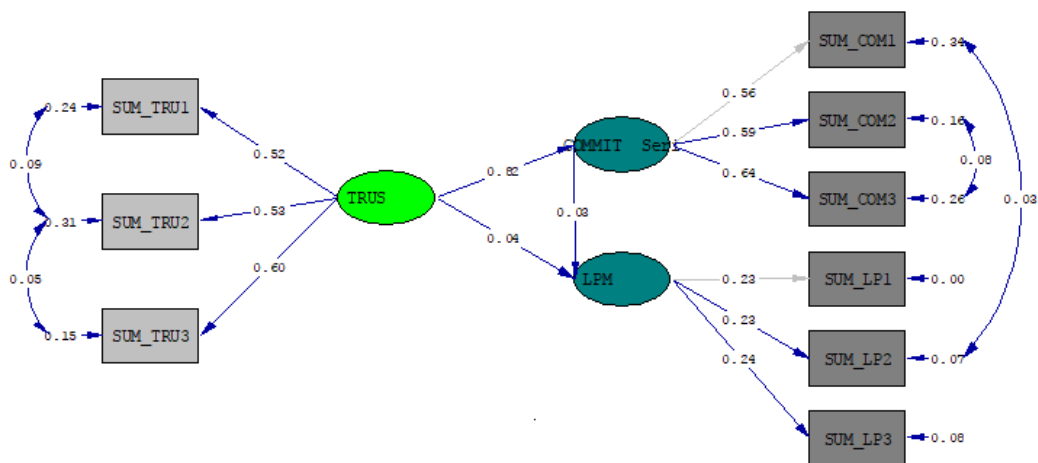


ภาคผนวก ย

ภาพรูปแบบที่ 2 และคำสั่งสำหรับการตรวจสอบความตรงของรูปแบบ  
ความสัมพันธ์เชิงสาเหตุตามสมมติฐานข้อ 2 (รูปแบบที่ 2)



Chi-Square=25.86, df=20, P-value=0.17046, RMSEA=0.027

L I S R E L 8.70

BY

Karl G. Jöreskog &amp; Dag Sörbom

This program is published exclusively by  
 Scientific Software International, Inc.  
 7383 N. Lincoln Avenue, Suite 100  
 Lincolnwood, IL 60712, U.S.A.  
 Phone: (800)247-6113, (847)675-0720, Fax: (847)675-2140  
 Copyright by Scientific Software International, Inc., 1981-2002  
 Use of this program is subject to the terms specified in the  
 Universal Copyright Convention.  
 Website: www.ssicentral.com

LP2

## Covariance Matrix

	SUM_COM1	SUM_COM2	SUM_COM3	SUM_LP1	SUM_LP2	SUM_LP3
	-----	-----	-----	-----	-----	-----
SUM_COM1	0.63					
SUM_COM2	0.32	0.49				
SUM_COM3	0.33	0.29	0.65			
SUM_LP1	0.00	0.01	-0.01	0.06		
SUM_LP2	0.02	-0.01	-0.02	0.05	0.12	
SUM_LP3	0.00	0.02	-0.01	0.05	0.05	0.14
SUM_TRU1	0.24	0.24	0.29	0.00	-0.01	0.01
SUM_TRU2	0.21	0.28	0.26	0.00	0.00	0.02
SUM_TRU3	0.29	0.28	0.33	0.00	0.00	0.01

## Covariance Matrix

	SUM_TRU1	SUM_TRU2	SUM_TRU3
	-----	-----	-----
SUM_TRU1	0.51		
SUM_TRU2	0.37	0.59	
SUM_TRU3	0.31	0.27	0.51

LP2

Number of Iterations = 5  
 LISREL Estimates (Maximum Likelihood)

## Measurement Equations

SUM\_COM1 = 0.56\*COMMIT, Errorvar.= 0.34 , R<sup>2</sup> = 0.47  
 (0.029)  
 11.70

SUM\_COM2 = 0.59\*COMMIT, Errorvar.= 0.16 , R<sup>2</sup> = 0.68  
 (0.048) (0.024)  
 12.27 6.48

SUM\_COM3 = 0.64\*COMMIT, Errorvar.= 0.26 , R<sup>2</sup> = 0.61  
 (0.055) (0.033)  
 11.72 7.70

