

5 Class Model - Delinquency

Data Summary, Model Information, and Fit Statistics (EM Algorithm)

Number of subjects in dataset: 3000
Number of subjects in analysis: 3000

Number of measurement items per time: 6
Response categories per item: 2 2 2 2 2 2
Number of occasions (times): 2
Number of groups in the data: 1
Number of latent statuses: 5

Starting values were provided via a dataset.

Parameter restrictions: Rho (measurement) parameters were constrained to be equal across time.

The model converged in 349 iterations.

Maximum number of iterations: 5000
Convergence method: maximum absolute deviation (MAD)
Convergence criterion: 0.000001000

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Fit statistics:
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Log-likelihood: -19437.82
G-squared: 2276.57
AIC: 2384.57
BIC: 2708.91
Degrees of freedom: 4041

5 Class Model - Delinquency

Parameter Estimates

Delta estimates (status membership probabilities):

Status:	1	2	3	4	5
Time 1 :	0.0746	0.2081	0.3088	0.1788	0.2297
Time 2 :	0.2415	0.1990	0.2994	0.1220	0.1382

Tau estimates (transition probabilities):

Time 1 latent status (rows) by

Time 2 latent status (columns)

	1	2	3	4	5
1 :	0.8569	0.0892	0.0411	0.0127	0.0000
2 :	0.1301	0.6390	0.0608	0.1190	0.0511
3 :	0.1691	0.0515	0.6593	0.0902	0.0298
4 :	0.4040	0.1564	0.0545	0.2935	0.0915
5 :	0.1134	0.0675	0.3060	0.0693	0.4439

Rho estimates (item-response probabilities):

(All times)

Response category: 1:

Status:	1	2	3	4	5
LIE1 :	0.8291	0.1136	0.3087	0.2485	0.1527
ROWDY1 :	0.8731	0.5985	0.2251	0.5104	0.1484
DAMAGE1 :	0.9522	0.9358	0.7200	0.9033	0.3286
STL_STR1 :	0.9382	0.9632	0.9497	0.0610	0.0870
STL_SM1 :	0.9421	0.9771	0.9167	0.2776	0.1706
FGHTGRP1 :	0.9640	0.9756	0.6050	0.8970	0.5113

Response category: 2:

Status:	1	2	3	4	5
LIE1 :	0.1709	0.8864	0.6913	0.7515	0.8473
ROWDY1 :	0.1269	0.4015	0.7749	0.4896	0.8516
DAMAGE1 :	0.0478	0.0642	0.2800	0.0967	0.6714
STL_STR1 :	0.0618	0.0368	0.0503	0.9390	0.9130
STL_SM1 :	0.0579	0.0229	0.0833	0.7224	0.8294
FGHTGRP1 :	0.0360	0.0244	0.3950	0.1030	0.4887

5 Class Model - Delinquency, Grouping Variable
Measurement Invariance

Data Summary, Model Information, and Fit Statistics (EM Algorithm)

Number of subjects in dataset: 3000
Number of subjects in analysis: 3000

Number of measurement items per time: 6
Response categories per item: 2 2 2 2 2 2
Number of occasions (times): 2
Number of groups in the data: 2
Number of latent statuses: 5

Starting values were provided via a dataset.

Parameter restrictions: Rho (measurement) parameters were constrained to be equal across groups and time.

The model converged in 529 iterations.

Maximum number of iterations: 5000
Convergence method: maximum absolute deviation (MAD)
Convergence criterion: 0.000001000

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Fit statistics:
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Log-likelihood: -19290.90
G-squared: 3397.51
AIC: 3553.51
BIC: 4022.01
Degrees of freedom: 8113

5 Class Model - Delinquency, Grouping Variable
Measurement Invariance

Parameter Estimates

Delta estimates (status membership probabilities):

MALE		:					
Status:			1	2	3	4	5
Time 1	:		0.0487	0.2015	0.2232	0.1677	0.3589
Time 2	:		0.2691	0.1474	0.2736	0.1151	0.1948
FEMALE		:					
Status:			1	2	3	4	5
Time 1	:		0.0884	0.2272	0.3935	0.1786	0.1124
Time 2	:		0.1748	0.2898	0.3252	0.1206	0.0896

Tau estimates (transition probabilities):

MALE		:					
Time	1	latent status (rows) by					
Time	2	latent status (columns)					
			1	2	3	4	5
1	:		0.8813	0.0000	0.1065	0.0121	0.0000
2	:		0.1663	0.5450	0.1013	0.1690	0.0184
3	:		0.3192	0.0001	0.6141	0.0247	0.0418
4	:		0.4604	0.0819	0.0358	0.3258	0.0962
5	:		0.1233	0.0664	0.2923	0.0565	0.4615

