

ภาคผนวก

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ข้อมูล

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ประสิทธิภาพของโมเดลการวัดที่ 1 (โมเดล base)

MODEL 1-LFA MODEL

DA NI=10 NO=400 MA=CM

LA

'Y1_RGU1"Y2-RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3"Y8_ACH4'

'X9_SEL"X10_ATT'

KM

1.000

.334 1.000

.307 .319 1.000

.338 .315 .388 1.000

.126 .192 .181 .150 1.000

.171 .196 .169 .141 .483 1.000

.161 .247 .182 .154 .508 .602 1.000

.146 .229 .200 .195 .415 .559 .667 1.000

.242 .317 .220 .207 .431 .293 .356 .357 1.000

.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000

SD

2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

SE

1 2 3 4 5 6 7 8/

MONY=8 NE=4 C

LY=FU,FI PS=SY,FI TE=SY,FI

PA LY

1 0 0 0

0 1 0 0

0 0 1 0

0 0 0 1

1 0 0 0

0 1 0 0

0 0 1 0

0 0 0 1

ST 0.4 LY(1,1) LY(2,2) LY(3,3) LY(4,4)
 PA PS
 1
 1 1
 1 1 1
 0 0 0 0
 FI PS(4,1) PS(4,2)
 ST 0.65 PS(4,1) PS(4,3)
 ST 0.70 PS(4,2)
 ST 0.74 PS(4,4)
 PA TE
 1
 1 1
 1 1 1
 1 1 1 1
 0 0 0 0 1
 0 0 0 0 0 1
 0 0 0 0 0 0 1
 0 0 0 0 0 0 0 1
 LE
 'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'
 OU SE TV RS MI NS AD=OFF

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ประสิทธิภาพของโมเดลการวัดที่ 2 (โมเดล base)

MODEL 2-LFA MODEL
 DA NI=10 NO=400 MA=CM
 LA
 'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3'
 'Y8_ACH4"X9_SEF"X10_ATT'
 KM
 1.000
 .334 1.000
 .307 .319 1.000
 .338 .315 .388 1.000

.126 .192 .181 .150 1.000

.171 .196 .169 .141 .483 1.000

.161 .247 .182 .154 .508 .602 1.000

.146 .229 .200 .195 .415 .559 .667 1.000

.242 .317 .220 .207 .431 .293 .356 .357 1.000

.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000

SD

2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

SE

1 2 3 4 5 6 7 8/

MO NY=8 NE=8 NK=4 C

LY=FU,FI BE=FU,FI PS=SY,FI TE=SY,FI GA=FU,FI PH=SY,FI

PA LY

1 0 0 0 0 0 0 0

0 1 0 0 0 0 0 0

0 0 1 0 0 0 0 0

0 0 0 1 0 0 0 0

0 0 0 0 1 0 0 0

0 0 0 0 0 1 0 0

0 0 0 0 0 0 1 0

0 0 0 0 0 0 0 1

ST 1.80 LY(1,1)

ST 2.50 LY(2,2)

ST 1.36 LY(3,3)

ST 1.68 LY(4,4)

ST 0.85 LY(5,5)

ST 2.76 LY(6,6)

ST 0.62 LY(7,7)

ST 3.48 LY(8,8)

PA PS

1

0 0

1 0 1

1 0 0 1

1 0 0 0 0

0 0 0 0 0 0

1 0 0 0 0 0 0

0 0 0 0 0 1 0 0

ST 1 PS(1,1) PS(2,2) PS(3,3) PS(4,4) PS(5,5) PS(6,6) PS(7,7) PS(8,8)

PA GA

0 0 0 0

0 1 0 0

0 0 0 0

0 0 0 0

0 0 0 0

0 0 0 0

0 0 0 1

0 0 0 0

ST 1 GA(1,1) GA(2,1) GA(3,1) GA(4,1) GA(5,3) GA(6,3) GA(7,3) GA(8,3)

ST 1 GA(2,2) GA(3,2) GA(4,2) GA(6,4) GA(8,4)

PA PH

0

0 0

1 0 1

0 0 0 0

ST 0.1 PH(1,1)

ST 0.4 PH(2,2)

ST 0.6 PH(4,4)

FR BE(2,1) BE(3,2) BE(5,8) BE(8,6)

FR TE(6,1)

LK

'K1_INI1"K2_OVA1"K3_INI2"K4_OVA2'

LE

'E1_MRGU1"E2_MRGU2"E3_MRGU3"E4_MRGU4"E5_MACH1"E6_MACH2"E7_MACH3"E8_MACH4'

OU SE TV RS MI NS AD=OFF IT=1609

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ประสิทธิภาพของโมเดลการวัดที่ 3 (โมเดล base)

MODEL 3-LFA MODEL

DA NI=10 NO=400 MA=CM

LA

'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3'
'Y8_ACH4"X9_SEF"X10_ATT'

KM

1.000

.334 1.000

.307 .319 1.000

.338 .315 .388 1.000

.126 .192 .181 .150 1.000

.171 .196 .169 .141 .483 1.000

.161 .247 .182 .154 .508 .602 1.000

.146 .229 .200 .195 .415 .559 .667 1.000

.242 .317 .220 .207 .431 .293 .356 .357 1.000

.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000

SD

2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

SE

1 2 3 4 5 6 7 8/

MO NY=8 NE=4 NK=2 C

LY=FU,FI BE=FU,FI PS=SY,FI TE=SY,FI GA=FU,FI PH=SY,FI

MA LY

*

1.6 0.0 0.0 0.0

0.0 2.5 0.0 0.0

0.0 0.0 1.8 0.0

0.0 0.0 0.0 1.5

2.3 0.0 0.0 0.0

0.0 1.4 0.0 0.0

0.0 0.0 2.1 0.0

0.0 0.0 0.0 1.7

FR LY(1,1) LY(2,2) LY(3,3) LY(4,4) C

```

LY(5,1) LY(6,2) LY(8,4)
PA GA
0 0
0 0
0 1
0 0
ST 1 GA(1,1) GA(2,1) GA(3,1) GA(4,1) GA(2,2) GA(4,2)
ST 0 GA(1,2)
PA TE
1
1 1
1 1 1
1 1 1 1
0 1 1 1 0
1 1 1 1 1 1
1 1 1 1 1 1 1
0 0 0 0 1 0 0 0
PA PH
0
0 0
ST 0.35 PH(2,2)
ST 0.25 PH(1,1)
LK
'K1_MINI"K2_MOVA'
LE
'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'
OU SE TV RS MI NS AD=OFF IT=1609

