

ภาคผนวก ค

ผลการวิเคราะห์ด้วยโปรแกรม

ค่าการวิเคราะห์โมเดลสมการโครงสร้างแรก

Path Analysis

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	397
Number of dependent variables	12
Number of independent variables	0
Number of continuous latent variables	3

Observed dependent variables

Continuous

X1	X2	X3	X4	X5	X6
X7	X8	Y1	Y2	Y3	Y4

Continuous latent variables

INNOVATI ETHICS EFFICIEN

Estimator	ML
Information matrix	OBSERVED
Maximum number of iterations	1000
Convergence criterion	0.500D-04
Maximum number of steepest descent iterations	20

Input data file(s)

Input data format FREE

SAMPLE STATISTICS

SAMPLE STATISTICS

Means

	X1	X2	X3	X4	X5
1	4.077	4.155	4.168	4.092	4.240

Means

	X6	X7	X8	Y1	Y2
1	4.194	4.266	4.268	4.098	4.178

Means

	Y3	Y4
1	4.205	4.162

Covariances

	X1	X2	X3	X4	X5
X1	0.207				
X2	0.121	0.172			
X3	0.113	0.124	0.208		
X4	0.094	0.105	0.130	0.211	
X5	0.080	0.075	0.094	0.086	0.127
X6	0.066	0.089	0.123	0.109	0.081
X7	0.076	0.068	0.082	0.087	0.067
X8	0.053	0.068	0.098	0.079	0.068
Y1	0.087	0.087	0.123	0.114	0.074
Y2	0.096	0.096	0.119	0.100	0.077
Y3	0.096	0.094	0.112	0.087	0.061
Y4	0.089	0.092	0.098	0.086	0.069

Covariances

	X6	X7	X8	Y1	Y2
X6	0.214				
X7	0.111	0.155			
X8	0.155	0.091	0.280		
Y1	0.116	0.081	0.083	0.159	

Y2	0.087	0.088	0.076	0.110	0.170
Y3	0.093	0.073	0.066	0.091	0.106
Y4	0.083	0.079	0.064	0.087	0.099

Covariances

	Y3	Y4
Y3	0.145	
Y4	0.105	0.162

Correlations

	X1	X2	X3	X4	X5
X1	1.000				
X2	0.645	1.000			
X3	0.544	0.658	1.000		
X4	0.453	0.554	0.619	1.000	
X5	0.494	0.508	0.577	0.526	1.000
X6	0.315	0.466	0.584	0.512	0.495
X7	0.423	0.420	0.456	0.481	0.482
X8	0.219	0.313	0.408	0.326	0.361
Y1	0.480	0.526	0.675	0.622	0.518
Y2	0.511	0.562	0.629	0.527	0.522
Y3	0.556	0.596	0.642	0.496	0.449
Y4	0.487	0.552	0.536	0.467	0.478

Correlations

	X6	X7	X8	Y1	Y2
X6	1.000				
X7	0.611	1.000			
X8	0.633	0.437	1.000		
Y1	0.629	0.516	0.392	1.000	

Y2	0.455	0.540	0.349	0.671	1.000
Y3	0.527	0.485	0.328	0.598	0.675
Y4	0.445	0.502	0.300	0.541	0.595

Correlations

	Y3	Y4
Y3	1.000	
Y4	0.688	1.000

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 39

Loglikelihood

H0 Value	-1382.902
H1 Value	-1214.863

Information Criteria

Akaike (AIC)	2843.804
Bayesian (BIC)	2999.178
Sample-Size Adjusted BIC	2875.429

$$(n^* = (n + 2) / 24)$$

Chi-Square Test of Model Fit

Value	336.077
Degrees of Freedom	51
P-Value	0.0000

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.119
90 Percent C.I.	0.107 0.131
Probability RMSEA \leq .05	0.000

CFI/TLI

CFI	0.900
TLI	0.871

Chi-Square Test of Model Fit for the Baseline Model

Value	2921.369
Degrees of Freedom	66
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.051
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MODEL RESULTS

