MAP : Seed report

Date: 2016-12-29

Table of Contents

This report contains a searchable table, followed by publication-ready tables.

# Available models

Study **MAP** have contributed the following outcome pairs to the IASLA-2015-Portland model pool: NULL

|  |  |  |
| --- | --- | --- |
| process\_a | process\_b | n\_models |
| fev | bnt | 8 |
| fev | bstory\_de | 8 |
| fev | bstory\_im | 8 |
| fev | categories | 8 |
| fev | digit\_b | 8 |
| fev | digit\_f | 8 |
| fev | digit\_o | 8 |
| fev | ideas | 8 |
| fev | line | 8 |
| fev | logic\_de | 8 |
| fev | logic\_im | 8 |
| fev | matrices | 8 |
| fev | mmse | 8 |
| fev | nart | 8 |
| fev | num\_comp | 8 |
| fev | symbol | 8 |
| fev | word\_de | 8 |
| fev | word\_im | 8 |
| fev | word\_rec | 8 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| map | female | a | fev | bnt | 1 |
| map | female | a | fev | bstory\_de | 1 |
| map | female | a | fev | bstory\_im | 1 |
| map | female | a | fev | categories | 1 |
| map | female | a | fev | digit\_b | 1 |
| map | female | a | fev | digit\_f | 1 |
| map | female | a | fev | digit\_o | 1 |
| map | female | a | fev | ideas | 1 |
| map | female | a | fev | line | 1 |
| map | female | a | fev | logic\_de | 1 |
| map | female | a | fev | logic\_im | 1 |
| map | female | a | fev | matrices | 1 |
| map | female | a | fev | mmse | 1 |
| map | female | a | fev | nart | 1 |
| map | female | a | fev | num\_comp | 1 |
| map | female | a | fev | symbol | 1 |
| map | female | a | fev | word\_de | 1 |
| map | female | a | fev | word\_im | 1 |
| map | female | a | fev | word\_rec | 1 |
| map | female | ae | fev | bnt | 1 |
| map | female | ae | fev | bstory\_de | 1 |
| map | female | ae | fev | bstory\_im | 1 |
| map | female | ae | fev | categories | 1 |
| map | female | ae | fev | digit\_b | 1 |
| map | female | ae | fev | digit\_f | 1 |
| map | female | ae | fev | digit\_o | 1 |
| map | female | ae | fev | ideas | 1 |
| map | female | ae | fev | line | 1 |
| map | female | ae | fev | logic\_de | 1 |
| map | female | ae | fev | logic\_im | 1 |
| map | female | ae | fev | matrices | 1 |
| map | female | ae | fev | mmse | 1 |
| map | female | ae | fev | nart | 1 |
| map | female | ae | fev | num\_comp | 1 |
| map | female | ae | fev | symbol | 1 |
| map | female | ae | fev | word\_de | 1 |
| map | female | ae | fev | word\_im | 1 |
| map | female | ae | fev | word\_rec | 1 |
| map | female | aeh | fev | bnt | 1 |
| map | female | aeh | fev | bstory\_de | 1 |
| map | female | aeh | fev | bstory\_im | 1 |
| map | female | aeh | fev | categories | 1 |
| map | female | aeh | fev | digit\_b | 1 |
| map | female | aeh | fev | digit\_f | 1 |
| map | female | aeh | fev | digit\_o | 1 |
| map | female | aeh | fev | ideas | 1 |
| map | female | aeh | fev | line | 1 |
| map | female | aeh | fev | logic\_de | 1 |
| map | female | aeh | fev | logic\_im | 1 |
| map | female | aeh | fev | matrices | 1 |
| map | female | aeh | fev | mmse | 1 |
| map | female | aeh | fev | nart | 1 |
| map | female | aeh | fev | num\_comp | 1 |
| map | female | aeh | fev | symbol | 1 |
| map | female | aeh | fev | word\_de | 1 |
| map | female | aeh | fev | word\_im | 1 |
| map | female | aeh | fev | word\_rec | 1 |
| map | female | aehplus | fev | bnt | 1 |
| map | female | aehplus | fev | bstory\_de | 1 |
| map | female | aehplus | fev | bstory\_im | 1 |
| map | female | aehplus | fev | categories | 1 |
| map | female | aehplus | fev | digit\_b | 1 |
| map | female | aehplus | fev | digit\_f | 1 |
| map | female | aehplus | fev | digit\_o | 1 |
| map | female | aehplus | fev | ideas | 1 |
| map | female | aehplus | fev | line | 1 |
| map | female | aehplus | fev | logic\_de | 1 |
| map | female | aehplus | fev | logic\_im | 1 |
| map | female | aehplus | fev | matrices | 1 |
| map | female | aehplus | fev | mmse | 1 |
| map | female | aehplus | fev | nart | 1 |
| map | female | aehplus | fev | num\_comp | 1 |
| map | female | aehplus | fev | symbol | 1 |
| map | female | aehplus | fev | word\_de | 1 |
| map | female | aehplus | fev | word\_im | 1 |
| map | female | aehplus | fev | word\_rec | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| map | male | a | fev | bnt | 1 |
| map | male | a | fev | bstory\_de | 1 |
| map | male | a | fev | bstory\_im | 1 |
| map | male | a | fev | categories | 1 |
| map | male | a | fev | digit\_b | 1 |
| map | male | a | fev | digit\_f | 1 |
| map | male | a | fev | digit\_o | 1 |
| map | male | a | fev | ideas | 1 |
| map | male | a | fev | line | 1 |
| map | male | a | fev | logic\_de | 1 |
| map | male | a | fev | logic\_im | 1 |
| map | male | a | fev | matrices | 1 |
| map | male | a | fev | mmse | 1 |
| map | male | a | fev | nart | 1 |
| map | male | a | fev | num\_comp | 1 |
| map | male | a | fev | symbol | 1 |
| map | male | a | fev | word\_de | 1 |
| map | male | a | fev | word\_im | 1 |
| map | male | a | fev | word\_rec | 1 |
| map | male | ae | fev | bnt | 1 |
| map | male | ae | fev | bstory\_de | 1 |
| map | male | ae | fev | bstory\_im | 1 |
| map | male | ae | fev | categories | 1 |
| map | male | ae | fev | digit\_b | 1 |
| map | male | ae | fev | digit\_f | 1 |
| map | male | ae | fev | digit\_o | 1 |
| map | male | ae | fev | ideas | 1 |
| map | male | ae | fev | line | 1 |
| map | male | ae | fev | logic\_de | 1 |
| map | male | ae | fev | logic\_im | 1 |
| map | male | ae | fev | matrices | 1 |
| map | male | ae | fev | mmse | 1 |
| map | male | ae | fev | nart | 1 |
| map | male | ae | fev | num\_comp | 1 |
| map | male | ae | fev | symbol | 1 |
| map | male | ae | fev | word\_de | 1 |
| map | male | ae | fev | word\_im | 1 |
| map | male | ae | fev | word\_rec | 1 |
| map | male | aeh | fev | bnt | 1 |
| map | male | aeh | fev | bstory\_de | 1 |
| map | male | aeh | fev | bstory\_im | 1 |
| map | male | aeh | fev | categories | 1 |
| map | male | aeh | fev | digit\_b | 1 |
| map | male | aeh | fev | digit\_f | 1 |
| map | male | aeh | fev | digit\_o | 1 |
| map | male | aeh | fev | ideas | 1 |
| map | male | aeh | fev | line | 1 |
| map | male | aeh | fev | logic\_de | 1 |
| map | male | aeh | fev | logic\_im | 1 |
| map | male | aeh | fev | matrices | 1 |
| map | male | aeh | fev | mmse | 1 |
| map | male | aeh | fev | nart | 1 |
| map | male | aeh | fev | num\_comp | 1 |
| map | male | aeh | fev | symbol | 1 |
| map | male | aeh | fev | word\_de | 1 |
| map | male | aeh | fev | word\_im | 1 |
| map | male | aeh | fev | word\_rec | 1 |
| map | male | aehplus | fev | bnt | 1 |
| map | male | aehplus | fev | bstory\_de | 1 |
| map | male | aehplus | fev | bstory\_im | 1 |
| map | male | aehplus | fev | categories | 1 |
| map | male | aehplus | fev | digit\_b | 1 |
| map | male | aehplus | fev | digit\_f | 1 |
| map | male | aehplus | fev | digit\_o | 1 |
| map | male | aehplus | fev | ideas | 1 |
| map | male | aehplus | fev | line | 1 |
| map | male | aehplus | fev | logic\_de | 1 |
| map | male | aehplus | fev | logic\_im | 1 |
| map | male | aehplus | fev | matrices | 1 |
| map | male | aehplus | fev | mmse | 1 |
| map | male | aehplus | fev | nart | 1 |
| map | male | aehplus | fev | num\_comp | 1 |
| map | male | aehplus | fev | symbol | 1 |
| map | male | aehplus | fev | word\_de | 1 |
| map | male | aehplus | fev | word\_im | 1 |
| map | male | aehplus | fev | word\_rec | 1 |