FEMALE		:					
Time	1	latent status (rows) by					
Time	2	latent status (columns)					
		1	2	3	4	5	
1	:	0.7487	0.2501	0.0001	0.0011	0.0000	
2	:	0.1195	0.7031	0.0292	0.0671	0.0811	
3	:	0.0552	0.1100	0.6862	0.1240	0.0244	
4	:	0.2892	0.2940	0.0683	0.2527	0.0958	
5	:	0.0715	0.1083	0.3237	0.1005	0.3959	

Rho estimates (item-response probabilities):

(All groups)

(All times)

Response category: 1:						
Status:		1	2	3	4	5
LIE1	:	0.8869	0.1143	0.3113	0.2439	0.1578
ROWDY1	:	0.8816	0.6145	0.2240	0.5175	0.1483
DAMAGE1	:	0.9484	0.9354	0.7276	0.9132	0.3295
STL_STR1	:	0.9382	0.9577	0.9507	0.0541	0.0981
STL_SM1	:	0.9371	0.9736	0.9236	0.2704	0.1760
FGHTGRP1	:	0.9619	0.9762	0.6087	0.8991	0.5143

Response category: 2:						
Status:		1	2	3	4	5
LIE1	:	0.1131	0.8857	0.6887	0.7561	0.8422
ROWDY1	:	0.1184	0.3855	0.7760	0.4825	0.8517

DAMAGE1	:	0.0516	0.0646	0.2724	0.0868	0.6705
STL_STR1	:	0.0618	0.0423	0.0493	0.9459	0.9019
STL_SM1	:	0.0629	0.0264	0.0764	0.7296	0.8240
FGHTGRP1	:	0.0381	0.0238	0.3913	0.1009	0.4857

5 Class Model - Delinquency, Covariate Predicting Deltas

Data and Model Summary and Fit Statistics (EM Algorithm with Logistic Regression)

Number of subjects in dataset: 3000
Number of subjects in analysis: 3000

Number of measurement items per time: 6
Response categories per item: 2 2 2 2 2 2
Number of occasions (times): 2
Number of groups in the data: 1
Number of latent statuses: 5

Logistic model for time 1: multinomial
Number of covariates for time 1: 1
Reference status for time 1: 1

Starting values were provided via a dataset.

Parameter restrictions: Rho (measurement) parameters were constrained to be equal across time.

The model converged in 651 iterations.

Maximum number of iterations: 5000
Convergence method: maximum absolute deviation (MAD)
Convergence criterion: 0.000001000

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Fit statistics:
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Log-likelihood: -19384.54

5 Class Model - Delinquency, Covariate Predicting Deltas

Parameter Estimates

Delta estimates (status membership probabilities):

Status:		1	2	3	4	5
Time 1	:	0.0698	0.2163	0.3056	0.1763	0.2320
Time 2	:	0.2361	0.2064	0.2979	0.1207	0.1389

Tau estimates (transition probabilities):

Time 1 latent status (rows) by

Time 2 latent status (columns)

		1	2	3	4	5
1	:	0.8940	0.0435	0.0523	0.0102	0.0000
2	:	0.1219	0.6559	0.0575	0.1158	0.0488
3	:	0.1668	0.0537	0.6616	0.0882	0.0297
4	:	0.4009	0.1633	0.0512	0.2960	0.0885
5	:	0.1104	0.0704	0.3041	0.0681	0.4469

Rho estimates (item-response probabilities):

(All times)

Response category: 1:

Status:		1	2	3	4	5
LIE1	:	0.8351	0.1318	0.3064	0.2468	0.1552
ROWDY1	:	0.8766	0.6018	0.2243	0.5106	0.1485
DAMAGE1	:	0.9512	0.9370	0.7209	0.8995	0.3317
STL_STR1	:	0.9366	0.9572	0.9510	0.0597	0.0914
STL_SM1	:	0.9404	0.9764	0.9188	0.2695	0.1736
FGHTGRP1	:	0.9632	0.9757	0.6042	0.8958	0.5120

Response category: 2:

Status:		1	2	3	4	5
LIE1	:	0.1649	0.8682	0.6936	0.7532	0.8448
ROWDY1	:	0.1234	0.3982	0.7757	0.4894	0.8515
DAMAGE1	:	0.0488	0.0630	0.2791	0.1005	0.6683
STL_STR1	:	0.0634	0.0428	0.0490	0.9403	0.9086
STL_SM1	:	0.0596	0.0236	0.0812	0.7305	0.8264
FGHTGRP1	:	0.0368	0.0243	0.3958	0.1042	0.4880

Beta estimates for Delta:

Status:		1	2	3	4	5
Intercept	:	Reference	1.0107	1.3429	0.6479	0.8272
ALC_W1	:		1.0621	1.1381	1.7541	2.0467

Delta Odds Ratio estimates:

Status:		1	2	3	4	5
Intercept(odds)	:	Reference	2.7474	3.8303	1.9115	2.2869
ALC_W1	:		2.8925	3.1208	5.7781	7.7422

5 Class Model - Delinquency, Covariate Predicting Deltas

Significance Tests

Beta parameter test (Type III) for time 1 covariates (COVARIATES1): (based on 2*log-likelihood)