			Two-Tailed	
	Estimate	S.E.	Est./S.E.	P-Value
INNOVATI BY				
X1	1.000	0.000	999.000	999.000
X2	1.035	0.070	14.722	0.000
X3	1.214	0.082	14.774	0.000
ETHICS BY				
X4	1.000	0.000	999.000	999.000
X5	0.753	0.058	13.020	0.000
X6	1.093	0.080	13.718	0.000
X7	0.859	0.066	12.979	0.000
X8	0.931	0.091	10.284	0.000
EFFICIEN BY				
Y1	1.000	0.000	999.000	999.000
Y2	1.056	0.060	17.742	0.000
Y3	0.983	0.057	17.371	0.000
Y4	0.945	0.061	15.531	0.000
EFFICIEN ON				
ETHICS	0.311	0.091	3.418	0.001
INNOVATION	0.638	0.101	6.351	0.000
ETHICS ON				
INNOVATION	0.881	0.081	10.898	0.000

Intercepts

X1	4.077	0.023	178.692	0.000
X2	4.155	0.021	199.865	0.000
X3	4.168	0.023	181.968	0.000
X4	4.092	0.023	177.665	0.000
X5	4.240	0.018	237.349	0.000
X6	4.194	0.023	180.840	0.000
X7	4.266	0.020	216.133	0.000
X8	4.268	0.027	160.810	0.000
Y1	4.098	0.020	204.734	0.000
Y2	4.178	0.021	201.778	0.000
Y3	4.205	0.019	219.818	0.000
Y4	4.162	0.020	206.006	0.000

Variances

INNOVATION	0.101	0.013	7.571	0.000
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Residual Variances

X1	0.106	0.009	12.202	0.000
X2	0.064	0.006	10.696	0.000
X3	0.060	0.006	9.708	0.000
X4	0.102	0.009	11.816	0.000
X5	0.065	0.005	12.180	0.000
X6	0.084	0.008	10.395	0.000
X7	0.075	0.006	11.845	0.000
X8	0.186	0.015	12.789	0.000
Y1	0.058	0.005	11.449	0.000
Y2	0.058	0.005	11.282	0.000
Y3	0.048	0.004	10.923	0.000
Y4	0.072	0.006	12.198	0.000

ETHICS	0.030	0.006	5.462	0.000
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EFFICIENCY	0.014	0.003	4.670	0.000
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STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value
INNOVATI BY				
X1	0.699	0.030	23.489	0.000
X2	0.793	0.023	33.911	0.000
X3	0.845	0.019	44.122	0.000
ETHICS BY				
X4	0.717	0.029	24.810	0.000
X5	0.696	0.030	23.182	0.000
X6	0.779	0.026	30.322	0.000
X7	0.719	0.029	25.065	0.000
X8	0.580	0.038	15.152	0.000
EFFICIEN BY				
Y1	0.795	0.022	36.386	0.000
Y2	0.812	0.020	39.897	0.000
Y3	0.818	0.020	40.405	0.000
Y4	0.745	0.025	29.234	0.000
EFFICIEN ON				
ETHICS	0.323	0.091	3.537	0.000
INNOVATION	0.639	0.089	7.221	0.000
ETHICS ON				
INNOVATION	0.850	0.027	31.010	0.000
Intercepts				
X1	8.968	0.322	27.834	0.000
X2	10.031	0.360	27.902	0.000
X3	9.133	0.328	27.846	0.000
X4	8.917	0.320	27.830	0.000
X5	11.912	0.426	27.982	0.000

X6	9.076	0.326	27.842	0.000
X7	10.847	0.388	27.942	0.000
X8	8.071	0.291	27.755	0.000
Y1	10.275	0.368	27.915	0.000
Y2	10.127	0.363	27.907	0.000
Y3	11.032	0.395	27.949	0.000
Y4	10.339	0.370	27.918	0.000

Variances

INNOVATION	1.000	0.000	999.000	999.000
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Residual Variances

X1	0.512	0.042	12.312	0.000
X2	0.370	0.037	9.977	0.000
X3	0.286	0.032	8.851	0.000
X4	0.485	0.041	11.696	0.000
X5	0.515	0.042	12.321	0.000
X6	0.394	0.040	9.841	0.000
X7	0.483	0.041	11.704	0.000
X8	0.664	0.044	14.971	0.000
Y1	0.367	0.035	10.561	0.000
Y2	0.340	0.033	10.276	0.000
Y3	0.330	0.033	9.953	0.000
Y4	0.445	0.038	11.725	0.000
ETHICS	0.278	0.047	5.971	0.000
EFFICIENCY	0.136	0.029	4.773	0.000

STDY Standardization

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
INNOVATI BY				
X1	0.699	0.030	23.489	0.000
X2	0.793	0.023	33.911	0.000