# female

Gender = *female*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *bnt*, *bstory\_de*, *bstory\_im*, *categories*, *digit\_b*, *digit\_f*, *digit\_o*, *ideas*, *line*, *logic\_de*, *logic\_im*, *matrices*, *mmse*, *nart*, *num\_comp*, *symbol*, *word\_de*, *word\_im*, *word\_rec*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | bnt | bstory\_de | bstory\_im | categories | digit\_b | digit\_f | digit\_o | ideas | line | logic\_de | logic\_im | matrices | mmse | nart | num\_comp | symbol | word\_de | word\_im | word\_rec | mean(sd) |
| ab | Covar (Levels) | 0.03 (0.02) .10 | 0.01 (0.02) .74 | 0.03 (0.02) .12 | 0.52 (0.10) <.01 | 0.06 (0.02) .01 | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 | 0.02 (0.01) <.01 | 0.10 (0.03) <.01 | 0.05 (0.05) .31 | 0.05 (0.05) .33 | 0.10 (0.03) <.01 | 0.01 (0.02) .71 | 0.09 (0.03) <.01 | 0.32 (0.08) <.01 | 0.49 (0.11) <.01 | 0.02 (0.02) .41 | 0.11 (0.05) .02 | 0.00 (0.01) .68 | --- |
| ab | Covar (Slopes) | 0.00 (0.00) .92 | 0.00 (0.00) .97 | 0.00 (0.00) .84 | -0.00 (0.00) .37 | 0.00 (0.00) .10 | 0.00 (0.00) .98 | 0.00 (0.00) .69 | 0.00 (0.00) .61 | -0.00 (0.00) .70 | -0.00 (0.00) .14 | -0.00 (0.00) .80 | 0.00 (0.00) .28 | -0.00 (0.00) .69 | 0.00 (0.00) .56 | -0.00 (0.00) .86 | 0.00 (0.01) .77 | -0.00 (0.00) .29 | -0.01 (0.00) .09 | 0.00 (0.00) .95 | --- |
| ab | Covar (Residuals) | -0.00 (0.00) .35 | -0.01 (0.01) .17 | -0.01 (0.01) .22 | -0.03 (0.02) .10 | -0.01 (0.01) .18 | 0.00 (0.01) .46 | 0.00 (0.00) .28 | 0.00 (0.00) .46 | -0.01 (0.01) .10 | 0.00 (0.01) .78 | 0.00 (0.01) .91 | -0.01 (0.01) .08 | 0.01 (0.00) .07 | 0.00 (0.00) .72 | -0.01 (0.02) .59 | 0.03 (0.02) .12 | 0.00 (0.01) .53 | 0.01 (0.01) .34 | 0.00 (0.00) .89 | --- |
| er | Corr (Levels) | 0.08 (0.05) .10 | 0.02 (0.06) .74 | 0.09 (0.06) .12 | 0.23 (0.04) <.01 | 0.12 (0.04) .01 | 0.13 (0.04) <.01 | 0.18 (0.05) <.01 | 0.19 (0.06) <.01 | 0.14 (0.05) <.01 | 0.05 (0.04) .31 | 0.04 (0.05) .33 | 0.18 (0.05) <.01 | 0.02 (0.06) .71 | 0.15 (0.04) <.01 | 0.17 (0.04) <.01 | 0.19 (0.04) <.01 | 0.04 (0.05) .41 | 0.11 (0.04) .02 | 0.02 (0.04) .68 | --- |
| er | Corr (Slopes) | -0.04 (0.43) .92 | -0.02 (0.47) .97 | 0.11 (0.60) .85 | -0.35 (0.44) .42 | 0.68 (0.53) .20 | 0.01 (0.60) .98 | -0.20 (0.57) .72 | -0.24 (0.56) .66 | -0.32 (0.87) .72 | -0.60 (0.79) .44 | -0.11 (0.47) .81 | 0.64 (0.82) .44 | -0.20 (0.57) .72 | 0.32 (0.63) .61 | -0.10 (0.60) .86 | 0.12 (0.39) .76 | -0.58 (0.84) .49 | -0.55 (0.43) .19 | 0.08 (1.14) .95 | --- |
| er | Corr (Residuals) | -0.03 (0.03) .35 | -0.04 (0.03) .17 | -0.03 (0.03) .22 | -0.04 (0.03) .10 | -0.04 (0.03) .18 | 0.02 (0.03) .46 | 0.03 (0.03) .28 | 0.02 (0.03) .46 | -0.04 (0.03) .11 | 0.01 (0.03) .78 | 0.00 (0.03) .91 | -0.05 (0.03) .08 | 0.05 (0.03) .07 | 0.01 (0.03) .72 | -0.01 (0.03) .59 | 0.05 (0.03) .12 | 0.02 (0.03) .53 | 0.03 (0.03) .33 | 0.00 (0.03) .89 | --- |
| a | Level | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.70 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.70 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71 (0.04) <.01 | 1.71(0.00) |
| a | Slope | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04(0.00) |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02(0.00) |
| a | Level \* education | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01(0.00) |
| a | Level \* height | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.84 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.84 (0.18) <.01 | 1.83 (0.18) <.01 | 1.82 (0.18) <.01 | 1.82 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83 (0.18) <.01 | 1.83(0.00) |
| a | Level \* smoking | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.10 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.10 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11(0.00) |
| a | Level \* cardio | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .10 | -0.07 (0.04) .08 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07 (0.04) .08 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07 (0.04) .08 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .09 | -0.07 (0.04) .10 | -0.07 (0.04) .09 | -0.07(0.00) |
| a | Level \* diabetes | -0.00 (0.03) .90 | -0.00 (0.03) .87 | -0.00 (0.03) .88 | -0.00 (0.03) .89 | -0.00 (0.03) .87 | -0.00 (0.03) .88 | -0.01 (0.03) .84 | -0.00 (0.03) .88 | -0.00 (0.03) .90 | -0.01 (0.03) .86 | -0.00 (0.03) .87 | -0.01 (0.03) .85 | -0.00 (0.03) .88 | -0.00 (0.03) .88 | -0.01 (0.03) .84 | -0.01 (0.03) .86 | -0.01 (0.03) .86 | -0.01 (0.03) .85 | -0.00 (0.03) .88 | -0.01(0.00) |
| a | Slope \* age | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .14 | 0.00 (0.00) .19 | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .16 | 0.00 (0.00) .15 | 0.00 (0.00) .15 | 0.00 (0.00) .12 | 0.00 (0.00) .14 | 0.00 (0.00) .14 | 0.00 (0.00) .16 | 0.00 (0.00) .14 | 0.00 (0.00) .14 | 0.00 (0.00) .18 | 0.00 (0.00) .16 | 0.00 (0.00) .16 | 0.00(0.00) |
| a | Slope \* education | 0.00 (0.00) .91 | 0.00 (0.00) .94 | 0.00 (0.00) .93 | 0.00 (0.00) .97 | 0.00 (0.00) .92 | 0.00 (0.00) .94 | 0.00 (0.00) .92 | 0.00 (0.00) .95 | 0.00 (0.00) .96 | 0.00 (0.00) .90 | 0.00 (0.00) .97 | 0.00 (0.00) .95 | 0.00 (0.00) .91 | 0.00 (0.00) .87 | 0.00 (0.00) .94 | 0.00 (0.00) .90 | 0.00 (0.00) .89 | 0.00 (0.00) .97 | 0.00 (0.00) .92 | 0.00(0.00) |
| a | Slope \* height | -0.08 (0.04) .03 | -0.08 (0.04) .02 | -0.08 (0.04) .02 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.09 (0.04) .02 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .03 | -0.08 (0.04) .04 | -0.08 (0.04) .03 | -0.08(0.00) |
| a | Slope \* smoking | 0.01 (0.01) .20 | 0.01 (0.01) .21 | 0.01 (0.01) .21 | 0.01 (0.00) .26 | 0.01 (0.01) .17 | 0.01 (0.01) .20 | 0.01 (0.01) .21 | 0.01 (0.01) .24 | 0.01 (0.01) .20 | 0.01 (0.01) .19 | 0.01 (0.01) .19 | 0.01 (0.00) .21 | 0.01 (0.00) .21 | 0.01 (0.01) .16 | 0.01 (0.01) .22 | 0.01 (0.01) .20 | 0.01 (0.00) .20 | 0.01 (0.01) .21 | 0.01 (0.01) .21 | 0.01(0.00) |
| a | Slope \* cardio | -0.01 (0.01) .40 | -0.01 (0.01) .38 | -0.01 (0.01) .39 | -0.01 (0.01) .37 | -0.01 (0.01) .43 | -0.01 (0.01) .37 | -0.01 (0.01) .39 | -0.01 (0.01) .39 | -0.01 (0.01) .40 | -0.01 (0.01) .36 | -0.01 (0.01) .38 | -0.01 (0.01) .36 | -0.01 (0.01) .40 | -0.01 (0.01) .38 | -0.01 (0.01) .37 | -0.01 (0.01) .38 | -0.01 (0.01) .38 | -0.01 (0.01) .36 | -0.01 (0.01) .39 | -0.01(0.00) |
| a | Slope \* diabetes | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .17 | 0.01 (0.01) .15 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01 (0.01) .19 | 0.01 (0.01) .18 | 0.01 (0.01) .17 | 0.01 (0.01) .16 | 0.01 (0.01) .18 | 0.01 (0.01) .17 | 0.01 (0.01) .16 | 0.01 (0.01) .19 | 0.01 (0.01) .17 | 0.01 (0.01) .18 | 0.01 (0.01) .18 | 0.01(0.00) |
| b | Level | 13.59 (0.15) <.01 | 8.92 (0.17) <.01 | 9.31 (0.16) <.01 | 32.40 (0.80) <.01 | 5.17 (0.20) <.01 | 7.35 (0.22) <.01 | 6.51 (0.16) <.01 | 7.58 (0.06) <.01 | 7.99 (0.30) <.01 | 8.46 (0.41) <.01 | 10.31 (0.42) <.01 | 10.11 (0.27) <.01 | 27.80 (0.16) <.01 | 5.36 (0.24) <.01 | 23.28 (0.77) <.01 | 35.72 (1.08) <.01 | 5.44 (0.21) <.01 | 16.81 (0.39) <.01 | 9.65 (0.09) <.01 | --- |
| b | Slope | 0.07 (0.04) .07 | 0.05 (0.07) .43 | 0.03 (0.06) .65 | 0.07 (0.22) .77 | -0.03 (0.06) .64 | -0.00 (0.06) .99 | 0.09 (0.05) .07 | 0.02 (0.02) .40 | 0.08 (0.09) .37 | 0.39 (0.12) <.01 | 0.31 (0.12) .01 | 0.05 (0.09) .59 | 0.06 (0.07) .35 | 0.02 (0.05) .70 | 0.39 (0.17) .02 | 0.85 (0.24) <.01 | 0.15 (0.06) .01 | 0.49 (0.12) <.01 | 0.02 (0.02) .38 | --- |
| b | Level \* age | -0.03 (0.00) <.01 | -0.02 (0.01) <.01 | -0.02 (0.01) <.01 | -0.26 (0.04) <.01 | 0.01 (0.01) .48 | 0.00 (0.01) .98 | -0.00 (0.01) .66 | 0.00 (0.00) .25 | -0.01 (0.01) .32 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | 0.04 (0.01) <.01 | -0.17 (0.03) <.01 | -0.38 (0.04) <.01 | -0.06 (0.01) <.01 | -0.11 (0.02) <.01 | -0.02 (0.00) <.01 | --- |
| b | Level \* education | 0.09 (0.01) <.01 | 0.09 (0.02) <.01 | 0.08 (0.02) <.01 | 0.82 (0.08) <.01 | 0.15 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 | 0.02 (0.00) <.01 | 0.25 (0.03) <.01 | 0.35 (0.04) <.01 | 0.33 (0.04) <.01 | 0.30 (0.02) <.01 | 0.14 (0.02) <.01 | 0.31 (0.02) <.01 | 0.50 (0.08) <.01 | 1.01 (0.10) <.01 | 0.14 (0.02) <.01 | 0.35 (0.04) <.01 | 0.02 (0.01) .01 | --- |
| b | Level \* height | 2.33 (0.60) <.01 | 0.73 (0.80) .36 | 0.74 (0.79) .35 | 12.85 (3.74) <.01 | 2.82 (0.88) <.01 | 2.50 (0.91) .01 | 1.90 (0.68) .01 | 0.23 (0.26) .37 | 2.73 (1.26) .03 | 5.53 (1.75) <.01 | 4.28 (1.65) .01 | 4.94 (1.20) <.01 | 0.80 (0.71) .26 | 3.20 (1.02) <.01 | 11.44 (3.37) <.01 | 16.74 (4.22) <.01 | 2.03 (0.88) .02 | 4.40 (1.81) .01 | 0.45 (0.45) .31 | --- |
| b | Level \* smoking | 0.03 (0.07) .71 | 0.02 (0.12) .86 | 0.10 (0.10) .33 | -0.64 (0.51) .21 | -0.02 (0.12) .88 | -0.01 (0.12) .94 | -0.04 (0.09) .63 | -0.02 (0.03) .47 | -0.23 (0.18) .19 | 0.08 (0.26) .76 | -0.11 (0.25) .66 | 0.03 (0.16) .86 | -0.01 (0.09) .88 | 0.05 (0.13) .71 | -0.37 (0.44) .40 | -0.14 (0.59) .81 | -0.20 (0.13) .12 | -0.49 (0.25) .05 | -0.04 (0.05) .47 | --- |
| b | Level \* cardio | 0.08 (0.11) .44 | -0.12 (0.19) .53 | -0.08 (0.16) .60 | -0.63 (0.74) .39 | -0.38 (0.18) .04 | 0.23 (0.19) .24 | -0.05 (0.14) .71 | -0.03 (0.05) .59 | 0.06 (0.26) .81 | -0.05 (0.42) .90 | -0.10 (0.40) .81 | -0.46 (0.25) .06 | -0.10 (0.13) .43 | 0.25 (0.19) .19 | -0.49 (0.70) .48 | -0.71 (0.89) .43 | -0.33 (0.21) .12 | -0.34 (0.37) .37 | -0.10 (0.10) .32 | --- |
| b | Level \* diabetes | -0.22 (0.11) .04 | 0.14 (0.14) .32 | 0.17 (0.13) .19 | -0.37 (0.64) .57 | 0.17 (0.16) .28 | 0.16 (0.17) .35 | 0.07 (0.13) .59 | -0.10 (0.05) .06 | 0.07 (0.24) .78 | 0.20 (0.32) .54 | 0.04 (0.31) .91 | -0.13 (0.21) .55 | 0.01 (0.13) .96 | -0.50 (0.19) .01 | -0.32 (0.60) .59 | -1.22 (0.81) .13 | 0.16 (0.16) .30 | 0.33 (0.32) .31 | 0.09 (0.06) .17 | --- |
| b | Slope \* age | -0.00 (0.00) .63 | -0.01 (0.00) <.01 | -0.00 (0.00) .15 | -0.03 (0.01) <.01 | -0.00 (0.00) .82 | 0.00 (0.00) .71 | -0.00 (0.00) .04 | 0.00 (0.00) .77 | -0.00 (0.00) .78 | -0.02 (0.00) <.01 | -0.01 (0.00) .06 | -0.01 (0.00) .01 | -0.00 (0.00) .04 | -0.00 (0.00) .25 | -0.03 (0.01) <.01 | -0.06 (0.01) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 | -0.00 (0.00) .20 | --- |
| b | Slope \* education | -0.01 (0.00) .10 | -0.00 (0.01) .52 | 0.00 (0.01) .95 | -0.00 (0.02) .92 | -0.00 (0.00) .61 | -0.00 (0.01) .67 | -0.00 (0.00) .46 | -0.00 (0.00) .51 | -0.00 (0.01) .70 | 0.02 (0.01) .23 | 0.01 (0.01) .55 | 0.00 (0.01) .98 | -0.01 (0.01) .05 | 0.00 (0.00) .88 | -0.03 (0.02) .11 | -0.07 (0.03) .01 | 0.00 (0.01) .81 | -0.01 (0.01) .61 | -0.00 (0.00) .70 | --- |
| b | Slope \* height | -0.17 (0.16) .27 | -0.02 (0.33) .95 | 0.00 (0.29) .99 | -0.46 (1.11) .68 | 0.11 (0.26) .68 | 0.12 (0.27) .64 | -0.06 (0.23) .81 | 0.04 (0.09) .67 | 0.53 (0.39) .17 | -0.28 (0.60) .64 | 0.14 (0.52) .80 | 0.28 (0.39) .48 | 0.05 (0.26) .86 | 0.08 (0.19) .68 | 0.95 (0.81) .24 | 0.98 (1.16) .40 | 0.23 (0.29) .44 | 0.09 (0.56) .88 | 0.02 (0.10) .82 | --- |
| b | Slope \* smoking | 0.00 (0.02) .82 | -0.01 (0.05) .80 | -0.05 (0.04) .24 | 0.12 (0.15) .43 | 0.02 (0.04) .59 | -0.01 (0.04) .69 | -0.04 (0.03) .22 | 0.01 (0.01) .34 | 0.02 (0.05) .77 | -0.08 (0.08) .28 | -0.10 (0.07) .20 | -0.04 (0.05) .46 | 0.02 (0.04) .56 | 0.04 (0.02) .10 | -0.08 (0.11) .47 | -0.24 (0.15) .10 | -0.02 (0.04) .66 | 0.00 (0.08) .99 | 0.01 (0.01) .38 | --- |
| b | Slope \* cardio | 0.00 (0.03) .99 | 0.00 (0.07) .98 | -0.03 (0.06) .57 | -0.54 (0.21) .01 | 0.10 (0.06) .09 | -0.04 (0.05) .47 | -0.08 (0.04) .08 | 0.00 (0.02) .88 | -0.14 (0.09) .11 | -0.05 (0.12) .68 | -0.04 (0.12) .75 | -0.00 (0.09) .97 | -0.03 (0.06) .66 | -0.04 (0.04) .28 | -0.11 (0.17) .50 | -0.08 (0.22) .71 | 0.00 (0.06) .95 | -0.14 (0.12) .26 | -0.00 (0.02) .90 | --- |
| b | Slope \* diabetes | 0.06 (0.03) .02 | 0.10 (0.05) .06 | 0.04 (0.04) .33 | 0.07 (0.18) .67 | 0.03 (0.05) .53 | -0.02 (0.04) .68 | -0.01 (0.04) .87 | 0.03 (0.02) .06 | -0.12 (0.07) .07 | 0.06 (0.10) .54 | 0.21 (0.09) .02 | 0.00 (0.07) .98 | 0.07 (0.05) .14 | -0.03 (0.04) .42 | -0.04 (0.15) .77 | -0.08 (0.19) .69 | -0.05 (0.04) .23 | 0.02 (0.10) .80 | -0.00 (0.02) .77 | --- |
| a | Var (Level) | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11(0.00) |
| a | Var (Slope) | 0.00 (0.00) .65 | 0.00 (0.00) .63 | 0.00 (0.00) .60 | 0.00 (0.00) .59 | 0.00 (0.00) .30 | 0.00 (0.00) .62 | 0.00 (0.00) .64 | 0.00 (0.00) .64 | 0.00 (0.00) .46 | 0.00 (0.00) .63 | 0.00 (0.00) .61 | 0.00 (0.00) .62 | 0.00 (0.00) .66 | 0.00 (0.00) .60 | 0.00 (0.00) .63 | 0.00 (0.00) .61 | 0.00 (0.00) .66 | 0.00 (0.00) .32 | 0.00 (0.00) .50 | 0.00(0.00) |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02(0.00) |
| b | Var (Level) | 0.95 (0.09) <.01 | 1.33 (0.19) <.01 | 0.95 (0.11) <.01 | 46.05 (3.18) <.01 | 2.29 (0.16) <.01 | 2.37 (0.15) <.01 | 1.02 (0.10) <.01 | 0.13 (0.02) <.01 | 4.26 (0.32) <.01 | 11.12 (0.67) <.01 | 10.12 (0.63) <.01 | 2.94 (0.26) <.01 | 0.88 (0.13) <.01 | 3.22 (0.20) <.01 | 32.44 (2.12) <.01 | 62.40 (4.28) <.01 | 2.59 (0.18) <.01 | 9.68 (0.65) <.01 | 0.48 (0.13) <.01 | --- |
| b | Var (Slope) | 0.02 (0.01) <.01 | 0.07 (0.03) .01 | 0.04 (0.02) .02 | 1.10 (0.24) <.01 | 0.04 (0.02) .03 | 0.02 (0.01) .09 | 0.03 (0.01) .03 | 0.01 (0.00) .02 | 0.03 (0.03) .38 | 0.29 (0.06) <.01 | 0.23 (0.06) <.01 | 0.06 (0.03) .05 | 0.06 (0.03) .08 | 0.02 (0.01) .06 | 0.37 (0.15) .02 | 1.17 (0.33) <.01 | 0.04 (0.02) .02 | 0.30 (0.07) <.01 | 0.00 (0.01) .89 | --- |
| b | Var (Residual) | 0.43 (0.02) <.01 | 2.38 (0.13) <.01 | 1.95 (0.07) <.01 | 21.53 (0.79) <.01 | 1.62 (0.06) <.01 | 1.61 (0.06) <.01 | 1.25 (0.06) <.01 | 0.19 (0.01) <.01 | 3.84 (0.16) <.01 | 5.67 (0.20) <.01 | 5.59 (0.21) <.01 | 3.04 (0.18) <.01 | 1.51 (0.07) <.01 | 0.67 (0.04) <.01 | 15.13 (0.82) <.01 | 21.98 (1.27) <.01 | 1.76 (0.08) <.01 | 5.88 (0.20) <.01 | 0.33 (0.06) <.01 | --- |
| a | Covar (Level, Slope) | 0.00 (0.00) .83 | 0.00 (0.00) .78 | 0.00 (0.00) .78 | 0.00 (0.00) .91 | -0.00 (0.00) .54 | 0.00 (0.00) .78 | 0.00 (0.00) .82 | 0.00 (0.00) .80 | 0.00 (0.00) .65 | 0.00 (0.00) .76 | 0.00 (0.00) .76 | 0.00 (0.00) .78 | 0.00 (0.00) .79 | 0.00 (0.00) .65 | 0.00 (0.00) .80 | 0.00 (0.00) .83 | 0.00 (0.00) .86 | -0.00 (0.00) .65 | 0.00 (0.00) .71 | -0.00(0.00) |
| b | Covar (Level, Slope) | -0.09 (0.02) <.01 | 0.02 (0.06) .71 | -0.04 (0.04) .29 | -0.12 (0.63) .85 | -0.08 (0.04) .04 | -0.03 (0.04) .45 | -0.07 (0.03) .01 | -0.01 (0.01) .04 | 0.04 (0.08) .63 | -0.04 (0.15) .76 | -0.30 (0.14) .04 | -0.07 (0.07) .31 | -0.01 (0.04) .79 | -0.03 (0.03) .39 | -0.28 (0.43) .51 | 0.77 (0.82) .35 | 0.02 (0.04) .67 | 0.09 (0.16) .58 | -0.00 (0.03) .97 | --- |
|  | Correlation of Levels | 0.079 | 0.021 | 0.092 | 0.230 | 0.121 | 0.127 | 0.18 | 0.190 | 0.142 | 0.0455 | 0.0449 | 0.179 | 0.022 | 0.153 | 0.168 | 0.186 | 0.037 | 0.107 | 0.017 | 0.11(0.07) |
|  | Correlation of Slopes | NaN | NaN | NaN | -Inf | Inf | NaN | NaN | NaN | -Inf | -Inf | -Inf | Inf | -Inf | Inf | -Inf | Inf | -Inf | -Inf | NaN | --- |
|  | Correlation of Residuals | -0.030 | -0.038 | -0.033 | -0.044 | -0.042 | 0.021 | 0.03 | 0.015 | -0.041 | 0.0083 | 0.0028 | -0.049 | 0.048 | 0.008 | -0.015 | 0.045 | 0.015 | 0.031 | 0.000 | -0.00(0.03) |
|  | N | 934 | 935 | 935 | 935 | 935 | 935 | 935 | 935 | 934 | 935 | 935 | 920 | 935 | 932 | 934 | 934 | 935 | 935 | 935 | 933.84(3.44) |
|  | occasions | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -4,437 | -7,106 | -6,642 | -11,446 | -6,650 | -6,662 | -5,902 | -2,608 | -7,918 | -9,022 | -8,933 | -7,005 | -6,293 | -5,515 | -10,533 | -11,355 | -6,810 | -9,012 | -3,826 | -7,246(2,393) |
|  | AIC | 8,956 | 14,294 | 13,366 | 22,974 | 13,383 | 13,406 | 11,885 | 5,299 | 15,919 | 18,127 | 17,949 | 14,093 | 12,668 | 11,112 | 21,148 | 22,792 | 13,701 | 18,107 | 7,735 | 14,574(4,785) |
|  | BIC | 9,154 | 14,492 | 13,564 | 23,172 | 13,581 | 13,604 | 12,084 | 5,497 | 16,117 | 18,325 | 18,147 | 14,291 | 12,867 | 11,311 | 21,347 | 22,990 | 13,900 | 18,305 | 7,933 | 14,773(4,785) |

## bnt

Gender = *female*; Process (a) = *fev*; Process (b) = *bnt*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.06 (0.02) <.01 | 0.04 (0.02) .03 | 0.02 (0.01) .17 | 0.03 (0.02) .10 |
| ab | Covar (Slopes) | 0.00 (0.00) .99 | 0.00 (0.00) .99 | 0.00 (0.00) .97 | 0.00 (0.00) .92 |
| ab | Covar (Residuals) | 0.00 (0.00) .88 | 0.00 (0.00) .88 | -0.00 (0.00) .71 | -0.00 (0.00) .35 |
| er | Corr (Levels) | 0.14 (0.04) <.01 | 0.11 (0.05) .02 | 0.06 (0.04) .17 | 0.08 (0.05) .10 |
| er | Corr (Slopes) | -0.01 (0.48) .99 | -0.00 (0.47) .99 | 0.02 (0.49) .97 | -0.04 (0.43) .92 |
| er | Corr (Residuals) | -0.00 (0.03) .88 | -0.00 (0.03) .88 | -0.01 (0.03) .71 | -0.03 (0.03) .35 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .90 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .91 | 0.00 (0.00) .88 | 0.00 (0.00) .91 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .40 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 14.19 (0.06) <.01 | 13.41 (0.13) <.01 | 13.46 (0.13) <.01 | 13.59 (0.15) <.01 |
| b | Slope | 0.04 (0.01) <.01 | 0.08 (0.04) .02 | 0.08 (0.04) .02 | 0.07 (0.04) .07 |
| b | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| b | Level \* education | --- | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 |
| b | Level \* height | --- | --- | 1.88 (0.57) <.01 | 2.33 (0.60) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.03 (0.07) .71 |
| b | Level \* cardio | --- | --- | --- | 0.08 (0.11) .44 |
| b | Level \* diabetes | --- | --- | --- | -0.22 (0.11) .04 |
| b | Slope \* age | -0.00 (0.00) .51 | -0.00 (0.00) .45 | -0.00 (0.00) .44 | -0.00 (0.00) .63 |
| b | Slope \* education | --- | -0.01 (0.00) .13 | -0.01 (0.00) .13 | -0.01 (0.00) .10 |
| b | Slope \* height | --- | --- | -0.10 (0.15) .50 | -0.17 (0.16) .27 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.02) .82 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.03) .99 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.03) .02 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .75 | 0.00 (0.00) .75 | 0.00 (0.00) .74 | 0.00 (0.00) .65 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 1.28 (0.20) <.01 | 1.18 (0.20) <.01 | 1.00 (0.11) <.01 | 0.95 (0.09) <.01 |
| b | Var (Slope) | 0.03 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) <.01 | 0.02 (0.01) <.01 |
| b | Var (Residual) | 0.44 (0.02) <.01 | 0.44 (0.02) <.01 | 0.43 (0.02) <.01 | 0.43 (0.02) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .28 | -0.00 (0.00) .29 | -0.00 (0.00) .48 | 0.00 (0.00) .83 |
| b | Covar (Level, Slope) | -0.11 (0.03) <.01 | -0.10 (0.03) <.01 | -0.08 (0.02) <.01 | -0.09 (0.02) <.01 |
|  | Correlation of Levels | 0.15 | 0.11 | 0.062 | 0.079 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | 0.00 | 0.00 | -0.010 | -0.030 |
|  | N | 1,029 | 1,029 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -5,150 | -5,107 | -4,948 | -4,437 |
|  | AIC | 10,342 | 10,263 | 9,954 | 8,956 |
|  | BIC | 10,446 | 10,387 | 10,097 | 9,154 |

## bstory\_de

Gender = *female*; Process (a) = *fev*; Process (b) = *bstory\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.03 (0.02) .19 | 0.01 (0.02) .52 | 0.01 (0.02) .70 | 0.01 (0.02) .74 |
| ab | Covar (Slopes) | 0.00 (0.00) .85 | 0.00 (0.00) .88 | 0.00 (0.00) .93 | 0.00 (0.00) .97 |
| ab | Covar (Residuals) | -0.01 (0.01) .13 | -0.01 (0.01) .13 | -0.01 (0.01) .14 | -0.01 (0.01) .17 |
| er | Corr (Levels) | 0.07 (0.05) .19 | 0.04 (0.06) .52 | 0.02 (0.06) .70 | 0.02 (0.06) .74 |
| er | Corr (Slopes) | 0.10 (0.61) .86 | 0.08 (0.60) .89 | 0.05 (0.59) .93 | -0.02 (0.47) .97 |
| er | Corr (Residuals) | -0.04 (0.03) .13 | -0.04 (0.03) .13 | -0.04 (0.03) .14 | -0.04 (0.03) .17 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .87 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .84 | 0.00 (0.00) .92 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .08 | -0.08 (0.04) .02 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 9.68 (0.07) <.01 | 8.97 (0.14) <.01 | 9.02 (0.14) <.01 | 8.92 (0.17) <.01 |
| b | Slope | 0.01 (0.03) .62 | 0.05 (0.05) .32 | 0.05 (0.05) .34 | 0.05 (0.07) .43 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.02 (0.01) <.01 |
| b | Level \* education | --- | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 | 0.09 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.68 (0.74) .36 | 0.73 (0.80) .36 |
| b | Level \* smoking | --- | --- | --- | 0.02 (0.12) .86 |
| b | Level \* cardio | --- | --- | --- | -0.12 (0.19) .53 |
| b | Level \* diabetes | --- | --- | --- | 0.14 (0.14) .32 |
| b | Slope \* age | -0.01 (0.00) .01 | -0.01 (0.00) <.01 | -0.01 (0.00) .01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.01) .43 | -0.00 (0.01) .44 | -0.00 (0.01) .52 |
| b | Slope \* height | --- | --- | 0.15 (0.34) .67 | -0.02 (0.33) .95 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.05) .80 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.07) .98 |
| b | Slope \* diabetes | --- | --- | --- | 0.10 (0.05) .06 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .63 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 1.37 (0.18) <.01 | 1.29 (0.17) <.01 | 1.25 (0.17) <.01 | 1.33 (0.19) <.01 |
| b | Var (Slope) | 0.07 (0.03) <.01 | 0.07 (0.03) <.01 | 0.07 (0.02) <.01 | 0.07 (0.03) .01 |
| b | Var (Residual) | 2.36 (0.12) <.01 | 2.36 (0.12) <.01 | 2.36 (0.12) <.01 | 2.38 (0.13) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .24 | -0.00 (0.00) .26 | -0.00 (0.00) .45 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | 0.03 (0.06) .58 | 0.04 (0.05) .53 | 0.04 (0.05) .46 | 0.02 (0.06) .71 |
|  | Correlation of Levels | 0.070 | 0.037 | 0.021 | 0.021 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | -0.039 | -0.039 | -0.039 | -0.038 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,931 | -7,906 | -7,821 | -7,106 |
|  | AIC | 15,903 | 15,862 | 15,699 | 14,294 |
|  | BIC | 16,007 | 15,986 | 15,842 | 14,492 |

