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Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 1					
Model A: Restricted Oblique Clusters (24 df)					
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The CALIS Procedure					
Covariance Structure Analysis: Pattern and Initial Values					
FACTOR Model Statement					
	Matrix	Rows	Columns	-----Matrix Type-----	
Term 1	1	F	9	3	GENERAL
	2	P	3	3	SYMMETRIC
Term 2	3	U	9	9	SYMMETRIC
Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 3					
Model A: Restricted Oblique Clusters (24 df)					
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The CALIS Procedure					
Covariance Structure Analysis: Maximum Likelihood Estimation					
Fit Function	0.3654				
Goodness of Fit Index (GFI)	0.9285				
GFI Adjusted for Degrees of Freedom (AGFI)	0.8659				
Root Mean Square Residual (RMR)	0.0751				
Parsimonious GFI (Mulaik, 1989)	0.6190				
Chi-Square	52.6178				
Chi-Square DF	24				
Pr > Chi-Square	0.0006				
Independence Model Chi-Square	496.67				
Independence Model Chi-Square DF	36				
RMSEA Estimate	0.0910				
RMSEA 90% Lower Confidence Limit	0.0575				
RMSEA 90% Upper Confidence Limit	0.1245				
ECVI Estimate	0.6788				
ECVI 90% Lower Confidence Limit	0.5577				
ECVI 90% Upper Confidence Limit	0.8579				
Probability of Close Fit	0.0250				
Bentler's Comparative Fit Index	0.9379				
Normal Theory Reweighted LS Chi-Square	49.9204				
Akaike's Information Criterion	4.6178				
Bozdogan's (1987) CAIC	-90.8238				
Schwarz's Bayesian Criterion	-66.8238				
McDonald's (1989) Centrality	0.9060				
Bentler & Bonett's (1980) Non-normed Index	0.9068				
Bentler & Bonett's (1980) NFI	0.8941				
James, Mulaik, & Brett (1982) Parsimonious NFI	0.5960				
Z-Test of Wilson & Hilferty (1931)	3.2045				
Bollen (1986) Normed Index Rhol	0.8411				
Bollen (1988) Non-normed Index Delta2	0.9395				
Hoelter's (1983) Critical N	101				

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Model A: Restricted Oblique Clusters (24 df)					
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Covariance Structure Analysis: Maximum Likelihood Estimation					
Estimated Parameter Matrix _P_[3:3]					
Symmetric Matrix					
	FCOR1	FCOR2	FCOR3		
FCOR1	1.0000	0.5431	0.5113	[C1]	[C2]
FCOR2	0.5431	1.0000	0.3204	[C1]	[C3]
FCOR3	0.5113	0.3204	1.0000	[C2]	[C3]
Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 5					
Model A: Restricted Oblique Clusters (24 df)					
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Covariance Structure Analysis: Maximum Likelihood Estimation					
Estimated Parameter Matrix _F_[9:3]					
Lower Triangular Matrix					
	FACT1	FACT2	FACT3		
V1	0.6725	0	0	[L1]	
V2	0.5130	0	0	[L2]	
V3	0.6840	0	0	[L3]	
V4	0	0.8671	0	[L4]	
V5	0	0.8301	0	[L5]	
V6	0	0.8257	0	[L6]	
V7	0	0	0.6615		[L7]
V8	0	0	0.7969		[L8]
V9	0	0	0.6810		[L9]

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Model A: Restricted Oblique Clusters (24 df)					
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Covariance Structure Analysis: Maximum Likelihood Estimation					
Estimated Parameter Matrix _U_[9:9]					
Diagonal Matrix					
	UVAR1	UVAR2	UVAR3	UVAR4	UVAR5
V1	0.5477 [EPS1]	0	0	0	0
V2	0	0.7368 [EPS2]	0	0	0
V3	0	0	0.5322 [EPS3]	0	0
V4	0	0	0	0.2482 [EPS4]	0
V5	0	0	0	0	0.3109 [EPS5]
V6	0	0	0	0	0
V7	0	0	0	0	0
V8	0	0	0	0	0
V9	0	0	0	0	0
Estimated Parameter Matrix _U_[9:9]					
Diagonal Matrix					
	UVAR6	UVAR7	UVAR8	UVAR9	
V1	0	0	0	0	
V2	0	0	0	0	
V3	0	0	0	0	
V4	0	0	0	0	
V5	0	0	0	0	

