

Mplus VERSION 7.2 (Mac)  
MUTHEN & MUTHEN  
10/29/2014 10:47 AM

INPUT INSTRUCTIONS

TITLE: E-loyalty data from BCCDC's SmartSexResource Visitor Survey;

DATA: FILE IS ssr\_loyalty.dat;  
FORMAT IS 13F11.0;

VARIABLE: NAMES ARE type status educ gender rec  
ret overall effe effi lit tru act recp;

USEVARIABLES ARE type educ gender rec  
ret overall effe effi lit tru act;

MISSING ARE ALL (999);

CATEGORICAL ARE educ gender;

ANALYSIS:

MODEL: loyalty BY rec ret;  
loyalty ON type overall effe effi lit act tru;  
act ON tru lit;  
loyalty WITH educ;  
loyalty WITH gender;  
educ WITH type;

OUTPUT: SAMPSTAT STANDARDIZED MODINDICES;

\*\*\* WARNING

Data set contains cases with missing on x-variables.  
These cases were not included in the analysis.  
Number of cases with missing on x-variables: 328  
1 WARNING(S) FOUND IN THE INPUT INSTRUCTIONS

E-loyalty data from BCCDC's SmartSexResource Visitor Survey;

SUMMARY OF ANALYSIS

Number of groups	1
Number of observations	173
Number of dependent variables	5
Number of independent variables	6

Number of continuous latent variables 1

Observed dependent variables

Continuous  
REC RET ACT

Binary and ordered categorical (ordinal)  
EDUC GENDER

Observed independent variables

TYPE OVERALL EFFE EFFI LIT TRU

Continuous latent variables

LOYALTY

Estimator WLSMV  
Maximum number of iterations 1000  
Convergence criterion 0.500D-04  
Maximum number of steepest descent iterations 20  
Maximum number of iterations for H1 2000  
Convergence criterion for H1 0.100D-03  
Parameterization DELTA

Input data file(s)  
ssr\_loyalty.dat

Input data format  
(13F11.0)

#### SUMMARY OF DATA

Number of missing data patterns 8

#### COVARIANCE COVERAGE OF DATA

Minimum covariance coverage value 0.100

#### PROPORTION OF DATA PRESENT

	Covariance Coverage			
RET	TYPE	EDUC	GENDER	REC
TYPE	1.000			
EDUC	0.850	0.850		
GENDER	0.746	0.734	0.746	
REC	0.994	0.850	0.746	0.994

RET	0.983	0.838	0.734	0.977
0.983				
ACT	0.994	0.844	0.740	0.988
0.977				

Covariance Coverage  
ACT

ACT	<u>0.994</u>
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UNIVARIATE PROPORTIONS AND COUNTS FOR CATEGORICAL VARIABLES

EDUC		
Category 1	0.034	5.000
Category 2	0.197	29.000
Category 3	0.544	80.000
Category 4	0.224	33.000
GENDER		
Category 1	0.667	86.000
Category 2	0.333	43.000

SAMPLE STATISTICS

ESTIMATED SAMPLE STATISTICS

	MEANS/INTERCEPTS/THRESHOLDS			
	TYPE	EDUC\$1	EDUC\$2	EDUC\$3
GENDER\$1	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
1	-0.639	-0.896	0.213	1.753
-1.842				

	MEANS/INTERCEPTS/THRESHOLDS		
	REC	RET	ACT
1	<u>-0.944</u>	<u>-0.496</u>	<u>-0.187</u>

	SLOPES			
	OVERALL	EFFE	EFFI	LIT
TRU	<u>          </u>	<u>          </u>	<u>          </u>	<u>          </u>
TYPE	0.015	0.024	-0.093	0.078
0.121				
EDUC	0.075	0.098	-0.197	-0.076
0.259				

GENDER	-0.166	0.004	0.153	-0.286
-0.081				
REC	0.217	0.109	-0.035	0.183
0.652				
RET	0.306	0.129	0.060	0.142
0.459				
ACT	-0.041	0.154	-0.058	0.326
0.646				

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

	TYPE	EDUC	GENDER	REC
RET				
TYPE	0.156			
EDUC	0.355			
GENDER	-0.268	-0.174		
REC	0.094	0.217	-0.143	0.789
RET	0.016	0.288	0.031	0.516
0.554				
ACT	-0.051	0.177	0.029	0.102
0.188				