## bstory\_im

Gender = *female*; Process (a) = *fev*; Process (b) = *bstory\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.05 (0.02) .01 | 0.04 (0.02) .06 | 0.03 (0.02) .09 | 0.03 (0.02) .12 |
| ab | Covar (Slopes) | 0.00 (0.00) .53 | 0.00 (0.00) .54 | 0.00 (0.00) .55 | 0.00 (0.00) .84 |
| ab | Covar (Residuals) | -0.01 (0.00) .10 | -0.01 (0.00) .10 | -0.01 (0.00) .12 | -0.01 (0.01) .22 |
| er | Corr (Levels) | 0.13 (0.05) .01 | 0.10 (0.05) .06 | 0.09 (0.06) .09 | 0.09 (0.06) .12 |
| er | Corr (Slopes) | 0.38 (0.84) .66 | 0.36 (0.83) .66 | 0.36 (0.84) .67 | 0.11 (0.60) .85 |
| er | Corr (Residuals) | -0.04 (0.02) .10 | -0.04 (0.02) .10 | -0.04 (0.02) .12 | -0.03 (0.03) .22 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.84 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .84 | 0.00 (0.00) .91 | 0.00 (0.00) .93 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .08 | -0.08 (0.04) .02 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 10.03 (0.07) <.01 | 9.43 (0.13) <.01 | 9.47 (0.13) <.01 | 9.31 (0.16) <.01 |
| b | Slope | -0.01 (0.03) .76 | -0.03 (0.05) .50 | -0.04 (0.05) .47 | 0.03 (0.06) .65 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.02 (0.01) <.01 |
| b | Level \* education | --- | 0.08 (0.01) <.01 | 0.07 (0.01) <.01 | 0.08 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.58 (0.73) .43 | 0.74 (0.79) .35 |
| b | Level \* smoking | --- | --- | --- | 0.10 (0.10) .33 |
| b | Level \* cardio | --- | --- | --- | -0.08 (0.16) .60 |
| b | Level \* diabetes | --- | --- | --- | 0.17 (0.13) .19 |
| b | Slope \* age | -0.00 (0.00) .35 | -0.00 (0.00) .34 | -0.00 (0.00) .37 | -0.00 (0.00) .15 |
| b | Slope \* education | --- | 0.00 (0.01) .56 | 0.00 (0.01) .53 | 0.00 (0.01) .95 |
| b | Slope \* height | --- | --- | 0.10 (0.27) .72 | 0.00 (0.29) .99 |
| b | Slope \* smoking | --- | --- | --- | -0.05 (0.04) .24 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.06) .57 |
| b | Slope \* diabetes | --- | --- | --- | 0.04 (0.04) .33 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .70 | 0.00 (0.00) .70 | 0.00 (0.00) .71 | 0.00 (0.00) .60 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 1.05 (0.11) <.01 | 0.99 (0.11) <.01 | 0.96 (0.11) <.01 | 0.95 (0.11) <.01 |
| b | Var (Slope) | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.04 (0.02) .02 |
| b | Var (Residual) | 1.96 (0.07) <.01 | 1.96 (0.07) <.01 | 1.95 (0.07) <.01 | 1.95 (0.07) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .24 | -0.00 (0.00) .26 | -0.00 (0.00) .46 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | -0.05 (0.04) .14 | -0.06 (0.04) .12 | -0.05 (0.04) .15 | -0.04 (0.04) .29 |
|  | Correlation of Levels | 0.129 | 0.100 | 0.093 | 0.092 |
|  | Correlation of Slopes | Inf | Inf | Inf | NaN |
|  | Correlation of Residuals | -0.042 | -0.042 | -0.038 | -0.033 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,456 | -7,426 | -7,341 | -6,642 |
|  | AIC | 14,954 | 14,903 | 14,741 | 13,366 |
|  | BIC | 15,057 | 15,026 | 14,884 | 13,564 |

## categories

Gender = *female*; Process (a) = *fev*; Process (b) = *categories*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.81 (0.11) <.01 | 0.68 (0.10) <.01 | 0.55 (0.10) <.01 | 0.52 (0.10) <.01 |
| ab | Covar (Slopes) | -0.00 (0.00) .64 | -0.00 (0.00) .63 | -0.00 (0.00) .58 | -0.00 (0.00) .37 |
| ab | Covar (Residuals) | -0.02 (0.02) .20 | -0.02 (0.02) .19 | -0.02 (0.02) .18 | -0.03 (0.02) .10 |
| er | Corr (Levels) | 0.31 (0.04) <.01 | 0.28 (0.04) <.01 | 0.24 (0.04) <.01 | 0.23 (0.04) <.01 |
| er | Corr (Slopes) | -0.21 (0.48) .66 | -0.22 (0.48) .65 | -0.25 (0.48) .60 | -0.35 (0.44) .42 |
| er | Corr (Residuals) | -0.03 (0.03) .20 | -0.03 (0.03) .19 | -0.04 (0.03) .18 | -0.04 (0.03) .10 |
| a | Level | 1.73 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.70 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.10 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .89 |
| a | Slope \* age | 0.00 (0.00) .10 | 0.00 (0.00) .10 | 0.00 (0.00) .19 | 0.00 (0.00) .19 |
| a | Slope \* education | --- | 0.00 (0.00) .79 | 0.00 (0.00) .98 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .26 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .37 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .15 |
| b | Level | 38.26 (0.41) <.01 | 31.91 (0.67) <.01 | 32.32 (0.66) <.01 | 32.40 (0.80) <.01 |
| b | Slope | 0.07 (0.10) .49 | 0.02 (0.18) .92 | 0.01 (0.18) .96 | 0.07 (0.22) .77 |
| b | Level \* age | -0.29 (0.03) <.01 | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.26 (0.04) <.01 |
| b | Level \* education | --- | 0.83 (0.08) <.01 | 0.78 (0.08) <.01 | 0.82 (0.08) <.01 |
| b | Level \* height | --- | --- | 12.35 (3.44) <.01 | 12.85 (3.74) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.64 (0.51) .21 |
| b | Level \* cardio | --- | --- | --- | -0.63 (0.74) .39 |
| b | Level \* diabetes | --- | --- | --- | -0.37 (0.64) .57 |
| b | Slope \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | 0.01 (0.02) .76 | 0.01 (0.02) .75 | -0.00 (0.02) .92 |
| b | Slope \* height | --- | --- | -0.02 (1.01) .98 | -0.46 (1.11) .68 |
| b | Slope \* smoking | --- | --- | --- | 0.12 (0.15) .43 |
| b | Slope \* cardio | --- | --- | --- | -0.54 (0.21) .01 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.18) .67 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .68 | 0.00 (0.00) .69 | 0.00 (0.00) .68 | 0.00 (0.00) .59 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 53.01 (3.31) <.01 | 46.27 (3.05) <.01 | 45.15 (3.00) <.01 | 46.05 (3.18) <.01 |
| b | Var (Slope) | 1.03 (0.22) <.01 | 1.03 (0.22) <.01 | 1.03 (0.22) <.01 | 1.10 (0.24) <.01 |
| b | Var (Residual) | 21.55 (0.75) <.01 | 21.54 (0.75) <.01 | 21.57 (0.75) <.01 | 21.53 (0.79) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .30 | -0.00 (0.00) .31 | -0.00 (0.00) .53 | 0.00 (0.00) .91 |
| b | Covar (Level, Slope) | 0.21 (0.64) .74 | 0.14 (0.59) .81 | 0.17 (0.59) .77 | -0.12 (0.63) .85 |
|  | Correlation of Levels | 0.306 | 0.277 | 0.244 | 0.230 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | -0.034 | -0.034 | -0.034 | -0.044 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -12,781 | -12,719 | -12,625 | -11,446 |
|  | AIC | 25,603 | 25,489 | 25,308 | 22,974 |
|  | BIC | 25,707 | 25,612 | 25,451 | 23,172 |

## digit\_b

Gender = *female*; Process (a) = *fev*; Process (b) = *digit\_b*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.14 (0.02) <.01 | 0.11 (0.02) <.01 | 0.08 (0.02) <.01 | 0.06 (0.02) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .10 | 0.00 (0.00) .09 | 0.00 (0.00) .10 | 0.00 (0.00) .10 |
| ab | Covar (Residuals) | -0.01 (0.00) .21 | -0.01 (0.00) .21 | -0.01 (0.00) .21 | -0.01 (0.01) .18 |
| er | Corr (Levels) | 0.23 (0.04) <.01 | 0.20 (0.04) <.01 | 0.15 (0.04) <.01 | 0.12 (0.04) .01 |
| er | Corr (Slopes) | 0.68 (0.53) .20 | 0.68 (0.53) .20 | 0.68 (0.53) .21 | 0.68 (0.53) .20 |
| er | Corr (Residuals) | -0.04 (0.03) .22 | -0.04 (0.03) .21 | -0.04 (0.03) .21 | -0.04 (0.03) .18 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .08 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .87 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .85 | 0.00 (0.00) .91 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .17 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .43 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 6.36 (0.10) <.01 | 5.15 (0.16) <.01 | 5.25 (0.16) <.01 | 5.17 (0.20) <.01 |
| b | Slope | -0.03 (0.02) .25 | -0.02 (0.04) .69 | -0.02 (0.04) .63 | -0.03 (0.06) .64 |
| b | Level \* age | -0.01 (0.01) .42 | -0.00 (0.01) .70 | 0.00 (0.01) .87 | 0.01 (0.01) .48 |
| b | Level \* education | --- | 0.16 (0.02) <.01 | 0.14 (0.02) <.01 | 0.15 (0.02) <.01 |
| b | Level \* height | --- | --- | 3.46 (0.84) <.01 | 2.82 (0.88) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.02 (0.12) .88 |
| b | Level \* cardio | --- | --- | --- | -0.38 (0.18) .04 |
| b | Level \* diabetes | --- | --- | --- | 0.17 (0.16) .28 |
| b | Slope \* age | 0.00 (0.00) .93 | 0.00 (0.00) .98 | 0.00 (0.00) .96 | -0.00 (0.00) .82 |
| b | Slope \* education | --- | -0.00 (0.00) .81 | -0.00 (0.00) .87 | -0.00 (0.00) .61 |
| b | Slope \* height | --- | --- | -0.07 (0.24) .77 | 0.11 (0.26) .68 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.04) .59 |
| b | Slope \* cardio | --- | --- | --- | 0.10 (0.06) .09 |
| b | Slope \* diabetes | --- | --- | --- | 0.03 (0.05) .53 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .31 | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .30 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 2.67 (0.17) <.01 | 2.43 (0.16) <.01 | 2.37 (0.16) <.01 | 2.29 (0.16) <.01 |
| b | Var (Slope) | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.01) .01 | 0.04 (0.02) .03 |
| b | Var (Residual) | 1.61 (0.06) <.01 | 1.61 (0.06) <.01 | 1.61 (0.06) <.01 | 1.62 (0.06) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .14 | -0.00 (0.00) .15 | -0.00 (0.00) .26 | -0.00 (0.00) .54 |
| b | Covar (Level, Slope) | -0.10 (0.04) .01 | -0.10 (0.04) .01 | -0.10 (0.04) .01 | -0.08 (0.04) .04 |
|  | Correlation of Levels | 0.230 | 0.199 | 0.146 | 0.121 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | -0.037 | -0.037 | -0.037 | -0.042 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,457 | -7,410 | -7,330 | -6,650 |
|  | AIC | 14,956 | 14,870 | 14,719 | 13,383 |
|  | BIC | 15,060 | 14,994 | 14,862 | 13,581 |

## digit\_f

Gender = *female*; Process (a) = *fev*; Process (b) = *digit\_f*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.11 (0.02) <.01 | 0.09 (0.02) <.01 | 0.06 (0.02) <.01 | 0.07 (0.02) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .66 | 0.00 (0.00) .66 | 0.00 (0.00) .68 | 0.00 (0.00) .98 |
| ab | Covar (Residuals) | 0.00 (0.00) .58 | 0.00 (0.00) .60 | 0.00 (0.00) .61 | 0.00 (0.01) .46 |
| er | Corr (Levels) | 0.20 (0.04) <.01 | 0.17 (0.04) <.01 | 0.12 (0.04) <.01 | 0.13 (0.04) <.01 |
| er | Corr (Slopes) | 0.31 (0.78) .69 | 0.31 (0.77) .68 | 0.30 (0.76) .70 | 0.01 (0.60) .98 |
| er | Corr (Residuals) | 0.01 (0.03) .58 | 0.01 (0.03) .59 | 0.01 (0.03) .61 | 0.02 (0.03) .46 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .86 | 0.00 (0.00) .91 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .37 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 8.36 (0.09) <.01 | 7.37 (0.17) <.01 | 7.45 (0.17) <.01 | 7.35 (0.22) <.01 |
| b | Slope | -0.03 (0.02) .20 | -0.01 (0.05) .86 | -0.01 (0.05) .85 | -0.00 (0.06) .99 |
| b | Level \* age | -0.01 (0.01) .34 | -0.00 (0.01) .54 | 0.00 (0.01) .97 | 0.00 (0.01) .98 |
| b | Level \* education | --- | 0.13 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.86 (0.85) <.01 | 2.50 (0.91) .01 |
| b | Level \* smoking | --- | --- | --- | -0.01 (0.12) .94 |
| b | Level \* cardio | --- | --- | --- | 0.23 (0.19) .24 |
| b | Level \* diabetes | --- | --- | --- | 0.16 (0.17) .35 |
| b | Slope \* age | 0.00 (0.00) .84 | -0.00 (0.00) .79 | 0.00 (0.00) .88 | 0.00 (0.00) .71 |
| b | Slope \* education | --- | -0.00 (0.01) .66 | -0.00 (0.01) .66 | -0.00 (0.01) .67 |
| b | Slope \* height | --- | --- | 0.01 (0.25) .98 | 0.12 (0.27) .64 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.04) .69 |
| b | Slope \* cardio | --- | --- | --- | -0.04 (0.05) .47 |
| b | Slope \* diabetes | --- | --- | --- | -0.02 (0.04) .68 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .62 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 2.55 (0.15) <.01 | 2.39 (0.14) <.01 | 2.35 (0.14) <.01 | 2.37 (0.15) <.01 |
| b | Var (Slope) | 0.02 (0.01) .09 | 0.02 (0.01) .09 | 0.02 (0.01) .09 | 0.02 (0.01) .09 |
| b | Var (Residual) | 1.62 (0.06) <.01 | 1.62 (0.06) <.01 | 1.63 (0.06) <.01 | 1.61 (0.06) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .25 | -0.00 (0.00) .27 | -0.00 (0.00) .45 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | -0.02 (0.03) .48 | -0.02 (0.03) .51 | -0.02 (0.03) .49 | -0.03 (0.04) .45 |
|  | Correlation of Levels | 0.194 | 0.167 | 0.124 | 0.127 |
|  | Correlation of Slopes | Inf | Inf | NaN | NaN |
|  | Correlation of Residuals | 0.016 | 0.016 | 0.016 | 0.021 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,472 | -7,440 | -7,361 | -6,662 |
|  | AIC | 14,986 | 14,930 | 14,780 | 13,406 |
|  | BIC | 15,089 | 15,054 | 14,923 | 13,604 |

## digit\_o

Gender = *female*; Process (a) = *fev*; Process (b) = *digit\_o*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.10 (0.02) <.01 | 0.08 (0.02) <.01 | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .82 | 0.00 (0.00) .82 | 0.00 (0.00) .81 | 0.00 (0.00) .69 |
| ab | Covar (Residuals) | 0.00 (0.00) .54 | 0.00 (0.00) .54 | 0.00 (0.00) .59 | 0.00 (0.00) .28 |
| er | Corr (Levels) | 0.26 (0.04) <.01 | 0.22 (0.04) <.01 | 0.20 (0.05) <.01 | 0.18 (0.05) <.01 |
| er | Corr (Slopes) | -0.14 (0.64) .83 | -0.14 (0.65) .83 | -0.15 (0.66) .82 | -0.20 (0.57) .72 |
| er | Corr (Residuals) | 0.02 (0.03) .54 | 0.02 (0.03) .54 | 0.01 (0.03) .59 | 0.03 (0.03) .28 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .84 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .87 | 0.00 (0.00) .90 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 7.36 (0.07) <.01 | 6.43 (0.14) <.01 | 6.48 (0.14) <.01 | 6.51 (0.16) <.01 |
| b | Slope | 0.02 (0.02) .21 | 0.05 (0.04) .22 | 0.05 (0.04) .21 | 0.09 (0.05) .07 |
| b | Level \* age | -0.01 (0.01) .18 | -0.00 (0.01) .35 | -0.00 (0.01) .58 | -0.00 (0.01) .66 |
| b | Level \* education | --- | 0.12 (0.01) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 |
| b | Level \* height | --- | --- | 1.76 (0.65) .01 | 1.90 (0.68) .01 |
| b | Level \* smoking | --- | --- | --- | -0.04 (0.09) .63 |
| b | Level \* cardio | --- | --- | --- | -0.05 (0.14) .71 |
| b | Level \* diabetes | --- | --- | --- | 0.07 (0.13) .59 |
| b | Slope \* age | -0.00 (0.00) .04 | -0.00 (0.00) .03 | -0.00 (0.00) .05 | -0.00 (0.00) .04 |
| b | Slope \* education | --- | -0.00 (0.00) .49 | -0.00 (0.00) .44 | -0.00 (0.00) .46 |
| b | Slope \* height | --- | --- | 0.12 (0.22) .58 | -0.06 (0.23) .81 |
| b | Slope \* smoking | --- | --- | --- | -0.04 (0.03) .22 |
| b | Slope \* cardio | --- | --- | --- | -0.08 (0.04) .08 |
| b | Slope \* diabetes | --- | --- | --- | -0.01 (0.04) .87 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .64 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 1.20 (0.11) <.01 | 1.05 (0.10) <.01 | 1.04 (0.10) <.01 | 1.02 (0.10) <.01 |
| b | Var (Slope) | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.03 (0.01) .03 |
| b | Var (Residual) | 1.28 (0.06) <.01 | 1.28 (0.06) <.01 | 1.28 (0.06) <.01 | 1.25 (0.06) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .27 | -0.00 (0.00) .28 | -0.00 (0.00) .48 | 0.00 (0.00) .82 |
| b | Covar (Level, Slope) | -0.07 (0.03) .01 | -0.07 (0.03) .01 | -0.07 (0.03) .01 | -0.07 (0.03) .01 |
|  | Correlation of Levels | 0.256 | 0.224 | 0.194 | 0.18 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | 0.017 | 0.017 | 0.012 | 0.03 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -6,679 | -6,626 | -6,551 | -5,902 |
|  | AIC | 13,399 | 13,302 | 13,160 | 11,885 |
|  | BIC | 13,503 | 13,426 | 13,303 | 12,084 |

