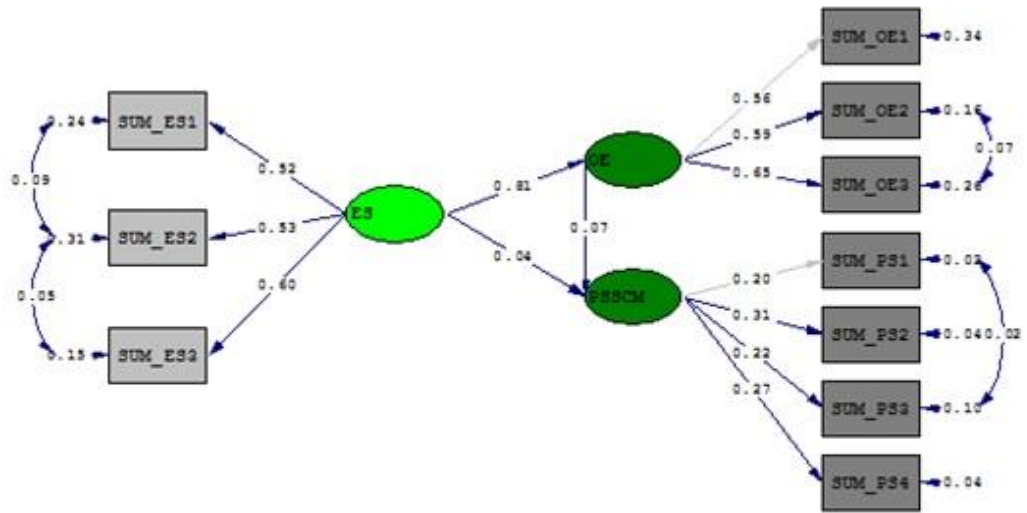


ภาคผนวก ข

ภาพรูปแบบที่ 2 และคำสั่งสำหรับการตรวจสอบความตรงของรูปแบบ
ความสัมพันธ์เชิงสาเหตุตามสมมติฐานข้อ 7 (รูปแบบที่ 2)



Chi-Square=40.86, df=28, P-value=0.05536, RMSEA=0.034

DATE: 7/ 6/2017

TIME: 11:14

L I S R E L 8.52

BY

Karl G. J"reskog & Dag S"rbom

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TI ES_1

Covariance Matrix

	SUM_OE1	SUM_OE2	SUM_OE3	SUM_PS1	SUM_PS2	SUM_PS3
	-----	-----	-----	-----	-----	-----
SUM_OE1	0.63					
SUM_OE2	0.32	0.49				
SUM_OE3	0.33	0.29	0.65			
SUM_PS1	0.00	0.01	-0.01	0.06		
SUM_PS2	0.02	-0.01	-0.02	0.05	0.12	
SUM_PS3	0.00	0.02	-0.01	0.05	0.05	0.14
SUM_PS4	0.00	0.00	-0.02	0.05	0.07	0.05
SUM_ES1	0.24	0.24	0.29	0.00	-0.01	0.01
SUM_ES2	0.21	0.28	0.26	0.00	0.00	0.02
SUM_ES3	0.29	0.28	0.33	0.00	0.00	0.01

Covariance Matrix

	SUM_PS4	SUM_ES1	SUM_ES2	SUM_ES3
	-----	-----	-----	-----
SUM_PS4	0.10			
SUM_ES1	-0.01	0.51		
SUM_ES2	-0.01	0.37	0.59	
SUM_ES3	-0.01	0.31	0.27	0.51

TI ES_1

Number of Iterations = 8

LISREL Estimates (Maximum Likelihood)

