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TITLE:
    SVLM N=1000 Large DIF (Testing parameter values);
DATA:
    FILE IS condition_125_rep1.dat;
VARIABLE:
    NAMES id age agec study study_c gender gender_c  eta
        bin_1-bin_12 y1 y2;
    USEVARIABLES ARE AGEC STUDY GENDER bin_1-bin_12 agec2 agestudy;
    CATEGORICAL ARE bin_1-bin_12;
    CONSTRAINT= study agec gender;
DEFINE:
    agec2 = agec*agec;
    agestudy = agec*study;
ANALYSIS:        ESTIMATOR=ml;
    ALGORITHM=integration;
MODEL:
    Trait BY bin_1* bin_2-bin_12;
    [Trait@0];
    Trait ON agec agec2 study agestudy;
    Trait (v);
    Trait BY bin_1 (L1);
    Trait BY bin_2 (L2);
    Trait BY bin_3 (L3);
    Trait BY bin_4 (L4);
    bin_1 ON gender study;
    bin_2 ON agec study;
    bin_3 ON agec gender;
    bin_4 ON gender study;
MODEL CONSTRAINT:
    NEW (v1 v2 v3 L10*1 L20*1 L30*1 L40*1 L11*0 L12*0 L21*0 L22*0
        L31*0 L32*0 L41*0 L42*0);
    v = 1*EXP(v1*agec + v2*study + v3*gender);
    L1 = L10 + L11*gender + L12*study;
    L2 = L20 + L21*agec + L22*study;
    L3 = L30 + L31*agec + L32*gender;
    L4 = L40 + L41*gender + L42*study;
```

Handwritten annotations:

] predictors of factor variance on factor loadings must be listed here

covariate effects on factor mean

} Covariate effects exist for these factor loadings (see below)

} Covariate effects on intercepts of items 1, 2, 3 & 4

list of parameters in variance + loading equations, * start value

covariate effects on factor variance

} Covariate effects for loadings (labeled L1, L2, L3, L4 (see above)

$[Trait@\underline{0}]$

$v = \underline{1} * EXP( \ )$

} These statements are used to scale the latent factor to have a mean of 0 and variance of 1 when all covariates are 0

(Useful to center / code covariates so that 0 point is meaningful + within range of data)