## ideas

Gender = *female*; Process (a) = *fev*; Process (b) = *ideas*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.02 (0.01) <.01 | 0.02 (0.01) <.01 | 0.02 (0.01) .01 | 0.02 (0.01) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .72 | 0.00 (0.00) .73 | 0.00 (0.00) .62 | 0.00 (0.00) .61 |
| ab | Covar (Residuals) | 0.00 (0.00) .76 | 0.00 (0.00) .76 | 0.00 (0.00) .69 | 0.00 (0.00) .46 |
| er | Corr (Levels) | 0.19 (0.05) <.01 | 0.17 (0.05) <.01 | 0.17 (0.06) <.01 | 0.19 (0.06) <.01 |
| er | Corr (Slopes) | -0.21 (0.66) .75 | -0.21 (0.67) .76 | -0.31 (0.78) .69 | -0.24 (0.56) .66 |
| er | Corr (Residuals) | 0.01 (0.03) .76 | 0.01 (0.03) .76 | 0.01 (0.03) .69 | 0.02 (0.03) .46 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.10 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .08 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .16 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .84 | 0.00 (0.00) .93 | 0.00 (0.00) .95 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .24 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 7.67 (0.03) <.01 | 7.52 (0.05) <.01 | 7.52 (0.05) <.01 | 7.58 (0.06) <.01 |
| b | Slope | 0.02 (0.01) .07 | 0.03 (0.02) .08 | 0.04 (0.02) .05 | 0.02 (0.02) .40 |
| b | Level \* age | 0.00 (0.00) .35 | 0.00 (0.00) .26 | 0.00 (0.00) .21 | 0.00 (0.00) .25 |
| b | Level \* education | --- | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Level \* height | --- | --- | 0.24 (0.24) .31 | 0.23 (0.26) .37 |
| b | Level \* smoking | --- | --- | --- | -0.02 (0.03) .47 |
| b | Level \* cardio | --- | --- | --- | -0.03 (0.05) .59 |
| b | Level \* diabetes | --- | --- | --- | -0.10 (0.05) .06 |
| b | Slope \* age | 0.00 (0.00) .62 | 0.00 (0.00) .58 | 0.00 (0.00) .88 | 0.00 (0.00) .77 |
| b | Slope \* education | --- | -0.00 (0.00) .28 | -0.00 (0.00) .16 | -0.00 (0.00) .51 |
| b | Slope \* height | --- | --- | 0.11 (0.09) .21 | 0.04 (0.09) .67 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .34 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.02) .88 |
| b | Slope \* diabetes | --- | --- | --- | 0.03 (0.02) .06 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .64 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 0.13 (0.02) <.01 | 0.12 (0.02) <.01 | 0.12 (0.02) <.01 | 0.13 (0.02) <.01 |
| b | Var (Slope) | 0.00 (0.00) .03 | 0.00 (0.00) .03 | 0.00 (0.00) .04 | 0.01 (0.00) .02 |
| b | Var (Residual) | 0.20 (0.01) <.01 | 0.20 (0.01) <.01 | 0.20 (0.01) <.01 | 0.19 (0.01) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .26 | -0.00 (0.00) .27 | -0.00 (0.00) .46 | 0.00 (0.00) .80 |
| b | Covar (Level, Slope) | -0.01 (0.01) .06 | -0.01 (0.01) .07 | -0.01 (0.01) .06 | -0.01 (0.01) .04 |
|  | Correlation of Levels | 0.193 | 0.175 | 0.169 | 0.190 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | 0.015 | 0.015 | 0.015 | 0.015 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,010 | -2,995 | -2,915 | -2,608 |
|  | AIC | 6,062 | 6,040 | 5,888 | 5,299 |
|  | BIC | 6,166 | 6,163 | 6,031 | 5,497 |

## line

Gender = *female*; Process (a) = *fev*; Process (b) = *line*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.17 (0.04) <.01 | 0.13 (0.04) <.01 | 0.10 (0.03) <.01 | 0.10 (0.03) <.01 |
| ab | Covar (Slopes) | -0.00 (0.00) .53 | -0.00 (0.00) .50 | -0.00 (0.00) .57 | -0.00 (0.00) .70 |
| ab | Covar (Residuals) | -0.01 (0.01) .18 | -0.01 (0.01) .18 | -0.01 (0.01) .18 | -0.01 (0.01) .10 |
| er | Corr (Levels) | 0.20 (0.04) <.01 | 0.16 (0.05) <.01 | 0.14 (0.04) <.01 | 0.14 (0.05) <.01 |
| er | Corr (Slopes) | -0.80 (1.82) .66 | -0.85 (1.92) .66 | -0.74 (1.82) .68 | -0.32 (0.87) .72 |
| er | Corr (Residuals) | -0.03 (0.02) .18 | -0.03 (0.02) .18 | -0.03 (0.02) .19 | -0.04 (0.03) .11 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.70 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .90 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .81 | 0.00 (0.00) .95 | 0.00 (0.00) .96 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .40 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .19 |
| b | Level | 9.78 (0.14) <.01 | 7.66 (0.26) <.01 | 7.75 (0.26) <.01 | 7.99 (0.30) <.01 |
| b | Slope | 0.04 (0.03) .23 | 0.08 (0.07) .26 | 0.09 (0.07) .22 | 0.08 (0.09) .37 |
| b | Level \* age | -0.02 (0.01) .14 | -0.01 (0.01) .30 | -0.01 (0.01) .57 | -0.01 (0.01) .32 |
| b | Level \* education | --- | 0.28 (0.03) <.01 | 0.26 (0.03) <.01 | 0.25 (0.03) <.01 |
| b | Level \* height | --- | --- | 2.90 (1.21) .02 | 2.73 (1.26) .03 |
| b | Level \* smoking | --- | --- | --- | -0.23 (0.18) .19 |
| b | Level \* cardio | --- | --- | --- | 0.06 (0.26) .81 |
| b | Level \* diabetes | --- | --- | --- | 0.07 (0.24) .78 |
| b | Slope \* age | -0.00 (0.00) .36 | -0.00 (0.00) .32 | -0.00 (0.00) .49 | -0.00 (0.00) .78 |
| b | Slope \* education | --- | -0.00 (0.01) .49 | -0.01 (0.01) .38 | -0.00 (0.01) .70 |
| b | Slope \* height | --- | --- | 0.58 (0.35) .10 | 0.53 (0.39) .17 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.05) .77 |
| b | Slope \* cardio | --- | --- | --- | -0.14 (0.09) .11 |
| b | Slope \* diabetes | --- | --- | --- | -0.12 (0.07) .07 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .77 | 0.00 (0.00) .77 | 0.00 (0.00) .77 | 0.00 (0.00) .46 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 5.37 (0.37) <.01 | 4.62 (0.33) <.01 | 4.51 (0.32) <.01 | 4.26 (0.32) <.01 |
| b | Var (Slope) | 0.03 (0.03) .36 | 0.03 (0.03) .37 | 0.03 (0.03) .40 | 0.03 (0.03) .38 |
| b | Var (Residual) | 3.79 (0.15) <.01 | 3.79 (0.15) <.01 | 3.79 (0.15) <.01 | 3.84 (0.16) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .27 | -0.00 (0.00) .28 | -0.00 (0.00) .47 | 0.00 (0.00) .65 |
| b | Covar (Level, Slope) | 0.02 (0.08) .81 | 0.04 (0.08) .65 | 0.04 (0.08) .65 | 0.04 (0.08) .63 |
|  | Correlation of Levels | 0.202 | 0.164 | 0.14 | 0.142 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | -0.034 | -0.034 | -0.03 | -0.041 |
|  | N | 1,029 | 1,029 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -8,876 | -8,815 | -8,737 | -7,918 |
|  | AIC | 17,793 | 17,679 | 17,532 | 15,919 |
|  | BIC | 17,897 | 17,803 | 17,675 | 16,117 |

## logic\_de

Gender = *female*; Process (a) = *fev*; Process (b) = *logic\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.17 (0.05) <.01 | 0.12 (0.05) .02 | 0.06 (0.05) .21 | 0.05 (0.05) .31 |
| ab | Covar (Slopes) | -0.00 (0.00) .17 | -0.00 (0.00) .16 | -0.00 (0.00) .16 | -0.00 (0.00) .14 |
| ab | Covar (Residuals) | 0.01 (0.01) .59 | 0.01 (0.01) .58 | 0.00 (0.01) .64 | 0.00 (0.01) .78 |
| er | Corr (Levels) | 0.14 (0.04) <.01 | 0.10 (0.04) .02 | 0.05 (0.04) .21 | 0.05 (0.04) .31 |
| er | Corr (Slopes) | -0.67 (1.14) .55 | -0.69 (1.13) .54 | -0.69 (1.13) .54 | -0.60 (0.79) .44 |
| er | Corr (Residuals) | 0.01 (0.03) .59 | 0.02 (0.03) .58 | 0.01 (0.03) .64 | 0.01 (0.03) .78 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .86 |
| a | Slope \* age | 0.00 (0.00) .09 | 0.00 (0.00) .09 | 0.00 (0.00) .16 | 0.00 (0.00) .15 |
| a | Slope \* education | --- | 0.00 (0.00) .89 | 0.00 (0.00) .88 | 0.00 (0.00) .90 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .19 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .36 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 11.16 (0.18) <.01 | 8.50 (0.32) <.01 | 8.66 (0.32) <.01 | 8.46 (0.41) <.01 |
| b | Slope | 0.45 (0.05) <.01 | 0.28 (0.10) .01 | 0.27 (0.10) .01 | 0.39 (0.12) <.01 |
| b | Level \* age | -0.12 (0.02) <.01 | -0.11 (0.02) <.01 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 |
| b | Level \* education | --- | 0.35 (0.04) <.01 | 0.32 (0.04) <.01 | 0.35 (0.04) <.01 |
| b | Level \* height | --- | --- | 6.04 (1.75) <.01 | 5.53 (1.75) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.08 (0.26) .76 |
| b | Level \* cardio | --- | --- | --- | -0.05 (0.42) .90 |
| b | Level \* diabetes | --- | --- | --- | 0.20 (0.32) .54 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | --- | 0.02 (0.01) .06 | 0.02 (0.01) .05 | 0.02 (0.01) .23 |
| b | Slope \* height | --- | --- | -0.21 (0.55) .70 | -0.28 (0.60) .64 |
| b | Slope \* smoking | --- | --- | --- | -0.08 (0.08) .28 |
| b | Slope \* cardio | --- | --- | --- | -0.05 (0.12) .68 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.10) .54 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .72 | 0.00 (0.00) .63 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 12.25 (0.66) <.01 | 11.09 (0.64) <.01 | 10.93 (0.63) <.01 | 11.12 (0.67) <.01 |
| b | Var (Slope) | 0.28 (0.06) <.01 | 0.27 (0.06) <.01 | 0.28 (0.06) <.01 | 0.29 (0.06) <.01 |
| b | Var (Residual) | 5.70 (0.20) <.01 | 5.69 (0.20) <.01 | 5.67 (0.20) <.01 | 5.67 (0.20) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .24 | -0.00 (0.00) .25 | -0.00 (0.00) .43 | 0.00 (0.00) .76 |
| b | Covar (Level, Slope) | 0.08 (0.14) .60 | 0.01 (0.14) .95 | 0.01 (0.14) .93 | -0.04 (0.15) .76 |
|  | Correlation of Levels | 0.136 | 0.099 | 0.055 | 0.0455 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.017 | 0.017 | 0.014 | 0.0083 |
|  | N | 1,029 | 1,029 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,096 | -10,040 | -9,951 | -9,022 |
|  | AIC | 20,233 | 20,130 | 19,960 | 18,127 |
|  | BIC | 20,337 | 20,254 | 20,103 | 18,325 |

## logic\_im

Gender = *female*; Process (a) = *fev*; Process (b) = *logic\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.18 (0.05) <.01 | 0.13 (0.05) .01 | 0.08 (0.05) .08 | 0.05 (0.05) .33 |
| ab | Covar (Slopes) | 0.00 (0.00) .69 | 0.00 (0.00) .72 | 0.00 (0.00) .69 | -0.00 (0.00) .80 |
| ab | Covar (Residuals) | -0.00 (0.01) .85 | -0.00 (0.01) .87 | -0.00 (0.01) .76 | 0.00 (0.01) .91 |
| er | Corr (Levels) | 0.15 (0.04) <.01 | 0.11 (0.04) .01 | 0.08 (0.04) .08 | 0.04 (0.05) .33 |
| er | Corr (Slopes) | 0.20 (0.55) .71 | 0.18 (0.54) .73 | 0.20 (0.56) .72 | -0.11 (0.47) .81 |
| er | Corr (Residuals) | -0.00 (0.03) .85 | -0.00 (0.03) .87 | -0.01 (0.03) .76 | 0.00 (0.03) .91 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .87 |
| a | Slope \* age | 0.00 (0.00) .06 | 0.00 (0.00) .07 | 0.00 (0.00) .12 | 0.00 (0.00) .12 |
| a | Slope \* education | --- | 0.00 (0.00) .80 | 0.00 (0.00) .96 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .09 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .19 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 12.75 (0.18) <.01 | 10.22 (0.32) <.01 | 10.31 (0.32) <.01 | 10.31 (0.42) <.01 |
| b | Slope | 0.34 (0.05) <.01 | 0.24 (0.10) .02 | 0.24 (0.10) .02 | 0.31 (0.12) .01 |
| b | Level \* age | -0.11 (0.02) <.01 | -0.10 (0.01) <.01 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 |
| b | Level \* education | --- | 0.33 (0.04) <.01 | 0.32 (0.04) <.01 | 0.33 (0.04) <.01 |
| b | Level \* height | --- | --- | 4.86 (1.66) <.01 | 4.28 (1.65) .01 |
| b | Level \* smoking | --- | --- | --- | -0.11 (0.25) .66 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.40) .81 |
| b | Level \* diabetes | --- | --- | --- | 0.04 (0.31) .91 |
| b | Slope \* age | -0.01 (0.00) .15 | -0.01 (0.00) .17 | -0.01 (0.00) .16 | -0.01 (0.00) .06 |
| b | Slope \* education | --- | 0.01 (0.01) .26 | 0.01 (0.01) .27 | 0.01 (0.01) .55 |
| b | Slope \* height | --- | --- | 0.15 (0.49) .76 | 0.14 (0.52) .80 |
| b | Slope \* smoking | --- | --- | --- | -0.10 (0.07) .20 |
| b | Slope \* cardio | --- | --- | --- | -0.04 (0.12) .75 |
| b | Slope \* diabetes | --- | --- | --- | 0.21 (0.09) .02 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .68 | 0.00 (0.00) .68 | 0.00 (0.00) .69 | 0.00 (0.00) .61 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 11.20 (0.63) <.01 | 10.13 (0.61) <.01 | 10.01 (0.60) <.01 | 10.12 (0.63) <.01 |
| b | Var (Slope) | 0.25 (0.06) <.01 | 0.25 (0.06) <.01 | 0.25 (0.06) <.01 | 0.23 (0.06) <.01 |
| b | Var (Residual) | 5.63 (0.20) <.01 | 5.62 (0.20) <.01 | 5.63 (0.20) <.01 | 5.59 (0.21) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .21 | -0.00 (0.00) .23 | -0.00 (0.00) .41 | 0.00 (0.00) .76 |
| b | Covar (Level, Slope) | -0.25 (0.14) .09 | -0.28 (0.14) .05 | -0.28 (0.14) .04 | -0.30 (0.14) .04 |
|  | Correlation of Levels | 0.1492 | 0.1124 | 0.0777 | 0.0449 |
|  | Correlation of Slopes | Inf | Inf | Inf | -Inf |
|  | Correlation of Residuals | -0.0056 | -0.0056 | -0.0083 | 0.0028 |
|  | N | 1,029 | 1,029 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,012 | -9,957 | -9,872 | -8,933 |
|  | AIC | 20,065 | 19,963 | 19,803 | 17,949 |
|  | BIC | 20,169 | 20,087 | 19,946 | 18,147 |

## matrices

Gender = *female*; Process (a) = *fev*; Process (b) = *matrices*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.21 (0.03) <.01 | 0.16 (0.03) <.01 | 0.11 (0.03) <.01 | 0.10 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .39 | 0.00 (0.00) .41 | 0.00 (0.00) .38 | 0.00 (0.00) .28 |
| ab | Covar (Residuals) | -0.01 (0.01) .15 | -0.01 (0.01) .16 | -0.01 (0.01) .16 | -0.01 (0.01) .08 |
| er | Corr (Levels) | 0.28 (0.04) <.01 | 0.25 (0.04) <.01 | 0.19 (0.04) <.01 | 0.18 (0.05) <.01 |
| er | Corr (Slopes) | 0.64 (1.09) .56 | 0.61 (1.04) .56 | 0.66 (1.12) .56 | 0.64 (0.82) .44 |
| er | Corr (Residuals) | -0.04 (0.03) .15 | -0.04 (0.03) .15 | -0.04 (0.03) .16 | -0.05 (0.03) .08 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .08 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .85 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .82 | 0.00 (0.00) .94 | 0.00 (0.00) .95 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .36 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .16 |
| b | Level | 12.31 (0.13) <.01 | 9.80 (0.23) <.01 | 9.92 (0.23) <.01 | 10.11 (0.27) <.01 |
| b | Slope | 0.03 (0.03) .41 | 0.01 (0.07) .87 | 0.02 (0.07) .83 | 0.05 (0.09) .59 |
| b | Level \* age | -0.07 (0.01) <.01 | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 |
| b | Level \* education | --- | 0.33 (0.02) <.01 | 0.31 (0.02) <.01 | 0.30 (0.02) <.01 |
| b | Level \* height | --- | --- | 4.96 (1.10) <.01 | 4.94 (1.20) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.03 (0.16) .86 |
| b | Level \* cardio | --- | --- | --- | -0.46 (0.25) .06 |
| b | Level \* diabetes | --- | --- | --- | -0.13 (0.21) .55 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) .01 | -0.01 (0.00) .01 |
| b | Slope \* education | --- | 0.00 (0.01) .79 | 0.00 (0.01) .86 | 0.00 (0.01) .98 |
| b | Slope \* height | --- | --- | 0.29 (0.36) .41 | 0.28 (0.39) .48 |
| b | Slope \* smoking | --- | --- | --- | -0.04 (0.05) .46 |
| b | Slope \* cardio | --- | --- | --- | -0.00 (0.09) .97 |
| b | Slope \* diabetes | --- | --- | --- | 0.00 (0.07) .98 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .71 | 0.00 (0.00) .71 | 0.00 (0.00) .71 | 0.00 (0.00) .62 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 4.26 (0.31) <.01 | 3.19 (0.27) <.01 | 3.07 (0.27) <.01 | 2.94 (0.26) <.01 |
| b | Var (Slope) | 0.05 (0.03) .07 | 0.05 (0.03) .08 | 0.05 (0.03) .09 | 0.06 (0.03) .05 |
| b | Var (Residual) | 3.12 (0.18) <.01 | 3.11 (0.18) <.01 | 3.12 (0.18) <.01 | 3.04 (0.18) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .26 | -0.00 (0.00) .26 | -0.00 (0.00) .45 | 0.00 (0.00) .78 |
| b | Covar (Level, Slope) | -0.06 (0.08) .41 | -0.06 (0.07) .40 | -0.07 (0.07) .36 | -0.07 (0.07) .31 |
|  | Correlation of Levels | 0.281 | 0.248 | 0.193 | 0.179 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | -0.037 | -0.037 | -0.037 | -0.049 |
|  | N | 1,013 | 1,013 | 1,010 | 920 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,981 | -7,865 | -7,796 | -7,005 |
|  | AIC | 16,005 | 15,780 | 15,649 | 14,093 |
|  | BIC | 16,108 | 15,904 | 15,792 | 14,291 |