Measurement Equations

SUM_OE1 = 0.56*OE, Errorvar.= 0.34 , R² = 0.47
 (0.029)
 11.73

SUM_OE2 = 0.59*OE, Errorvar.= 0.16 , R² = 0.67
 (0.049) (0.025)
 12.03 6.54

SUM_OE3 = 0.65*OE, Errorvar.= 0.26 , R² = 0.61
 (0.056) (0.034)
 11.56 7.62

SUM_PS1 = 0.20*PSSCM, Errorvar.= 0.023 , R² = 0.60
 (0.0024)
 9.50

SUM_PS2 = 0.31*PSSCM, Errorvar.= 0.040 , R² = 0.67
 (0.022) (0.0051)
 14.51 7.97

SUM_PS3 = 0.22*PSSCM, Errorvar.= 0.10 , R² = 0.27
 (0.018) (0.0080)
 11.66 12.72

SUM_PS4 = 0.27*PSSCM, Errorvar.= 0.039 , R² = 0.61
 (0.019) (0.0042)
 14.32 9.31

SUM_ES1 = 0.52*ES, Errorvar.= 0.24 , R² = 0.53
 (0.034) (0.023)
 15.37 10.61

SUM_ES2 = 0.53*ES, Errorvar.= 0.31 , R² = 0.48
 (0.042) (0.035)
 12.66 8.83

SUM_ES3 = 0.60*ES, Errorvar.= 0.15 , R² = 0.71
 (0.033) (0.023)
 18.10 6.65

Structural Equations

BETA

OE

PSSCM = 0.07
(0.13)
0.52

GAMMA

ES

OE = 0.81
(0.072)
11.20
PSSCM = 0.043
(0.13)
0.33

Squared Multiple Correlations for Reduced Form

OE	PSSCM
-----	-----
0.70	0.69

Reduced Form

ES

OE = 0.81
(0.072)
11.20
PSSCM = 0.014
(0.055)
0.25

Correlation Matrix of Independent Variables

ES

1.00

Covariance Matrix of Latent Variables

	OE	PSSCM	ES
	-----	-----	-----
OE	0.94		
PSSCM	0.03	0.82	
ES	0.81	0.01	1.00

Goodness of Fit St Statistics

Degrees of Freedom = 28

Minimum Fit Function Chi-Square = 40.86 (P = 0.047)

Normal Theory Weighted Least Squares Chi-Square = 40.86 (P = 0.05536)

Chi-Square Difference with 1 Degree of Freedom = 10.22 (P = 0.0014)

Estimated Non-centrality Parameter (NCP) = 12.86

90 Percent Confidence Interval for NCP = (0.0 ; 34.01)

Minimum Fit Function Value = 0.10

Population Discrepancy Function Value (F0) = 0.032

90 Percent Confidence Interval for F0 = (0.0 ; 0.085)

Root Mean Square Error of Approximation (RMSEA) = 0.034

90 Percent Confidence Interval for RMSEA = (0.0 ; 0.055)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.89

Expected Cross-Validation Index (ECVI) = 0.24

90 Percent Confidence Interval for ECVI = (0.21 ; 0.29)

ECVI for Saturated Model = 0.28

ECVI for Independence Model = 6.01

Chi-Square for Independence Model with 45 Degrees of Freedom = 2379.07

Independence AIC = 2399.07

Model AIC = 94.86

Saturated AIC = 110.00

Independence CAIC = 2448.98

Model CAIC = 229.63

Saturated CAIC = 384.53

Normed Fit Index (NFI) = 0.98

Non-Normed Fit Index (NNFI) = 0.99

Parsimony Normed Fit Index (PNFI) = 0.61

Comparative Fit Index (CFI) = 0.99

Incremental Fit Index (IFI) = 0.99

Relative Fit Index (RFI) = 0.97

Critical N (CN) = 464.15

Root Mean Square Residual (RMR) = 0.0099

Standardized RMR = 0.030

Goodness of Fit Index (GFI) = 0.98

Adjusted Goodness of Fit Index (AGFI) = 0.96

Parsimony Goodness of Fit Index (PGFI) = 0.50

Standardized Residuals

	SUM_OE1	SUM_OE2	SUM_OE3	SUM_PS1	SUM_PS2	SUM_PS3
	-----	-----	-----	-----	-----	-----
SUM_OE1	- -					
SUM_OE2	0.78	- -				
SUM_OE3	0.78	- -	- -			
SUM_PS1	0.81	0.97	0.82	- -		
SUM_PS2	0.32	0.33	0.22	0.60	- -	
SUM_PS3	0.53	0.92	0.12	- -	0.54	- -
SUM_PS4	0.83	0.47	0.10	0.37	0.00	0.57
SUM_ES1	0.23	0.07	0.00	0.08	0.44	0.88
SUM_ES2	0.24	0.74	0.79	0.88	0.09	0.38
SUM_ES3	0.90	0.10	0.65	0.56	0.30	0.99

