equal variances assumed	-3.259	382	.001	-2.159	.663	-3.462	-.857
	Equal variances not assumed	-3.281	377.530	.001	-2.159	.658	-3.454	-.865
Accomplishment	Equal variances assumed	-2.391	382	.017	-1.678	.702	-3.058	-.298
	Equal variances not assumed	-2.401	381.214	.017	-1.678	.699	-3.052	-.304
GQ	Equal variances assumed	-3.506	382	.001	-2.547	.727	-3.976	-1.119
	Equal variances not assumed	-3.556	346.297	.000	-2.547	.716	-3.956	-1.139
SH	Equal variances assumed	-2.040	382	.042	-1.260	.617	-2.473	-.046
	Equal variances not assumed	-2.055	375.908	.041	-1.260	.613	-2.465	-.055
LS	Equal variances assumed	-2.145	382	.033	-1.835	.856	-3.517	-.153
	Equal variances not assumed	-2.157	379.521	.032	-1.835	.851	-3.508	-.162



Run MATRIX procedure:

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\*\*\*\*\*

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\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : SH  
X : Pemption  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.21	.04	50.02	16.92	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	26.67	1.12	23.79	.00	24.46
28.87					
Pemption	.24	.06	4.11	.00	.12
.35					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
SH

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.42	.18	30.54	40.49	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	8.30	1.38	6.01	.00	5.59
11.01					
Pemption	.31	.05	6.73	.00	.22
.40					
GQ	.18	.04	4.46	.00	.10
.26					

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:  
SH

#### Model Summary

	R	R-sq	MSE	F	df1	df2
p	.36	.13	32.05	58.18	1.00	382.00
.00						

#### Model

	coeff	se	t	p	LLCI
ULCI					
constant	13.06	.90	14.55	.00	11.29
14.82					
Pemtion	.35	.05	7.63	.00	.26
.44					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

#### Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.35	.05	7.63	.00	.26	.44

#### Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.31	.05	6.73	.00	.22	.40

#### Indirect effect(s) of X on Y:

Effect	BootSE	BootLLCI	BootULCI
GQ	.04	.02	.08

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

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

Run MATRIX procedure:

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\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : LS  
X : Pemtion

M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.21	.04	50.02	16.92	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	26.67	1.12	23.79	.00	24.46
28.87					
Pemtion	.24	.06	4.11	.00	.12
.35					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.36	.13	61.79	29.04	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	16.24	1.96	8.28	.00	12.38
20.10					
Pemtion	.31	.07	4.83	.00	.19
.44					
GQ	.27	.06	4.78	.00	.16
.38					

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:  
LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.28	.08	65.32	33.35	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	23.49	1.28	18.33	.00	20.97
26.01					

Pemtion	.38	.07	5.77	.00	.25
.51					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.38	.07	5.77	.00	.25	.51

Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.31	.07	4.83	.00	.19	.44

Indirect effect(s) of X on Y:				
Effect	BootSE	BootLLCI	BootULCI	
GQ	.06	.03	.02	.12

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

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

Run MATRIX procedure:

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\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : SH  
X : Engagmen  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary						
R	R-sq	MSE	F	df1	df2	p

	.24	.06	49.19	23.67	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	25.99	1.10	23.72	.00	23.84
28.15					
Engagmen	.27	.06	4.87	.00	.16
.38					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

SH

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
.00	.33	.11	33.01	23.17	2.00	381.00

Model

	coeff	se	t	p	LLCI
ULCI					
constant	10.24	1.41	7.25	.00	7.46
13.01					
Engagmen	.17	.05	3.65	.00	.08
.27					
GQ	.20	.04	4.70	.00	.11
.28					

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:

SH

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
.00	.24	.06	34.83	23.00	1.00	382.00

Model

	coeff	se	t	p	LLCI
ULCI					
constant	15.36	.92	16.65	.00	13.54
17.17					
Engagmen	.23	.05	4.80	.00	.13
.32					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.23	.05	4.80	.00	.13	.32

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.17	.05	3.65	.00	.08	.27

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.05	.02	.02	.10

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

WARNING: Variables names longer than eight characters can produce incorrect output when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

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

Run MATRIX procedure:

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\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : LS  
X : Engagmen  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary						
	R	R-sq	MSE	F	df1	df2
p	.24	.06	49.19	23.67	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	25.99	1.10	23.72	.00	23.84
28.15					
Engagmen	.27	.06	4.87	.00	.16
.38					

\*\*\*\*\*

\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
	.31	.09	64.53	19.74	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	18.36	1.97	9.30	.00	14.48
22.24					
Engagmen	.16	.07	2.48	.01	.03
.29					
GQ	.29	.06	5.00	.00	.18
.41					