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Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937)				7	
Model A: Restricted Oblique Clusters (24 df)					
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The CALIS Procedure					
Covariance Structure Analysis: Maximum Likelihood Estimation					
Estimated Parameter Matrix _U_[9:9]					
Diagonal Matrix					
	UVAR6	UVAR7	UVAR8	UVAR9	
V6	0.3182 [EPS6]	0	0	0	
V7	0	0.5624 [EPS7]	0	0	
V8	0	0	0.3650 [EPS8]	0	
V9	0	0	0	0.5362 [EPS9]	

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 8
 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Standardized Factor Loadings

	FACT1	FACT2	FACT3
V1	0.67254	0.00000	0.00000
V2	0.51302	0.00000	0.00000
V3	0.68396	0.00000	0.00000
V4	0.00000	0.86707	0.00000
V5	0.00000	0.83009	0.00000
V6	0.00000	0.82574	0.00000
V7	0.00000	0.00000	0.66154
V8	0.00000	0.00000	0.79687
V9	0.00000	0.00000	0.68101

Squared Multiple Correlations

Variable	Error Variance	Total Variance	R-Square
1 V1	0.54769	1.00000	0.4523
2 V2	0.73681	1.00000	0.2632
3 V3	0.53220	1.00000	0.4678
4 V4	0.24818	1.00000	0.7518
5 V5	0.31095	1.00000	0.6891
6 V6	0.31815	1.00000	0.6818
7 V7	0.56237	1.00000	0.4376
8 V8	0.36501	1.00000	0.6350
9 V9	0.53623	1.00000	0.4638

Correlations Among Factors

---Row---	---Column---	Parameter	Estimate
FCOR2	2	FCOR1 1 C1	0.54313
FCOR3	3	FCOR1 1 C2	0.51132
FCOR3	3	FCOR2 2 C3	0.32045

Total Determination of All Equations 0.987
 Total Determination of Manifest Variables 0.982

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 10
 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Pattern and Initial Values

LINEQS Model Statement

Term	Matrix	Rows	Columns	-----Matrix Type-----
1	_SEL_	9	21	SELECTION
2	_BETA_	21	21	EQSBETA IMINUSINV
3	_GAMMA_	21	12	EQSGAMMA
4	_PHI_	12	12	SYMMETRIC

The 9 Endogenous Variables

Manifest Latent V1 V2 V3 V4 V5 V6 V7 V8 V9

The 12 Exogenous Variables

Manifest Latent Error F1 F2 F3 E1 E2 E3 E4 E5 E6 E7 E8 E9

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 12
 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Fit Function	0.3654
Goodness of Fit Index (GFI)	0.9285
GFI Adjusted for Degrees of Freedom (AGFI)	0.8659
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Chi-Square	52.6178
Chi-Square DF	24
Pr > Chi-Square	0.0006
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RMSEA Estimate	0.0910
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RMSEA 90% Upper Confidence Limit	0.1245
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Bozdogan's (1987) CAIC	-90.8238
Schwarz's Bayesian Criterion	-66.8238
McDonald's (1989) Centrality	0.9060
Bentler & Bonett's (1980) Non-normed Index	0.9068
Bentler & Bonett's (1980) NFI	0.8941
James, Mulaik, & Brett (1982) Parsimonious NFI	0.5960
Z-Test of Wilson & Hilferty (1931)	3.2045
Bollen (1986) Normed Index Rho1	0.8411
Bollen (1988) Non-normed Index Delta2	0.9395
Hoelter's (1983) Critical N	101