X3	0.845	0.019	44.122	0.000
ETHICS BY				
X4	0.717	0.029	24.810	0.000
X5	0.696	0.030	23.182	0.000
X6	0.779	0.026	30.322	0.000
X7	0.719	0.029	25.065	0.000
X8	0.580	0.038	15.152	0.000
EFFICIEN BY				
Y1	0.795	0.022	36.386	0.000
Y2	0.812	0.020	39.897	0.000
Y3	0.818	0.020	40.405	0.000
Y4	0.745	0.025	29.234	0.000
EFFICIEN ON				
ETHICS	0.323	0.091	3.537	0.000
INNOVATION	0.639	0.089	7.221	0.000
ETHICS ON				
INNOVATION	0.850	0.027	31.010	0.000
Intercepts				
X1	8.968	0.322	27.834	0.000
X2	10.031	0.360	27.902	0.000
X3	9.133	0.328	27.846	0.000
X4	8.917	0.320	27.830	0.000
X5	11.912	0.426	27.982	0.000
X6	9.076	0.326	27.842	0.000
X7	10.847	0.388	27.942	0.000
X8	8.071	0.291	27.755	0.000
Y1	10.275	0.368	27.915	0.000
Y2	10.127	0.363	27.907	0.000
Y3	11.032	0.395	27.949	0.000
Y4	10.339	0.370	27.918	0.000

Variances

INNOVATION	1.000	0.000	999.000	999.000
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Residual Variances

X1	0.512	0.042	12.312	0.000
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X2	0.370	0.037	9.977	0.000
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X3	0.286	0.032	8.851	0.000
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X4	0.485	0.041	11.696	0.000
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X5	0.515	0.042	12.321	0.000
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X6	0.394	0.040	9.841	0.000
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X7	0.483	0.041	11.704	0.000
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X8	0.664	0.044	14.971	0.000
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Y1	0.367	0.035	10.561	0.000
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Y2	0.340	0.033	10.276	0.000
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Y3	0.330	0.033	9.953	0.000
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Y4	0.445	0.038	11.725	0.000
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ETHICS	0.278	0.047	5.971	0.000
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EFFICIENCY	0.136	0.029	4.773	0.000
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STD Standardization

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
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INNOVATI BY

X1	0.318	0.021	15.143	0.000
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X2	0.329	0.018	18.071	0.000
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X3	0.386	0.019	20.023	0.000
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ETHICS BY

X4	0.329	0.021	15.605	0.000
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X5	0.248	0.016	15.045	0.000
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X6	0.360	0.021	17.307	0.000
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X7	0.283	0.018	15.679	0.000
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X8	0.307	0.026	11.714	0.000
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EFFICIEN BY

Y1	0.317	0.017	18.443	0.000
Y2	0.335	0.018	19.090	0.000
Y3	0.312	0.016	19.233	0.000
Y4	0.300	0.018	16.782	0.000

EFFICIEN ON

ETHICS	0.323	0.091	3.537	0.000
INNOVATION	0.639	0.089	7.221	0.000

ETHICS ON

INNOVATION	0.850	0.027	31.010	0.000
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Intercepts

X1	4.077	0.023	178.692	0.000
X2	4.155	0.021	199.865	0.000
X3	4.168	0.023	181.968	0.000
X4	4.092	0.023	177.665	0.000
X5	4.240	0.018	237.349	0.000
X6	4.194	0.023	180.840	0.000
X7	4.266	0.020	216.133	0.000
X8	4.268	0.027	160.810	0.000
Y1	4.098	0.020	204.734	0.000
Y2	4.178	0.021	201.778	0.000
Y3	4.205	0.019	219.818	0.000
Y4	4.162	0.020	206.006	0.000

Variances

INNOVATION	1.000	0.000	999.000	999.000
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Residual Variances

X1	0.106	0.009	12.202	0.000
X2	0.064	0.006	10.696	0.000
X3	0.060	0.006	9.708	0.000
X4	0.102	0.009	11.816	0.000

X5	0.065	0.005	12.180	0.000
X6	0.084	0.008	10.395	0.000
X7	0.075	0.006	11.845	0.000
X8	0.186	0.015	12.789	0.000
Y1	0.058	0.005	11.449	0.000
Y2	0.058	0.005	11.282	0.000
Y3	0.048	0.004	10.923	0.000
Y4	0.072	0.006	12.198	0.000
ETHICS	0.278	0.047	5.971	0.000
EFFICIENCY	0.136	0.029	4.773	0.000