CORRELATION MATRIX (WITH VARIANCES ON THE DIAGONAL)

ACT	
ACT	0.236

THE MODEL ESTIMATION TERMINATED NORMALLY

MODEL FIT INFORMATION

Number of Free Parameters 26

Chi-Square Test of Model Fit

Value	51.183*
Degrees of Freedom	31
P-Value	0.0127

\* The chi-square value for MLM, MLMV, MLR, ULSMV, WLSM and WLSMV cannot be used for chi-square difference testing in the regular way. MLM, MLR and WLSM chi-square difference testing is described on the Mplus website. MLMV, WLSMV, and ULSMV difference testing is done using the DIFFTEST option.

RMSEA (Root Mean Square Error Of Approximation)

Estimate	0.061	
90 Percent C.I.	0.029	0.090
Probability RMSEA <= .05	0.249	

CFI/TLI

CFI	0.945
TLI	0.920

Chi-Square Test of Model Fit for the Baseline Model

Value	411.254
Degrees of Freedom	45
P-Value	0.0000

WRMR (Weighted Root Mean Square Residual)

Value	0.948
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MODEL RESULTS

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
LOYALTY BY				
REC	1.000	0.000	999.000	999.000
RET	0.940	0.106	8.842	0.000
LOYALTY ON				
TYPE	0.107	0.112	0.961	0.336
OVERALL	0.282	0.063	4.470	0.000
EFFE	0.127	0.065	1.962	0.050
EFFI	0.034	0.064	0.528	0.597
LIT	0.080	0.095	0.834	0.404
ACT	0.247	0.074	3.321	0.001
TRU	0.376	0.088	4.253	0.000
ACT ON				
TRU	0.646	0.045	14.204	0.000
LIT	0.326	0.055	5.963	0.000
LOYALTY WITH				
EDUC	0.195	0.055	3.549	0.000
GENDER	-0.045	0.076	-0.591	0.555
EDUC WITH				
TYPE	0.141	0.048	2.926	0.003
Means				
TYPE	-0.639	0.282	-2.262	0.024

Intercepts				
REC	-0.829	0.846	-0.980	0.327
RET	-0.388	0.488	-0.795	0.427
ACT	-0.187	0.261	-0.717	0.474
Thresholds				
EDUC\$1	-0.896	0.982	-0.913	0.361
EDUC\$2	0.213	0.919	0.232	0.816
EDUC\$3	1.753	0.925	1.895	0.058
GENDER\$1	-1.842	0.919	-2.006	0.045
Variances				
TYPE	0.156	0.039	3.999	0.000
Residual Variances				
REC	0.426	0.056	7.607	0.000
RET	0.233	0.048	4.830	0.000
ACT	0.236	0.016	14.880	0.000
LOYALTY	0.347	0.054	6.422	0.000

#### STANDARDIZED MODEL RESULTS

##### STDYX Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
LOYALTY BY				
REC	0.880	0.028	31.540	0.000
RET	0.920	0.022	41.209	0.000
LOYALTY ON				
TYPE	0.035	0.036	0.963	0.336
OVERALL	0.260	0.057	4.523	0.000
EFFE	0.101	0.051	1.988	0.047
EFFI	0.033	0.062	0.528	0.598
LIT	0.063	0.073	0.856	0.392
ACT	0.219	0.064	3.421	0.001
TRU	0.337	0.072	4.666	0.000
ACT ON				
TRU	0.653	0.038	16.992	0.000
LIT	0.290	0.044	6.534	0.000
LOYALTY WITH				
EDUC	0.331	0.089	3.722	0.000
GENDER	-0.076	0.129	-0.593	0.553
EDUC WITH				
TYPE	0.355	0.094	3.783	0.000

Means

TYPE	-1.616	0.669	-2.413	0.016
Intercepts				
REC	-0.604	0.587	-1.029	0.304
RET	-0.314	0.383	-0.822	0.411
ACT	-0.174	0.240	-0.728	0.467
Thresholds				
EDUC\$1	-0.896	0.982	-0.913	0.361
EDUC\$2	0.213	0.919	0.232	0.816
EDUC\$3	1.753	0.925	1.895	0.058
GENDER\$1	-1.842	0.919	-2.006	0.045
Variances				
TYPE	1.000	0.000	999.000	999.000
Residual Variances				
REC	0.226	0.049	4.599	0.000
RET	0.153	0.041	3.730	0.000
ACT	0.206	0.028	7.480	0.000
LOYALTY	0.238	0.038	6.260	0.000