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 13
 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Manifest Variable Equations with Estimates

V1	=	0.6726*F1	+	1.0000	E1
Std Err		0.0910		Lam1	
t Value		7.3917			
V2	=	0.5130*F1	+	1.0000	E2
Std Err		0.0924		Lam2	
t Value		5.5502			
V3	=	0.6839*F1	+	1.0000	E3
Std Err		0.0910		Lam3	
t Value		7.5139			
V4	=	0.8671*F2	+	1.0000	E4
Std Err		0.0702		Lam4	
t Value		12.3478			
V5	=	0.8301*F2	+	1.0000	E5
Std Err		0.0715		Lam5	
t Value		11.6094			
V6	=	0.8257*F2	+	1.0000	E6
Std Err		0.0716		Lam6	
t Value		11.5247			
V7	=	0.6615*F3	+	1.0000	E7
Std Err		0.0852		Lam7	
t Value		7.7629			
V8	=	0.7968*F3	+	1.0000	E8
Std Err		0.0845		Lam8	
t Value		9.4312			
V9	=	0.6811*F3	+	1.0000	E9
Std Err		0.0851		Lam9	
t Value		8.0075			

Variances of Exogenous Variables

Variable	Parameter	Estimate	Standard Error	t Value
F1		1.00000		
F2		1.00000		
F3		1.00000		
E1	EPS1	0.54767	0.09707	5.64
E2	EPS2	0.73683	0.10092	7.30
E3	EPS3	0.53223	0.09737	5.47
E4	EPS4	0.24818	0.05149	4.82
E5	EPS5	0.31095	0.05374	5.79
E6	EPS6	0.31815	0.05408	5.88
E7	EPS7	0.56241	0.08722	6.45
E8	EPS8	0.36507	0.08912	4.10
E9	EPS9	0.53616	0.08671	6.18

The CALIS Procedure

Covariances Among Exogenous Variables

Var1	Var2	Parameter	Estimate	Standard Error	t Value
F1	F2	C1	0.54314	0.08585	6.33
F1	F3	C2	0.51140	0.09641	5.30
F2	F3	C3	0.32050	0.09288	3.45

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 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Manifest Variable Equations with Standardized Estimates

V1 = 0.6726*F1 + 0.7400 E1
 Lam1
 V2 = 0.5130*F1 + 0.8584 E2
 Lam2
 V3 = 0.6839*F1 + 0.7295 E3
 Lam3
 V4 = 0.8671*F2 + 0.4982 E4
 Lam4
 V5 = 0.8301*F2 + 0.5576 E5
 Lam5
 V6 = 0.8257*F2 + 0.5641 E6
 Lam6
 V7 = 0.6615*F3 + 0.7499 E7
 Lam7
 V8 = 0.7968*F3 + 0.6042 E8
 Lam8
 V9 = 0.6811*F3 + 0.7322 E9
 Lam9

Squared Multiple Correlations

Variable	Error Variance	Total Variance	R-Square
1 V1	0.54767	1.00000	0.4523
2 V2	0.73683	1.00000	0.2632
3 V3	0.53223	1.00000	0.4678
4 V4	0.24818	1.00000	0.7518
5 V5	0.31095	1.00000	0.6891
6 V6	0.31815	1.00000	0.6818
7 V7	0.56241	1.00000	0.4376
8 V8	0.36507	1.00000	0.6349
9 V9	0.53616	1.00000	0.4638

Correlations Among Exogenous Variables

Var1	Var2	Parameter	Estimate
F1	F2	C1	0.54314
F1	F3	C2	0.51140
F2	F3	C3	0.32050

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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Lagrange Multiplier and Wald Test Indices _PHI_ [12:12]

Symmetric Matrix
 Univariate Tests for Constant Constraints
 Lagrange Multiplier or Wald Index / Probability / Approx Change of Value

