

## Latent Variable Cross-lag Panel Model of Positive and Negative Social Exchanges

### Without Correlated Errors Over Time

```

title: Latent Cross-lag panel model of positive and negative exchanges;

data: file=c:\jason\mplus\semclass\long2.dat; format=28f9.6;
      listwise=on;

variable: names = trust emo info tang social comm se
           trustf emof inof tangf socialf commf sef
           ntrust nemo ninfo ntang nsocial ncomm nse
           ntrustf nemof ninof ntangf nsocialf ncommf nsef;
           missing=blank;

analysis: type=general;
           estimator=mlm;

model: pos by trust emo info tang social comm se;
       posf by trustf emof inof tangf socialf commf sef;
       neg by ntrust nemo ninfo ntang nsocial ncomm nse;
       negf by ntrustf nemof ninof ntangf nsocialf ncommf nsef;
       negf on neg pos;
       posf on neg pos;
       neg with pos;
       negf with posf;

output: stdyx;

```

#### (output excerpts)

Number of observations 138

#### TESTS OF MODEL FIT

##### Chi-Square Test of Model Fit

Value	838.082*
Degrees of Freedom	344
P-Value	0.0000
Scaling Correction Factor for MLM	1.130

\* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference tests. MLM, MLR and WLSM chi-square difference testing is described in the Mplus Technical Appendices at [www.statmodel.com](http://www.statmodel.com). See chi-square difference testing in the index of the Mplus User's Guide.

#### CFI/TLI

CFI	0.846
TLI	0.831

#### RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.102
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#### SRMR (Standardized Root Mean Square Residual)

Value	0.074
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#### STDYX Standardization

POS	BY	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
TRUST		0.858	0.025	35.039	0.000
EMO		0.896	0.020	45.691	0.000
INFO		0.801	0.025	31.797	0.000
TANG		0.709	0.034	20.974	0.000
SOCIAL		0.798	0.030	26.473	0.000
COMM		0.917	0.016	56.179	0.000
SE		0.889	0.019	47.716	0.000
POSF					
TRUSTF		0.791	0.031	25.819	0.000
EMOF		0.891	0.018	49.278	0.000
INFOF		0.630	0.047	13.417	0.000
TANGF		0.638	0.046	13.946	0.000
SOCIALF		0.800	0.029	27.852	0.000
COMMF		0.881	0.021	41.778	0.000
SEF		0.859	0.024	36.081	0.000

NEG	BY				
	NTRUST	0.683	0.056	12.288	0.000
	NEMO	0.845	0.034	24.619	0.000
	NINFO	0.754	0.028	27.369	0.000
	NTANG	0.795	0.039	20.443	0.000
	NSOCIAL	0.711	0.042	16.845	0.000
	NCOMM	0.899	0.021	43.344	0.000
	NSE	0.822	0.038	21.494	0.000
NEGF	BY				
	NTRUSTF	0.806	0.026	31.214	0.000
	NEMOF	0.866	0.021	41.878	0.000
	NINFOF	0.787	0.032	24.241	0.000
	NTANGF	0.796	0.022	36.495	0.000
	NSOCIALF	0.858	0.023	36.649	0.000
	NCOMMF	0.918	0.015	59.362	0.000
	NSEF	0.873	0.026	34.166	0.000
NEGF	ON				
	NEG	0.659	0.066	10.028	0.000
	POS	-0.074	0.065	-1.139	0.255
POSF	ON				
	NEG	-0.156	0.088	-1.770	0.077
	POS	0.648	0.061	10.543	0.000
NEG	WITH				
	POS	-0.490	0.093	-5.265	0.000
NEGF	WITH				
	POSF	-0.496	0.084	-5.874	0.000

R-SQUARE

Latent Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
POSF	0.544	0.061	8.854	0.000
NEGF	0.487	0.071	6.868	0.000

**With Correlated Errors Over Time**

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listwise=on;

variable: names = trust emo info tang social comm se  
trustf emof infof tangf socialf commf sef  
ntrust nemo ninfo ntang nsocial ncomm nse  
ntrustf nemof ninfof ntangf nsocialf ncommf nsef;  
missing=blank;

analysis: type=general;  
estimator=mlm;  
!model=nomeanstructure; information=expected;

model: pos by trust emo info tang social comm se;  
posf by trustf emof infof tangf socialf commf sef;  
neg by ntrust nemo ninfo ntang nsocial ncomm nse;  
negf by ntrustf nemof ninfof ntangf nsocialf ncommf nsef;  
negf on neg pos;  
posf on neg pos;  
neg with pos;  
negf with posf;

trust-se pwith trustf-sef;  
ntrust-nse pwith ntrustf-nsef;

output: stdyx;