## mmse

Gender = *female*; Process (a) = *fev*; Process (b) = *mmse*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.04 (0.02) .03 | 0.02 (0.02) .26 | 0.01 (0.02) .54 | 0.01 (0.02) .71 |
| ab | Covar (Slopes) | 0.00 (0.00) .90 | 0.00 (0.00) .88 | 0.00 (0.00) .80 | -0.00 (0.00) .69 |
| ab | Covar (Residuals) | 0.01 (0.00) .16 | 0.01 (0.00) .15 | 0.01 (0.00) .13 | 0.01 (0.00) .07 |
| er | Corr (Levels) | 0.12 (0.05) .03 | 0.06 (0.06) .26 | 0.04 (0.06) .53 | 0.02 (0.06) .71 |
| er | Corr (Slopes) | -0.07 (0.64) .91 | -0.10 (0.65) .88 | -0.16 (0.71) .82 | -0.20 (0.57) .72 |
| er | Corr (Residuals) | 0.04 (0.02) .16 | 0.04 (0.02) .15 | 0.04 (0.02) .13 | 0.05 (0.03) .07 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.84 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .88 | 0.00 (0.00) .89 | 0.00 (0.00) .91 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .40 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 28.80 (0.07) <.01 | 27.71 (0.14) <.01 | 27.77 (0.14) <.01 | 27.80 (0.16) <.01 |
| b | Slope | -0.03 (0.02) .14 | 0.06 (0.06) .29 | 0.06 (0.06) .30 | 0.06 (0.07) .35 |
| b | Level \* age | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 |
| b | Level \* education | --- | 0.14 (0.01) <.01 | 0.14 (0.01) <.01 | 0.14 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.94 (0.66) .15 | 0.80 (0.71) .26 |
| b | Level \* smoking | --- | --- | --- | -0.01 (0.09) .88 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.13) .43 |
| b | Level \* diabetes | --- | --- | --- | 0.01 (0.13) .96 |
| b | Slope \* age | -0.01 (0.00) .01 | -0.01 (0.00) <.01 | -0.01 (0.00) .01 | -0.00 (0.00) .04 |
| b | Slope \* education | --- | -0.01 (0.01) .07 | -0.01 (0.01) .06 | -0.01 (0.01) .05 |
| b | Slope \* height | --- | --- | 0.18 (0.26) .50 | 0.05 (0.26) .86 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.04) .56 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.06) .66 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.05) .14 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .74 | 0.00 (0.00) .74 | 0.00 (0.00) .74 | 0.00 (0.00) .66 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 1.12 (0.14) <.01 | 0.92 (0.13) <.01 | 0.87 (0.12) <.01 | 0.88 (0.13) <.01 |
| b | Var (Slope) | 0.05 (0.03) .10 | 0.05 (0.03) .10 | 0.05 (0.03) .12 | 0.06 (0.03) .08 |
| b | Var (Residual) | 1.53 (0.07) <.01 | 1.53 (0.07) <.01 | 1.53 (0.07) <.01 | 1.51 (0.07) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .25 | -0.00 (0.00) .26 | -0.00 (0.00) .45 | 0.00 (0.00) .79 |
| b | Covar (Level, Slope) | -0.01 (0.04) .77 | 0.00 (0.04) .93 | 0.01 (0.04) .75 | -0.01 (0.04) .79 |
|  | Correlation of Levels | 0.114 | 0.064 | 0.035 | 0.022 |
|  | Correlation of Slopes | NaN | NaN | NaN | -Inf |
|  | Correlation of Residuals | 0.037 | 0.037 | 0.037 | 0.048 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,112 | -7,052 | -6,964 | -6,293 |
|  | AIC | 14,265 | 14,154 | 13,987 | 12,668 |
|  | BIC | 14,369 | 14,277 | 14,130 | 12,867 |

## nart

Gender = *female*; Process (a) = *fev*; Process (b) = *nart*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.19 (0.03) <.01 | 0.14 (0.03) <.01 | 0.10 (0.02) <.01 | 0.09 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .36 | 0.00 (0.00) .36 | 0.00 (0.00) .35 | 0.00 (0.00) .56 |
| ab | Covar (Residuals) | 0.00 (0.00) .96 | 0.00 (0.00) .96 | 0.00 (0.00) .96 | 0.00 (0.00) .72 |
| er | Corr (Levels) | 0.24 (0.04) <.01 | 0.20 (0.04) <.01 | 0.16 (0.04) <.01 | 0.15 (0.04) <.01 |
| er | Corr (Slopes) | 0.56 (0.96) .56 | 0.53 (0.85) .54 | 0.55 (0.89) .54 | 0.32 (0.63) .61 |
| er | Corr (Residuals) | -0.00 (0.03) .96 | -0.00 (0.03) .96 | -0.00 (0.03) .96 | 0.01 (0.03) .72 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) .01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .16 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .88 | 0.00 (0.00) .88 | 0.00 (0.00) .87 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .08 | -0.09 (0.04) .02 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .16 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 7.58 (0.12) <.01 | 4.96 (0.21) <.01 | 5.06 (0.21) <.01 | 5.36 (0.24) <.01 |
| b | Slope | 0.03 (0.02) .07 | 0.04 (0.04) .36 | 0.04 (0.04) .37 | 0.02 (0.05) .70 |
| b | Level \* age | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.34 (0.02) <.01 | 0.33 (0.02) <.01 | 0.31 (0.02) <.01 |
| b | Level \* height | --- | --- | 3.64 (0.96) <.01 | 3.20 (1.02) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.05 (0.13) .71 |
| b | Level \* cardio | --- | --- | --- | 0.25 (0.19) .19 |
| b | Level \* diabetes | --- | --- | --- | -0.50 (0.19) .01 |
| b | Slope \* age | -0.00 (0.00) .13 | -0.00 (0.00) .13 | -0.00 (0.00) .14 | -0.00 (0.00) .25 |
| b | Slope \* education | --- | 0.00 (0.00) .93 | 0.00 (0.00) .94 | 0.00 (0.00) .88 |
| b | Slope \* height | --- | --- | 0.02 (0.17) .91 | 0.08 (0.19) .68 |
| b | Slope \* smoking | --- | --- | --- | 0.04 (0.02) .10 |
| b | Slope \* cardio | --- | --- | --- | -0.04 (0.04) .28 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.04) .42 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .71 | 0.00 (0.00) .68 | 0.00 (0.00) .69 | 0.00 (0.00) .60 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 4.70 (0.27) <.01 | 3.53 (0.20) <.01 | 3.39 (0.19) <.01 | 3.22 (0.20) <.01 |
| b | Var (Slope) | 0.02 (0.01) .03 | 0.02 (0.01) .04 | 0.02 (0.01) .04 | 0.02 (0.01) .06 |
| b | Var (Residual) | 0.70 (0.04) <.01 | 0.70 (0.04) <.01 | 0.70 (0.04) <.01 | 0.67 (0.04) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .22 | -0.00 (0.00) .20 | -0.00 (0.00) .38 | 0.00 (0.00) .65 |
| b | Covar (Level, Slope) | -0.04 (0.04) .24 | -0.04 (0.03) .21 | -0.04 (0.03) .24 | -0.03 (0.03) .39 |
|  | Correlation of Levels | 0.24 | 0.2 | 0.16 | 0.153 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | 0.00 | 0.0 | 0.00 | 0.008 |
|  | N | 1,027 | 1,027 | 1,022 | 932 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -6,371 | -6,231 | -6,148 | -5,515 |
|  | AIC | 12,784 | 12,512 | 12,355 | 11,112 |
|  | BIC | 12,888 | 12,635 | 12,498 | 11,311 |

## num\_comp

Gender = *female*; Process (a) = *fev*; Process (b) = *num\_comp*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.56 (0.09) <.01 | 0.46 (0.09) <.01 | 0.34 (0.08) <.01 | 0.32 (0.08) <.01 |
| ab | Covar (Slopes) | -0.00 (0.00) .82 | -0.00 (0.00) .80 | -0.00 (0.00) .85 | -0.00 (0.00) .86 |
| ab | Covar (Residuals) | -0.00 (0.01) .95 | -0.00 (0.01) .94 | -0.00 (0.01) .92 | -0.01 (0.02) .59 |
| er | Corr (Levels) | 0.25 (0.04) <.01 | 0.22 (0.04) <.01 | 0.18 (0.04) <.01 | 0.17 (0.04) <.01 |
| er | Corr (Slopes) | -0.15 (0.68) .82 | -0.16 (0.69) .81 | -0.13 (0.70) .85 | -0.10 (0.60) .86 |
| er | Corr (Residuals) | -0.00 (0.03) .95 | -0.00 (0.03) .94 | -0.00 (0.03) .92 | -0.01 (0.03) .59 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.82 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .84 |
| a | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .08 | 0.00 (0.00) .14 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .83 | 0.00 (0.00) .94 | 0.00 (0.00) .94 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .22 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .37 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .16 |
| b | Level | 26.65 (0.35) <.01 | 22.29 (0.66) <.01 | 22.63 (0.66) <.01 | 23.28 (0.77) <.01 |
| b | Slope | 0.11 (0.07) .12 | 0.26 (0.14) .06 | 0.27 (0.14) .06 | 0.39 (0.17) .02 |
| b | Level \* age | -0.19 (0.03) <.01 | -0.18 (0.03) <.01 | -0.17 (0.03) <.01 | -0.17 (0.03) <.01 |
| b | Level \* education | --- | 0.57 (0.07) <.01 | 0.53 (0.07) <.01 | 0.50 (0.08) <.01 |
| b | Level \* height | --- | --- | 11.30 (3.15) <.01 | 11.44 (3.37) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.37 (0.44) .40 |
| b | Level \* cardio | --- | --- | --- | -0.49 (0.70) .48 |
| b | Level \* diabetes | --- | --- | --- | -0.32 (0.60) .59 |
| b | Slope \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | -0.02 (0.02) .23 | -0.02 (0.02) .18 | -0.03 (0.02) .11 |
| b | Slope \* height | --- | --- | 0.81 (0.76) .29 | 0.95 (0.81) .24 |
| b | Slope \* smoking | --- | --- | --- | -0.08 (0.11) .47 |
| b | Slope \* cardio | --- | --- | --- | -0.11 (0.17) .50 |
| b | Slope \* diabetes | --- | --- | --- | -0.04 (0.15) .77 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .70 | 0.00 (0.00) .70 | 0.00 (0.00) .71 | 0.00 (0.00) .63 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 37.90 (2.26) <.01 | 34.70 (2.12) <.01 | 33.28 (2.03) <.01 | 32.44 (2.12) <.01 |
| b | Var (Slope) | 0.36 (0.14) .01 | 0.36 (0.14) .01 | 0.35 (0.14) .01 | 0.37 (0.15) .02 |
| b | Var (Residual) | 15.03 (0.76) <.01 | 15.03 (0.76) <.01 | 15.03 (0.76) <.01 | 15.13 (0.82) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .26 | -0.00 (0.00) .27 | -0.00 (0.00) .47 | 0.00 (0.00) .80 |
| b | Covar (Level, Slope) | -0.33 (0.41) .42 | -0.23 (0.41) .57 | -0.21 (0.40) .59 | -0.28 (0.43) .51 |
|  | Correlation of Levels | 0.2486 | 0.2180 | 0.1779 | 0.168 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | -0.0017 | -0.0017 | -0.0034 | -0.015 |
|  | N | 1,029 | 1,029 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -11,739 | -11,699 | -11,612 | -10,533 |
|  | AIC | 23,521 | 23,448 | 23,282 | 21,148 |
|  | BIC | 23,624 | 23,572 | 23,425 | 21,347 |

## symbol

Gender = *female*; Process (a) = *fev*; Process (b) = *symbol*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.86 (0.12) <.01 | 0.68 (0.12) <.01 | 0.53 (0.11) <.01 | 0.49 (0.11) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .98 | 0.00 (0.00) .97 | 0.00 (0.00) .92 | 0.00 (0.01) .77 |
| ab | Covar (Residuals) | 0.03 (0.02) .17 | 0.03 (0.02) .18 | 0.02 (0.02) .22 | 0.03 (0.02) .12 |
| er | Corr (Levels) | 0.27 (0.04) <.01 | 0.23 (0.04) <.01 | 0.20 (0.04) <.01 | 0.19 (0.04) <.01 |
| er | Corr (Slopes) | -0.01 (0.42) .98 | -0.02 (0.42) .97 | 0.04 (0.43) .92 | 0.12 (0.39) .76 |
| er | Corr (Residuals) | 0.04 (0.03) .17 | 0.04 (0.03) .18 | 0.04 (0.03) .21 | 0.05 (0.03) .12 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.82 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .86 |
| a | Slope \* age | 0.00 (0.00) .06 | 0.00 (0.00) .07 | 0.00 (0.00) .13 | 0.00 (0.00) .14 |
| a | Slope \* education | --- | 0.00 (0.00) .86 | 0.00 (0.00) .91 | 0.00 (0.00) .90 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .11 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .19 |
| b | Level | 42.77 (0.50) <.01 | 34.21 (0.91) <.01 | 34.69 (0.92) <.01 | 35.72 (1.08) <.01 |
| b | Slope | 0.12 (0.10) .23 | 0.46 (0.21) .03 | 0.48 (0.21) .02 | 0.85 (0.24) <.01 |
| b | Level \* age | -0.40 (0.04) <.01 | -0.38 (0.04) <.01 | -0.37 (0.04) <.01 | -0.38 (0.04) <.01 |
| b | Level \* education | --- | 1.13 (0.09) <.01 | 1.07 (0.09) <.01 | 1.01 (0.10) <.01 |
| b | Level \* height | --- | --- | 15.00 (3.97) <.01 | 16.74 (4.22) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.14 (0.59) .81 |
| b | Level \* cardio | --- | --- | --- | -0.71 (0.89) .43 |
| b | Level \* diabetes | --- | --- | --- | -1.22 (0.81) .13 |
| b | Slope \* age | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Slope \* education | --- | -0.04 (0.02) .07 | -0.05 (0.03) .05 | -0.07 (0.03) .01 |
| b | Slope \* height | --- | --- | 1.19 (1.11) .28 | 0.98 (1.16) .40 |
| b | Slope \* smoking | --- | --- | --- | -0.24 (0.15) .10 |
| b | Slope \* cardio | --- | --- | --- | -0.08 (0.22) .71 |
| b | Slope \* diabetes | --- | --- | --- | -0.08 (0.19) .69 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .69 | 0.00 (0.00) .61 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 78.80 (4.79) <.01 | 66.38 (4.15) <.01 | 64.62 (4.15) <.01 | 62.40 (4.28) <.01 |
| b | Var (Slope) | 1.17 (0.32) <.01 | 1.16 (0.32) <.01 | 1.16 (0.32) <.01 | 1.17 (0.33) <.01 |
| b | Var (Residual) | 22.57 (1.21) <.01 | 22.55 (1.20) <.01 | 22.53 (1.20) <.01 | 21.98 (1.27) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .28 | -0.00 (0.00) .28 | -0.00 (0.00) .47 | 0.00 (0.00) .83 |
| b | Covar (Level, Slope) | 0.61 (0.85) .47 | 1.10 (0.79) .17 | 1.00 (0.78) .20 | 0.77 (0.82) .35 |
|  | Correlation of Levels | 0.268 | 0.233 | 0.196 | 0.186 |
|  | Correlation of Slopes | NaN | NaN | Inf | Inf |
|  | Correlation of Residuals | 0.039 | 0.037 | 0.035 | 0.045 |
|  | N | 1,028 | 1,028 | 1,024 | 934 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -12,730 | -12,656 | -12,576 | -11,355 |
|  | AIC | 25,503 | 25,362 | 25,209 | 22,792 |
|  | BIC | 25,607 | 25,486 | 25,352 | 22,990 |

## word\_de

Gender = *female*; Process (a) = *fev*; Process (b) = *word\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.08 (0.03) <.01 | 0.06 (0.03) .02 | 0.04 (0.02) .15 | 0.02 (0.02) .41 |
| ab | Covar (Slopes) | -0.00 (0.00) .24 | -0.00 (0.00) .24 | -0.00 (0.00) .27 | -0.00 (0.00) .29 |
| ab | Covar (Residuals) | 0.00 (0.00) .40 | 0.00 (0.00) .41 | 0.00 (0.00) .43 | 0.00 (0.01) .53 |
| er | Corr (Levels) | 0.14 (0.04) <.01 | 0.10 (0.04) .02 | 0.06 (0.04) .14 | 0.04 (0.05) .41 |
| er | Corr (Slopes) | -0.70 (1.23) .57 | -0.72 (1.26) .57 | -0.68 (1.22) .58 | -0.58 (0.84) .49 |
| er | Corr (Residuals) | 0.02 (0.03) .40 | 0.02 (0.03) .41 | 0.02 (0.03) .43 | 0.02 (0.03) .53 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .86 |
| a | Slope \* age | 0.00 (0.00) .10 | 0.00 (0.00) .10 | 0.00 (0.00) .18 | 0.00 (0.00) .18 |
| a | Slope \* education | --- | 0.00 (0.00) .88 | 0.00 (0.00) .90 | 0.00 (0.00) .89 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.00) .20 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .38 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .17 |
| b | Level | 6.48 (0.09) <.01 | 5.34 (0.18) <.01 | 5.42 (0.17) <.01 | 5.44 (0.21) <.01 |
| b | Slope | 0.14 (0.02) <.01 | 0.12 (0.05) .02 | 0.12 (0.05) .02 | 0.15 (0.06) .01 |
| b | Level \* age | -0.07 (0.01) <.01 | -0.07 (0.01) <.01 | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Level \* education | --- | 0.15 (0.02) <.01 | 0.14 (0.02) <.01 | 0.14 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.38 (0.87) .01 | 2.03 (0.88) .02 |
| b | Level \* smoking | --- | --- | --- | -0.20 (0.13) .12 |
| b | Level \* cardio | --- | --- | --- | -0.33 (0.21) .12 |
| b | Level \* diabetes | --- | --- | --- | 0.16 (0.16) .30 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | --- | 0.00 (0.01) .61 | 0.00 (0.01) .69 | 0.00 (0.01) .81 |
| b | Slope \* height | --- | --- | 0.26 (0.28) .36 | 0.23 (0.29) .44 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.04) .66 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.06) .95 |
| b | Slope \* diabetes | --- | --- | --- | -0.05 (0.04) .23 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .74 | 0.00 (0.00) .75 | 0.00 (0.00) .75 | 0.00 (0.00) .66 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 2.90 (0.19) <.01 | 2.69 (0.18) <.01 | 2.63 (0.18) <.01 | 2.59 (0.18) <.01 |
| b | Var (Slope) | 0.04 (0.02) <.01 | 0.04 (0.02) <.01 | 0.04 (0.02) <.01 | 0.04 (0.02) .02 |
| b | Var (Residual) | 1.75 (0.07) <.01 | 1.75 (0.07) <.01 | 1.75 (0.07) <.01 | 1.76 (0.08) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .29 | -0.00 (0.00) .30 | -0.00 (0.00) .50 | 0.00 (0.00) .86 |
| b | Covar (Level, Slope) | 0.00 (0.04) .99 | -0.00 (0.04) .96 | -0.00 (0.04) .93 | 0.02 (0.04) .67 |
|  | Correlation of Levels | 0.14 | 0.10 | 0.064 | 0.037 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.02 | 0.02 | 0.020 | 0.015 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,640 | -7,600 | -7,514 | -6,810 |
|  | AIC | 15,321 | 15,251 | 15,087 | 13,701 |
|  | BIC | 15,425 | 15,374 | 15,230 | 13,900 |