	F1	F2	F3	E1	E2	E3
F1	.	40.0254	28.1356	4.3661	1.8328	0.6317
	.	.	.	0.0367	0.1758	0.4267
	Sing	[C1]	[C2]	-0.3346	0.1725	0.1298
F2	40.0254	.	11.9069	0.1524	0.5664	0.0590
	.	.	.	0.6962	0.4517	0.8080
	[C1]	Sing	[C3]	0.0346	-0.0603	0.0218
F3	28.1356	11.9069	.	3.6652	0.8596	1.3233
	.	.	.	0.0556	0.3538	0.2500
	[C2]	[C3]	Sing	0.1759	-0.0796	-0.1068
E1	4.3661	0.1524	3.6652	31.8342	0.6316	1.8327
	0.0367	0.6962	0.0556	.	0.4268	0.1758
	-0.3346	0.0346	0.1759	.	-0.0655	-0.1547
				[EPS1]		
E2	1.8328	0.5664	0.8596	0.6316	53.3017	4.3667
	0.1758	0.4517	0.3538	0.4268	.	0.0366
	0.1725	-0.0603	-0.0796	-0.0655	.	0.1745
					[EPS2]	
E3	0.6317	0.0590	1.3233	1.8327	4.3667	29.8746
	0.4267	0.8080	0.2500	0.1758	0.0366	.
	0.1298	0.0218	-0.1068	-0.1547	0.1745	.
						[EPS3]
E4	0.2952	0.0031	0.9553	0.0407	0.7406	0.0440
	0.5869	0.9554	0.3284	0.8401	0.3895	0.8338
	0.0321	0.0062	-0.0557	0.0090	0.0405	-0.0093
E5	2.2558	0.1208	3.6377	0.0078	1.2928	0.6299
	0.1331	0.7282	0.0565	0.9298	0.2555	0.4274
	-0.0903	0.0388	0.1115	-0.0041	-0.0558	-0.0365
E6	0.8694	0.1680	0.7531	0.0134	0.1288	1.3993
	0.3511	0.6819	0.3855	0.9077	0.7197	0.2368
	0.0562	-0.0459	-0.0509	0.0054	-0.0177	0.0546

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Lagrange Multiplier and Wald Test Indices _PHI_ [12:12]						
Symmetric Matrix						
Univariate Tests for Constant Constraints						
Lagrange Multiplier or Wald Index / Probability / Approx Change of Value						
	E4	E5	E6	E7	E8	E9
F1	0.2952	2.2558	0.8694	17.4993	0.0873	13.9380
	0.5869	0.1331	0.3511	0.0000	0.7676	0.0002
	0.0321	-0.0903	0.0562	-0.3264	0.0243	0.2912
F2	0.0031	0.1208	0.1680	3.6502	8.5264	2.1950
	0.9554	0.7282	0.6819	0.0561	0.0035	0.1385
	0.0062	0.0388	-0.0459	0.1314	-0.2051	0.1014
F3	0.9553	3.6377	0.7531	8.5821	3.9074	24.9616
	0.3284	0.0565	0.3855	0.0034	0.0481	0.0000
	-0.0557	0.1115	-0.0509	0.4634	0.3403	-0.7944
E1	0.0407	0.0078	0.0134	4.1919	0.3788	9.0816
	0.8401	0.9298	0.9077	0.0406	0.5383	0.0026
	0.0090	-0.0041	0.0054	-0.1206	0.0349	0.1758
E2	0.7406	1.2928	0.1288	0.4229	0.1639	0.0202
	0.3895	0.2555	0.7197	0.5155	0.6856	0.8870
	0.0405	-0.0558	-0.0177	-0.0406	-0.0238	0.0088
E3	0.0440	0.6299	1.3993	4.5613	0.0002	1.0315
	0.8338	0.4274	0.2368	0.0327	0.9879	0.3098
	-0.0093	-0.0365	0.0546	-0.1253	-0.0009	0.0591
E4	23.2361	0.1680	0.1208	0.6008	3.7462	0.3408
	.	0.6819	0.7282	0.4383	0.0529	0.5593
	[EPS4]	0.0400	-0.0335	0.0330	-0.0772	0.0245
E5	0.1680	33.4773	0.0031	0.8601	0.2123	0.4140
	0.6819	.	0.9554	0.3537	0.6450	0.5199
	0.0400	[EPS5]	-0.0049	0.0412	0.0191	0.0282
E6	0.1208	0.0031	34.6131	0.0844	0.1925	0.0187
	0.7282	0.9554	.	0.7714	0.6608	0.8911
	-0.0335	-0.0049	[EPS6]	-0.0130	-0.0183	-0.0060