Standardized Residuals

	SUM_PS4	SUM_ES1	SUM_ES2	SUM_ES3
	-----	-----	-----	-----
SUM_PS4	- -			
SUM_ES1	0.64	- -		
SUM_ES2	0.56	- -	- -	
SUM_ES3	0.94	- -	- -	- -

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -2.24
 Median Standardized Residual = 0.00
 Largest Standardized Residual = 2.74

Stemleaf Plot

```

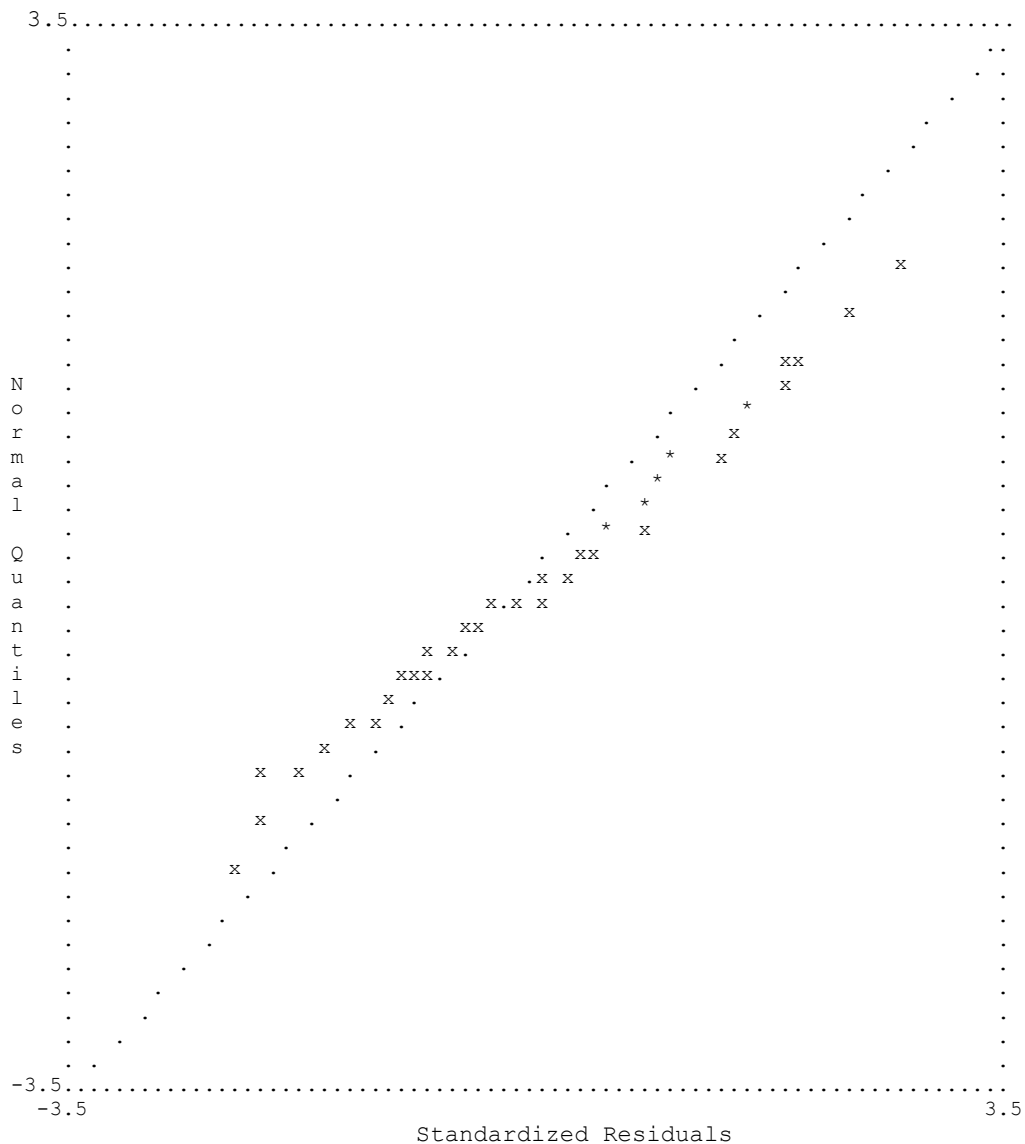
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- 1|4210
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  0|55688899
  1|004
  1|56699
  2|03
  2|7