## word\_im

Gender = *female*; Process (a) = *fev*; Process (b) = *word\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.26 (0.05) <.01 | 0.20 (0.05) <.01 | 0.15 (0.04) <.01 | 0.11 (0.05) .02 |
| ab | Covar (Slopes) | -0.00 (0.00) .12 | -0.00 (0.00) .12 | -0.00 (0.00) .13 | -0.01 (0.00) .09 |
| ab | Covar (Residuals) | 0.01 (0.01) .30 | 0.01 (0.01) .30 | 0.01 (0.01) .32 | 0.01 (0.01) .34 |
| er | Corr (Levels) | 0.21 (0.04) <.01 | 0.17 (0.04) <.01 | 0.14 (0.04) <.01 | 0.11 (0.04) .02 |
| er | Corr (Slopes) | -0.52 (0.43) .23 | -0.52 (0.44) .23 | -0.52 (0.44) .24 | -0.55 (0.43) .19 |
| er | Corr (Residuals) | 0.03 (0.03) .29 | 0.03 (0.03) .30 | 0.03 (0.03) .31 | 0.03 (0.03) .33 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.88 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .10 |
| a | Level \* diabetes | --- | --- | --- | -0.01 (0.03) .85 |
| a | Slope \* age | 0.00 (0.00) .08 | 0.00 (0.00) .09 | 0.00 (0.00) .15 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .81 | 0.00 (0.00) .96 | 0.00 (0.00) .97 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .12 | -0.08 (0.04) .04 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .36 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 19.36 (0.19) <.01 | 16.51 (0.34) <.01 | 16.67 (0.33) <.01 | 16.81 (0.39) <.01 |
| b | Slope | 0.40 (0.05) <.01 | 0.43 (0.10) <.01 | 0.43 (0.10) <.01 | 0.49 (0.12) <.01 |
| b | Level \* age | -0.13 (0.02) <.01 | -0.12 (0.01) <.01 | -0.12 (0.01) <.01 | -0.11 (0.02) <.01 |
| b | Level \* education | --- | 0.38 (0.04) <.01 | 0.35 (0.04) <.01 | 0.35 (0.04) <.01 |
| b | Level \* height | --- | --- | 4.40 (1.67) .01 | 4.40 (1.81) .01 |
| b | Level \* smoking | --- | --- | --- | -0.49 (0.25) .05 |
| b | Level \* cardio | --- | --- | --- | -0.34 (0.37) .37 |
| b | Level \* diabetes | --- | --- | --- | 0.33 (0.32) .31 |
| b | Slope \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | --- | -0.00 (0.01) .67 | -0.00 (0.01) .65 | -0.01 (0.01) .61 |
| b | Slope \* height | --- | --- | 0.34 (0.54) .53 | 0.09 (0.56) .88 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.08) .99 |
| b | Slope \* cardio | --- | --- | --- | -0.14 (0.12) .26 |
| b | Slope \* diabetes | --- | --- | --- | 0.02 (0.10) .80 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .36 | 0.00 (0.00) .37 | 0.00 (0.00) .36 | 0.00 (0.00) .32 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 11.47 (0.70) <.01 | 10.09 (0.66) <.01 | 9.72 (0.62) <.01 | 9.68 (0.65) <.01 |
| b | Var (Slope) | 0.29 (0.07) <.01 | 0.29 (0.07) <.01 | 0.29 (0.07) <.01 | 0.30 (0.07) <.01 |
| b | Var (Residual) | 5.83 (0.19) <.01 | 5.83 (0.19) <.01 | 5.84 (0.19) <.01 | 5.88 (0.20) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .20 | -0.00 (0.00) .21 | -0.00 (0.00) .35 | -0.00 (0.00) .65 |
| b | Covar (Level, Slope) | 0.00 (0.16) .99 | 0.01 (0.16) .93 | 0.04 (0.15) .80 | 0.09 (0.16) .58 |
|  | Correlation of Levels | 0.207 | 0.171 | 0.141 | 0.107 |
|  | Correlation of Slopes | -Inf | -Inf | -Inf | -Inf |
|  | Correlation of Residuals | 0.031 | 0.031 | 0.031 | 0.031 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,079 | -10,024 | -9,930 | -9,012 |
|  | AIC | 20,200 | 20,099 | 19,917 | 18,107 |
|  | BIC | 20,304 | 20,222 | 20,060 | 18,305 |

## word\_rec

Gender = *female*; Process (a) = *fev*; Process (b) = *word\_rec*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.02 (0.01) .13 | 0.01 (0.01) .23 | 0.01 (0.01) .38 | 0.00 (0.01) .68 |
| ab | Covar (Slopes) | 0.00 (0.00) .92 | 0.00 (0.00) .92 | 0.00 (0.00) .92 | 0.00 (0.00) .95 |
| ab | Covar (Residuals) | 0.00 (0.00) .98 | 0.00 (0.00) .99 | 0.00 (0.00) .95 | 0.00 (0.00) .89 |
| er | Corr (Levels) | 0.07 (0.04) .13 | 0.05 (0.04) .23 | 0.04 (0.04) .39 | 0.02 (0.04) .68 |
| er | Corr (Slopes) | 0.13 (1.22) .91 | 0.12 (1.21) .92 | 0.15 (1.42) .92 | 0.08 (1.14) .95 |
| er | Corr (Residuals) | 0.00 (0.03) .98 | 0.00 (0.03) .99 | 0.00 (0.03) .95 | 0.00 (0.03) .89 |
| a | Level | 1.74 (0.02) <.01 | 1.61 (0.03) <.01 | 1.66 (0.03) <.01 | 1.71 (0.04) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* education | --- | 0.02 (0.00) <.01 | 0.01 (0.00) .01 | 0.01 (0.00) <.01 |
| a | Level \* height | --- | --- | 1.89 (0.18) <.01 | 1.83 (0.18) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.11 (0.03) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.07 (0.04) .09 |
| a | Level \* diabetes | --- | --- | --- | -0.00 (0.03) .88 |
| a | Slope \* age | 0.00 (0.00) .09 | 0.00 (0.00) .10 | 0.00 (0.00) .16 | 0.00 (0.00) .16 |
| a | Slope \* education | --- | 0.00 (0.00) .86 | 0.00 (0.00) .90 | 0.00 (0.00) .92 |
| a | Slope \* height | --- | --- | -0.06 (0.04) .10 | -0.08 (0.04) .03 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .21 |
| a | Slope \* cardio | --- | --- | --- | -0.01 (0.01) .39 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .18 |
| b | Level | 9.83 (0.03) <.01 | 9.67 (0.07) <.01 | 9.69 (0.07) <.01 | 9.65 (0.09) <.01 |
| b | Slope | 0.02 (0.01) .02 | 0.02 (0.02) .32 | 0.02 (0.02) .34 | 0.02 (0.02) .38 |
| b | Level \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Level \* education | --- | 0.02 (0.01) <.01 | 0.02 (0.01) .01 | 0.02 (0.01) .01 |
| b | Level \* height | --- | --- | 0.52 (0.43) .22 | 0.45 (0.45) .31 |
| b | Level \* smoking | --- | --- | --- | -0.04 (0.05) .47 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.10) .32 |
| b | Level \* diabetes | --- | --- | --- | 0.09 (0.06) .17 |
| b | Slope \* age | -0.00 (0.00) .23 | -0.00 (0.00) .21 | -0.00 (0.00) .20 | -0.00 (0.00) .20 |
| b | Slope \* education | --- | -0.00 (0.00) .81 | -0.00 (0.00) .81 | -0.00 (0.00) .70 |
| b | Slope \* height | --- | --- | 0.05 (0.10) .59 | 0.02 (0.10) .82 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.01) .38 |
| b | Slope \* cardio | --- | --- | --- | -0.00 (0.02) .90 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.02) .77 |
| a | Var (Level) | 0.13 (0.01) <.01 | 0.13 (0.01) <.01 | 0.11 (0.01) <.01 | 0.11 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) .51 | 0.00 (0.00) .52 | 0.00 (0.00) .52 | 0.00 (0.00) .50 |
| a | Var (Residual) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
| b | Var (Level) | 0.53 (0.14) <.01 | 0.53 (0.14) <.01 | 0.46 (0.12) <.01 | 0.48 (0.13) <.01 |
| b | Var (Slope) | 0.00 (0.01) .89 | 0.00 (0.01) .89 | 0.00 (0.01) .91 | 0.00 (0.01) .89 |
| b | Var (Residual) | 0.32 (0.06) <.01 | 0.32 (0.06) <.01 | 0.31 (0.05) <.01 | 0.33 (0.06) <.01 |
| a | Covar (Level, Slope) | -0.00 (0.00) .21 | -0.00 (0.00) .22 | -0.00 (0.00) .38 | 0.00 (0.00) .71 |
| b | Covar (Level, Slope) | -0.01 (0.03) .75 | -0.01 (0.03) .75 | -0.00 (0.03) .93 | -0.00 (0.03) .97 |
|  | Correlation of Levels | 0.068 | 0.053 | 0.035 | 0.017 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | 0.000 | 0.000 | 0.000 | 0.000 |
|  | N | 1,030 | 1,030 | 1,025 | 935 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,252 | -4,241 | -4,117 | -3,826 |
|  | AIC | 8,546 | 8,531 | 8,291 | 7,735 |
|  | BIC | 8,650 | 8,655 | 8,434 | 7,933 |

## Summary

Study = *MAP*; Gender = *female*; Process (a) = *fev*

Computed correlations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Levels | bnt | 0.15 | 0.11 | 0.06 | 0.08 |
| Correlation of Levels | bstory\_de | 0.07 | 0.04 | 0.02 | 0.02 |
| Correlation of Levels | bstory\_im | 0.13 | 0.10 | 0.09 | 0.09 |
| Correlation of Levels | categories | 0.31 | 0.28 | 0.24 | 0.23 |
| Correlation of Levels | digit\_b | 0.23 | 0.20 | 0.15 | 0.12 |
| Correlation of Levels | digit\_f | 0.19 | 0.17 | 0.12 | 0.13 |
| Correlation of Levels | digit\_o | 0.26 | 0.22 | 0.19 | 0.18 |
| Correlation of Levels | ideas | 0.19 | 0.17 | 0.17 | 0.19 |
| Correlation of Levels | line | 0.20 | 0.16 | 0.14 | 0.14 |
| Correlation of Levels | logic\_de | 0.14 | 0.10 | 0.05 | 0.05 |
| Correlation of Levels | logic\_im | 0.15 | 0.11 | 0.08 | 0.04 |
| Correlation of Levels | matrices | 0.28 | 0.25 | 0.19 | 0.18 |
| Correlation of Levels | mmse | 0.11 | 0.06 | 0.03 | 0.02 |
| Correlation of Levels | nart | 0.24 | 0.20 | 0.16 | 0.15 |
| Correlation of Levels | num\_comp | 0.25 | 0.22 | 0.18 | 0.17 |
| Correlation of Levels | symbol | 0.27 | 0.23 | 0.20 | 0.19 |
| Correlation of Levels | word\_de | 0.14 | 0.10 | 0.06 | 0.04 |
| Correlation of Levels | word\_im | 0.21 | 0.17 | 0.14 | 0.11 |
| Correlation of Levels | word\_rec | 0.07 | 0.05 | 0.04 | 0.02 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Slopes | bnt | NaN | NaN | NaN | NaN |
| Correlation of Slopes | bstory\_de | NaN | NaN | NaN | NaN |
| Correlation of Slopes | bstory\_im | Inf | Inf | Inf | NaN |
| Correlation of Slopes | categories | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | digit\_b | Inf | Inf | Inf | Inf |
| Correlation of Slopes | digit\_f | Inf | Inf | NaN | NaN |
| Correlation of Slopes | digit\_o | NaN | NaN | NaN | NaN |
| Correlation of Slopes | ideas | NaN | NaN | NaN | NaN |
| Correlation of Slopes | line | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | logic\_de | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | logic\_im | Inf | Inf | Inf | -Inf |
| Correlation of Slopes | matrices | Inf | Inf | Inf | Inf |
| Correlation of Slopes | mmse | NaN | NaN | NaN | -Inf |
| Correlation of Slopes | nart | Inf | Inf | Inf | Inf |
| Correlation of Slopes | num\_comp | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | symbol | NaN | NaN | Inf | Inf |
| Correlation of Slopes | word\_de | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | word\_im | -Inf | -Inf | -Inf | -Inf |
| Correlation of Slopes | word\_rec | NaN | NaN | NaN | NaN |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Residuals | bnt | 0.00 | 0.00 | -0.01 | -0.03 |
| Correlation of Residuals | bstory\_de | -0.04 | -0.04 | -0.04 | -0.04 |
| Correlation of Residuals | bstory\_im | -0.04 | -0.04 | -0.04 | -0.03 |
| Correlation of Residuals | categories | -0.03 | -0.03 | -0.03 | -0.04 |
| Correlation of Residuals | digit\_b | -0.04 | -0.04 | -0.04 | -0.04 |
| Correlation of Residuals | digit\_f | 0.02 | 0.02 | 0.02 | 0.02 |
| Correlation of Residuals | digit\_o | 0.02 | 0.02 | 0.01 | 0.03 |
| Correlation of Residuals | ideas | 0.01 | 0.01 | 0.01 | 0.02 |
| Correlation of Residuals | line | -0.03 | -0.03 | -0.03 | -0.04 |
| Correlation of Residuals | logic\_de | 0.02 | 0.02 | 0.01 | 0.01 |
| Correlation of Residuals | logic\_im | -0.01 | -0.01 | -0.01 | 0.00 |
| Correlation of Residuals | matrices | -0.04 | -0.04 | -0.04 | -0.05 |
| Correlation of Residuals | mmse | 0.04 | 0.04 | 0.04 | 0.05 |
| Correlation of Residuals | nart | 0.00 | 0.00 | 0.00 | 0.01 |
| Correlation of Residuals | num\_comp | -0.00 | -0.00 | -0.00 | -0.02 |
| Correlation of Residuals | symbol | 0.04 | 0.04 | 0.03 | 0.05 |
| Correlation of Residuals | word\_de | 0.02 | 0.02 | 0.02 | 0.01 |
| Correlation of Residuals | word\_im | 0.03 | 0.03 | 0.03 | 0.03 |
| Correlation of Residuals | word\_rec | 0.00 | 0.00 | 0.00 | 0.00 |

P-values for corresponding covariances:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Levels | bnt | 0.00 | 0.03 | 0.17 | 0.10 |
| Covariance of Levels | bstory\_de | 0.19 | 0.52 | 0.70 | 0.74 |
| Covariance of Levels | bstory\_im | 0.01 | 0.06 | 0.09 | 0.12 |
| Covariance of Levels | categories | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | digit\_b | 0.00 | 0.00 | 0.00 | 0.01 |
| Covariance of Levels | digit\_f | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | digit\_o | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | ideas | 0.00 | 0.00 | 0.01 | 0.00 |
| Covariance of Levels | line | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | logic\_de | 0.00 | 0.02 | 0.21 | 0.31 |
| Covariance of Levels | logic\_im | 0.00 | 0.01 | 0.08 | 0.33 |
| Covariance of Levels | matrices | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | mmse | 0.03 | 0.26 | 0.54 | 0.71 |
| Covariance of Levels | nart | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | num\_comp | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | symbol | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | word\_de | 0.00 | 0.02 | 0.15 | 0.41 |
| Covariance of Levels | word\_im | 0.00 | 0.00 | 0.00 | 0.02 |
| Covariance of Levels | word\_rec | 0.13 | 0.23 | 0.38 | 0.68 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Slopes | bnt | 0.99 | 0.99 | 0.97 | 0.92 |
| Covariance of Slopes | bstory\_de | 0.85 | 0.88 | 0.93 | 0.97 |
| Covariance of Slopes | bstory\_im | 0.53 | 0.54 | 0.55 | 0.84 |
| Covariance of Slopes | categories | 0.64 | 0.63 | 0.58 | 0.37 |
| Covariance of Slopes | digit\_b | 0.10 | 0.09 | 0.10 | 0.10 |
| Covariance of Slopes | digit\_f | 0.66 | 0.66 | 0.68 | 0.98 |
| Covariance of Slopes | digit\_o | 0.82 | 0.82 | 0.81 | 0.69 |
| Covariance of Slopes | ideas | 0.72 | 0.73 | 0.62 | 0.61 |
| Covariance of Slopes | line | 0.53 | 0.50 | 0.57 | 0.70 |
| Covariance of Slopes | logic\_de | 0.17 | 0.16 | 0.16 | 0.14 |
| Covariance of Slopes | logic\_im | 0.69 | 0.72 | 0.69 | 0.80 |
| Covariance of Slopes | matrices | 0.39 | 0.41 | 0.38 | 0.28 |
| Covariance of Slopes | mmse | 0.90 | 0.88 | 0.80 | 0.69 |
| Covariance of Slopes | nart | 0.36 | 0.36 | 0.35 | 0.56 |
| Covariance of Slopes | num\_comp | 0.82 | 0.80 | 0.85 | 0.86 |
| Covariance of Slopes | symbol | 0.98 | 0.97 | 0.92 | 0.77 |
| Covariance of Slopes | word\_de | 0.24 | 0.24 | 0.27 | 0.29 |
| Covariance of Slopes | word\_im | 0.12 | 0.12 | 0.13 | 0.09 |
| Covariance of Slopes | word\_rec | 0.92 | 0.92 | 0.92 | 0.95 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Residuals | bnt | 0.88 | 0.88 | 0.71 | 0.35 |
| Covariance of Residuals | bstory\_de | 0.13 | 0.13 | 0.14 | 0.17 |
| Covariance of Residuals | bstory\_im | 0.10 | 0.10 | 0.12 | 0.22 |
| Covariance of Residuals | categories | 0.20 | 0.19 | 0.18 | 0.10 |
| Covariance of Residuals | digit\_b | 0.21 | 0.21 | 0.21 | 0.18 |
| Covariance of Residuals | digit\_f | 0.58 | 0.60 | 0.61 | 0.46 |
| Covariance of Residuals | digit\_o | 0.54 | 0.54 | 0.59 | 0.28 |
| Covariance of Residuals | ideas | 0.76 | 0.76 | 0.69 | 0.46 |
| Covariance of Residuals | line | 0.18 | 0.18 | 0.18 | 0.10 |
| Covariance of Residuals | logic\_de | 0.59 | 0.58 | 0.64 | 0.78 |
| Covariance of Residuals | logic\_im | 0.85 | 0.87 | 0.76 | 0.91 |
| Covariance of Residuals | matrices | 0.15 | 0.16 | 0.16 | 0.08 |
| Covariance of Residuals | mmse | 0.16 | 0.15 | 0.13 | 0.07 |
| Covariance of Residuals | nart | 0.96 | 0.96 | 0.96 | 0.72 |
| Covariance of Residuals | num\_comp | 0.95 | 0.94 | 0.92 | 0.59 |
| Covariance of Residuals | symbol | 0.17 | 0.18 | 0.22 | 0.12 |
| Covariance of Residuals | word\_de | 0.40 | 0.41 | 0.43 | 0.53 |
| Covariance of Residuals | word\_im | 0.30 | 0.30 | 0.32 | 0.34 |
| Covariance of Residuals | word\_rec | 0.98 | 0.99 | 0.95 | 0.89 |