\*\*\*\*\* TOTAL EFFECT MODEL

\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
	.19	.03	68.58	13.61	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	25.98	1.29	20.08	.00	23.44
28.52					
Engagmen	.24	.07	3.69	.00	.11
.37					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y

\*\*\*\*\*

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.24	.07	3.69	.00	.11	.37

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.16	.07	2.48	.01	.03	.29

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.08	.03	.03	.15

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence  
intervals:  
5000

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

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\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : SH  
X : Relation  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary						
	R	R-sq	MSE	F	df1	df2
p	.18	.03	50.60	12.32	1.00	382.00
.00						

Model	coeff	se	t	p	LLCI
ULCI					



constant	27.86	.97	28.63	.00	25.95
29.78					
Relation	.18	.05	3.51	.00	.08
.28					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

SH

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
	.38	.14	31.71	31.95	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	9.54	1.37	6.98	.00	6.86
12.23					
Relation	.22	.04	5.43	.00	.14
.30					
GQ	.19	.04	4.81	.00	.12
.27					

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:

SH

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
	.30	.09	33.55	38.51	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	14.97	.79	18.90	.00	13.42
16.53					
Relation	.26	.04	6.21	.00	.17
.34					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.26	.04	6.21	.00	.17	.34

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.22	.04	5.43	.00	.14	.30

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.03	.01	.01	.07

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence  
intervals:  
5000

WARNING: Variables names longer than eight characters can produce  
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----- END MATRIX -----

Run MATRIX procedure:

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\*\*\*\*\*

\*\*\*\*\*  
Model : 4  
Y : LS  
X : Relation  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.18	.03	50.60	12.32	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	27.86	.97	28.63	.00	25.95
29.78					
Relation	.18	.05	3.51	.00	.08
.28					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.35	.12	62.67	25.98	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	17.33	1.92	9.02	.00	13.55
21.11					
Relation	.24	.06	4.20	.00	.13
.35					
GQ	.29	.06	5.02	.00	.17
.40					

\*\*\*\*\* TOTAL EFFECT MODEL

\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.25	.06	66.64	25.15	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	25.30	1.12	22.65	.00	23.10
27.49					
Relation	.29	.06	5.02	.00	.18
.40					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y

\*\*\*\*\*

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.29	.06	5.02	.00	.18	.40

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.24	.06	4.20	.00	.13	.35

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.05	.02	.02	.10

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

\*\*\*\*\*

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

WARNING: Variables names longer than eight characters can produce incorrect output when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

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

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 4.1  
\*\*\*\*\*

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Documentation available in Hayes (2022).  
[www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

\*\*\*\*\*  
\*\*\*\*\*  
Model : 4  
Y : SH  
X : Meaning  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*  
OUTCOME VARIABLE:  
GQ

Model Summary						
	R	R-sq	MSE	F	df1	df2
p	.16	.03	50.85	10.38	1.00	382.00
.00						

Model					
	coeff	se	t	p	LLCI
ULCI					
constant	27.79	1.07	25.96	.00	25.68
29.89					
Meaning	.18	.06	3.22	.00	.07
.29					

\*\*\*\*\*  
\*\*\*\*\*  
OUTCOME VARIABLE:  
SH

Model Summary						
	R	R-sq	MSE	F	df1	df2
p	.40	.16	31.16	35.90	2.00	381.00
.00						

Model					
	coeff	se	t	p	LLCI
ULCI					
constant	8.66	1.39	6.22	.00	5.92
11.40					
Meaning	.27	.04	6.07	.00	.18
.35					
GQ	.19	.04	4.85	.00	.12
.27					

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:  
SH

Model Summary						
	R	R-sq	MSE	F	df1	df2
p	.33	.11	32.99	45.57	1.00	382.00
.00						

Model					
	coeff	se	t	p	LLCI
ULCI					
constant	14.06	.86	16.31	.00	12.37
15.76					
Meaning	.30	.04	6.75	.00	.21
.39					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y					
	Effect	se	t	p	LLCI
	.30	.04	6.75	.00	.21
					ULCI
					.39

Direct effect of X on Y					
	Effect	se	t	p	LLCI
	.27	.04	6.07	.00	.18
					ULCI
					.35

Indirect effect(s) of X on Y:				
	Effect	BootSE	BootLLCI	BootULCI
GQ	.03	.01	.01	.07

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

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

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 4.1  
\*\*\*\*\*

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[www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : LS  
X : Meaning  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