```

Largest Positive Standardized Residuals
 Residual for SUM_ES2 and SUM_OE2 2.74

TI ES_1

Qplot of Standardized Residuals



The Modification Indices Suggest to Add an Error Covariance
 Between and Decrease in Chi-Square New Estimate
 SUM_ES2 SUM_OE2 13.2 0.06

TI ES_1

Factor Scores Regressions

ETA		SUM_OE1	SUM_OE2	SUM_OE3	SUM_PS1	SUM_PS2	SUM_PS3
		-----	-----	-----	-----	-----	-----
OE		0.18	0.59	0.44	0.01	0.01	0.00
PSSCM		0.00	0.01	0.00	0.13	0.15	0.08

ETA		SUM_PS4	SUM_ES1	SUM_ES2	SUM_ES3
		-----	-----	-----	-----
OE		0.01	0.05	0.08	0.18
PSSCM		0.94	0.00	0.00	0.00

KSI		SUM_OE1	SUM_OE2	SUM_OE3	SUM_PS1	SUM_PS2	SUM_PS3
		-----	-----	-----	-----	-----	-----
ES		0.06	0.22	0.16	0.00	0.00	0.00

KSI		SUM_PS4	SUM_ES1	SUM_ES2	SUM_ES3
		-----	-----	-----	-----
ES		0.00	0.20	0.28	0.65

TI ES_1

Standardized Solution

LAMBDA-Y		OE	PSSCM
		-----	-----
SUM_OE1		0.54	- -
SUM_OE2		0.57	- -
SUM_OE3		0.63	- -
SUM_PS1		- -	0.19
SUM_PS2		- -	0.29
SUM_PS3		- -	0.20
SUM_PS4		- -	0.25

LAMBDA-X		ES

SUM_ES1		0.52
SUM_ES2		0.53
SUM_ES3		0.60

BETA		OE	PSSCM
		-----	-----
OE		- -	- -
PSSCM		0.07	- -

GAMMA

	ES
OE	0.81
PSSCM	0.01

Correlation Matrix of ETA and KSI

	OE	PSSCM	ES
OE	1.00		
PSSCM	0.03	1.00	
ES	0.84	0.01	1.00

PSI

Note: This matrix is diagonal.

OE	PSSCM
0.30	1.00

Regression Matrix ETA on KSI (Standardized)

	ES
OE	0.81
PSSCM	0.01

TI ES_1

Completely Standardized Solution

LAMBDA-Y

	OE	PSSCM
SUM_OE1	0.68	- -
SUM_OE2	0.82	- -
SUM_OE3	0.78	- -
SUM_PS1	- -	0.78
SUM_PS2	- -	0.82
SUM_PS3	- -	0.52
SUM_PS4	- -	0.78

LAMBDA-X

	ES
SUM_ES1	0.73
SUM_ES2	0.69
SUM_ES3	0.84

Correlation Matrix of ETA and KSI

	OE	PSSCM	ES
OE	1.00		
PSSCM	0.03	1.00	
ES	0.84	0.01	1.00

PSI

Note: This matrix is diagonal.

OE	PSSCM
-----	-----
0.30	1.00

THETA-EPS

	SUM_OE1	SUM_OE2	SUM_OE3	SUM_PS1	SUM_PS2	SUM_PS3
	-----	-----	-----	-----	-----	-----
SUM_OE1	0.53					
SUM_OE2	- -	0.33				
SUM_OE3	- -	-0.13	0.39			
SUM_PS1	- -	- -	- -	0.40		
SUM_PS2	- -	- -	- -	- -	0.33	
SUM_PS3	- -	- -	- -	0.21	- -	0.73
SUM_PS4	- -	- -	- -	- -	- -	- -

THETA-EPS

	SUM_PS4

SUM_PS4	0.39

THETA-DELTA

	SUM_ES1	SUM_ES2	SUM_ES3
	-----	-----	-----
SUM_ES1	0.47		
SUM_ES2	0.17	0.52	
SUM_ES3	- -	-0.08	0.29

Regression Matrix ETA on KSI (Standardized)