# male

Gender = *male*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *bnt*, *bstory\_de*, *bstory\_im*, *categories*, *digit\_b*, *digit\_f*, *digit\_o*, *ideas*, *line*, *logic\_de*, *logic\_im*, *matrices*, *mmse*, *nart*, *num\_comp*, *symbol*, *word\_de*, *word\_im*, *word\_rec*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | bnt | bstory\_de | bstory\_im | categories | digit\_b | digit\_f | digit\_o | ideas | line | logic\_de | logic\_im | matrices | mmse | nart | num\_comp | symbol | word\_de | word\_im | word\_rec | mean(sd) |
| ab | Covar (Levels) | 0.04 (0.04) .30 | 0.08 (0.07) .22 | 0.09 (0.06) .15 | 0.62 (0.29) .03 | 0.13 (0.06) .03 | 0.06 (0.06) .27 | -0.01 (0.04) .74 | -0.00 (0.02) .82 | 0.17 (0.08) .05 | 0.23 (0.12) .05 | 0.16 (0.11) .14 | 0.07 (0.07) .28 | 0.03 (0.06) .63 | 0.11 (0.06) .07 | 0.06 (0.21) .77 | 0.72 (0.33) .03 | 0.08 (0.07) .25 | 0.06 (0.11) .56 | 0.00 (0.04) .93 | --- |
| ab | Covar (Slopes) | 0.00 (0.00) .89 | 0.00 (0.00) .59 | 0.00 (0.00) .28 | 0.00 (0.01) .75 | -0.00 (0.00) .61 | 0.00 (0.00) .78 | 0.00 (0.00) .96 | -0.00 (0.00) .32 | 0.00 (0.00) .60 | 0.00 (0.01) .90 | 0.00 (0.01) .90 | 0.00 (0.00) .45 | -0.00 (0.01) .44 | 0.00 (0.00) .98 | -0.02 (0.01) .13 | -0.01 (0.02) .60 | 0.00 (0.00) .43 | 0.00 (0.01) .53 | -0.00 (0.00) .22 | --- |
| ab | Covar (Residuals) | -0.00 (0.01) .53 | -0.01 (0.02) .66 | -0.02 (0.01) .29 | -0.01 (0.05) .76 | -0.00 (0.01) .77 | -0.01 (0.01) .56 | 0.00 (0.01) .95 | 0.00 (0.00) .41 | -0.01 (0.02) .68 | -0.01 (0.02) .76 | -0.01 (0.02) .78 | -0.01 (0.02) .70 | 0.00 (0.01) .72 | -0.00 (0.01) .70 | 0.02 (0.03) .63 | 0.06 (0.04) .17 | 0.00 (0.01) .92 | 0.05 (0.03) .04 | 0.01 (0.01) .19 | --- |
| er | Corr (Levels) | 0.07 (0.08) .35 | 0.13 (0.10) .21 | 0.16 (0.11) .14 | 0.16 (0.07) .02 | 0.16 (0.07) .03 | 0.08 (0.07) .27 | -0.02 (0.08) .74 | -0.02 (0.08) .82 | 0.15 (0.08) .04 | 0.14 (0.07) .04 | 0.11 (0.07) .14 | 0.08 (0.08) .28 | 0.04 (0.08) .66 | 0.11 (0.06) .07 | 0.02 (0.07) .77 | 0.16 (0.07) .02 | 0.10 (0.08) .25 | 0.05 (0.08) .56 | 0.01 (0.08) .93 | --- |
| er | Corr (Slopes) | 0.16 (1.34) .90 | 0.64 (2.09) .76 | 0.80 (1.12) .47 | 0.17 (0.50) .73 | -0.43 (0.98) .66 | 0.26 (1.03) .80 | 0.09 (1.68) .96 | -0.36 (0.38) .34 | 0.39 (0.74) .60 | 0.05 (0.44) .90 | 0.12 (1.05) .91 | 0.43 (0.68) .52 | -0.58 (0.79) .46 | -0.01 (0.59) .98 | -0.75 (0.49) .13 | -0.36 (0.81) .65 | 0.69 (1.04) .50 | 0.54 (0.97) .58 | -0.58 (0.43) .18 | --- |
| er | Corr (Residuals) | -0.04 (0.06) .53 | -0.02 (0.05) .66 | -0.05 (0.05) .29 | -0.01 (0.05) .76 | -0.01 (0.04) .77 | -0.02 (0.04) .56 | 0.00 (0.05) .95 | 0.04 (0.05) .42 | -0.02 (0.04) .68 | -0.01 (0.04) .76 | -0.01 (0.04) .78 | -0.02 (0.04) .70 | 0.02 (0.05) .72 | -0.02 (0.05) .70 | 0.02 (0.04) .64 | 0.06 (0.05) .17 | 0.00 (0.05) .92 | 0.10 (0.05) .04 | 0.06 (0.05) .17 | --- |
| a | Level | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.36 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35 (0.12) <.01 | 2.34 (0.12) <.01 | 2.35 (0.12) <.01 | 2.35(0.00) |
| a | Slope | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) <.01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06 (0.02) .01 | -0.06(0.00) |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03(0.00) |
| a | Level \* education | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02 (0.01) .02 | 0.02(0.00) |
| a | Level \* height | 2.02 (0.42) <.01 | 2.01 (0.42) <.01 | 2.00 (0.42) <.01 | 1.97 (0.42) <.01 | 2.03 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 1.98 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 2.02 (0.42) <.01 | 2.01 (0.42) <.01 | 2.00 (0.42) <.01 | 1.96 (0.42) <.01 | 2.01 (0.42) <.01 | 2.00 (0.42) <.01 | 2.02 (0.42) <.01 | 2.01(0.02) |
| a | Level \* smoking | -0.18 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.18 (0.07) .01 | -0.18 (0.07) <.01 | -0.18 (0.07) .01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.18 (0.07) <.01 | -0.18 (0.07) <.01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.19 (0.07) <.01 | -0.18 (0.07) <.01 | -0.19(0.00) |
| a | Level \* cardio | -0.11 (0.08) .17 | -0.11 (0.08) .17 | -0.11 (0.08) .16 | -0.12 (0.08) .15 | -0.12 (0.08) .15 | -0.11 (0.08) .17 | -0.11 (0.08) .18 | -0.11 (0.08) .17 | -0.11 (0.08) .16 | -0.11 (0.08) .16 | -0.11 (0.08) .16 | -0.11 (0.08) .17 | -0.11 (0.08) .17 | -0.11 (0.08) .18 | -0.11 (0.08) .16 | -0.11 (0.08) .16 | -0.11 (0.08) .16 | -0.11 (0.08) .17 | -0.11 (0.08) .18 | -0.11(0.00) |
| a | Level \* diabetes | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.20 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19 (0.08) .02 | -0.20 (0.08) .02 | -0.19(0.00) |
| a | Slope \* age | -0.00 (0.00) .32 | -0.00 (0.00) .32 | -0.00 (0.00) .34 | -0.00 (0.00) .29 | -0.00 (0.00) .35 | -0.00 (0.00) .31 | -0.00 (0.00) .31 | -0.00 (0.00) .28 | -0.00 (0.00) .31 | -0.00 (0.00) .34 | -0.00 (0.00) .33 | -0.00 (0.00) .38 | -0.00 (0.00) .26 | -0.00 (0.00) .36 | -0.00 (0.00) .32 | -0.00 (0.00) .33 | -0.00 (0.00) .30 | -0.00 (0.00) .27 | -0.00 (0.00) .36 | -0.00(0.00) |
| a | Slope \* education | -0.00 (0.00) .60 | -0.00 (0.00) .61 | -0.00 (0.00) .64 | -0.00 (0.00) .72 | -0.00 (0.00) .63 | -0.00 (0.00) .56 | -0.00 (0.00) .59 | -0.00 (0.00) .67 | -0.00 (0.00) .58 | -0.00 (0.00) .60 | -0.00 (0.00) .60 | -0.00 (0.00) .58 | -0.00 (0.00) .68 | -0.00 (0.00) .61 | -0.00 (0.00) .71 | -0.00 (0.00) .68 | -0.00 (0.00) .62 | -0.00 (0.00) .55 | -0.00 (0.00) .54 | -0.00(0.00) |
| a | Slope \* height | 0.05 (0.12) .70 | 0.05 (0.12) .65 | 0.06 (0.12) .60 | 0.05 (0.12) .69 | 0.05 (0.12) .69 | 0.06 (0.12) .63 | 0.06 (0.12) .63 | 0.05 (0.12) .70 | 0.06 (0.12) .61 | 0.05 (0.12) .66 | 0.05 (0.12) .67 | 0.05 (0.12) .67 | 0.07 (0.12) .56 | 0.05 (0.12) .68 | 0.05 (0.12) .68 | 0.05 (0.12) .70 | 0.06 (0.12) .65 | 0.06 (0.12) .64 | 0.06 (0.12) .64 | 0.05(0.01) |
| a | Slope \* smoking | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.05 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06 (0.01) <.01 | 0.06(0.00) |
| a | Slope \* cardio | -0.02 (0.02) .13 | -0.02 (0.02) .12 | -0.02 (0.02) .12 | -0.02 (0.02) .14 | -0.02 (0.02) .12 | -0.02 (0.02) .11 | -0.02 (0.02) .11 | -0.02 (0.02) .12 | -0.03 (0.02) .10 | -0.03 (0.02) .11 | -0.02 (0.02) .11 | -0.03 (0.02) .11 | -0.02 (0.02) .15 | -0.03 (0.02) .10 | -0.02 (0.02) .11 | -0.03 (0.02) .11 | -0.02 (0.02) .13 | -0.02 (0.02) .12 | -0.03 (0.02) .10 | -0.03(0.00) |
| a | Slope \* diabetes | 0.02 (0.01) .30 | 0.02 (0.01) .30 | 0.02 (0.01) .28 | 0.01 (0.01) .34 | 0.01 (0.01) .30 | 0.01 (0.01) .32 | 0.01 (0.01) .31 | 0.02 (0.01) .28 | 0.01 (0.01) .32 | 0.01 (0.01) .31 | 0.01 (0.01) .31 | 0.01 (0.01) .34 | 0.02 (0.01) .28 | 0.02 (0.01) .30 | 0.02 (0.01) .24 | 0.01 (0.01) .33 | 0.01 (0.01) .32 | 0.01 (0.01) .35 | 0.02 (0.01) .28 | 0.02(0.00) |
| b | Level | 13.74 (0.28) <.01 | 8.68 (0.37) <.01 | 9.17 (0.32) <.01 | 31.21 (1.49) <.01 | 4.73 (0.34) <.01 | 7.01 (0.30) <.01 | 6.89 (0.25) <.01 | 7.72 (0.09) <.01 | 10.31 (0.50) <.01 | 7.56 (0.83) <.01 | 9.24 (0.79) <.01 | 10.98 (0.46) <.01 | 27.35 (0.32) <.01 | 5.08 (0.41) <.01 | 21.18 (1.29) <.01 | 35.55 (1.93) <.01 | 4.80 (0.37) <.01 | 15.42 (0.69) <.01 | 9.37 (0.20) <.01 | --- |
| b | Slope | 0.05 (0.05) .32 | -0.04 (0.12) .76 | -0.06 (0.12) .60 | -0.05 (0.38) .89 | 0.11 (0.10) .25 | 0.13 (0.09) .16 | -0.04 (0.09) .62 | 0.00 (0.04) .99 | -0.03 (0.14) .84 | 0.20 (0.23) .38 | 0.24 (0.20) .23 | 0.06 (0.15) .68 | -0.00 (0.12) .99 | 0.12 (0.08) .14 | 0.35 (0.32) .28 | -0.13 (0.43) .77 | 0.11 (0.11) .34 | 0.19 (0.20) .35 | 0.09 (0.06) .17 | --- |
| b | Level \* age | -0.03 (0.01) .08 | -0.06 (0.01) <.01 | -0.04 (0.01) <.01 | -0.29 (0.06) <.01 | -0.03 (0.02) .04 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.01 (0.01) .28 | -0.02 (0.02) .36 | -0.12 (0.03) <.01 | -0.13 (0.03) <.01 | -0.07 (0.02) <.01 | -0.08 (0.02) <.01 | 0.01 (0.02) .55 | -0.18 (0.06) <.01 | -0.46 (0.07) <.01 | -0.10 (0.01) <.01 | -0.15 (0.03) <.01 | -0.04 (0.01) <.01 | --- |
| b | Level \* education | 0.06 (0.02) .01 | 0.12 (0.03) <.01 | 0.09 (0.03) <.01 | 0.54 (0.12) <.01 | 0.20 (0.03) <.01 | 0.20 (0.02) <.01 | 0.10 (0.02) <.01 | 0.02 (0.01) .06 | 0.21 (0.05) <.01 | 0.27 (0.07) <.01 | 0.28 (0.07) <.01 | 0.24 (0.04) <.01 | 0.14 (0.03) <.01 | 0.31 (0.04) <.01 | 0.53 (0.11) <.01 | 0.87 (0.16) <.01 | 0.14 (0.03) <.01 | 0.30 (0.06) <.01 | 0.04 (0.02) .01 | --- |
| b | Level \* height | 2.96 (1.05) <.01 | 0.68 (1.51) .65 | 1.66 (1.31) .21 | 12.27 (6.08) .04 | 0.44 (1.46) .76 | 0.36 (1.43) .80 | 2.91 (1.11) .01 | 0.83 (0.41) .04 | 5.35 (2.29) .02 | 2.23 (3.01) .46 | 3.84 (2.94) .19 | 9.24 (2.21) <.01 | 3.05 (1.31) .02 | 2.78 (1.68) .10 | 16.81 (5.10) <.01 | 22.37 (6.41) <.01 | 1.62 (1.36) .23 | 2.02 (2.29) .38 | 0.86 (0.74) .25 | --- |
| b | Level \* smoking | 0.04 (0.15) .79 | -0.01 (0.21) .97 | 0.17 (0.18) .34 | -0.86 (0.92) .35 | 0.15 (0.21) .49 | 0.43 (0.21) .04 | -0.02 (0.16) .92 | -0.07 (0.07) .35 | -0.86 (0.30) <.01 | -0.04 (0.43) .92 | 0.06 (0.41) .88 | -0.50 (0.28) .07 | -0.08 (0.24) .73 | 0.17 (0.24) .47 | -0.60 (0.78) .44 | -0.83 (1.07) .44 | -0.20 (0.22) .36 | -0.27 (0.37) .46 | -0.20 (0.14) .13 | --- |
| b | Level \* cardio | 0.11 (0.15) .47 | 0.23 (0.24) .32 | 0.20 (0.22) .35 | 0.35 (1.04) .73 | 0.25 (0.22) .27 | 0.22 (0.23) .34 | 0.21 (0.19) .28 | 0.07 (0.07) .28 | -0.00 (0.35) .99 | 0.68 (0.49) .16 | 0.60 (0.48) .21 | 0.60 (0.31) .05 | 0.27 (0.27) .30 | -0.01 (0.27) .96 | 0.57 (0.85) .50 | 0.85 (1.13) .45 | 0.23 (0.24) .35 | 0.24 (0.41) .56 | 0.10 (0.16) .54 | --- |
| b | Level \* diabetes | 0.11 (0.12) .35 | 0.05 (0.24) .85 | 0.03 (0.21) .88 | -0.21 (1.06) .84 | 0.04 (0.23) .84 | -0.14 (0.23) .53 | -0.19 (0.17) .27 | -0.02 (0.07) .81 | -0.34 (0.34) .32 | 0.66 (0.47) .15 | 0.54 (0.45) .22 | -0.07 (0.33) .82 | 0.02 (0.21) .94 | -0.07 (0.25) .77 | 1.38 (0.86) .11 | 0.08 (1.26) .95 | 0.23 (0.26) .36 | 0.37 (0.44) .40 | 0.26 (0.14) .06 | --- |
| b | Slope \* age | 0.00 (0.00) .42 | 0.00 (0.01) .33 | 0.01 (0.00) .19 | -0.04 (0.02) .01 | -0.00 (0.00) .30 | -0.00 (0.00) .76 | -0.00 (0.00) .20 | 0.00 (0.00) .12 | 0.00 (0.01) .82 | -0.01 (0.01) .10 | -0.00 (0.01) .71 | -0.01 (0.01) .25 | -0.00 (0.01) .57 | -0.00 (0.00) .22 | -0.03 (0.01) <.01 | -0.05 (0.02) <.01 | 0.00 (0.00) .94 | -0.00 (0.01) .82 | 0.00 (0.00) .90 | --- |
| b | Slope \* education | -0.00 (0.00) .46 | -0.01 (0.01) .37 | -0.01 (0.01) .28 | -0.00 (0.04) .98 | -0.00 (0.01) .57 | -0.01 (0.01) .18 | 0.01 (0.01) .37 | -0.00 (0.00) .35 | 0.00 (0.01) .94 | 0.02 (0.02) .40 | -0.00 (0.02) .96 | -0.01 (0.01) .60 | -0.01 (0.01) .50 | -0.01 (0.01) .35 | -0.05 (0.03) .07 | 0.02 (0.04) .58 | -0.00 (0.01) .71 | 0.01 (0.02) .56 | -0.00 (0.01) .43 | --- |
| b | Slope \* height | -0.34 (0.18) .05 | 0.90 (0.47) .06 | 0.16 (0.44) .71 | 1.53 (1.52) .31 | 0.71 (0.41) .08 | 0.11 (0.41) .79 | 0.06 (0.33) .86 | -0.16 (0.14) .25 | 1.00 (0.58) .08 | 0.39 (0.85) .65 | 0.11 (0.76) .88 | -0.34 (0.79) .66 | -0.05 (0.56) .93 | 0.09 (0.27) .75 | 0.13 (1.12) .90 | 2.08 (1.59) .19 | 0.19 (0.45) .68 | -0.05 (0.77) .95 | -0.36 (0.25) .15 | --- |
| b | Slope \* smoking | 0.00 (0.03) .95 | -0.07 (0.07) .34 | -0.10 (0.07) .16 | 0.15 (0.23) .50 | -0.02 (0.06) .69 | -0.08 (0.06) .16 | -0.00 (0.05) .99 | 0.04 (0.03) .16 | 0.01 (0.09) .89 | 0.07 (0.14) .62 | 0.02 (0.12) .86 | 0.13 (0.09) .13 | -0.03 (0.08) .73 | 0.02 (0.04) .63 | 0.26 (0.18) .16 | 0.06 (0.23) .79 | -0.06 (0.07) .35 | -0.05 (0.13) .69 | -0.02 (0.04) .66 | --- |
| b | Slope \* cardio | -0.02 (0.03) .62 | 0.07 (0.08) .40 | 0.05 (0.08) .53 | 0.14 (0.29) .63 | -0.02 (0.07) .74 | -0.08 (0.07) .22 | -0.03 (0.06) .64 | -0.01 (0.02) .71 | 0.11 (0.12) .33 | 0.23 (0.15) .13 | 0.04 (0.15) .77 | 0.02 (0.11) .86 | 0.11 (0.08) .20 | 0.04 (0.05) .40 | -0.15 (0.19) .42 | 0.14 (0.27) .60 | 0.08 (0.07) .25 | 0.12 (0.14) .39 | 0.07 (0.04) .11 | --- |
| b | Slope \* diabetes | -0.00 (0.03) .96 | -0.00 (0.08) .98 | 0.05 (0.08) .53 | -0.25 (0.27) .35 | -0.05 (0.06) .44 | 0.02 (0.06) .73 | -0.03 (0.05) .59 | 0.00 (0.03) .94 | 0.06 (0.10) .54 | -0.07 (0.15) .65 | -0.15 (0.14) .28 | -0.03 (0.10) .78 | 0.07 (0.08) .39 | -0.06 (0.06) .30 | -0.17 (0.18) .34 | -0.18 (0.27) .50 | -0.08 (0.07) .21 | -0.14 (0.13) .30 | -0.03 (0.04) .42 | --- |
| a | Var (Level) | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.26 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.26 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27 (0.02) <.01 | 0.26 (0.02) <.01 | 0.26 (0.02) <.01 | 0.27 (0.02) <.01 | 0.27(0.00) |
| a | Var (Slope) | 0.00 (0.00) .51 | 0.00 (0.00) .35 | 0.00 (0.00) .28 | 0.00 (0.00) .52 | 0.00 (0.00) .55 | 0.00 (0.00) .40 | 0.00 (0.00) .42 | 0.00 (0.00) .47 | 0.00 (0.00) .48 | 0.00 (0.00) .49 | 0.00 (0.00) .49 | 0.00 (0.00) .35 | 0.00 (0.00) .46 | 0.00 (0.00) .48 | 0.00 (0.00) .28 | 0.00 (0.00) .49 | 0.00 (0.00) .52 | 0.00 (0.00) .58 | 0.00 (0.00) .41 | 0.00(0.00) |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05(0.00) |
| b | Var (Level) | 1.07 (0.54) .05 | 1.70 (0.38) <.01 | 1.10 (0.24) <.01 | 54.93 (6.33) <.01 | 2.54 (0.27) <.01 | 2.15 (0.26) <.01 | 1.20 (0.23) <.01 | 0.20 (0.15) .19 | 4.47 (0.56) <.01 | 10.74 (1.09) <.01 | 8.31 (0.98) <.01 | 3.18 (0.49) <.01 | 2.48 (1.52) .10 | 3.55 (0.40) <.01 | 35.35 (3.32) <.01 | 71.21 (7.27) <.01 | 2.45 (0.31) <.01 | 6.36 (0.87) <.01 | 0.91 (0.24) <.01 | --- |
| b | Var (Slope) | 0.00 (0.01) .79 | 0.01 (0.06) .84 | 0.02 (0.04) .55 | 0.83 (0.38) .03 | 0.02 (0.02) .28 | 0.01 (0.02) .58 | 0.00 (0.02) .83 | 0.03 (0.02) .23 | 0.05 (0.04) .22 | 0.30 (0.11) <.01 | 0.04 (0.09) .64 | 0.05 (0.05) .27 | 0.08 (0.08) .29 | 0.02 (0.02) .22 | 0.41 (0.28) .14 | 0.65 (0.42) .12 | 0.03 (0.02) .20 | 0.07 (0.07) .29 | 0.03 (0.02) .08 | --- |
| b | Var (Residual) | 0.38 (0.04) <.01 | 2.72 (0.21) <.01 | 2.21 (0.15) <.01 | 20.37 (1.30) <.01 | 1.57 (0.09) <.01 | 1.51 (0.09) <.01 | 1.19 (0.08) <.01 | 0.18 (0.05) <.01 | 3.28 (0.30) <.01 | 5.54 (0.37) <.01 | 6.50 (0.38) <.01 | 3.12 (0.33) <.01 | 1.93 (0.17) <.01 | 0.74 (0.10) <.01 | 13.62 (1.61) <.01 | 20.05 (1.62) <.01 | 1.68 (0.12) <.01 | 6.03 (0.34) <.01 | 0.45 (0.08) <.01 | --- |
| a | Covar (Level, Slope) | -0.01 (0.00) .07 | -0.01 (0.00) .06 | -0.01 (0.00) .05 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .06 | -0.01 (0.00) .06 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .05 | -0.01 (0.00) .07 | -0.01 (0.00) .06 | -0.01 (0.00) .06 | -0.01 (0.00) .07 | -0.01 (0.00) .07 | -0.01 (0.00) .09 | -0.01 (0.00) .05 | -0.01(0.00) |
| b | Covar (Level, Slope) | -0.04 (0.06) .52 | -0.02 (0.15) .87 | -0.03 (0.08) .70 | -1.14 (1.22) .35 | -0.03 (0.06) .61 | -0.02 (0.06) .72 | 0.01 (0.06) .90 | -0.06 (0.05) .23 | -0.20 (0.12) .08 | -0.33 (0.26) .20 | 0.13 (0.21) .55 | -0.10 (0.13) .45 | -0.26 (0.32) .42 | -0.15 (0.07) .04 | -0.29 (0.85) .73 | 1.25 (1.39) .37 | 0.01 (0.08) .90 | 0.27 (0.22) .22 | -0.10 (0.05) .06 | --- |
|  | Correlation of Levels | 0.075 | 0.13 | 0.160 | 0.162 | 0.163 | 0.079 | -0.0248 | -0.017 | 0.155 | 0.136 | 0.108 | 0.081 | 0.037 | 0.109 | 0.02 | 0.165 | 0.0943 | 0.047 | 0.0061 | 0.09(0.06) |
|  | Correlation of Slopes | 0.000 | 0.58 | 1.066 | 0.139 | -0.426 | 0.289 | 0.0000 | -0.385 | 0.295 | 0.058 | 0.158 | 0.408 | -0.549 | 0.000 | -0.89 | -0.314 | 0.5669 | 0.471 | -0.5477 | 0.05(0.48) |
|  | Correlation of Residuals | -0.037 | -0.02 | -0.051 | -0.014 | -0.011 | -0.027 | 0.0043 | 0.043 | -0.018 | -0.014 | -0.013 | -0.016 | 0.017 | -0.021 | 0.02 | 0.063 | 0.0036 | 0.098 | 0.0626 | 0.00(0.04) |
|  | N | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 308 | 321 | 321 | 321 | 321 | 321 | 321 | 321 | 320.32(2.98) |
|  | occasions | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -1,790 | -2,814 | -2,667 | -4,250 | -2,605 | -2,560 | -2,348 | -1,216 | -2,982 | -3,419 | -3,438 | -2,733 | -2,692 | -2,275 | -3,958 | -4,241 | -2,639 | -3,366 | -1,875 | -2,835( 805) |
|  | AIC | 3,662 | 5,711 | 5,415 | 8,582 | 5,292 | 5,202 | 4,778 | 2,514 | 6,046 | 6,920 | 6,958 | 5,547 | 5,467 | 4,632 | 7,997 | 8,565 | 5,361 | 6,814 | 3,833 | 5,752(1,610) |
|  | BIC | 3,817 | 5,865 | 5,570 | 8,736 | 5,446 | 5,357 | 4,932 | 2,669 | 6,201 | 7,074 | 7,113 | 5,700 | 5,621 | 4,787 | 8,152 | 8,719 | 5,515 | 6,968 | 3,987 | 5,907(1,610) |

