4 Class Model - Marijuana Use, Covariate (standardized)

Standardized Grades

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

Number of subjects in dataset: 2587

Number of subjects in analysis: 2587

Number of measurement items: 7

Response categories per item: 2 2 2 2 2 2 2

Number of groups in the data: 1

Number of latent classes: 4

Logistic model: multinomial

Number of covariates used: 1

Reference class: 1

NOTE: A data-derived prior was applied to the rho parameters to help

avoid parameter estimates on boundary values of zero and one.

Rho starting values were randomly generated (seed = 25752).

No parameter restrictions were specified (freely estimated).

The model converged in 89 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: -6454.78

4 Class Model - Marijuana Use, Covariate (standardized)

Standardized Grades

Parameter Estimates

Class membership probabilities: Gamma estimates (standard errors)

Class: 1 2 3 4

0.5135 0.0918 0.1492 0.2454

(0.0107) (0.0063) (0.0096) (0.0096)

Item response probabilities: Rho estimates (standard errors)

Response category 1:

Class: 1 2 3 4

LIFETIME : 0.1092 0.3014 0.9996 0.9998

(0.0116) (0.0321) (0.0011) (0.0006)

PREV\_YR : 0.0001 0.0009 0.8558 0.9995

(0.0003) (0.0029) (0.0358) (0.0012)

PREV\_MO : 0.0000 0.0002 0.2458 0.7336

(0.0002) (0.0010) (0.0255) (0.0206)

NEXT\_MO : 0.0157 0.1990 0.2909 0.8754

(0.0038) (0.0280) (0.0292) (0.0178)

APRV\_TRY : 0.1602 0.9804 0.6672 0.9997

(0.0113) (0.0133) (0.0277) (0.0007)

APRV\_OCC : 0.0052 0.9915 0.1919 0.9961

(0.0030) (0.0197) (0.0340) (0.0045)

APRV\_REG : 0.0020 0.4305 0.0203 0.6058

(0.0014) (0.0339) (0.0085) (0.0221)

Response category 2:

Class: 1 2 3 4

LIFETIME : 0.8908 0.6986 0.0004 0.0002

(0.0116) (0.0321) (0.0011) (0.0006)

PREV\_YR : 0.9999 0.9991 0.1442 0.0005

(0.0003) (0.0029) (0.0358) (0.0012)

PREV\_MO : 1.0000 0.9998 0.7542 0.2664

(0.0002) (0.0010) (0.0255) (0.0206)

NEXT\_MO : 0.9843 0.8010 0.7091 0.1246

(0.0038) (0.0280) (0.0292) (0.0178)

APRV\_TRY : 0.8398 0.0196 0.3328 0.0003

(0.0113) (0.0133) (0.0277) (0.0007)

APRV\_OCC : 0.9948 0.0085 0.8081 0.0039

(0.0030) (0.0197) (0.0340) (0.0045)

APRV\_REG : 0.9980 0.5695 0.9797 0.3942

(0.0014) (0.0339) (0.0085) (0.0221)

Beta estimates (standard errors)

Class: 1 2 3 4

Intercept Reference -1.6982 -1.2382 -0.7522

(0.0776) (0.0780) (0.0553)

GRADE : -0.2287 -0.4528 -0.4971

(0.0770) (0.0658) (0.0518)

4 Class Model - Marijuana Use, Covariate (standardized)

Standardized Grades

Parameter Estimates

Odds Ratio estimates [95% Confidence Interval]

Class: 1 2 3 4

Intercept(odds): Reference 0.1830 0.2899 0.4713

Lower bound [0.1572] [0.2488] [0.4229]

Upper bound [0.2131] [0.3378] [0.5253]

GRADE : 0.7956 0.6358 0.6083

Lower bound [0.6842] [0.5589] [0.5496]

Upper bound [0.9252] [0.7233] [0.6732]

4 Class Model - Marijuana Use, Covariate (standardized)

Standardized Grades

Significance Tests

Beta parameter test (Type III): (based on 2\*log-likelihood)

Covariate Exclusion LL Change in 2\*LL deg freedom p-Value

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GRADE -6513.06 116.55 3 0.0000

4 Class Model - Marijuana Use, Grouping Variable and Covariate (standardized)

Standardized Grades

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

Number of subjects in dataset: 2587

Number of subjects in analysis: 2587

Number of measurement items: 7

Response categories per item: 2 2 2 2 2 2 2

Number of groups in the data: 3

Number of latent classes: 4

Logistic model: multinomial

Number of covariates used: 1

Reference class: 1

NOTE: A data-derived prior was applied to the rho parameters to help

avoid parameter estimates on boundary values of zero and one.

Rho starting values were randomly generated (seed = 25752).

Rho (measurement) parameters were constrained to be equal across groups.