GQ

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.16	.03	50.85	10.38	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	27.79	1.07	25.96	.00	25.68
29.89					
Meaning	.18	.06	3.22	.00	.07
.29					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.36	.13	61.78	29.10	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	16.24	1.96	8.28	.00	12.39
20.10					
Meaning	.30	.06	4.84	.00	.18
.42					

```

GQ          .28          .06          5.03          .00          .17
.39

***** TOTAL EFFECT MODEL
*****
OUTCOME VARIABLE:
  LS

Model Summary
      R      R-sq      MSE      F      df1      df2
p      .27      .07      65.71      30.90      1.00      382.00
.00

Model
      coeff      se      t      p      LLCI
ULCI
constant      24.13      1.22      19.83      .00      21.74
26.52
Meaning      .35      .06      5.56      .00      .23
.47

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y
*****

Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI
      .35      .06      5.56      .00      .23      .47

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
      .30      .06      4.84      .00      .18      .42

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
GQ      .05      .02      .01      .10

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

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence
intervals:
  5000

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

Run MATRIX procedure:

***** PROCESS Procedure for SPSS Version 4.1
*****

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Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

```

```

*****
*****
Model   : 4
      Y   : SH
      X   : Relation
      M   : GQ

```

```

Sample
Size: 384

```

```

*****
*****
OUTCOME VARIABLE:
  GQ

```

```

Model Summary
      R      R-sq      MSE      F      df1      df2
p
.00      .18      .03      50.60      12.32      1.00      382.00

```

```

Model
      coeff      se      t      p      LLCI
ULCI
constant      27.86      .97      28.63      .00      25.95
29.78
Relation      .18      .05      3.51      .00      .08
.28

```

```

*****
*****
OUTCOME VARIABLE:
  SH

```

```

Model Summary
      R      R-sq      MSE      F      df1      df2
p
.00      .38      .14      31.71      31.95      2.00      381.00

```

```

Model
      coeff      se      t      p      LLCI
ULCI
constant      9.54      1.37      6.98      .00      6.86
12.23
Relation      .22      .04      5.43      .00      .14
.30
GQ      .19      .04      4.81      .00      .12
.27

```

```

***** TOTAL EFFECT MODEL
*****
OUTCOME VARIABLE:
  SH

```

```

Model Summary
      R      R-sq      MSE      F      df1      df2
p
.00      .30      .09      33.55      38.51      1.00      382.00

```



Model	coeff	se	t	p	LLCI	ULCI
constant	14.97	.79	18.90	.00	13.42	16.53
Relation	.26	.04	6.21	.00	.17	.34

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.26	.04	6.21	.00	.17	.34

Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.22	.04	5.43	.00	.14	.30

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.03	.01	.01	.07

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

WARNING: Variables names longer than eight characters can produce incorrect output when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

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

Run MATRIX procedure:

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[www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : LS  
X : Relation

M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.18	.03	50.60	12.32	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	27.86	.97	28.63	.00	25.95
29.78					
Relation	.18	.05	3.51	.00	.08
.28					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.35	.12	62.67	25.98	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	17.33	1.92	9.02	.00	13.55
21.11					
Relation	.24	.06	4.20	.00	.13
.35					
GQ	.29	.06	5.02	.00	.17
.40					

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:  
LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.25	.06	66.64	25.15	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	25.30	1.12	22.65	.00	23.10
27.49					

Relation	.29	.06	5.02	.00	.18
.40					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.29	.06	5.02	.00	.18	.40

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.24	.06	4.20	.00	.13	.35

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.05	.02	.02	.10

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

WARNING: Variables names longer than eight characters can produce incorrect output when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

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

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 4.1  
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\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : SH  
X : Meaning  
M : GQ

Sample  
Size: 384

```

*****
*****
OUTCOME VARIABLE:
  GQ

Model Summary
      R      R-sq      MSE      F      df1      df2
p      .16      .03      50.85      10.38      1.00      382.00
.00

Model
      coeff      se      t      p      LLCI
ULCI
constant      27.79      1.07      25.96      .00      25.68
29.89
Meaning      .18      .06      3.22      .00      .07
.29

*****
*****
OUTCOME VARIABLE:
  SH

Model Summary
      R      R-sq      MSE      F      df1      df2
p      .40      .16      31.16      35.90      2.00      381.00
.00

Model
      coeff      se      t      p      LLCI
ULCI
constant      8.66      1.39      6.22      .00      5.92
11.40
Meaning      .27      .04      6.07      .00      .18
.35
GQ      .19      .04      4.85      .00      .12
.27

***** TOTAL EFFECT MODEL
*****
OUTCOME VARIABLE:
  SH

Model Summary
      R      R-sq      MSE      F      df1      df2
p      .33      .11      32.99      45.57      1.00      382.00
.00

Model
      coeff      se      t      p      LLCI
ULCI
constant      14.06      .86      16.31      .00      12.37
15.76
Meaning      .30      .04      6.75      .00      .21
.39

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y
*****