```

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ประสิทธิภาพของโมเดลลิสเรลที่ 1 (โมเดล base)

MODEL LISREL 1-LFA MODEL

DA NI=10 NO=400 MA=CM

LA

'X1_RGU1"X2_RGU2"X3_RGU3"X4_RGU4"X5_ACH1"X6_ACH2"X7_ACH3"X8_ACH4'

'X9_SEF"X10_ATT'

KM

1.000

.334 1.000

.307 .319 1.000

.338 .315 .388 1.000

.126 .192 .181 .150 1.000

.171 .196 .169 .141 .483 1.000

.161 .247 .182 .154 .508 .602 1.000

.146 .229 .200 .195 .415 .559 .667 1.000

.242 .317 .220 .207 .431 .293 .356 .357 1.000

.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000

SD

2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

MO NX=10 NK=6 C

LX=FU,FI PH=SY,FR TD=SY,FI

PA LX

1 0 0 0 0 0

0 1 0 0 0 0

0 0 1 0 0 0

0 0 0 1 0 0

1 0 0 0 0 0

0 1 0 0 0 0

0 0 1 0 0 0

0 0 0 1 0 0

0 0 0 0 1 0

0 0 0 0 0 1

ST 0.60 LX(1,1)

ST 0.70 LX(2,2)

ST 0.80 LX(3,3)

ST 0.50 LX(4,4)

ST 0.75 LX(6,2)

ST 0.90 LX(7,3)

ST 0.64 LX(9,5)

ST 0.70 LX(10,6)

ST 0.95 LX(5,1)

ST 0.87 LX(8,4)

PA PH

1

1 1

1 1 1

1 1 1 1

1 1 1 1 0

0 0 0 0 0 0

ST 0.87 PH(6,1)

ST 0.69 PH(6,2)

ST 0.54 PH(6,3)

ST 0.36 PH(6,4)

ST 0.58 PH(6,5)

ST 0.75 PH(6,6)

ST 0.40 PH(5,5)

PA TD

1

1 1

1 1 1

1 1 1 1

0 0 0 0 1

0 0 0 0 0 1

0 0 0 0 1 0 1

0 0 0 0 0 0 0 1

0 0 0 0 0 1 0 0 0

0 0 0 0 0 1 0 1 1 0

ST 0.55 TD(9,9)

LK

'K1_MACH1"K2_MACH2"K3_MACH3"K4_MACH4"K5_MSEF"K6_MATT'

OU SE TV RS MI NS AD=OFF IT=89987

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ประสิทธิภาพของโมเดลลิสมรลที่ 2 (โมเดล base)

MODEL LISREL 2-LFA MODEL

DA NI=10 NO=400 MA=CM

LA

'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3'

'Y8_ACH4"X1_SEF"X2_ATT'

KM

1.000

.334 1.000

.307 .319 1.000

.338 .315 .388 1.000

.126 .192 .181 .150 1.000

.171 .196 .169 .141 .483 1.000

.161 .247 .182 .154 .508 .602 1.000

.146 .229 .200 .195 .415 .559 .667 1.000

.242 .317 .220 .207 .431 .293 .356 .357 1.000

.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000

SD

2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

MONY=8 NE=8 NX=2 NK=6 C

LY=FU,FI PS=SY,FI TE=SY,FI LX=FU,FI GA=FU,FI PH=SY,FI TD=SY,FI

PA LY

1 0 0 0 0 0 0 0

0 1 0 0 0 0 0 0

0 0 1 0 0 0 0 0

0 0 0 1 0 0 0 0

0 0 0 0 1 0 0 0

0 0 0 0 0 1 0 0

0 0 0 0 0 0 1 0

0 0 0 0 0 0 0 1

ST 2.96 LY(1,1)

ST 5.90 LY(2,2)

ST 3.45 LY(3,3)

ST 1.73 LY(5,5)

ST 0.98 LY(6,6)

ST 0.56 LY(4,4)

ST 0.96 LY(7,7)

ST 0.80 LY(8,8)

PA LX

000010

000001

ST 0.48 LX(1,5)

ST 0.70 LX(2,6)

PA GA

000000

000000

010000

000000

000000

000000

000100

000000

ST 1 GA(1,1) GA(2,1) GA(3,1) GA(4,1) C

GA(5,3) GA(6,3) GA(7,3) GA(8,3) GA(2,2) GA(3,2) GA(4,2) C

GA(6,4) GA(7,4) GA(8,4)

ST 0 GA(1,2) GA(5,4)

PA TD

0

00

ST 0.8 TD(1,1)

ST 0.7 TD(2,2)

PA PS

0

00

000

0000

00000

000001

```

0 0 0 0 0 0 0
0 0 0 0 0 0 0 0
ST 0.36 PS(1,1)
ST 0.42 PS(2,2)
ST 0.20 PS(5,5)
ST 0.30 PS(7,7)
PA TE
1
1 0
0 1 0
1 1 1 1
1 1 1 1 0
1 1 1 0 1 0
0 1 0 0 1 1 0
1 1 0 1 0 1 1 1
ST 0.50 PH(1,1)
ST 0.75 PH(2,2)
ST 0.64 PH(3,3)
ST 0.34 PH(4,4)
ST 0.62 PH(5,5)
ST 0.55 PH(6,6)
FR PH(5,1) PH(6,1) PH(5,2) PH(6,2) PH(5,3) PH(6,3) PH(5,4) C
PH(6,4) PH(3,1) PH(6,5)
FR PH=FU,FI
FR TH(2,7) TH(1,8)
LK
'K1_INI1"K2_OVA1"K3_INI2"K4_OVA2"K5_MSEF"K6_MATT'
LE
'E1_MRGU1"E2_MRGU2"E3_MRGU3"E4_MRGU4"E5_MACH1"E6_MACH2"E7_MACH3"E8_MACH4'
OU SE TV RS MI NS AD=OFF IT=1990