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Lagrange Multiplier and Wald Test Indices _PHI_ [12:12]						
Symmetric Matrix						
Univariate Tests for Constant Constraints						
Lagrange Multiplier or Wald Index / Probability / Approx Change of Value						
	F1	F2	F3	E1	E2	E3
E7	17.4993	3.6502	8.5821	4.1919	0.4229	4.5613
	0.0000	0.0561	0.0034	0.0406	0.5155	0.0327
	-0.3264	0.1314	0.4634	-0.1206	-0.0406	-0.1253
E8	0.0873	8.5264	3.9074	0.3788	0.1639	0.0002
	0.7676	0.0035	0.0481	0.5383	0.6856	0.9879
	0.0243	-0.2051	0.3403	0.0349	-0.0238	-0.0009
E9	13.9380	2.1950	24.9616	9.0816	0.0202	1.0315
	0.0002	0.1385	0.0000	0.0026	0.8870	0.3098
	0.2912	0.1014	-0.7944	0.1758	0.0088	0.0591
Lagrange Multiplier and Wald Test Indices _PHI_ [12:12]						
Symmetric Matrix						
Univariate Tests for Constant Constraints						
Lagrange Multiplier or Wald Index / Probability / Approx Change of Value						
	E4	E5	E6	E7	E8	E9
E7	0.6008	0.8601	0.0844	41.5772	24.9672	3.9074
	0.4383	0.3537	0.7714	.	0.0000	0.0481
	0.0330	0.0412	-0.0130	.	0.6149	-0.1924
				[EPS7]		
E8	3.7462	0.2123	0.1925	24.9672	16.7806	8.5813
	0.0529	0.6450	0.6608	0.0000	.	0.0034
	-0.0772	0.0191	-0.0183	0.6149	.	-0.3801
				[EPS8]		
E9	0.3408	0.4140	0.0187	3.9074	8.5813	38.2363
	0.5593	0.5199	0.8911	0.0481	0.0034	.
	0.0245	0.0282	-0.0060	-0.1924	-0.3801	[EPS9]
Rank Order of the 10 Largest Lagrange Multipliers in _PHI_						
	Row	Column	Chi-Square	Pr > ChiSq		
	E8	E7	24.96719	<.0001		
	E9	F3	24.96156	<.0001		
	E7	F1	17.49934	<.0001		
	E9	F1	13.93803	0.0002		

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 19
 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Rank Order of the 10 Largest Lagrange Multipliers in _PHI_

Row	Column	Chi-Square	Pr > ChiSq
E9	E1	9.08162	0.0026
E7	F3	8.58212	0.0034
E9	E8	8.58134	0.0034
E8	F2	8.52642	0.0035
E7	E3	4.56127	0.0327
E3	E2	4.36673	0.0366

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 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Lagrange Multiplier and Wald Test Indices _GAMMA_ [9:3]

General Matrix
 Univariate Tests for Constant Constraints
 Lagrange Multiplier or Wald Index / Probability / Approx Change of Value