SUM\_LP1 = 0.23\*LPM, Errorvar.= 0.0028 , R<sup>2</sup> = 0.95  
 (0.0040)  
 0.70

SUM\_LP2 = 0.23\*LPM, Errorvar.= 0.070 , R<sup>2</sup> = 0.42  
           (0.021)                  (0.0062)  
           10.70                  11.20

SUM\_LP3 = 0.24\*LPM, Errorvar.= 0.084 , R<sup>2</sup> = 0.39  
           (0.023)                  (0.0072)  
           10.41                  11.68

SUM\_TRU1 = 0.52\*TRUS, Errorvar.= 0.24 , R<sup>2</sup> = 0.53  
           (0.034)                  (0.023)  
           15.37                  10.60

SUM\_TRU2 = 0.53\*TRUS, Errorvar.= 0.31 , R<sup>2</sup> = 0.48  
           (0.042)                  (0.035)  
           12.67                  8.79

SUM\_TRU3 = 0.60\*TRUS, Errorvar.= 0.15 , R<sup>2</sup> = 0.71  
           (0.033)                  (0.023)  
           18.09                  6.65

### Structural Equations

#### BETA

TRUS  
 -----

COMMIT = 0.82  
           (0.072)  
           11.33

LMP = 0.042  
       (0.13)  
       0.32)

#### GAMMA

COM  
 -----

LPM = 0.034  
       (0.13)  
       0.25

### Squared Multiple Correlations for Reduced Form

TRU	COM	LP
-----	-----	-----
0.57	0.58	0.58

## Reduced Form

		TRUS
		-----
COMMIT	=	0.82
		(0.072)
		11.33
LPM	=	0.014
		(0.056)
		0.25

## Correlation Matrix of Independent Variables

	TRUS
	-----
	1.00

## Covariance Matrix of Latent Variables

	COMMIT	LPM	TRUS
	-----	-----	-----
COMMIT	0.96		
LPM	0.00	0.99	
TRUS	0.82	0.01	1.00

## Goodness of Fit Statistics

Degrees of Freedom = 20  
 Minimum Fit Function Chi-Square = 26.21 (P = 0.16)  
 Normal Theory Weighted Least Squares Chi-Square = 25.86 (P = 0.17)  
 Chi-Square Difference with 1 Degree of Freedom = 0.071 (P = 0.79)  
 Estimated Non-centrality Parameter (NCP) = 5.86  
 90 Percent Confidence Interval for NCP = (0.0 ; 23.14)

Minimum Fit Function Value = 0.066  
 Population Discrepancy Function Value (F0) = 0.015  
 90 Percent Confidence Interval for F0 = (0.0 ; 0.058)  
 Root Mean Square Error of Approximation (RMSEA) = 0.027  
 90 Percent Confidence Interval for RMSEA = (0.0 ; 0.054)  
 P-Value for Test of Close Fit (RMSEA < 0.05) = 0.91

Expected Cross-Validation Index (ECVI) = 0.19  
 90 Percent Confidence Interval for ECVI = (0.18 ; 0.23)  
 ECVI for Saturated Model = 0.23  
 ECVI for Independence Model = 5.03

Chi-Square for Independence Model with 36 Degrees of Freedom = 1990.29  
 Independence AIC = 2008.29  
 Model AIC = 75.86  
 Saturated AIC = 90.00  
 Independence CAIC = 2053.22  
 Model CAIC = 200.65  
 Saturated CAIC = 314.62

Normed Fit Index (NFI) = 0.99  
 Non-Normed Fit Index (NNFI) = 0.99  
 Parsimony Normed Fit Index (PNFI) = 0.55  
 Comparative Fit Index (CFI) = 1.00  
 Incremental Fit Index (IFI) = 1.00  
 Relative Fit Index (RFI) = 0.98

Critical N (CN) = 572.86

Root Mean Square Residual (RMR) = 0.0098  
 Standardized RMR = 0.026  
 Goodness of Fit Index (GFI) = 0.99  
 Adjusted Goodness of Fit Index (AGFI) = 0.97  
 Parsimony Goodness of Fit Index (PGFI) = 0.44