```

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ประสิทธิภาพของโมเดลลิשראלที่ 3 (โมเดล base)

MODEL LISREL 3-LFA MODEL

DA NI=10 NO=400 MA=CM

LA

'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3'
'Y8_ACH4"X1_SEF"X2_ATT'

KM

1.000

.334 1.000

.307 .319 1.000

.338 .315 .388 1.000

.126 .192 .181 .150 1.000

.171 .196 .169 .141 .483 1.000

.161 .247 .182 .154 .508 .602 1.000

.146 .229 .200 .195 .415 .559 .667 1.000

.242 .317 .220 .207 .431 .293 .356 .357 1.000

.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000

SD

2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

MO NX=2 NY=8 NK=4 NE=4 C

LX=FU,FI LY=FU,FI GA=FU,FI PS=SY,FI PH=SY,FI TE=SY,FI TD=SY,FI

PA LY

1 0 0 0

0 1 0 0

0 0 1 0

0 0 0 1

1 0 0 0

0 1 0 0

0 0 1 0

0 0 0 1

ST 1.95 LY(1,1)

ST 1.86 LY(2,2)

ST 2.90 LY(3,3)

ST 1.54 LY(4,4)

ST 1.99 LY(5,1)

ST 2.87 LY(6,2)

ST 2.56 LY(7,3)

ST 1.75 LY(8,4)
PA LX
0 0 1 0
0 0 0 1
ST 0.99 LX(1,3)
ST 0.98 LX(2,4)
PA GA
0 0 0 0
0 0 0 0
0 1 0 0
0 0 0 0
ST 1 GA(1,1) GA(2,1) GA(3,1) GA(4,1) GA(2,2) GA(3,2) GA(4,2)
ST 0 GA(1,2)
PA PS
0
0 0
0 0 0
0 0 0 0
FR PH=FU,FR
FR PH(1,1) PH(3,1) PH(3,2) PH(4,2) PH(4,1)
ST 0.62 PH(1,1)
ST 0.53 PH(2,2) PH(3,1)
ST 0.82 PH(3,3)
ST 0.75 PH(4,4) PH(4,3)
ST 0.84 PH(3,2)
ST 0.35 PH(4,1)
PA TE
1
1 1
1 1 1
1 1 1 1
1 1 0 1 0
1 0 0 0 1 1
0 1 1 0 0 1 1

```

0 0 0 1 1 1 1 1
PA TD
0
0 1
ST 0.2 TD(1,1)
ST 0.3 TD(2,2)
FR TH=FU,FI
FR TH(1,2) TH(1,1) TH(2,2) TH(1,3) TH(1,4) TH(2,6) TH(2,3) C
TH(1,6) TH(2,1)
LE
'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'
LK
'K1_MINI"K2_MOVA"K3_MSEF"K4_MATT'
OU SE TV RS MI NS AD=OFF IT=99990

```

ตัวอย่างคำสั่งสำหรับสร้างตัวป้องกันคะแนนพัฒนาการของผลสัมฤทธิ์ทางการเรียนคณิตศาสตร์

```

MODEL 3-OVERALL MODEL
DA NI=10 NO=400 MA=CM
LA
'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3'
'Y8_ACH4"X9_SEF"X10_ATT'
KM
1.000
.334 1.000
.307 .319 1.000
.338 .315 .388 1.000
.126 .192 .181 .150 1.000
.171 .196 .169 .141 .483 1.000
.161 .247 .182 .154 .508 .602 1.000
.146 .229 .200 .195 .415 .559 .667 1.000
.242 .317 .220 .207 .431 .293 .356 .357 1.000
.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000
SD
2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

```

SE

1 2 3 4 5 6 7 8/

MO NY=8 NE=4 NK=2 C

LY=FU,FI BE=FU,FI PS=SY,FI TE=SY,FI GA=FU,FI PH=SY,FI

MA LY

*

1.6 0.0 0.0 0.0

0.0 2.5 0.0 0.0

0.0 0.0 1.8 0.0

0.0 0.0 0.0 1.5

2.3 0.0 0.0 0.0

0.0 1.4 0.0 0.0

0.0 0.0 2.1 0.0

0.0 0.0 0.0 1.7

FR LY(1,1) LY(2,2) LY(3,3) LY(4,4) C

LY(5,1) LY(6,2) LY(7,3) LY(8,4)

PA GA

0 0

0 0

0 1

0 0

ST 1 GA(1,1) GA(2,1) GA(3,1) GA(4,1) GA(2,2) GA(4,2)

ST 0 GA(1,2)

PA TE

1

1 1

1 1 1

1 1 1 1

1 1 0 0 1

1 0 0 0 1 1

0 0 1 0 1 0 1

0 0 0 0 0 0 0 1

PA PH

1

0 0
ST 0.35 PH(2,2)
ST 0.25 PH(1,1)
LK
'K1_MINI"K2_MOVA'
LE
'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'
EQ LY(1,1) LY(2,2) LY(3,3) LY(4,4)
OU SE TV RS MI NS FS AD=OFF IT=1609

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ตรวจสอบความไม่แปรเปลี่ยนของรูปแบบโมเดลการวัดที่ 3
ระหว่างกลุ่มนักเรียนต่างกลุ่ม ด้วยการวิเคราะห์โมเดลสมการโครงสร้างกลุ่มพหุ (นำเสนอเฉพาะ
โมเดลที่มีประสิทธิภาพสูงสุด)

MODEL 3-ILFA MODEL
DA NG=2 NI=10 NO=400 MA=CM
LA
'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3'
'Y8_ACH4"X9_SEF"X10_ATT'
KM
1.000
.334 1.000
.307 .319 1.000
.338 .315 .388 1.000
.126 .192 .181 .150 1.000
.171 .196 .169 .141 .483 1.000
.161 .247 .182 .154 .508 .602 1.000
.146 .229 .200 .195 .415 .559 .667 1.000
.242 .317 .220 .207 .431 .293 .356 .357 1.000
.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000
SD
2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75
SE
1 2 3 4 5 6 7 8/
MO NY=8 NE=4 NK=2 C