R-SQUARE

Observed	Two-Tailed			
Variable	Estimate	S.E.	Est./S.E.	P-Value
X1	0.488	0.042	11.744	0.000
X2	0.630	0.037	16.955	0.000
X3	0.714	0.032	22.061	0.000
X4	0.515	0.041	12.405	0.000
X5	0.485	0.042	11.591	0.000
X6	0.606	0.040	15.161	0.000
X7	0.517	0.041	12.532	0.000
X8	0.336	0.044	7.576	0.000
Y1	0.633	0.035	18.193	0.000
Y2	0.660	0.033	19.948	0.000
Y3	0.670	0.033	20.202	0.000
Y4	0.555	0.038	14.617	0.000
Latent	Two-Tailed			
Variable	Estimate	S.E.	Est./S.E.	P-Value
ETHICS	0.722	0.047	15.505	0.000
EFFICIEN	0.864	0.029	30.194	0.000

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.326E-03

(ratio of smallest to largest eigenvalue)

MODEL MODIFICATION INDICES

NOTE: Modification indices for direct effects of observed dependent variables

regressed on covariates may not be included. To include these, request

MODINDICES (ALL).

Minimum M.I. value for printing the modification index 10.000

M.I. E.P.C. Std E.P.C. StdYX E.P.C.

ค่าการวิเคราะห์โมเดลสมการโครงสร้างหลังปรับแก้

Mplus VERSION 7

MUTHEN & MUTHEN

02/07/2018 9:32 PM

INPUT INSTRUCTIONS

TITLE: Path Analysis

DATA:

FILE IS "C:\Users\Administrator\Desktop\p4\pik4.dat";

VARIABLE:

NAMES ARE X1 X2 X3 X4 X5 X6 X7 X8 Y1 Y2 Y3 Y4;

USEVARIABLES ARE X1 X2 X3 X4 X5 X6 X7 X8 Y1 Y2 Y3 Y4;

ANALYSIS:

TYPE IS GENERAL;

ESTIMATOR IS ML;

ITERATIONS = 1000;

CONVERGENCE = 0.00005;

MODEL:

Innovation BY X1 X2 X3;

Ethics BY X4 X5 X6 X7 X8;

Efficiency BY Y1 Y2 Y3 Y4;

Efficiency ON Ethics Innovation;

Efficiency ON Innovation;

Ethics ON Innovation;

Variable: EFFICIENCY

2 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS

Path Analysis

SUMMARY OF ANALYSIS

Number of groups	1
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Number of observations	397
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Number of dependent variables 12
 Number of independent variables 0
 Number of continuous latent variables 3

Observed dependent variables

Continuous

X1	X2	X3	X4	X5	X6
X7	X8	Y1	Y2	Y3	Y4

Continuous latent variables

INNOVATI ETHICS EFFICIEN

Estimator ML
 Information matrix OBSERVED
 Maximum number of iterations 1000
 Convergence criterion 0.500D-04
 Maximum number of steepest descent iterations 20
 Input data file(s)

C:\Users\Administrator\Desktop\p4\pik4.dat

Input data format FREE

SAMPLE STATISTICS

SAMPLE STATISTICS

Means

	X1	X2	X3	X4	X5
1	4.077	4.155	4.168	4.092	4.240

Means

	X6	X7	X8	Y1	Y2
1	4.194	4.266	4.268	4.098	4.178

Means

Y3 Y4

1 4.205 4.162

Covariances

X1 X2 X3 X4 X5

X1	0.207				
X2	0.121	0.172			
X3	0.113	0.124	0.208		
X4	0.094	0.105	0.130	0.211	
X5	0.080	0.075	0.094	0.086	0.127
X6	0.066	0.089	0.123	0.109	0.081
X7	0.076	0.068	0.082	0.087	0.067
X8	0.053	0.068	0.098	0.079	0.068
Y1	0.087	0.087	0.123	0.114	0.074
Y2	0.096	0.096	0.119	0.100	0.077
Y3	0.096	0.094	0.112	0.087	0.061
Y4	0.089	0.092	0.098	0.086	0.069

Covariances

X6 X7 X8 Y1 Y2

X6	0.214				
X7	0.111	0.155			
X8	0.155	0.091	0.280		
Y1	0.116	0.081	0.083	0.159	
Y2	0.087	0.088	0.076	0.110	0.170
Y3	0.093	0.073	0.066	0.091	0.106
Y4	0.083	0.079	0.064	0.087	0.099