```

Effect	se	t	p	LLCI	ULCI
.30	.04	6.75	.00	.21	.39

Effect	se	t	p	LLCI	ULCI
.27	.04	6.07	.00	.18	.35

Effect	BootSE	BootLLCI	BootULCI
GQ	.03	.01	.07

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

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

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 4.1 \*\*\*\*\*

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\*\*\*\*\*

Model : 4  
Y : LS  
X : Meaning  
M : GQ

Sample  
Size: 384

\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

	R	R-sq	MSE	F	df1	df2
p	.16	.03	50.85	10.38	1.00	382.00
.00						

Model	coeff	se	t	p	LLCI
ULCI					

constant	27.79	1.07	25.96	.00	25.68
29.89					
Meaning	.18	.06	3.22	.00	.07
.29					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
	.36	.13	61.78	29.10	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	16.24	1.96	8.28	.00	12.39
20.10					
Meaning	.30	.06	4.84	.00	.18
.42					
GQ	.28	.06	5.03	.00	.17
.39					

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p						
	.27	.07	65.71	30.90	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	24.13	1.22	19.83	.00	21.74
26.52					
Meaning	.35	.06	5.56	.00	.23
.47					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.35	.06	5.56	.00	.23	.47

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.30	.06	4.84	.00	.18	.42

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.05	.02	.01	.10

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

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

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

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 4.1  
\*\*\*\*\*

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[www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : SH  
X : Acomplis  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.20	.04	50.07	16.52	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	27.36	.97	28.13	.00	25.45
29.27					
Acomplis	.21	.05	4.06	.00	.11
.32					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
SH

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.32	.10	33.17	22.16	2.00	381.00
.00						

```

Model
      coeff      se      t      p      LLCI
ULCI
constant 10.63    1.39    7.66    .00    7.90
13.36
Acomplis .15      .04    3.38    .00    .06
.23
GQ       .21      .04    4.93    .00    .12
.29

***** TOTAL EFFECT MODEL
*****
OUTCOME VARIABLE:
SH

Model Summary
      R      R-sq      MSE      F      df1      df2
p      .22      .05      35.19    18.89    1.00    382.00
.00

Model
      coeff      se      t      p      LLCI
ULCI
constant 16.25    .82    19.93    .00    14.64
17.85
Acomplis .19      .04    4.35    .00    .10
.28

***** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y
*****

Total effect of X on Y
      Effect      se      t      p      LLCI      ULCI
      .19      .04    4.35    .00    .10      .28

Direct effect of X on Y
      Effect      se      t      p      LLCI      ULCI
      .15      .04    3.38    .00    .06      .23

Indirect effect(s) of X on Y:
      Effect      BootSE      BootLLCI      BootULCI
GQ       .04      .02      .02      .08

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

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence
intervals:
5000

WARNING: Variables names longer than eight characters can produce
incorrect output
when some variables in the data file have the same first eight
characters. Shorter
variable names are recommended. By using this output, you are
accepting all risk

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and consequences of interpreting or reporting results that may be incorrect.

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

Run MATRIX procedure:

\*\*\*\*\* PROCESS Procedure for SPSS Version 4.1  
\*\*\*\*\*

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[www.guilford.com/p/hayes3](http://www.guilford.com/p/hayes3)

\*\*\*\*\*  
\*\*\*\*\*

Model : 4  
Y : LS  
X : Acomplis  
M : GQ

Sample  
Size: 384

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
GQ

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.20	.04	50.07	16.52	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	27.36	.97	28.13	.00	25.45
29.27					
Acomplis	.21	.05	4.06	.00	.11
.32					

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
LS

Model Summary

	R	R-sq	MSE	F	df1	df2
p	.34	.12	62.88	25.26	2.00	381.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					

constant	17.59	1.91	9.21	.00	13.84
21.35					
Acomplis	.24	.06	4.04	.00	.12
.36					
GQ	.28	.06	4.90	.00	.17
.39					

\*\*\*\*\* TOTAL EFFECT MODEL

\*\*\*\*\*

OUTCOME VARIABLE:

LS

Model Summary

	R	R-sq	MSE	F	df1	df2
P	.25	.06	66.67	24.98	1.00	382.00
.00						

Model

	coeff	se	t	p	LLCI
ULCI					
constant	25.28	1.12	22.53	.00	23.08
27.49					
Acomplis	.30	.06	5.00	.00	.18
.42					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y

\*\*\*\*\*

Total effect of X on Y

Effect	se	t	p	LLCI	ULCI
.30	.06	5.00	.00	.18	.42

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
.24	.06	4.04	.00	.12	.36

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
GQ	.06	.02	.02	.11

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

\*\*\*\*\*

Level of confidence for all confidence intervals in output:

95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:

5000

WARNING: Variables names longer than eight characters can produce incorrect output when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

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