LY=FU,FI BE=FU,FI PS=SY,FI TE=SY,FI GA=FU,FI PH=SY,FI

MA LY

*

2.6 0.0 0.0 0.0

0.0 2.5 0.0 0.0

0.0 0.0 2.8 0.0

0.0 0.0 0.0 2.5

2.3 0.0 0.0 0.0

0.0 2.4 0.0 0.0

0.0 0.0 2.1 0.0

0.0 0.0 0.0 2.7

FR LY(1,1) LY(2,2) LY(3,3) LY(4,4) C

LY(5,1) LY(6,2) LY(8,4) LY(7,3)

PA GA

0 0

0 1

0 1

0 0

ST 1 GA(1,1) GA(2,1) GA(3,1) GA(4,1) GA(2,2) GA(4,2)

ST 0 GA(1,2)

PA TE

1

1 1

1 1 1

1 1 1 1

0 0 1 1 1

0 0 0 1 1 1

0 0 0 0 1 1 1

0 0 0 0 1 0 0 1

ST 1.5 TE(1,1) TE(2,2) TE(3,3) TE(4,4) TE(5,5) TE(6,6) TE(7,7) TE(8,8)

PA PH

1

0 0

ST 0.35 PH(2,2)

ST 0.25 PH(1,1)

LK

'K1_MINI"K2_MOVA'

LE

'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'

OU SE TV RS MI NS AD=OFF IT=1160

GROUP 2

DA NI=10 NO=400 MA=CM

LA

'X1_RGU1"X2_RGU2"X3_RGU3"X4_RGU4"X5_ACH1"X6_ACH2"X7_ACH3"X8_ACH4'

'X9_SEF"X10_ATT'

KM

1.000

.349 1.000

.311 .411 1.000

.361 .355 .440 1.000

.127 .132 .027 .074 1.000

.105 .072 .018 .107 .555 1.000

.158 .131 .051 .140 .462 .542 1.000

.089 .129 .074 .161 .430 .540 .620 1.000

.103 .186 .084 .175 .431 .325 .366 .349 1.000

.113 .117 .112 .138 .374 .377 .348 .252 .342 1.000

SD

3.27 2.88 3.18 3.50 19.51 20.90 19.04 18.01 3.53 13.99

SE

1 2 3 4 5 6 7 8/

MO NY=8 NE=4 NK=2 C

LY=PS BE=PS PS=PS TE=PS GA=PS PH=PS

LK

'K1_MINI"K2_MOVA'

LE

'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'

OU SC SE TV RS MI NS AD=OFF

ตัวอย่างคำสั่งที่ใช้ในการวิเคราะห์ที่ตรวจสอบความไม่แปรเปลี่ยนของรูปแบบโมเดลอิสระที่ 3
ระหว่างกลุ่มนักเรียนต่างกลุ่ม ด้วยการวิเคราะห์โมเดลสมการโครงสร้างกลุ่มพหุ (นำเสนอเฉพาะ
โมเดลที่มีประสิทธิภาพสูงสุด)

MODEL LISREL 3-ILFA MODEL

DA NG=2 NI=10 NO=400 MA=CM

LA

'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3'

'Y8_ACH4"X1_SEF"X2_ATT'

KM

1.000

.334 1.000

.307 .319 1.000

.338 .315 .388 1.000

.126 .192 .181 .150 1.000

.171 .196 .169 .141 .483 1.000

.161 .247 .182 .154 .508 .602 1.000

.146 .229 .200 .195 .415 .559 .667 1.000

.242 .317 .220 .207 .431 .293 .356 .357 1.000

.115 .149 .124 .110 .311 .460 .377 .407 .250 1.000

SD

2.92 3.03 3.10 3.31 20.25 20.60 20.37 19.38 3.80 13.75

MO NX=2 NY=8 NK=4 NE=4 C

LX=FU,FI LY=FU,FI GA=FU,FI PS=SY,FI PH=SY,FI TE=SY,FI TD=SY,FI

MA LY

*

0.3 0.0 0.0 0.0

0.0 0.5 0.0 0.0

0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.0

FR LY(1,1) LY(2,2) LY(3,3) LY(4,4) LY(5,1) LY(6,2) LY(7,3) LY(8,4)

MA LX

*

0.0 0.0 0.0 0.0

0.0 0.0 0.0 0.5

FR LX(1,3) LX(2,4)

MA GA

*

1.0 0.0 0.0 0.0

1.0 1.0 0.0 0.0

1.0 1.0 0.0 0.0

1.0 1.0 0.0 0.0

FR GA(3,2) GA(4,2)

PA PS

0

0 0

0 0 0

0 0 0 0

FR PH=FU,FR

FR PH(4,1) PH(4,3)

ST 5.53 PH(2,2) PH(3,2)

ST 22.82 PH(3,3) PH(4,3)

ST 21.75 PH(4,4) PH(4,1)

ST 20.84 PH(2,1) PH(1,1)

ST 14.35 PH(3,1) PH(4,2)

MA TE

*

200.3

25.5 200.6

24.2 28.5 200.6

26.5 29.6 29.7 200.7

28.5 28.7 27.0 25.9 200.4

29.2 29.8 25.7 28.8 28.6 200.4

28.5 26.4 26.5 29.8 23.7 29.1 200.1

21.7 27.8 29.5 28.4 26.6 29.7 27.8 200.6

FR TE(1,1) TE(2,2) TE(3,3) TE(4,4) TE(6,6) C
 TE(2,1) TE(3,1) TE(3,2) TE(4,1) TE(4,2) TE(4,3) C
 TE(5,1) TE(5,2) TE(5,3) TE(5,4) TE(6,1) TE(6,2) TE(6,3) C
 TE(6,4) TE(6,5) TE(7,1) TE(7,2) TE(7,3) TE(7,4) TE(7,5) C
 TE(7,6) TE(8,1) TE(8,2) TE(8,3) TE(8,5) TE(8,6) TE(8,4) C
 TE(8,7)
 MA TD
 *
 5.5
 0 5.5
 FR TD(1,1)
 FR TH=FU,FI
 FR TH(1,2) TH(1,3) TH(2,6) TH(1,1) TH(1,7) C
 TH(2,4) TH(1,5)
 LK
 'K1_MINI"K2_MOVA"K3_MSEF"K4_MATT'
 LE
 'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'
 OU SC RS MI NS AD=OFF IT=950000
 GROUP 2
 DA NI=10 NO=400 MA=CM
 LA
 'Y1_RGU1"Y2_RGU2"Y3_RGU3"Y4_RGU4"Y5_ACH1"Y6_ACH2"Y7_ACH3"Y8_ACH4'
 'X1_SEF"X2_ATT'
 KM
 1.000
 .349 1.000
 .311 .411 1.000
 .361 .355 .440 1.000
 .127 .132 .027 .074 1.000
 .105 .072 .018 .107 .555 1.000
 .158 .131 .051 .140 .462 .542 1.000
 .089 .129 .074 .161 .430 .540 .620 1.000
 .103 .186 .084 .175 .431 .325 .366 .349 1.000