LP2

## Fitted Covariance Matrix

	SUM_COM1	SUM_COM2	SUM_COM3	SUM_LP1	SUM_LP2	SUM_LP3
	-----	-----	-----	-----	-----	-----
SUM_COM1	0.64					
SUM_COM2	0.32	0.49				
SUM_COM3	0.34	0.29	0.65			
SUM_LP1	0.00	0.00	0.00	0.06		
SUM_LP2	0.03	0.00	0.00	0.05	0.12	
SUM_LP3	0.00	0.00	0.00	0.05	0.05	0.14
SUM_TRU1	0.24	0.25	0.27	0.00	0.00	0.00
SUM_TRU2	0.24	0.25	0.28	0.00	0.00	0.00
SUM_TRU3	0.28	0.29	0.32	0.00	0.00	0.00

## Fitted Covariance Matrix

	SUM_TRU1	SUM_TRU2	SUM_TRU3
	-----	-----	-----
SUM_TRU1	0.51		
SUM_TRU2	0.37	0.59	
SUM_TRU3	0.31	0.27	0.51

## Fitted Residuals

	SUM_COM1	SUM_COM2	SUM_COM3	SUM_LP1	SUM_LP2	SUM_LP3
	-----	-----	-----	-----	-----	-----
SUM_COM1	-0.01					
SUM_COM2	0.00	0.00				
SUM_COM3	-0.01	0.00	0.00			
SUM_LP1	0.00	0.01	-0.01	0.00		
SUM_LP2	-0.01	-0.01	-0.02	0.00	0.00	
SUM_LP3	0.00	0.02	-0.01	0.00	0.00	0.00
SUM_TRU1	0.00	-0.01	0.01	0.00	-0.01	0.01
SUM_TRU2	-0.03	0.02	-0.02	0.00	0.00	0.01
SUM_TRU3	0.01	-0.01	0.01	0.00	0.00	0.01

## Fitted Residuals

	SUM_TRU1	SUM_TRU2	SUM_TRU3
	-----	-----	-----
SUM_TRU1	0.00		
SUM_TRU2	0.00	0.00	
SUM_TRU3	0.00	0.00	0.00

## Summary Statistics for Fitted Residuals

Smallest Fitted Residual = -0.03  
 Median Fitted Residual = 0.00  
 Largest Fitted Residual = 0.02

## Stemleaf Plot

```

- 3|2
- 2|1
- 1|8310
- 0|98876633210000000000000000
  0|11233777
  1|22348
  2|4

```

## Standardized Residuals

	SUM_COM1	SUM_COM2	SUM_COM3	SUM_LP1	SUM_LP2	SUM_LP3
	-----	-----	-----	-----	-----	-----
SUM_COM1	1.29					
SUM_COM2	0.07	- -				
SUM_COM3	1.08	- -	- -			
SUM_LP1	0.36	1.77	-1.85	- -		
SUM_LP2	0.75	-0.86	-1.53	0.34	0.31	
SUM_LP3	0.25	1.63	-0.48	- -	-0.43	- -
SUM_TRU1	0.06	-1.14	1.08	-0.53	-0.74	0.63
SUM_TRU2	2.37	2.66	-1.72	0.49	-0.27	1.16
SUM_TRU3	1.48	-2.16	1.59	-0.23	-0.25	0.69

## Standardized Residuals

	SUM_TRU1	SUM_TRU2	SUM_TRU3
	-----	-----	-----
SUM_TRU1	- -		
SUM_TRU2	- -	- -	
SUM_TRU3	- -	- -	- -

## Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -2.37  
 Median Standardized Residual = 0.00  
 Largest Standardized Residual = 2.66