STDY Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
LOYALTY BY				
REC	0.880	0.028	31.540	0.000
RET	0.920	0.022	41.209	0.000
LOYALTY ON				
TYPE	0.035	0.036	0.963	0.336
OVERALL	0.234	0.052	4.513	0.000
EFFE	0.105	0.053	1.991	0.047
EFFI	0.028	0.053	0.528	0.598
LIT	0.066	0.077	0.856	0.392
ACT	0.219	0.064	3.421	0.001
TRU	0.311	0.067	4.621	0.000
ACT ON				
TRU	0.603	0.042	14.211	0.000
LIT	0.304	0.047	6.449	0.000
LOYALTY WITH				
EDUC	0.331	0.089	3.722	0.000
GENDER	-0.076	0.129	-0.593	0.553
EDUC WITH				
TYPE	0.355	0.094	3.783	0.000
Means				
TYPE	-1.616	0.669	-2.413	0.016

Intercepts				
REC	-0.604	0.587	-1.029	0.304
RET	-0.314	0.383	-0.822	0.411
ACT	-0.174	0.240	-0.728	0.467

Thresholds				
EDUC\$1	-0.896	0.982	-0.913	0.361
EDUC\$2	0.213	0.919	0.232	0.816
EDUC\$3	1.753	0.925	1.895	0.058
GENDER\$1	-1.842	0.919	-2.006	0.045

Variances				
TYPE	1.000	0.000	999.000	999.000

Residual Variances				
REC	0.226	0.049	4.599	0.000
RET	0.153	0.041	3.730	0.000
ACT	0.206	0.028	7.480	0.000
LOYALTY	0.238	0.038	6.260	0.000

STD Standardization

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
LOYALTY BY				
REC	1.208	0.124	9.733	0.000
RET	1.135	0.093	12.263	0.000
LOYALTY ON				
TYPE	0.089	0.092	0.963	0.336
OVERALL	0.234	0.052	4.513	0.000
EFFE	0.105	0.053	1.991	0.047
EFFI	0.028	0.053	0.528	0.598
LIT	0.066	0.077	0.856	0.392
ACT	0.204	0.059	3.441	0.001
TRU	0.311	0.067	4.621	0.000
ACT ON				
TRU	0.646	0.045	14.204	0.000
LIT	0.326	0.055	5.963	0.000
LOYALTY WITH				
EDUC	0.331	0.089	3.722	0.000
GENDER	-0.076	0.129	-0.593	0.553
EDUC WITH				
TYPE	0.141	0.048	2.926	0.003
Means				
TYPE	-0.639	0.282	-2.262	0.024



Intercepts				
REC	-0.829	0.846	-0.980	0.327
RET	-0.388	0.488	-0.795	0.427
ACT	-0.187	0.261	-0.717	0.474
Thresholds				
EDUC\$1	-0.896	0.982	-0.913	0.361
EDUC\$2	0.213	0.919	0.232	0.816
EDUC\$3	1.753	0.925	1.895	0.058
GENDER\$1	-1.842	0.919	-2.006	0.045
Variances				
TYPE	0.156	0.039	3.999	0.000
Residual Variances				
REC	0.426	0.056	7.607	0.000
RET	0.233	0.048	4.830	0.000
ACT	0.236	0.016	14.880	0.000
LOYALTY	0.238	0.038	6.260	0.000

#### R-SQUARE

Observed Residual Variable Variance	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
REC	0.774	0.049	15.770	0.000
RET	0.847	0.041	20.605	0.000
ACT	0.794	0.028	28.876	0.000
Latent Variable	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
LOYALTY	0.762	0.038	20.062	0.000

#### QUALITY OF NUMERICAL RESULTS

Condition Number for the Information Matrix  
0.241E-03  
(ratio of smallest to largest eigenvalue)

#### MODEL MODIFICATION INDICES

NOTE: Modification indices for direct effects of observed dependent variables regressed on covariates and residual covariances among observed dependent variables 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.			

No modification indices above the minimum value.

Beginning Time: 10:47:13  
Ending Time: 10:47:13  
Elapsed Time: 00:00:00

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