.113 .117 .112 .138 .374 .377 .348 .252 .342 1.000
SD
3.27 2.88 3.18 3.50 19.51 20.90 19.04 18.01 3.53 13.99
MO NX=2 NY=8 NK=4 NE=4 C
LX=PS LY=PS GA=PS PS=PS PH=PS TE=PS TD=PS
LK
'K1_MINI"K2_MOVA"K3_MSEF"K4_MATT'
LE
'E1_MACH1"E2_MACH2"E3_MACH3"E4_MACH4'
OU SC RS MI NS AD=OFF IT=950000

ตัวอย่างผลการวิเคราะห์

ตัวอย่างผลการวิเคราะห์ประสิทธิภาพของโมเดลการวัดที่ 3 (โมเดล base) นำเสนอเฉพาะโมเดลที่มีประสิทธิภาพสูงสุดและแสดงรายละเอียดส่วนที่สำคัญเท่านั้น

MODEL 3-LFA MODEL

DA NI=10 NO=400 MA=CM

Number of Iterations = 42

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
	-----	-----	-----	-----
Y1_RGU1	0.83	--	--	--
	(0.28)			
	2.96			
Y2_RGU2	--	0.83	--	--
		(0.19)		
		4.43		
Y3_RGU3	--	--	0.09	--
			(0.02)	
			3.81	
Y4_RGU4	--	--	--	0.76
				(0.20)
				3.70

Y5_ACH1	40.49	--	--	--
	(1.43)			
	28.25			
Y6_ACH2	--	14.70	--	--
		(1.22)		
		12.09		
Y7_ACH3	--	--	2.10	--
Y8_ACH4	--	--	--	24.97
				(0.88)
				28.28

GAMMA

	K1_MINI	K2_MOVA
	-----	-----
E1_MACH1	1.00	--
E2_MACH2	1.00	1.00
E3_MACH3	1.00	13.49
		(0.94)
		14.31
E4_MACH4	1.00	1.00

PHI

Note: This matrix is diagonal.

K1_MINI	K2_MOVA
-----	-----
0.25	0.35

Squared Multiple Correlations for Structural Equations

E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
-----	-----	-----	-----
1.00	1.00	1.00	1.00

Squared Multiple Correlations for Reduced Form

E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
-----	-----	-----	-----
1.00	1.00	1.00	1.00

THETA-EPS

	Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
	-----	-----	-----	-----	-----	-----
Y1_RGU1	8.35					
	(0.59)					
	14.14					
Y2_RGU2	2.73	8.73				
	(0.45)	(0.62)				
	6.07	14.13				
Y3_RGU3	2.72	2.60	9.08			
	(0.47)	(0.47)	(0.66)			
	5.78	5.55	13.73			
Y4_RGU4	3.05	2.74	3.61	10.57		
	(0.50)	(0.50)	(0.53)	(0.75)		
	6.16	5.49	6.86	14.13		
Y5_ACH1	--	3.64	10.70	2.67	--	
		(2.75)	(3.09)	(3.02)		
		1.32	3.47	0.88		
Y6_ACH2	6.14	4.50	3.90	2.47	52.04	292.63
	(2.45)	(2.53)	(2.61)	(2.78)	(16.93)	(20.71)
	2.51	1.78	1.50	0.89	3.07	14.13
Y7_ACH3	7.66	6.05	-0.97	1.87	187.15	96.85
	(2.70)	(2.26)	(2.59)	(2.47)	(22.59)	(13.88)
	2.83	2.67	-0.37	0.76	8.28	6.98
Y8_ACH4	--	--	--	--	-92.23	--
					(15.08)	
					-6.12	

THETA-EPS

	Y7_ACH3	Y8_ACH4
	-----	-----
Y7_ACH3	130.49	
	(22.26)	
	5.86	
Y8_ACH4	--	--

Squared Multiple Correlations for Y - Variables

Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
-----	-----	-----	-----	-----	-----
0.02	0.05	0.05	0.03	1.00	0.31

Squared Multiple Correlations for Y - Variables

Y7_ACH3	Y8_ACH4
-----	-----
0.68	1.00

Goodness of Fit Statistics

Degrees of Freedom = 1

Minimum Fit Function Chi-Square = 1.92 (P = 0.17)

Normal Theory Weighted Least Squares Chi-Square = 1.91 (P = 0.17)

Estimated Non-centrality Parameter (NCP) = 0.91

90 Percent Confidence Interval for NCP = (0.0 ; 9.17)

Minimum Fit Function Value = 0.0048

Population Discrepancy Function Value (F0) = 0.0023

90 Percent Confidence Interval for F0 = (0.0 ; 0.023)

Root Mean Square Error of Approximation (RMSEA) = 0.048

90 Percent Confidence Interval for RMSEA = (0.0 ; 0.15)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.36

Expected Cross-Validation Index (ECVI) = 0.18

90 Percent Confidence Interval for ECVI = (0.18 ; 0.20)

ECVI for Saturated Model = 0.18

ECVI for Independence Model = 2.17

Chi-Square for Independence Model with 28 Degrees of Freedom = 851.56

Independence AIC = 867.56

Model AIC = 71.91

Saturated AIC = 72.00

Independence CAIC = 907.50

Model CAIC = 246.61

Saturated CAIC = 251.69

Normed Fit Index (NFI) = 1.00

Non-Normed Fit Index (NNFI) = 0.97

Parsimony Normed Fit Index (PNFI) = 0.036
 Comparative Fit Index (CFI) = 1.00
 Incremental Fit Index (IFI) = 1.00
 Relative Fit Index (RFI) = 0.94
 Critical N (CN) = 1376.99
 Root Mean Square Residual (RMR) = 1.29
 Standardized RMR = 0.013
 Goodness of Fit Index (GFI) = 1.00
 Adjusted Goodness of Fit Index (AGFI) = 0.96
 Parsimony Goodness of Fit Index (PGFI) = 0.028