## Stemleaf Plot

```

- 2|42
- 1|975311
- 0|9875543220000000000000
  0|112334567
  1|125668
  2|7

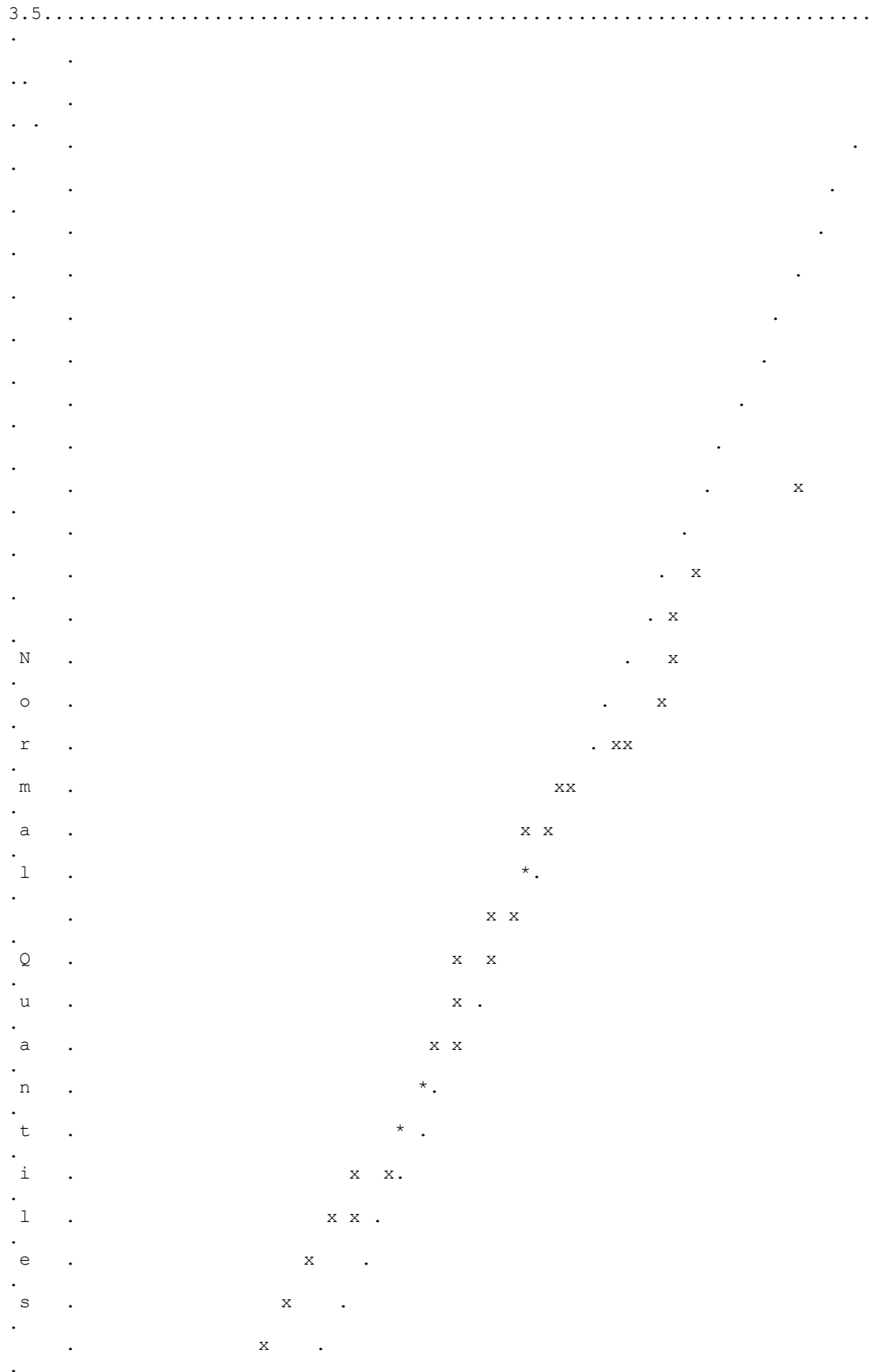
```