(output excerpts)

Chi-Square Test of Model Fit

Value	583.493*
Degrees of Freedom	330
P-Value	0.0000
Scaling Correction Factor for MLM	1.131

\* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference tests. MLM, MLR and WLSM chi-square difference testing is described in the Mplus Technical Appendices at [www.statmodel.com](http://www.statmodel.com). See chi-square difference testing in the index of the Mplus User's Guide.

CFI/TLI

CFI	0.921
TLI	0.910

SRMR (Standardized Root Mean Square Residual)

Value	0.070
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WRMR (Weighted Root Mean Square Residual)

Value	0.936
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STANDARDIZED MODEL RESULTS

STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
POS BY				
TRUST	0.859	0.024	35.345	0.000
EMO	0.900	0.020	45.645	0.000
INFO	0.798	0.029	27.436	0.000
TANG	0.689	0.036	19.090	0.000
SOCIAL	0.791	0.034	23.298	0.000
COMM	0.917	0.016	56.093	0.000
SE	0.888	0.020	43.943	0.000
POSF BY				
TRUSTF	0.792	0.030	26.017	0.000
EMOF	0.899	0.017	51.522	0.000
INFOF	0.646	0.046	14.111	0.000
TANGF	0.637	0.045	14.101	0.000
SOCIALF	0.796	0.032	25.220	0.000
COMMF	0.879	0.022	40.134	0.000
SEF	0.854	0.025	33.779	0.000
NEG BY				
NTRUST	0.675	0.056	12.054	0.000
NEMO	0.851	0.035	24.563	0.000
NINFO	0.753	0.030	25.501	0.000
NTANG	0.790	0.042	18.871	0.000
NSOCIAL	0.711	0.046	15.435	0.000
NCOMM	0.896	0.022	40.048	0.000
NSE	0.823	0.039	21.131	0.000
NEGF BY				
NTRUSTF	0.814	0.026	31.666	0.000
NEMOF	0.874	0.020	44.392	0.000
NINFOF	0.779	0.035	22.117	0.000
NTANGF	0.796	0.027	29.843	0.000
NSOCIALF	0.859	0.024	35.640	0.000
NCOMMF	0.913	0.017	54.879	0.000
NSEF	0.874	0.026	33.125	0.000
NEGF ON				
NEG	0.621	0.067	9.305	0.000
POS	-0.100	0.067	-1.493	0.135
POSF ON				

## Newsom, USP 655 SEM, Winter 2008

NEG		-0.165	0.090	-1.844	0.065
POS		0.626	0.062	10.022	0.000
NEG	WITH				
POS		-0.501	0.095	-5.292	0.000
NEGF	WITH				
POSF		-0.466	0.084	-5.545	0.000
TRUST	WITH				
TRUSTF		0.249	0.055	4.531	0.000
EMO	WITH				
EMOF		0.184	0.071	2.589	0.010
INFO	WITH				
INFOF		0.548	0.045	12.059	0.000
TANG	WITH				
TANGF		0.483	0.056	8.659	0.000
SOCIAL	WITH				
SOCIALF		0.483	0.059	8.118	0.000
COMM	WITH				
COMMF		0.081	0.077	1.048	0.295
SE	WITH				
SEF		0.298	0.071	4.177	0.000
NTRUST	WITH				
NTRUSTF		0.409	0.060	6.793	0.000
NEMO	WITH				
NEMOF		0.303	0.065	4.649	0.000
NINFO	WITH				
NINFOF		0.467	0.065	7.129	0.000
NTANG	WITH				
NTANGF		0.525	0.060	8.759	0.000
NSOCIAL	WITH				
NSOCIALF		0.406	0.061	6.602	0.000
NCOMM	WITH				
NCOMMF		0.370	0.065	5.661	0.000
NSE	WITH				
NSEF		0.381	0.068	5.598	0.000

## R-SQUARE

Latent Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
POSF	0.522	0.063	8.274	0.000
NEGF	0.459	0.070	6.510	0.000