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -1.38
 Median Standardized Residual = 1.38
 Largest Standardized Residual = 1.39
 Standardized Residual = 2.14

ตัวอย่างผลการวิเคราะห์ประสิทธิภาพของโมเดลอิสระที่ 3 (โมเดล base) นำเสนอเฉพาะโมเดลที่มีประสิทธิภาพสูงสุดและแสดงรายละเอียดส่วนที่สำคัญเท่านั้น

MODEL LISREL 3-LFA MODEL

DA NI=10 NO=400 MA=CM

Number of Iterations =116

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
	-----	-----	-----	-----
Y1_RGU1	1.77	--	--	--
	(1.01)			
	1.75			
Y2_RGU2	--	1.00	--	--
		(0.22)		
		4.49		
Y3_RGU3	--	--	1.07	--
			(0.45)	
			2.39	

Y4_RGU4	--	--	--	0.79 (0.25) 3.10
Y5_ACH1	38.67 (15.79) 2.45	--	--	--
Y6_ACH2	--	15.21 (3.94) 3.86	--	--
Y7_ACH3	--	--	19.76 (8.00) 2.47	--
Y8_ACH4	--	--	--	16.80 (4.05) 4.15

LAMBDA-X

	K1_MINI	K2_MOVA	K3_MSEF	K4_MATT
	-----	-----	-----	-----
X1_SEF	--	--	4.17 (0.15) 27.86	--
X2_ATT	--	--	--	4.18 (0.82) 5.09

GAMMA

	K1_MINI	K2_MOVA	K3_MSEF	K4_MATT
	-----	-----	-----	-----
E1_MACH1	1.00	--	--	--
E2_MACH2	1.00	1.00	--	--
E3_MACH3	1.00	0.74 (0.28) 2.62	--	--
E4_MACH4	1.00	1.00	--	--

PHI

	K1_MINI	K2_MOVA	K3_MSEF	K4_MATT
	-----	-----	-----	-----
K1_MINI	0.27			
	(0.22)			
	1.22			
K2_MOVA	--	0.53		
K3_MSEF	0.21	0.17	0.82	
	(0.09)	(0.05)		
	2.34	3.38		
K4_MATT	0.54	1.00	0.75	0.75
	(0.24)	(0.28)		
	2.22	3.55		

Squared Multiple Correlations for Structural Equations

E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
-----	-----	-----	-----
1.00	1.00	1.00	1.00

THETA-EPS

	Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
	-----	-----	-----	-----	-----	-----
Y1_RGU1	7.66					
	(0.71)					
	10.85					
Y2_RGU2	2.47	8.38				
	(0.46)	(0.64)				
	5.36	13.05				
Y3_RGU3	2.26	2.28	8.96			
	(0.47)	(0.48)	(0.65)			
	4.85	4.76	13.78			
Y4_RGU4	2.88	2.53	3.42	10.46		
	(0.49)	(0.51)	(0.53)	(0.76)		
	5.83	4.99	6.47	13.75		
Y5_ACH1	-11.36	1.20	--	1.71	--	
	(5.01)	(4.24)		(3.32)		

	-2.27	0.28		0.52		
Y6_ACH2	2.88	--	--	--	40.25	238.36
	(2.40)				(45.59)	(67.76)
	1.20				0.88	3.52
Y7_ACH3	--	2.08	-0.47	--	--	52.06
		(2.42)	(2.09)			(47.61)
		0.86	-0.22			1.09
Y8_ACH4	--	--	--	1.87	-15.10	17.59
				(2.43)	(40.50)	(53.72)
				0.77	-0.37	0.33

THETA-EPS

	Y7_ACH3	Y8_ACH4
	-----	-----
Y7_ACH3	193.83	
	(48.43)	
	4.00	
Y8_ACH4	41.68	148.65
	(51.36)	(60.86)
	0.81	2.44

Squared Multiple Correlations for Y - Variables

Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
-----	-----	-----	-----	-----	-----
0.10	0.09	0.07	0.05	1.00	0.44

Squared Multiple Correlations for Y - Variables

Y7_ACH3	Y8_ACH4
-----	-----
0.53	0.60

THETA-DELTA

X1_SEF	X2_ATT
-----	-----
0.20	175.95
	(12.55)
	14.02

Squared Multiple Correlations for X - Variables

X1_SEF	X2_ATT
-----	-----
0.99	0.07

Goodness of Fit Statistics

Degrees of Freedom = 4

Minimum Fit Function Chi-Square = 0.020 (P = 1.00)

Normal Theory Weighted Least Squares Chi-Square = 0.020 (P = 1.00)

Estimated Non-centrality Parameter (NCP) = 0.0

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

Minimum Fit Function Value = 0.00

Population Discrepancy Function Value (F0) = 0.0

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

Root Mean Square Error of Approximation (RMSEA) = 0.0

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

P-Value for Test of Close Fit (RMSEA < 0.05) = 1.00

Expected Cross-Validation Index (ECVI) = 0.27

90 Percent Confidence Interval for ECVI = (0.27 ; 0.27)

ECVI for Saturated Model = 0.28

ECVI for Independence Model = 2.81

Chi-Square for Independence Model with 45 Degrees of Freedom = 1101.10

Independence AIC = 1121.10

Model AIC = 102.02

Saturated AIC = 110.00

Independence CAIC = 1171.01

Model CAIC = 356.59

Saturated CAIC = 384.53

Normed Fit Index (NFI) = 1.00

Non-Normed Fit Index (NNFI) = 1.04

Parsimony Normed Fit Index (PNFI) = 0.089

Comparative Fit Index (CFI) = 1.00

Incremental Fit Index (IFI) = 1.00

Relative Fit Index (RFI) = 1.00

Critical N (CN) = 259329.73

Root Mean Square Residual (RMR) = 0.071

Standardized RMR = 0.00055

Goodness of Fit Index (GFI) = 1.00

Adjusted Goodness of Fit Index (AGFI) = 1.00

Parsimony Goodness of Fit Index (PGFI) = 0.073

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -0.14

Median Standardized Residual = 0.05

Largest Standardized Residual = 0.14

ตัวอย่างผลการวิเคราะห์สำหรับทดสอบความไม่แปรเปลี่ยนของรูปแบบโมเดลการวัดการเปลี่ยนแปลงที่ 3 ด้วยการวิเคราะห์โมเดลสมการโครงสร้างกลุ่มพหุ นำเสนอเฉพาะโมเดลที่มีประสิทธิภาพสูงสุด และแสดงรายละเอียดส่วนที่สำคัญเท่านั้น