	F1	F2	F3
V1	54.6365	0.2648	3.9466
	.	0.6069	0.0470
	.	0.0662	0.2534
	[Lam1]		
V2	30.8044	0.6644	0.9743
	.	0.4150	0.3236
	.	-0.0938	-0.1163
	[Lam2]		
V3	56.4592	0.0324	1.3572
	.	0.8571	0.2440
	.	0.0235	-0.1502
	[Lam3]		
V4	0.0037	152.4677	0.6829
	0.9517	.	0.4086
	0.0053	.	-0.0555
		[Lam4]	
V5	0.3418	134.7771	2.0499
	0.5588	.	0.1522
	-0.0518	.	0.0983
		[Lam5]	
V6	0.2753	132.8179	0.3078
	0.5998	.	0.5790
	0.0466	.	-0.0382
		[Lam6]	
V7	10.8606	0.1476	60.2621
	0.0010	0.7009	.
	-0.3737	0.0322	.
			[Lam7]
V8	2.6093	9.8691	88.9468
	0.1062	0.0017	.
	-0.1991	-0.2747	.
			[Lam8]
V9	24.6449	9.8805	64.1196
	0.0000	0.0017	.
	0.5658	0.2629	.
			[Lam9]

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 21
 Model A: Restricted Oblique Clusters (24 df)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Rank Order of the 9 Largest Lagrange Multipliers in _GAMMA_

Row	Column	Chi-Square	Pr > ChiSq
V9	F1	24.64495	<.0001
V7	F1	10.86058	0.0010
V9	F2	9.88054	0.0017
V8	F2	9.86909	0.0017
V1	F3	3.94660	0.0470
V8	F1	2.60931	0.1062
V5	F3	2.04995	0.1522
V3	F3	1.35719	0.2440
V2	F3	0.97429	0.3236

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937)

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Model A: Restricted Oblique Clusters (24 df)
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2008

Model Information

Sample size	145
Number of parameters	21
Number of active constraints	0
Null Model Chi-Square (df=36)	496.670 (Pr>ChiSq= 0.000)

Absolute Indices

Fit Function	0.365402
Goodness of Fit Index	0.928
Root Mean Square Residual	0.075
Chi-Square (df=24)	52.620 (Pr>ChiSq= 0.001)
Normal Theory Reweighted LS Chi-Square (df=24)	49.920 (Pr>ChiSq= 0.001)
Z-Test for Chi-Square (df=24)	3.200 (Pr>ChiSq= 0.001)
Critical N	101

Absolute, Adjusted for Parsimony

GFI Adjusted for Degrees of Freedom	0.866
Parsimonious GFI	0.619
RMS Error of Approx Estimate (RMSEA)	0.091 90% CI: (. ,0.124)
Probability of Close Fit [Pr(RMSEA <= 0.05)]	0.025
Expected Cross Validation Index (ECVI)	0.679 90% CI: (. ,0.858)
Akaike's Information Criterion	4.62
Consistent AIC	-90.824
Schwarz's Bayesian Criterion	-66.824
Centrality Index	0.906

Incremental Indices (vs. Null Model)

Comparative Fit Index	0.938
Non-normed Index (Rho)	0.907
Normed Fit Index (NFI)	0.894
Parsimonious NFI	0.596
Normed Index Rho1	0.841
Non-normed Index Delta2	0.939

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 23
 Model B: 23 degrees of freedom (F[9,1] free)
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The CALIS Procedure
 Covariance Structure Analysis: Pattern and Initial Values

LINEQS Model Statement

	Matrix	Rows	Columns	-----Matrix Type-----	
Term 1	1 _SEL_	9	21	SELECTION	
	2 _BETA_	21	21	EQSBETA	IMINUSINV
	3 _GAMMA_	21	12	EQSGAMMA	
	4 _PHI_	12	12	SYMMETRIC	

The 9 Endogenous Variables

	V1	V2	V3	V4	V5	V6	V7	V8	V9
Manifest									
Latent									

The 12 Exogenous Variables

	F1	F2	F3	E1	E2	E3	E4	E5	E6	E7	E8	E9
Manifest												
Latent												
Error												