Covariances

	Y3	Y4
Y3	0.145	
Y4	0.105	0.162

Correlations

	X1	X2	X3	X4	X5
X1	1.000				
X2	0.645	1.000			
X3	0.544	0.658	1.000		
X4	0.453	0.554	0.619	1.000	
X5	0.494	0.508	0.577	0.526	1.000
X6	0.315	0.466	0.584	0.512	0.495
X7	0.423	0.420	0.456	0.481	0.482
X8	0.219	0.313	0.408	0.326	0.361
Y1	0.480	0.526	0.675	0.622	0.518
Y2	0.511	0.562	0.629	0.527	0.522
Y3	0.556	0.596	0.642	0.496	0.449
Y4	0.487	0.552	0.536	0.467	0.478

Correlations

	X6	X7	X8	Y1	Y2
X6	1.000				
X7	0.611	1.000			
X8	0.633	0.437	1.000		
Y1	0.629	0.516	0.392	1.000	
Y2	0.455	0.540	0.349	0.671	1.000
Y3	0.527	0.485	0.328	0.598	0.675

Y4 0.445 0.502 0.300 0.541 0.595

Correlations

Y3 Y4

Y3 1.000

Y4 0.688 1.000

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 47

Loglikelihood

H0 Value -1280.682

H1 Value -1214.863

Information Criteria

Akaike (AIC) 2655.364

Bayesian (BIC) 2842.609

Sample-Size Adjusted BIC 2693.476

($n^* = (n + 2) / 24$)

Chi-Square Test of Model Fit

Value 131.637

Degrees of Freedom 43

P-Value 0.0000

RMSEA (Root Mean Square Error Of Approximation)

Estimate 0.072

90 Percent C.I. 0.058 0.086

Probability RMSEA \leq .05 0.005

CFI/TLI

CFI 0.969

TLI 0.952

Chi-Square Test of Model Fit for the Baseline Model

Value	2921.369
Degrees of Freedom	66
P-Value	0.0000

SRMR (Standardized Root Mean Square Residual)

Value	0.031
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MODEL RESULTS

			Two-Tailed	
	Estimate	S.E.	Est./S.E.	P-Value
INNOVATI BY				
X1	1.000	0.000	999.000	999.000
X2	1.042	0.067	15.471	0.000
X3	1.282	0.091	14.052	0.000
ETHICS BY				
X4	1.000	0.000	999.000	999.000
X5	0.752	0.055	13.656	0.000
X6	0.917	0.071	12.900	0.000
X7	0.750	0.062	12.190	0.000
X8	0.733	0.084	8.770	0.000
EFFICIEN BY				
Y1	1.000	0.000	999.000	999.000
Y2	1.074	0.058	18.436	0.000
Y3	0.947	0.056	16.862	0.000
Y4	0.893	0.061	14.678	0.000
EFFICIEN ON				
ETHICS	0.108	0.251	0.429	0.668
INNOVATION	0.868	0.287	3.026	0.002
ETHICS ON				
INNOVATION	1.058	0.090	11.805	0.000
Intercepts				
X1	4.077	0.023	178.692	0.000

X2	4.155	0.021	199.865	0.000
X3	4.168	0.023	181.968	0.000
X4	4.092	0.023	178.014	0.000
X5	4.240	0.018	237.349	0.000
X6	4.194	0.023	181.925	0.000
X7	4.266	0.020	216.133	0.000
X8	4.268	0.027	160.810	0.000
Y1	4.098	0.020	203.806	0.000
Y2	4.178	0.021	201.778	0.000
Y3	4.205	0.019	219.395	0.000
Y4	4.162	0.020	206.006	0.000

Variances

INNOVATION	0.092	0.013	7.113	0.000
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Residual Variances

X1	0.115	0.009	12.556	0.000
X2	0.072	0.006	11.411	0.000
X3	0.058	0.007	8.855	0.000
X4	0.093	0.008	11.338	0.000
X5	0.061	0.005	11.689	0.000
X6	0.113	0.009	12.553	0.000
X7	0.089	0.007	12.226	0.000
X8	0.217	0.016	13.396	0.000
Y1	0.057	0.005	11.250	0.000
Y2	0.051	0.005	10.189	0.000
Y3	0.053	0.005	11.111	0.000
Y4	0.080	0.007	12.172	0.000
ETHICS	0.014	0.006	2.493	0.013
EFFICIENCY	0.015	0.004	3.936	0.000

STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Two-Tailed Est./S.E.	P-Value
INNOVATI BY				
X1	0.666	0.032	20.948	0.000
X2	0.761	0.025	29.873	0.000
X3	0.850	0.020	42.412	0.000
ETHICS BY				
X4	0.745	0.027	27.318	0.000
X5	0.720	0.029	24.884	0.000
X6	0.681	0.031	21.726	0.000
X7	0.651	0.034	19.081	0.000
X8	0.473	0.043	10.917	0.000
EFFICIEN BY				
Y1	0.802	0.021	37.384	0.000
Y2	0.837	0.019	43.209	0.000
Y3	0.797	0.022	35.737	0.000
Y4	0.713	0.029	24.965	0.000
EFFICIEN ON				
ETHICS	0.114	0.266	0.429	0.668
INNOVATION	0.817	0.262	3.113	0.002
ETHICS ON				
INNOVATION	0.938	0.025	38.064	0.000
Intercepts				
X1	8.968	0.322	27.834	0.000
X2	10.031	0.360	27.902	0.000
X3	9.133	0.328	27.846	0.000
X4	8.934	0.320	27.885	0.000
X5	11.912	0.426	27.982	0.000

X6	9.131	0.325	28.135	0.000
X7	10.847	0.388	27.942	0.000
X8	8.071	0.291	27.755	0.000
Y1	10.229	0.367	27.847	0.000
Y2	10.127	0.363	27.907	0.000
Y3	11.011	0.394	27.936	0.000
Y4	10.339	0.370	27.918	0.000

Variances

INNOVATION	1.000	0.000	999.000	999.000
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Residual Variances

X1	0.557	0.042	13.165	0.000
X2	0.421	0.039	10.862	0.000
X3	0.278	0.034	8.168	0.000
X4	0.445	0.041	10.966	0.000
X5	0.481	0.042	11.541	0.000
X6	0.537	0.043	12.580	0.000
X7	0.577	0.044	13.001	0.000
X8	0.776	0.041	18.934	0.000
Y1	0.357	0.034	10.372	0.000
Y2	0.300	0.032	9.267	0.000
Y3	0.365	0.036	10.250	0.000
Y4	0.492	0.041	12.102	0.000

ETHICS	0.119	0.046	2.581	0.010
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EFFICIENCY	0.144	0.035	4.063	0.000
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STDY Standardization

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
INNOVATI BY				
X1	0.666	0.032	20.948	0.000
X2	0.761	0.025	29.873	0.000

X3	0.850	0.020	42.412	0.000
ETHICS BY				
X4	0.745	0.027	27.318	0.000
X5	0.720	0.029	24.884	0.000
X6	0.681	0.031	21.726	0.000
X7	0.651	0.034	19.081	0.000
X8	0.473	0.043	10.917	0.000
EFFICIEN BY				
Y1	0.802	0.021	37.384	0.000
Y2	0.837	0.019	43.209	0.000
Y3	0.797	0.022	35.737	0.000
Y4	0.713	0.029	24.965	0.000
EFFICIEN ON				
ETHICS	0.114	0.266	0.429	0.668
INNOVATION	0.817	0.262	3.113	0.002
ETHICS ON				
INNOVATION	0.938	0.025	38.064	0.000
Intercepts				
X1	8.968	0.322	27.834	0.000
X2	10.031	0.360	27.902	0.000
X3	9.133	0.328	27.846	0.000
X4	8.934	0.320	27.885	0.000
X5	11.912	0.426	27.982	0.000
X6	9.131	0.325	28.135	0.000
X7	10.847	0.388	27.942	0.000
X8	8.071	0.291	27.755	0.000
Y1	10.229	0.367	27.847	0.000
Y2	10.127	0.363	27.907	0.000
Y3	11.011	0.394	27.936	0.000
Y4	10.339	0.370	27.918	0.000

Variances

INNOVATION	1.000	0.000	999.000	999.000
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Residual Variances