MODEL 3-ILFA MODEL

DA NG=2 NI=10 NO=400 MA=CM

Number of Iterations =529

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
	-----	-----	-----	-----
Y1_RGU1	0.97	--	--	--
	(0.74)			
	1.30			
Y2_RGU2	--	1.36	--	--
		(0.85)		
		1.60		
Y3_RGU3	--	--	1.06	--
			(0.62)	
			1.72	
Y4_RGU4	--	--	--	0.80
				(0.32)
				2.52

Y5_ACH1	19.59	--	--	--
	(13.29)			
	1.47			
Y6_ACH2	--	22.25	--	--
		(13.63)		
		1.63		
Y7_ACH3	--	--	23.79	--
			(13.15)	
			1.81	
Y8_ACH4	--	--	--	20.16
				(8.11)
				2.49

GAMMA

	K1_MINI	K2_MOVA
	-----	-----
E1_MACH1	1.00	--
E2_MACH2	1.00	0.19
		(0.31)
		0.63
E3_MACH3	1.00	0.34
		(0.31)
		1.12
E4_MACH4	1.00	1.00

PHI

Note: This matrix is diagonal.

K1_MINI	K2_MOVA
-----	-----
0.43	0.35
(0.55)	
0.78	

Squared Multiple Correlations for Y - Variables

Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
-----	-----	-----	-----	-----	-----
0.05	0.09	0.06	0.05	0.40	0.52

Squared Multiple Correlations for Y - Variables

Y7_ACH3 Y8_ACH4

----- -----
0.64 0.84

Group Goodness of Fit Statistics

Contribution to Chi-Square = 1.39

Percentage Contribution to Chi-Square = 29.38

Root Mean Square Residual (RMR) = 0.33

Standardized RMR = 0.0053

Goodness of Fit Index (GFI) = 1.00

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -1.16

Median Standardized Residual = -0.13

Largest Standardized Residual = 0.81

GROUP 2

Number of Iterations = 529

LISREL Estimates (Maximum Likelihood)

LAMBDA-Y

	E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
	-----	-----	-----	-----
X1_RGU1	0.79	--	--	--
	(0.83)			
	0.95			
X2_RGU2	--	0.63	--	--
		(0.58)		
		1.08		
X3_RGU3	--	--	0.24	--
			(0.34)	
			0.72	
X4_RGU4	--	--	--	0.72
				(0.38)
				1.90
X5_ACH1	28.74	--	--	--
	(26.26)			

		1.09		
X6_ACH2	--	22.01	--	--
		(18.77)		
		1.17		
X7_ACH3	--	--	29.98	--
			(23.29)	
			1.29	
X8_ACH4	--	--	--	17.49
				(9.51)
				1.84

GAMMA

	K1_MINI	K2_MOVA
	-----	-----
E1_MACH1	1.00	--
E2_MACH2	1.00	0.40
		(0.42)
		0.94
E3_MACH3	1.00	0.05
		(0.64)
		0.09
E4_MACH4	1.00	1.00

PHI

Note: This matrix is diagonal.

K1_MINI	K2_MOVA
-----	-----
0.39	0.35
(0.69)	
0.56	

Squared Multiple Correlations for Structural Equations

E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
-----	-----	-----	-----
1.00	1.00	1.00	1.00

Squared Multiple Correlations for Y - Variables

X1_RGU1	X2_RGU2	X3_RGU3	X4_RGU4	X5_ACH1	X6_ACH2
---------	---------	---------	---------	---------	---------

-----	-----	-----	-----	-----	-----
0.02	0.02	0.00	0.03	0.84	0.49

Squared Multiple Correlations for Y - Variables

X7_ACH3 X8_ACH4

-----	-----
0.96	0.70

Global Goodness of Fit Statistics

Degrees of Freedom = 8

Minimum Fit Function Chi-Square = 4.74 (P = 0.79)

Normal Theory Weighted Least Squares Chi-Square = 4.72 (P = 0.79)

Estimated Non-centrality Parameter (NCP) = 0.0

90 Percent Confidence Interval for NCP = (0.0 ; 4.83)

Minimum Fit Function Value = 0.0059

Population Discrepancy Function Value (F0) = 0.0

90 Percent Confidence Interval for F0 = (0.0 ; 0.0061)

Root Mean Square Error of Approximation (RMSEA) = 0.0

90 Percent Confidence Interval for RMSEA = (0.0 ; 0.039)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.98

Expected Cross-Validation Index (ECVI) = 0.17

90 Percent Confidence Interval for ECVI = (0.17 ; 0.18)

ECVI for Saturated Model = 0.090

ECVI for Independence Model = 2.14

Chi-Square for Independence Model with 56 Degrees of Freedom = 1688.85

Independence AIC = 1720.85

Model AIC = 132.72

Saturated AIC = 144.00

Independence CAIC = 1811.80

Model CAIC = 496.54

Saturated CAIC = 553.29

Normed Fit Index (NFI) = 1.00

Non-Normed Fit Index (NNFI) = 1.01

Parsimony Normed Fit Index (PNFI) = 0.14

Comparative Fit Index (CFI) = 1.00

Incremental Fit Index (IFI) = 1.00

Relative Fit Index (RFI) = 0.98
Critical N (CN) = 3386.93
Group Goodness of Fit Statistics
Contribution to Chi-Square = 3.34
Percentage Contribution to Chi-Square = 70.62
Root Mean Square Residual (RMR) = 0.63
Standardized RMR = 0.011
Goodness of Fit Index (GFI) = 1.00
Summary Statistics for Standardized Residuals
Smallest Standardized Residual = -1.49
Median Standardized Residual = 0.31
Largest Standardized Residual = 1.75