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 25
 Model B: 23 degrees of freedom (F[9,1] free)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Fit Function	0.2014
Goodness of Fit Index (GFI)	0.9575
GFI Adjusted for Degrees of Freedom (AGFI)	0.9169
Root Mean Square Residual (RMR)	0.0451
Parsimonious GFI (Mulaik, 1989)	0.6118
Chi-Square	29.0077
Chi-Square DF	23
Pr > Chi-Square	0.1801
Independence Model Chi-Square	496.67
Independence Model Chi-Square DF	36
RMSEA Estimate	0.0426
RMSEA 90% Lower Confidence Limit	.
RMSEA 90% Upper Confidence Limit	0.0851
ECVI Estimate	0.5298
ECVI 90% Lower Confidence Limit	.
ECVI 90% Upper Confidence Limit	0.6580
Probability of Close Fit	0.5674
Bentler's Comparative Fit Index	0.9870
Normal Theory Reweighted LS Chi-Square	28.7444
Akaike's Information Criterion	-16.9923
Bozdogan's (1987) CAIC	-108.4571
Schwarz's Bayesian Criterion	-85.4571
McDonald's (1989) Centrality	0.9795
Bentler & Bonett's (1980) Non-normed Index	0.9796
Bentler & Bonett's (1980) NFI	0.9416
James, Mulaik, & Brett (1982) Parsimonious NFI	0.6016
Z-Test of Wilson & Hilferty (1931)	0.9165
Bollen (1986) Normed Index Rho1	0.9086
Bollen (1988) Non-normed Index Delta2	0.9873
Hoelter's (1983) Critical N	176

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 26
 Model B: 23 degrees of freedom (F[9,1] free)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Manifest Variable Equations with Estimates

V1	=	0.7082*F1	+	1.0000 E1	
Std Err		0.0868 Lam1			
t Value		8.1575			
V2	=	0.4833*F1	+	1.0000 E2	
Std Err		0.0908 Lam2			
t Value		5.3256			
V3	=	0.6499*F1	+	1.0000 E3	
Std Err		0.0875 Lam3			
t Value		7.4301			
V4	=	0.8679*F2	+	1.0000 E4	
Std Err		0.0702 Lam4			
t Value		12.3708			
V5	=	0.8299*F2	+	1.0000 E5	
Std Err		0.0715 Lam5			
t Value		11.6094			
V6	=	0.8250*F2	+	1.0000 E6	
Std Err		0.0717 Lam6			
t Value		11.5143			
V7	=	0.6809*F3	+	1.0000 E7	
Std Err		0.0887 Lam7			
t Value		7.6794			
V8	=	0.8591*F3	+	1.0000 E8	
Std Err		0.0917 Lam8			
t Value		9.3720			
V9	=	0.4567*F1	+	0.4188*F3	+ 1.0000 E9
Std Err		0.0886 Lam9		0.0885 Lam10	
t Value		5.1532		4.7337	

Variances of Exogenous Variables

Variable	Parameter	Estimate	Standard Error	t Value
F1		1.00000		
F2		1.00000		
F3		1.00000		
E1	EPS1	0.49847	0.09018	5.53
E2	EPS2	0.76639	0.10061	7.62
E3	EPS3	0.57765	0.09113	6.34
E4	EPS4	0.24673	0.05131	4.81
E5	EPS5	0.31128	0.05367	5.80
E6	EPS6	0.31936	0.05405	5.91
E7	EPS7	0.53642	0.09317	5.76
E8	EPS8	0.26187	0.11326	2.31
E9	EPS9	0.46700	0.07270	6.42

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 27
 Model B: 23 degrees of freedom (F[9,1] free)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Covariances Among Exogenous Variables

Var1	Var2	Parameter	Estimate	Standard Error	t Value
F1	F2	C1	0.55744	0.08117	6.87
F1	F3	C2	0.38968	0.10456	3.73
F2	F3	C3	0.22296	0.09602	2.32

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 28
 Model B: 23 degrees of freedom (F[9,1] free)
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The CALIS Procedure
 Covariance Structure Analysis: Maximum Likelihood Estimation