X1	0.557	0.042	13.165	0.000
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X2	0.421	0.039	10.862	0.000
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X3	0.278	0.034	8.168	0.000
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X4	0.445	0.041	10.966	0.000
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X5	0.481	0.042	11.541	0.000
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X6	0.537	0.043	12.580	0.000
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X7	0.577	0.044	13.001	0.000
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X8	0.776	0.041	18.934	0.000
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Y1	0.357	0.034	10.372	0.000
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Y2	0.300	0.032	9.267	0.000
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Y3	0.365	0.036	10.250	0.000
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Y4	0.492	0.041	12.102	0.000
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ETHICS	0.119	0.046	2.581	0.010
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EFFICIENCY	0.144	0.035	4.063	0.000
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STD Standardization

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
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INNOVATI BY

X1	0.303	0.021	14.226	0.000
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X2	0.315	0.018	17.048	0.000
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X3	0.388	0.019	19.937	0.000
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ETHICS BY

X4	0.341	0.021	16.419	0.000
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X5	0.256	0.016	15.643	0.000
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X6	0.313	0.022	14.476	0.000
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X7	0.256	0.019	13.535	0.000
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X8	0.250	0.027	9.283	0.000
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EFFICIEN BY

Y1	0.321	0.017	18.645	0.000
Y2	0.345	0.017	19.798	0.000
Y3	0.304	0.017	18.350	0.000
Y4	0.287	0.018	15.610	0.000

EFFICIEN ON

ETHICS	0.114	0.266	0.429	0.668
INNOVATION	0.817	0.262	3.113	0.002

ETHICS ON

INNOVATION	0.938	0.025	38.064	0.000
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Intercepts

X1	4.077	0.023	178.692	0.000
X2	4.155	0.021	199.865	0.000
X3	4.168	0.023	181.968	0.000
X4	4.092	0.023	178.014	0.000
X5	4.240	0.018	237.349	0.000
X6	4.194	0.023	181.925	0.000
X7	4.266	0.020	216.133	0.000
X8	4.268	0.027	160.810	0.000
Y1	4.098	0.020	203.806	0.000
Y2	4.178	0.021	201.778	0.000
Y3	4.205	0.019	219.395	0.000
Y4	4.162	0.020	206.006	0.000

Variances

INNOVATION	1.000	0.000	999.000	999.000
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Residual Variances

X1	0.115	0.009	12.556	0.000
X2	0.072	0.006	11.411	0.000
X3	0.058	0.007	8.855	0.000
X4	0.093	0.008	11.338	0.000

X5	0.061	0.005	11.689	0.000
X6	0.113	0.009	12.553	0.000
X7	0.089	0.007	12.226	0.000
X8	0.217	0.016	13.396	0.000
Y1	0.057	0.005	11.250	0.000
Y2	0.051	0.005	10.189	0.000
Y3	0.053	0.005	11.111	0.000
Y4	0.080	0.007	12.172	0.000
ETHICS	0.119	0.046	2.581	0.010
EFFICIENCY	0.144	0.035	4.063	0.000

R-SQUARE

Variable	Estimate	S.E.	Two-Tailed	
			Est./S.E.	P-Value
X1	0.443	0.042	10.474	0.000
X2	0.579	0.039	14.937	0.000
X3	0.722	0.034	21.206	0.000
X4	0.555	0.041	13.659	0.000
X5	0.519	0.042	12.442	0.000
X6	0.463	0.043	10.863	0.000
X7	0.423	0.044	9.540	0.000
X8	0.224	0.041	5.458	0.000
Y1	0.643	0.034	18.692	0.000
Y2	0.700	0.032	21.605	0.000
Y3	0.635	0.036	17.869	0.000
Y4	0.508	0.041	12.482	0.000
Latent			Two-Tailed	
Variable	Estimate	S.E.	Est./S.E.	P-Value
ETHICS	0.881	0.046	19.032	0.000
EFFICIEN	0.856	0.035	24.108	0.000

QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix 0.399E-04

(ratio of smallest to largest eigenvalue)

TOTAL, TOTAL INDIRECT, SPECIFIC INDIRECT, AND DIRECT EFFECTS

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
Effects from INNOVATI to EFFICIEN				
Total	0.981	0.078	12.621	0.000
Total indirect	0.114	0.264	0.432	0.666
Specific indirect				
EFFICIEN				
ETHICS				
INNOVATI	0.114	0.264	0.432	0.666
Direct				
EFFICIEN				
INNOVATI	0.868	0.287	3.026	0.002
Effects from ETHICS to EFFICIEN				
Total	0.108	0.251	0.429	0.668
Total indirect	0.000	0.000	999.000	0.000
Direct				
EFFICIEN				
ETHICS	0.108	0.251	0.429	0.668
Effects from INNOVATI to ETHICS				
Total	1.058	0.090	11.805	0.000
Total indirect	0.000	0.000	999.000	0.000
Direct				
ETHICS				
INNOVATI	1.058	0.090	11.805	0.000
Effects from INNOVATI to EFFICIEN				
Sum of indirect	0.114	0.264	0.432	0.666
Specific indirect				