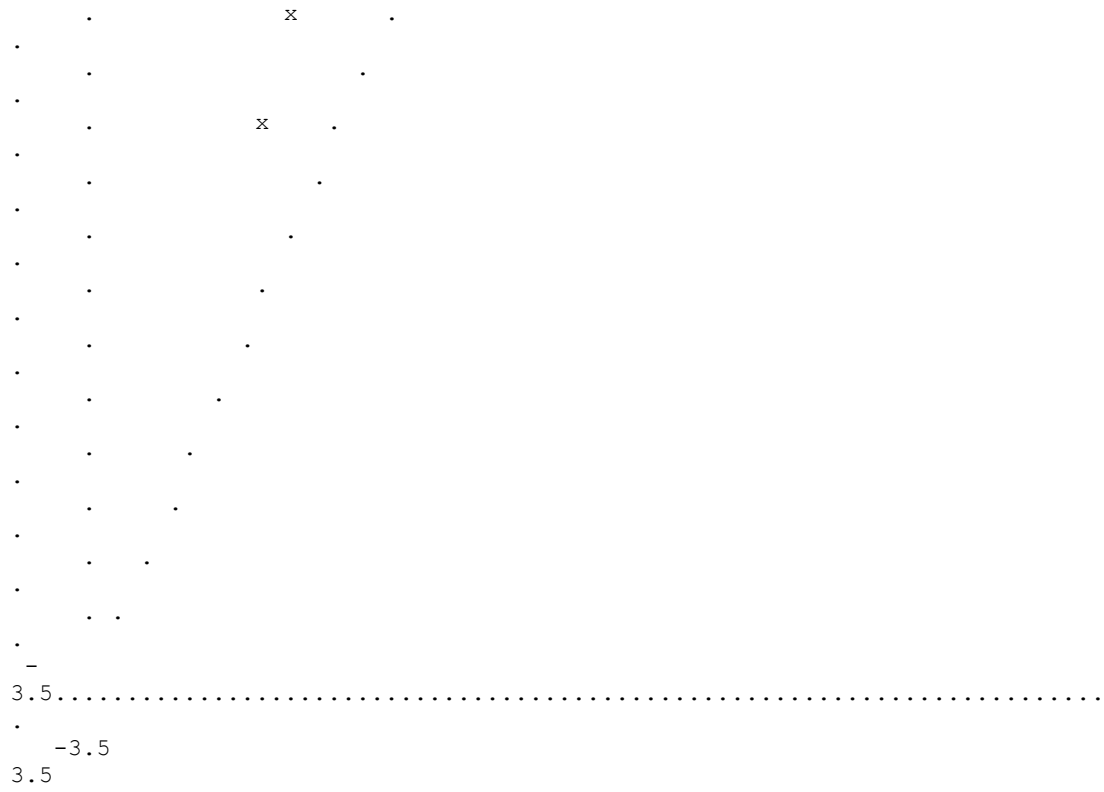
Largest Positive Standardized Residuals  
 Residual for SUM\_TRU2 and SUM\_COM2 2.66

SEM LP2



Qplot of Standardized Residuals





Standardized Residuals

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

		Decrease in Chi-Square	New Estimate
SUM_TRU2	SUM_COM2	13.1	0.06

SEM LP2

## Factor Scores Regressions

ETA

	SUM_COM1	SUM_COM2	SUM_COM3	SUM_LP1	SUM_LP2	SUM_LP3
	-----	-----	-----	-----	-----	-----
COMMIT	0.18	0.61	0.45	0.05	0.06	0.00
LPM	-0.01	0.00	0.00	0.70	0.15	0.13

ETA

	SUM_TRU1	SUM_TRU2	SUM_TRU3
	-----	-----	-----
COMMIT	0.05	0.08	0.17
LPM	0.00	0.00	0.00

KSI

	SUM_COM1	SUM_COM2	SUM_COM3	SUM_LP1	SUM_LP2	SUM_LP3
	-----	-----	-----	-----	-----	-----
TRUS	0.06	0.22	0.16	0.04	0.02	0.00

KSI

	SUM_TRU1	SUM_TRU2	SUM_TRU3
	-----	-----	-----
TRUS	0.20	0.28	0.65

SEM LP2

## Completely Standardized Solution

LAMBDA-Y

	COMMIT	LPM
	-----	-----
SUM_COM1	0.69	- -
SUM_COM2	0.82	- -
SUM_COM3	0.78	- -
SUM_LP1	- -	0.98
SUM_LP2	- -	0.65
SUM_LP3	- -	0.63

LAMBDA-X

	TRUS
	-----
SUM_TRU1	0.73
SUM_TRU2	0.69
SUM_TRU3	0.84

BETA

	COMMIT	LPM
	-----	-----
COMMIT	- -	- -
LPM	0.03	- -

GAMMA

	TRUS
	-----
COMMIT	0.83
LPM	0.04

Correlation Matrix of ETA and KSI

	COMMIT	LPM	TRUS
COMMIT	1.00		
LPM	0.00	1.00	
TRUS	0.83	0.01	1.00

PSI

Note: This matrix is diagonal.