Manifest Variable Equations with Standardized Estimates

V1 = 0.7082*F1 + 0.7060 E1
 Lam1
 V2 = 0.4833*F1 + 0.8754 E2
 Lam2
 V3 = 0.6499*F1 + 0.7600 E3
 Lam3
 V4 = 0.8679*F2 + 0.4967 E4
 Lam4
 V5 = 0.8299*F2 + 0.5579 E5
 Lam5
 V6 = 0.8250*F2 + 0.5651 E6
 Lam6
 V7 = 0.6809*F3 + 0.7324 E7
 Lam7
 V8 = 0.8591*F3 + 0.5117 E8
 Lam8
 V9 = 0.4567*F1 + 0.4188*F3 + 0.6834 E9
 Lam9 Lam10

Squared Multiple Correlations

Variable	Error Variance	Total Variance	R-Square
1 V1	0.49847	1.00000	0.5015
2 V2	0.76639	1.00000	0.2336
3 V3	0.57765	1.00000	0.4223
4 V4	0.24673	1.00000	0.7533
5 V5	0.31128	1.00000	0.6887
6 V6	0.31936	1.00000	0.6806
7 V7	0.53642	1.00000	0.4636
8 V8	0.26187	1.00000	0.7381
9 V9	0.46700	1.00000	0.5330

Correlations Among Exogenous Variables

Var1	Var2	Parameter	Estimate
F1	F2	C1	0.55744
F1	F3	C2	0.38968
F2	F3	C3	0.22296

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937)

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 Model B: 23 degrees of freedom (F[9,1] free)
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Model Information

Sample size 145
 Number of parameters 22
 Number of active constraints 0
 Null Model Chi-Square (df=36) 496.670 (Pr>ChiSq= 0.000)

Absolute Indices

Fit Function 0.201443
 Goodness of Fit Index 0.958
 Root Mean Square Residual 0.045
 Chi-Square (df=23) 29.010 (Pr>ChiSq= 0.180)
 Normal Theory Reweighted LS Chi-Square (df=23) 28.740 (Pr>ChiSq= 0.189)
 Z-Test for Chi-Square (df=23) 0.917 (Pr>ChiSq= 0.180)
 Critical N 176

Absolute, Adjusted for Parsimony

GFI Adjusted for Degrees of Freedom 0.917
 Parsimonious GFI 0.612
 RMS Error of Approx Estimate (RMSEA) 0.043 90% CI: (. ,0.085)
 Probability of Close Fit [Pr(RMSEA <= 0.05)] 0.567
 Expected Cross Validation Index (ECVI) 0.530 90% CI: (. ,0.658)
 Akaike's Information Criterion -16.992
 Consistent AIC -108.457
 Schwarz's Bayesian Criterion -85.457
 Centrality Index 0.979

Incremental Indices (vs. Null Model)

Comparative Fit Index 0.987
 Non-normed Index (Rho) 0.98
 Normed Fit Index (NFI) 0.942
 Parsimonious NFI 0.602
 Normed Index Rho1 0.909
 Non-normed Index Delta2 0.987

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 30
 Model Comparison Statistics from 2 RAM data sets
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Model	Parameters	df	Chi-Square	P>ChiSq	RMS Residual	GFI	Adj GFI	AIC
Model A	21	24	52.6178	0.00065	0.075101	0.92847	0.86588	4.6178
Model B	22	23	29.0077	0.18005	0.045061	0.95753	0.91690	-16.9923

Model	Consistent AIC	Schwarz BIC	Centrality	Parsimonious NFI	Critical N
Model A	-90.824	-66.8238	0.90603	0.59604	101
Model B	-108.457	-85.4571	0.97950	0.60157	176

Confirmatory Factor Analysis, Data of Holzinger & Swineford (1937) 31
 Model Comparison Statistics from 2 RAM data sets
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Model Comparison	ChiSq	df	p-value
Model A vs. Model B	23.6101	1	0.00000 ****