ตัวอย่างผลการวิเคราะห์สำหรับสร้างตัวบ่งชี้คะแนนพัฒนาการของผลสัมฤทธิ์ทางการเรียน
คณิตศาสตร์

MODEL 3-OVERALL MODEL

DA NI=10 NO=400 MA=CM

Number of Iterations = 54

LISREL Estimates (Maximum Likelihood)

	LAMBDA-Y			
	E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
	-----	-----	-----	-----
Y1_RGU1	0.85	--	--	--
	(0.28)			
	3.06			
Y2_RGU2	--	0.85	--	--
		(0.28)		
		3.06		
Y3_RGU3	--	--	0.85	--
			(0.28)	
			3.06	
Y4_RGU4	--	--	--	0.85
				(0.28)
				3.06

Y5_ACH1	17.73	--	--	--
	(10.04)			
	1.77			
Y6_ACH2	--	15.06	--	--
		(3.94)		
		3.82		
Y7_ACH3	--	--	20.00	--
			(7.29)	
			2.74	
Y8_ACH4	--	--	--	15.77
				(4.16)
				3.79

GAMMA

	K1_MINI	K2_MOVA
	-----	-----
E1_MACH1	1.00	--
E2_MACH2	1.00	1.00
E3_MACH3	1.00	0.69
		(0.33)
		2.08
E4_MACH4	1.00	1.00

PHI

Note: This matrix is diagonal.

K1_MINI	K2_MOVA
-----	-----
0.59	0.35
(0.49)	
1.22	

Squared Multiple Correlations for Structural Equations

E1_MACH1	E2_MACH2	E3_MACH3	E4_MACH4
-----	-----	-----	-----
1.00	1.00	1.00	1.00

THETA-EPS

	Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
	-----	-----	-----	-----	-----	-----
Y1_RGU1	8.12					
	(0.59)					
	13.76					
Y2_RGU2	2.51	8.42				
	(0.44)	(0.60)				
	5.69	13.92				
Y3_RGU3	2.34	2.33	9.00			
	(0.45)	(0.46)	(0.65)			
	5.17	5.05	13.88			
Y4_RGU4	2.93	2.52	3.41	10.46		
	(0.49)	(0.49)	(0.53)	(0.75)		
	5.96	5.10	6.49	13.96		
Y5_ACH1	-2.32	1.45	--	--	222.81	
	(2.81)	(2.34)			(64.36)	
	-0.82	0.62			3.46	
Y6_ACH2	3.08	--	--	--	42.76	210.45
	(2.23)				(16.15)	(18.87)
	1.38				2.65	11.15
Y7_ACH3	--	--	-1.44	--	-1.11	--
			(1.90)		(36.74)	
			-0.76		-0.03	
Y8_ACH4	--	--	--	--	--	--

THETA-EPS

	Y7_ACH3	Y8_ACH4
	-----	-----
Y7_ACH3	111.00	
	(27.11)	
	4.09	
Y8_ACH4	--	141.03
		(15.93)
		8.85

Squared Multiple Correlations for Y - Variables

Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
-----	-----	-----	-----	-----	-----
0.05	0.07	0.06	0.06	0.46	0.50

Squared Multiple Correlations for Y - Variables

Y7_ACH3	Y8_ACH4
-----	-----
0.73	0.62

Goodness of Fit Statistics

Degrees of Freedom = 9

Minimum Fit Function Chi-Square = 4.67 (P = 0.86)

Normal Theory Weighted Least Squares Chi-Square = 4.63 (P = 0.87)

Estimated Non-centrality Parameter (NCP) = 0.0

90 Percent Confidence Interval for NCP = (0.0 ; 3.16)

Minimum Fit Function Value = 0.012

Population Discrepancy Function Value (F0) = 0.0

90 Percent Confidence Interval for F0 = (0.0 ; 0.0079)

Root Mean Square Error of Approximation (RMSEA) = 0.0

90 Percent Confidence Interval for RMSEA = (0.0 ; 0.030)

P-Value for Test of Close Fit (RMSEA < 0.05) = 0.99

Expected Cross-Validation Index (ECVI) = 0.16

90 Percent Confidence Interval for ECVI = (0.16 ; 0.17)

ECVI for Saturated Model = 0.18

ECVI for Independence Model = 2.17

Chi-Square for Independence Model with 28 Degrees of Freedom = 851.56

Independence AIC = 867.56

Model AIC = 58.63

Saturated AIC = 72.00

Independence CAIC = 907.50

Model CAIC = 193.40

Saturated CAIC = 251.69

Normed Fit Index (NFI) = 0.99

Non-Normed Fit Index (NNFI) = 1.02

Parsimony Normed Fit Index (PNFI) = 0.32

Comparative Fit Index (CFI) = 1.00

Incremental Fit Index (IFI) = 1.01

Relative Fit Index (RFI) = 0.98

Critical N (CN) = 1854.04

Root Mean Square Residual (RMR) = 1.14

Standardized RMR = 0.015

Goodness of Fit Index (GFI) = 1.00

Adjusted Goodness of Fit Index (AGFI) = 0.99

Parsimony Goodness of Fit Index (PGFI) = 0.25

Summary Statistics for Standardized Residuals

Smallest Standardized Residual = -1.51

Median Standardized Residual = 0.02

Largest Standardized Residual = 1.19

MODEL 3-OVERALL MODEL

Factor Scores Regressions

ETA

	Y1_RGU1	Y2_RGU2	Y3_RGU3	Y4_RGU4	Y5_ACH1	Y6_ACH2
	-----	-----	-----	-----	-----	-----
E1_MACH1	0.02	0.00	0.01	0.00	0.01	0.00
E2_MACH2	-0.01	0.01	0.01	0.01	0.00	0.01
E3_MACH3	0.00	0.01	0.01	0.00	0.01	0.01
E4_MACH4	-0.01	0.01	0.01	0.01	0.00	0.01

ETA

	Y7_ACH3	Y8_ACH4
	-----	-----
E1_MACH1	0.02	0.01
E2_MACH2	0.02	0.02
E3_MACH3	0.02	0.01
E4_MACH4	0.02	0.02