EFFICIEN

ETHICS

INNOVATI 0.114 0.264 0.432 0.666

STANDARDIZED TOTAL, TOTAL INDIRECT, SPECIFIC INDIRECT, AND DIRECT
EFFECTS

STDYX Standardization

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
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Effects from INNOVATI to EFFICIEN

Total	0.924	0.022	42.897	0.000
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Total indirect	0.107	0.248	0.432	0.666
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Specific indirect

EFFICIEN

ETHICS

INNOVATI 0.107 0.248 0.432 0.666

Direct

EFFICIEN

INNOVATI 0.817 0.262 3.113 0.002

Effects from ETHICS to EFFICIEN

Total	0.114	0.266	0.429	0.668
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Total indirect	0.000	0.000	0.000	1.000
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Direct

EFFICIEN

ETHICS 0.114 0.266 0.429 0.668

Effects from INNOVATI to ETHICS

Total	0.938	0.025	38.064	0.000
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Total indirect	0.000	0.000	0.000	1.000
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Direct

ETHICS

INNOVATI	0.938	0.025	38.064	0.000
Effects from INNOVATI to EFFICIEN				
Sum of indirect	0.107	0.248	0.432	0.666
Specific indirect				
EFFICIEN				
ETHICS				
INNOVATI	0.107	0.248	0.432	0.666
STDY Standardization				

Two-Tailed

	Estimate	S.E.	Est./S.E.	P-Value
Effects from INNOVATI to EFFICIEN				
Total	0.924	0.022	42.897	0.000
Total indirect	0.107	0.248	0.432	0.666
Specific indirect				
EFFICIEN				
ETHICS				
INNOVATI	0.107	0.248	0.432	0.666
Direct				
EFFICIEN				
INNOVATI	0.817	0.262	3.113	0.002
Effects from ETHICS to EFFICIEN				
Total	0.114	0.266	0.429	0.668
Total indirect	0.000	0.000	0.000	1.000
Direct				
EFFICIEN				
ETHICS	0.114	0.266	0.429	0.668
Effects from INNOVATI to ETHICS				
Total	0.938	0.025	38.064	0.000
Total indirect	0.000	0.000	0.000	1.000
Direct				

ETHICS

INNOVATI	0.938	0.025	38.064	0.000
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Effects from INNOVATI to EFFICIEN

Sum of indirect	0.107	0.248	0.432	0.666
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Specific indirect

EFFICIEN

ETHICS

INNOVATI	0.107	0.248	0.432	0.666
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STD Standardization

Two-Tailed

Estimate	S.E.	Est./S.E.	P-Value
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Effects from INNOVATI to EFFICIEN

Total	0.924	0.022	42.897	0.000
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Total indirect	0.107	0.248	0.432	0.666
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Specific indirect

EFFICIEN

ETHICS

INNOVATI	0.107	0.248	0.432	0.666
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Direct

EFFICIEN

INNOVATI	0.817	0.262	3.113	0.002
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Effects from ETHICS to EFFICIEN

Total	0.114	0.266	0.429	0.668
-------	-------	-------	-------	-------

Total indirect	0.000	0.000	0.000	1.000
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Direct

EFFICIEN

ETHICS	0.114	0.266	0.429	0.668
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Effects from INNOVATI to ETHICS

Total	0.938	0.025	38.064	0.000
-------	-------	-------	--------	-------

Total indirect	0.000	0.000	0.000	1.000
Direct				
ETHICS				
INNOVATI	0.938	0.025	38.064	0.000

Effects from INNOVATI to EFFICIEN

Sum of indirect	0.107	0.248	0.432	0.666
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Specific indirect

EFFICIEN

ETHICS

INNOVATI	0.107	0.248	0.432	0.666
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MODEL MODIFICATION INDICES

NOTE: Modification indices for direct effects of observed dependent variables regressed on covariates may not be included. To include these, request MODINDICES (ALL).

Minimum M.I. value for printing the modification index 10.000

M.I. E.P.C. Std E.P.C. StdYX E.P.C.