The model converged in 91 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: -6446.61

4 Class Model - Marijuana Use, Grouping Variable and Covariate (standardized)

Standardized Grades

Parameter Estimates

Class membership probabilities: Gamma estimates (standard errors)

Class: 1 2 3 4

Y1 : 0.4922 0.0765 0.1501 0.2812

(0.0168) (0.0092) (0.0141) (0.0156)

Y2 : 0.5332 0.1001 0.1424 0.2243

(0.0183) (0.0113) (0.0147) (0.0154)

Y3 : 0.5173 0.1027 0.1547 0.2253

(0.0181) (0.0116) (0.0154) (0.0156)

Item response probabilities: Rho estimates (standard errors)

(All groups)

Response category 1:

Class: 1 2 3 4

LIFETIME : 0.1092 0.3023 0.9996 0.9998

(0.0117) (0.0323) (0.0011) (0.0006)

PREV\_YR : 0.0001 0.0009 0.8569 0.9995

(0.0003) (0.0029) (0.0368) (0.0013)

PREV\_MO : 0.0000 0.0002 0.2458 0.7339

(0.0002) (0.0010) (0.0258) (0.0205)

NEXT\_MO : 0.0154 0.2002 0.2904 0.8759

(0.0039) (0.0281) (0.0295) (0.0177)

APRV\_TRY : 0.1596 0.9800 0.6677 0.9998

(0.0114) (0.0136) (0.0278) (0.0007)

APRV\_OCC : 0.0053 0.9855 0.1936 0.9955

(0.0030) (0.0258) (0.0339) (0.0048)

APRV\_REG : 0.0020 0.4285 0.0194 0.6065

(0.0014) (0.0343) (0.0085) (0.0221)

Response category 2:

Class: 1 2 3 4

LIFETIME : 0.8908 0.6977 0.0004 0.0002

(0.0117) (0.0323) (0.0011) (0.0006)

PREV\_YR : 0.9999 0.9991 0.1431 0.0005

(0.0003) (0.0029) (0.0368) (0.0013)

PREV\_MO : 1.0000 0.9998 0.7542 0.2661

(0.0002) (0.0010) (0.0258) (0.0205)

NEXT\_MO : 0.9846 0.7998 0.7096 0.1241

(0.0039) (0.0281) (0.0295) (0.0177)

APRV\_TRY : 0.8404 0.0200 0.3323 0.0002

(0.0114) (0.0136) (0.0278) (0.0007)

APRV\_OCC : 0.9947 0.0145 0.8064 0.0045

(0.0030) (0.0258) (0.0339) (0.0048)

APRV\_REG : 0.9980 0.5715 0.9806 0.3935

(0.0014) (0.0343) (0.0085) (0.0221)

Beta estimates (standard errors)

Y1 :

Class: 1 2 3 4

Intercept Reference -1.8433 -1.2252 -0.5942

(0.1346) (0.1179) (0.0845)

GRADE : -0.1614 -0.5536 -0.5434

(0.1482) (0.1112) (0.0854)

Y2 :

Class: 1 2 3 4

Intercept Reference -1.6493 -1.3122 -0.8501

(0.1293) (0.1256) (0.0932)

GRADE : -0.2181 -0.3995 -0.3500

(0.1266) (0.1145) (0.0916)

Y3 :

Class: 1 2 3 4

Intercept Reference -1.5903 -1.1897 -0.8632

(0.1296) (0.1213) (0.0985)

GRADE : -0.2997 -0.3916 -0.5829

(0.1309) (0.1178) (0.0941)

Odds Ratio estimates [95% Confidence Interval]

Y1 :

Class: 1 2 3 4

Intercept(odds): Reference 0.1583 0.2937 0.5520

Lower bound [0.1216] [0.2331] [0.4678]

Upper bound [0.2061] [0.3701] [0.6514]

GRADE : 0.8510 0.5749 0.5807

Lower bound [0.6365] [0.4623] [0.4912]

Upper bound [1.1378] [0.7149] [0.6866]

Y2 :

Class: 1 2 3 4

Intercept(odds): Reference 0.1922 0.2692 0.4274

Lower bound [0.1492] [0.2105] [0.3560]

Upper bound [0.2476] [0.3444] [0.5130]

GRADE : 0.8041 0.6707 0.7047

Lower bound [0.6274] [0.5358] [0.5889]

Upper bound [1.0305] [0.8394] [0.8432]

Y3 :

Class: 1 2 3 4

Intercept(odds): Reference 0.2039 0.3043 0.4218

Lower bound [0.1581] [0.2399] [0.3478]

Upper bound [0.2628] [0.3860] [0.5117]

GRADE : 0.7410 0.6760 0.5583

Lower bound [0.5733] [0.5366] [0.4643]

Upper bound [0.9578] [0.8516] [0.6713]

4 Class Model - Marijuana Use, Grouping Variable and Covariate (standardized)

Standardized Grades

Significance Tests

Beta parameter test (Type III): (based on 2\*log-likelihood)

Covariate Exclusion LL Change in 2\*LL deg freedom p-Value

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GRADE -6506.55 119.89 9 0.0000