Covariate	Exclusion LL	Change in 2*LL	deg freedom	p-Value
ALC_W1	-19437.82452945	106.55950972	4	0.000000000

5 Class Model - Delinquency, Covariate Predicting Deltas and Taus

Data and Model Summary and Fit Statistics (EM Algorithm with Logistic Regression)

Number of subjects in dataset: 3000
Number of subjects in analysis: 3000

Number of measurement items per time: 6
Response categories per item: 2 2 2 2 2 2
Number of occasions (times): 2
Number of groups in the data: 1
Number of latent statuses: 5

Logistic model for time 1: multinomial
Number of covariates for time 1: 1
Reference status for time 1: 1

Logistic model for transitions: binary
Number of covariates for transitions: 1
Comparison statuses for time 1 to 2: 1 2 3 4 5

Starting values were provided via a dataset.

Parameter restrictions: Rho (measurement) parameters were constrained to be equal across time.

The model converged in 920 iterations.

Maximum number of iterations: 5000
Convergence method: maximum absolute deviation (MAD)
Convergence criterion: 0.000001000

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Fit statistics:
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Log-likelihood: -19381.34

5 Class Model - Delinquency, Covariate Predicting Deltas and Taus

Parameter Estimates

Delta estimates (status membership probabilities):

Status:		1	2	3	4	5
Time 1	:	0.0688	0.2184	0.3034	0.1783	0.2311
Time 2	:	0.2320	0.2138	0.2974	0.1217	0.1352

Tau estimates (transition probabilities):

Time 1 latent status (rows) by

Time 2 latent status (columns)

		1	2	3	4	5
1	:	0.8639	0.0814	0.0547	0.0000	0.0000
2	:	0.1172	0.6671	0.0525	0.1188	0.0444
3	:	0.1660	0.0518	0.6628	0.0880	0.0314
4	:	0.3970	0.1654	0.0541	0.2924	0.0911
5	:	0.1118	0.0748	0.3089	0.0730	0.4315

Rho estimates (item-response probabilities):

(All times)

Response category: 1:

Status:		1	2	3	4	5
LIE1	:	0.8397	0.1347	0.3070	0.2473	0.1548
ROWDY1	:	0.8780	0.6008	0.2239	0.5092	0.1476
DAMAGE1	:	0.9512	0.9366	0.7202	0.8996	0.3286
STL_STR1	:	0.9369	0.9574	0.9520	0.0626	0.0917
STL_SM1	:	0.9401	0.9772	0.9190	0.2711	0.1738
FGHTGRP1	:	0.9636	0.9735	0.6034	0.8945	0.5108

Response category: 2:

Status:		1	2	3	4	5
LIE1	:	0.1603	0.8653	0.6930	0.7527	0.8452
ROWDY1	:	0.1220	0.3992	0.7761	0.4908	0.8524
DAMAGE1	:	0.0488	0.0634	0.2798	0.1004	0.6714
STL_STR1	:	0.0631	0.0426	0.0480	0.9374	0.9083
STL_SM1	:	0.0599	0.0228	0.0810	0.7289	0.8262
FGHTGRP1	:	0.0364	0.0265	0.3966	0.1055	0.4892

Beta estimates for Delta:

Status:		1	2	3	4	5
Intercept	:	Reference	1.0578	1.3594	0.6809	0.8585
ALC_W1	:		0.8347	0.9900	1.6035	1.8554

Delta Odds Ratio estimates:

Status:		1	2	3	4	5
Intercept(odds)	:	Reference	2.8800	3.8939	1.9757	2.3596
ALC_W1	:		2.3041	2.6913	4.9702	6.3940

5 Class Model - Delinquency, Covariate Predicting Deltas and Taus

Parameter Estimates

Beta estimates for Tau:

Intercept:

Time 1	Time 2	Estimate
1	1	2.2302
2	2	0.5626
3	3	0.6965
4	4	-0.9275
5	5	-0.3727

ALC_W1 :

Time 1	Time 2	Estimate
1	1	-1.2091
2	2	0.6244
3	3	-0.0887
4	4	0.1830
5	5	0.4094

Tau Odds Ratio estimates:

Intercept(odds):

Time 1	Time 2	Estimate
1	1	9.3017
2	2	1.7553
3	3	2.0067
4	4	0.3955
5	5	0.6889

ALC_W1 :

Time 1	Time 2	Estimate
1	1	0.2985
2	2	1.8671
3	3	0.9151
4	4	1.2008
5	5	1.5059

5 Class Model - Delinquency, Covariate Predicting Deltas and Taus

Significance Tests

Beta parameter test (Type III) for time 1 covariates (COVARIATES1): (based on 2*log-likelihood)

Covariate	Exclusion LL	Change in 2*LL	deg freedom	p-Value
ALC_W1	-19431.94390134	101.21710324	4	0.000000000