COMMIT	LPM
0.30	1.00

THETA-EPS

	SUM_COM1	SUM_COM2	SUM_COM3	SUM_LP1	SUM_LP2	SUM_LP3
SUM_COM1	0.53					
SUM_COM2	- -	0.32				
SUM_COM3	- -	0.13	0.39			
SUM_LP1	- -	- -	- -	0.05		
SUM_LP2	0.09	- -	- -	- -	0.58	
SUM_LP3	- -	- -	- -	- -	- -	0.61

THETA-DELTA

	SUM_TRU1	SUM_TRU2	SUM_TRU3
SUM_TRU1	0.47		
SUM_TRU2	0.16	0.52	
SUM_TRU3	- -	0.08	0.29

Regression Matrix ETA on KSI (Standardized)

	TRUS
COMMIT	0.83
LPM	0.01

\*เป็นค่าอิทธิพลรวมและอิทธิพลทางอ้อม (Standard Error/ ความคลาดเคลื่อนมาตรฐานของการวัด)

SEM LP2

Total and Indirect Effects

**Total Effects of KSI on ETA**

	TRUS
COMMIT	0.82 (0.07) 11.33
LPM	0.01 (0.06) 0.25

**Indirect Effects of KSI on ETA**

	TRUS
COMMIT	- -

LPM            0.03  
                   (0.11)  
                   0.25

**Total Effects of ETA on ETA**

	COMMIT	LPM
	-----	-----
COMMIT	- -	- -
LPM	0.03 (0.13) 0.25	- -

**Largest Eigenvalue of B\*B' (Stability Index) is 0.001**

Total Effects of ETA on Y

	TRUS	COMMIT	LP
	-----	-----	-----
SUM_TRU1	0.58	- -	- -
SUM_TRU2	0.63 (0.05) 13.11	- -	- -
SUM_TRU3	0.63 (0.05) 13.30	- -	- -
SUM_COM1	0.69 (0.12) 5.87	0.57	- -
SUM_COM2	0.64 (0.10) 6.23	0.53 (0.04) 13.75	- -

Total Effects of ETA on Y

	COMMIT	LPM
	-----	-----
SUM_COM1	0.56	- -
SUM_COM2	0.59 (0.05) 12.27	- -
SUM_COM3	0.64 (0.05) 11.72	- -
SUM_LP1	0.01 (0.03) 0.25	0.23
SUM_LP2	0.01 (0.03) 0.25	0.23 (0.02) 10.70
SUM_LP3	0.01 (0.03)	0.24 (0.02)

0.25          10.41  
Indirect Effects of ETA on Y

	COMMIT -----	LPM -----
SUM_COM1	- -	- -
SUM_COM2	- -	- -
SUM_COM3	- -	- -
SUM_LP1	0.01 (0.03) 0.25	- -
SUM_LP2	0.01 (0.03) 0.25	- -
SUM_LP3	0.01 (0.03) 0.25	- -

Total Effects of KSI on Y

	TRUS -----
SUM_COM1	0.46 (0.04) 11.33
SUM_COM2	0.48 (0.03) 14.37
SUM_COM3	0.52 (0.04) 13.51
SUM_LP1	0.00 (0.01) 0.25
SUM_LP2	0.00 (0.01) 0.25
SUM_LP3	0.00 (0.01) 0.25

\*\*\*เป็นค่าอิทธิพลรวมและอิทธิพลทางอ้อมในรูปค่ามาตรฐาน

LP2

Standardized Total and Indirect Effects

Standardized Total Effect of KSI on ETA

	TRUS -----
COMMIT	0.82

LPM                    0.01

Standardized Indirect Effects of KSI on ETA

	TRUS
	-----
COMMIT	- -
LPM	0.03

Standardized Total Effects of ETA on ETA

	COMMIT	LPM
	-----	-----
COMMIT	- -	- -
LPM	0.03	- -

Completely Standardized Total Effects of ETA on Y

	COMMIT	LPM
	-----	-----
SUM_COM1	0.69	- -
SUM_COM2	0.82	- -
SUM_COM3	0.78	- -
SUM_LP1	0.03	0.98
SUM_LP2	0.02	0.65
SUM_LP3	0.02	0.63

Completely Standardized Indirect Effects of ETA on Y

	COMMIT	LPM
	-----	-----
SUM_COM1	- -	- -
SUM_COM2	- -	- -
SUM_COM3	- -	- -
SUM_LP1	0.03	- -
SUM_LP2	0.02	- -
SUM_LP3	0.02	- -

Completely Standardized Total Effects of KSI on Y

	TRUS
	-----
SUM_COM1	0.57
SUM_COM2	0.69
SUM_COM3	0.65
SUM_LP1	0.01
SUM_LP2	0.01
SUM_LP3	0.01

Time used:        0.029 Seconds