	ES

OE	0.84
PSSCM	-0.01

TI ES_1

Total and Indirect Effects

Total Effects of KSI on ETA

	ES

OE	0.81 (0.07) 11.20
PSSCM	0.01 (0.05) 0.25

Indirect Effects of KSI on ETA

	ES

OE	- -
PSSCM	0.06 (0.11) 0.52

Total Effects of ETA on ETA

	OE	PSSCM
	-----	-----
OE	- -	- -
PSSCM	0.07 (0.13) 0.52	- -

Largest Eigenvalue of B*B' (Stability Index) is 0.605

Total Effects of ETA on Y

	OE	PSSCM
	-----	-----
SUM_OE1	0.56	- -
SUM_OE2	0.59 (0.05) 12.03	- -
SUM_OE3	0.65 (0.06) 11.56	- -
SUM_PS1	0.01 (0.03) 0.52	0.20
SUM_PS2	0.02 (0.04) 0.52	0.31 (0.02) 14.51
SUM_PS3	0.01 (0.03) 0.52	0.22 (0.02) 11.66

SUM_PS4	0.02	0.27
	(0.04)	(0.02)
	0.52	14.32

Indirect Effects of ETA on Y

	OE	PSSCM
	-----	-----
SUM_OE1	- -	- -
SUM_OE2	- -	- -
SUM_OE3	- -	- -
SUM_PS1	0.01	- -
	(0.03)	
	0.52	
SUM_PS2	0.02	- -
	(0.04)	
	0.52	
SUM_PS3	0.01	- -
	(0.03)	
	0.52	
SUM_PS4	0.02	- -
	(0.04)	
	0.52	

Total Effects of KSI on Y

	ES

SUM_OE1	0.45
	(0.04)
	11.20
SUM_OE2	0.48
	(0.03)
	14.33
SUM_OE3	0.53
	(0.04)
	13.56
SUM_PS1	0.00
	(0.01)
	0.25
SUM_PS2	0.00
	(0.02)
	0.25
SUM_PS3	0.00
	(0.01)
	0.25
SUM_PS4	0.00
	(0.01)
	0.25

TI ES_1

Standardized Total and Indirect Effects

Standardized Total Effects of KSI on ETA

	ES

OE	0.81
PSSCM	0.01

Standardized Indirect Effects of KSI on ETA

	ES

OE	- -
PSSCM	0.06

Standardized Total Effects of ETA on ETA

	OE	PSSCM
	-----	-----
OE	- -	- -
PSSCM	0.07	- -

Standardized Total Effects of ETA on Y

	OE	PSSCM
	-----	-----
SUM_OE1	0.54	- -
SUM_OE2	0.57	- -
SUM_OE3	0.63	- -
SUM_PS1	0.01	0.19
SUM_PS2	0.02	0.29
SUM_PS3	0.01	0.20
SUM_PS4	0.02	0.25

Completely Standardized Total Effects of ETA on Y

	OE	PSSCM
	-----	-----
SUM_OE1	0.68	- -
SUM_OE2	0.82	- -
SUM_OE3	0.78	- -
SUM_PS1	0.06	0.78
SUM_PS2	0.06	0.82
SUM_PS3	0.04	0.52
SUM_PS4	0.06	0.78

Standardized Indirect Effects of ETA on Y

	OE	PSSCM
	-----	-----
SUM_OE1	- -	- -
SUM_OE2	- -	- -
SUM_OE3	- -	- -
SUM_PS1	0.01	- -
SUM_PS2	0.02	- -
SUM_PS3	0.01	- -
SUM_PS4	0.02	- -

Completely Standardized Indirect Effects of ETA on Y

	OE	PSSCM
	-----	-----
SUM_OE1	- -	- -
SUM_OE2	- -	- -
SUM_OE3	- -	- -
SUM_PS1	0.06	- -
SUM_PS2	0.06	- -
SUM_PS3	0.04	- -
SUM_PS4	0.06	- -

Standardized Total Effects of KSI on Y

	ES

SUM_OE1	0.45
SUM_OE2	0.48
SUM_OE3	0.53
SUM_PS1	0.00
SUM_PS2	0.00
SUM_PS3	0.00
SUM_PS4	0.00

Completely Standardized Total Effects of KSI on Y

	ES

SUM_OE1	0.57
SUM_OE2	0.69
SUM_OE3	0.65
SUM_PS1	0.01
SUM_PS2	0.01
SUM_PS3	0.01
SUM_PS4	0.01

Time used: 0.016 Seconds