## bnt

Gender = *male*; Process (a) = *fev*; Process (b) = *bnt*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.12 (0.05) .01 | 0.08 (0.04) .05 | 0.05 (0.04) .21 | 0.04 (0.04) .30 |
| ab | Covar (Slopes) | 0.00 (0.00) .97 | 0.00 (0.00) .97 | 0.00 (0.00) .88 | 0.00 (0.00) .89 |
| ab | Covar (Residuals) | -0.01 (0.01) .44 | -0.01 (0.01) .44 | -0.00 (0.01) .48 | -0.00 (0.01) .53 |
| er | Corr (Levels) | 0.18 (0.08) .02 | 0.13 (0.08) .08 | 0.09 (0.08) .25 | 0.07 (0.08) .35 |
| er | Corr (Slopes) | 0.03 (0.87) .97 | -0.03 (0.88) .97 | 0.13 (0.99) .89 | 0.16 (1.34) .90 |
| er | Corr (Residuals) | -0.04 (0.05) .44 | -0.04 (0.05) .44 | -0.04 (0.06) .48 | -0.04 (0.06) .53 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .08 | -0.02 (0.02) .16 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .32 |
| a | Slope \* education | --- | -0.00 (0.00) .48 | -0.00 (0.00) .36 | -0.00 (0.00) .60 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .43 | 0.05 (0.12) .70 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .13 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .30 |
| b | Level | 14.33 (0.13) <.01 | 13.72 (0.24) <.01 | 13.76 (0.23) <.01 | 13.74 (0.28) <.01 |
| b | Slope | 0.02 (0.02) .29 | 0.06 (0.04) .10 | 0.06 (0.04) .12 | 0.05 (0.05) .32 |
| b | Level \* age | -0.02 (0.01) .07 | -0.03 (0.01) .05 | -0.02 (0.01) .08 | -0.03 (0.01) .08 |
| b | Level \* education | --- | 0.07 (0.02) <.01 | 0.06 (0.02) <.01 | 0.06 (0.02) .01 |
| b | Level \* height | --- | --- | 3.13 (1.05) <.01 | 2.96 (1.05) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.04 (0.15) .79 |
| b | Level \* cardio | --- | --- | --- | 0.11 (0.15) .47 |
| b | Level \* diabetes | --- | --- | --- | 0.11 (0.12) .35 |
| b | Slope \* age | 0.00 (0.00) .52 | 0.00 (0.00) .50 | 0.00 (0.00) .59 | 0.00 (0.00) .42 |
| b | Slope \* education | --- | -0.00 (0.00) .18 | -0.00 (0.00) .35 | -0.00 (0.00) .46 |
| b | Slope \* height | --- | --- | -0.29 (0.17) .09 | -0.34 (0.18) .05 |
| b | Slope \* smoking | --- | --- | --- | 0.00 (0.03) .95 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.03) .62 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.03) .96 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .29 | 0.00 (0.00) .51 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 1.35 (0.56) .02 | 1.28 (0.53) .02 | 1.23 (0.53) .02 | 1.07 (0.54) .05 |
| b | Var (Slope) | 0.00 (0.01) .72 | 0.00 (0.01) .74 | 0.00 (0.01) .78 | 0.00 (0.01) .79 |
| b | Var (Residual) | 0.38 (0.03) <.01 | 0.38 (0.03) <.01 | 0.38 (0.03) <.01 | 0.38 (0.04) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.05 (0.05) .36 | -0.05 (0.05) .38 | -0.04 (0.05) .43 | -0.04 (0.06) .52 |
|  | Correlation of Levels | 0.182 | 0.133 | 0.089 | 0.075 |
|  | Correlation of Slopes | 0.000 | 0.000 | 0.000 | 0.000 |
|  | Correlation of Residuals | -0.045 | -0.045 | -0.038 | -0.037 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,003 | -1,988 | -1,957 | -1,790 |
|  | AIC | 4,048 | 4,026 | 3,973 | 3,662 |
|  | BIC | 4,129 | 4,123 | 4,084 | 3,817 |

## bstory\_de

Gender = *male*; Process (a) = *fev*; Process (b) = *bstory\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.16 (0.08) .03 | 0.10 (0.07) .15 | 0.08 (0.07) .24 | 0.08 (0.07) .22 |
| ab | Covar (Slopes) | 0.00 (0.00) .47 | 0.00 (0.00) .46 | 0.00 (0.00) .49 | 0.00 (0.00) .59 |
| ab | Covar (Residuals) | -0.01 (0.01) .53 | -0.01 (0.01) .53 | -0.01 (0.01) .49 | -0.01 (0.02) .66 |
| er | Corr (Levels) | 0.21 (0.09) .02 | 0.15 (0.10) .14 | 0.12 (0.10) .23 | 0.13 (0.10) .21 |
| er | Corr (Slopes) | 0.64 (1.74) .71 | 0.64 (1.72) .71 | 0.65 (1.93) .74 | 0.64 (2.09) .76 |
| er | Corr (Residuals) | -0.03 (0.04) .52 | -0.03 (0.04) .53 | -0.03 (0.04) .49 | -0.02 (0.05) .66 |
| a | Level | 2.39 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .10 | -0.02 (0.02) .15 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.70 (0.41) <.01 | 2.01 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .32 |
| a | Slope \* education | --- | -0.00 (0.00) .47 | -0.00 (0.00) .37 | -0.00 (0.00) .61 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .40 | 0.05 (0.12) .65 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .30 |
| b | Level | 9.70 (0.16) <.01 | 8.68 (0.29) <.01 | 8.65 (0.29) <.01 | 8.68 (0.37) <.01 |
| b | Slope | -0.13 (0.06) .02 | -0.10 (0.09) .26 | -0.08 (0.08) .32 | -0.04 (0.12) .76 |
| b | Level \* age | -0.05 (0.01) <.01 | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Level \* education | --- | 0.12 (0.03) <.01 | 0.12 (0.03) <.01 | 0.12 (0.03) <.01 |
| b | Level \* height | --- | --- | 0.70 (1.47) .63 | 0.68 (1.51) .65 |
| b | Level \* smoking | --- | --- | --- | -0.01 (0.21) .97 |
| b | Level \* cardio | --- | --- | --- | 0.23 (0.24) .32 |
| b | Level \* diabetes | --- | --- | --- | 0.05 (0.24) .85 |
| b | Slope \* age | 0.01 (0.00) .12 | 0.01 (0.00) .14 | 0.01 (0.00) .14 | 0.00 (0.01) .33 |
| b | Slope \* education | --- | -0.00 (0.01) .67 | -0.01 (0.01) .42 | -0.01 (0.01) .37 |
| b | Slope \* height | --- | --- | 0.68 (0.45) .13 | 0.90 (0.47) .06 |
| b | Slope \* smoking | --- | --- | --- | -0.07 (0.07) .34 |
| b | Slope \* cardio | --- | --- | --- | 0.07 (0.08) .40 |
| b | Slope \* diabetes | --- | --- | --- | -0.00 (0.08) .98 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.30 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .22 | 0.00 (0.00) .22 | 0.00 (0.00) .21 | 0.00 (0.00) .35 |
| a | Var (Residual) | 0.05 (0.00) <.01 | 0.05 (0.00) <.01 | 0.04 (0.00) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 1.82 (0.40) <.01 | 1.64 (0.38) <.01 | 1.64 (0.38) <.01 | 1.70 (0.38) <.01 |
| b | Var (Slope) | 0.01 (0.06) .81 | 0.01 (0.06) .81 | 0.01 (0.06) .83 | 0.01 (0.06) .84 |
| b | Var (Residual) | 2.74 (0.20) <.01 | 2.74 (0.20) <.01 | 2.74 (0.20) <.01 | 2.72 (0.21) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .08 | -0.01 (0.00) .09 | -0.01 (0.00) .04 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | 0.02 (0.15) .91 | 0.02 (0.15) .90 | 0.01 (0.15) .96 | -0.02 (0.15) .87 |
|  | Correlation of Levels | 0.214 | 0.145 | 0.120 | 0.13 |
|  | Correlation of Slopes | 0.567 | 0.567 | 0.612 | 0.58 |
|  | Correlation of Residuals | -0.028 | -0.028 | -0.031 | -0.02 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,077 | -3,059 | -3,026 | -2,814 |
|  | AIC | 6,196 | 6,167 | 6,109 | 5,711 |
|  | BIC | 6,277 | 6,264 | 6,220 | 5,865 |

## bstory\_im

Gender = *male*; Process (a) = *fev*; Process (b) = *bstory\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.15 (0.06) .02 | 0.11 (0.06) .08 | 0.08 (0.06) .18 | 0.09 (0.06) .15 |
| ab | Covar (Slopes) | 0.00 (0.00) .20 | 0.00 (0.00) .21 | 0.00 (0.00) .21 | 0.00 (0.00) .28 |
| ab | Covar (Residuals) | -0.02 (0.01) .22 | -0.02 (0.01) .22 | -0.02 (0.01) .22 | -0.02 (0.01) .29 |
| er | Corr (Levels) | 0.25 (0.10) .01 | 0.19 (0.11) .07 | 0.14 (0.11) .18 | 0.16 (0.11) .14 |
| er | Corr (Slopes) | 0.78 (0.90) .39 | 0.77 (0.94) .41 | 0.78 (0.94) .41 | 0.80 (1.12) .47 |
| er | Corr (Residuals) | -0.06 (0.04) .22 | -0.06 (0.04) .22 | -0.06 (0.04) .22 | -0.05 (0.05) .29 |
| a | Level | 2.39 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.02) .11 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.69 (0.41) <.01 | 2.00 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .05 | -0.00 (0.00) .34 |
| a | Slope \* education | --- | -0.00 (0.00) .54 | -0.00 (0.00) .42 | -0.00 (0.00) .64 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .36 | 0.06 (0.12) .60 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 10.05 (0.14) <.01 | 9.28 (0.25) <.01 | 9.29 (0.25) <.01 | 9.17 (0.32) <.01 |
| b | Slope | -0.17 (0.05) <.01 | -0.08 (0.08) .31 | -0.08 (0.08) .29 | -0.06 (0.12) .60 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.09 (0.02) <.01 | 0.08 (0.02) <.01 | 0.09 (0.03) <.01 |
| b | Level \* height | --- | --- | 1.93 (1.29) .14 | 1.66 (1.31) .21 |
| b | Level \* smoking | --- | --- | --- | 0.17 (0.18) .34 |
| b | Level \* cardio | --- | --- | --- | 0.20 (0.22) .35 |
| b | Level \* diabetes | --- | --- | --- | 0.03 (0.21) .88 |
| b | Slope \* age | 0.01 (0.00) .05 | 0.01 (0.00) .05 | 0.01 (0.00) .06 | 0.01 (0.00) .19 |
| b | Slope \* education | --- | -0.01 (0.01) .21 | -0.01 (0.01) .26 | -0.01 (0.01) .28 |
| b | Slope \* height | --- | --- | -0.10 (0.43) .82 | 0.16 (0.44) .71 |
| b | Slope \* smoking | --- | --- | --- | -0.10 (0.07) .16 |
| b | Slope \* cardio | --- | --- | --- | 0.05 (0.08) .53 |
| b | Slope \* diabetes | --- | --- | --- | 0.05 (0.08) .53 |
| a | Var (Level) | 0.32 (0.03) <.01 | 0.30 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .20 | 0.00 (0.00) .21 | 0.00 (0.00) .19 | 0.00 (0.00) .28 |
| a | Var (Residual) | 0.04 (0.00) <.01 | 0.04 (0.00) <.01 | 0.04 (0.00) <.01 | 0.04 (0.01) <.01 |
| b | Var (Level) | 1.18 (0.24) <.01 | 1.07 (0.22) <.01 | 1.05 (0.22) <.01 | 1.10 (0.24) <.01 |
| b | Var (Slope) | 0.02 (0.03) .48 | 0.02 (0.03) .50 | 0.02 (0.03) .50 | 0.02 (0.04) .55 |
| b | Var (Residual) | 2.22 (0.14) <.01 | 2.22 (0.14) <.01 | 2.22 (0.14) <.01 | 2.21 (0.15) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .08 | -0.01 (0.00) .09 | -0.01 (0.00) .04 | -0.01 (0.00) .05 |
| b | Covar (Level, Slope) | -0.03 (0.08) .71 | -0.02 (0.08) .82 | -0.02 (0.08) .81 | -0.03 (0.08) .70 |
|  | Correlation of Levels | 0.251 | 0.190 | 0.144 | 0.160 |
|  | Correlation of Slopes | 0.722 | 0.737 | 0.737 | 1.066 |
|  | Correlation of Residuals | -0.054 | -0.054 | -0.054 | -0.051 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,913 | -2,898 | -2,867 | -2,667 |
|  | AIC | 5,868 | 5,845 | 5,791 | 5,415 |
|  | BIC | 5,949 | 5,942 | 5,903 | 5,570 |

## categories

Gender = *male*; Process (a) = *fev*; Process (b) = *categories*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 1.18 (0.31) <.01 | 0.87 (0.29) <.01 | 0.66 (0.27) .01 | 0.62 (0.29) .03 |
| ab | Covar (Slopes) | 0.01 (0.01) .45 | 0.01 (0.01) .43 | 0.01 (0.01) .57 | 0.00 (0.01) .75 |
| ab | Covar (Residuals) | -0.01 (0.05) .76 | -0.01 (0.05) .78 | -0.01 (0.05) .84 | -0.01 (0.05) .76 |
| er | Corr (Levels) | 0.27 (0.06) <.01 | 0.22 (0.07) <.01 | 0.17 (0.07) .01 | 0.16 (0.07) .02 |
| er | Corr (Slopes) | 0.32 (0.39) .42 | 0.33 (0.39) .40 | 0.23 (0.38) .55 | 0.17 (0.50) .73 |
| er | Corr (Residuals) | -0.01 (0.05) .76 | -0.01 (0.05) .78 | -0.01 (0.05) .84 | -0.01 (0.05) .76 |
| a | Level | 2.39 (0.06) <.01 | 2.09 (0.09) <.01 | 2.12 (0.09) <.01 | 2.36 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .06 | -0.03 (0.01) .10 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.66 (0.41) <.01 | 1.97 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.12 (0.08) .15 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .04 | -0.00 (0.00) .29 |
| a | Slope \* education | --- | -0.00 (0.00) .62 | -0.00 (0.00) .50 | -0.00 (0.00) .72 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .43 | 0.05 (0.12) .69 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .14 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .34 |
| b | Level | 35.33 (0.77) <.01 | 30.15 (1.19) <.01 | 30.17 (1.18) <.01 | 31.21 (1.49) <.01 |
| b | Slope | 0.01 (0.17) .96 | -0.06 (0.32) .86 | -0.05 (0.32) .88 | -0.05 (0.38) .89 |
| b | Level \* age | -0.28 (0.06) <.01 | -0.29 (0.06) <.01 | -0.28 (0.06) <.01 | -0.29 (0.06) <.01 |
| b | Level \* education | --- | 0.62 (0.11) <.01 | 0.58 (0.12) <.01 | 0.54 (0.12) <.01 |
| b | Level \* height | --- | --- | 12.16 (5.97) .04 | 12.27 (6.08) .04 |
| b | Level \* smoking | --- | --- | --- | -0.86 (0.92) .35 |
| b | Level \* cardio | --- | --- | --- | 0.35 (1.04) .73 |
| b | Level \* diabetes | --- | --- | --- | -0.21 (1.06) .84 |
| b | Slope \* age | -0.04 (0.01) .02 | -0.04 (0.02) .01 | -0.04 (0.01) .01 | -0.04 (0.02) .01 |
| b | Slope \* education | --- | 0.01 (0.03) .78 | 0.01 (0.03) .86 | -0.00 (0.04) .98 |
| b | Slope \* height | --- | --- | 0.86 (1.49) .56 | 1.53 (1.52) .31 |
| b | Slope \* smoking | --- | --- | --- | 0.15 (0.23) .50 |
| b | Slope \* cardio | --- | --- | --- | 0.14 (0.29) .63 |
| b | Slope \* diabetes | --- | --- | --- | -0.25 (0.27) .35 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .34 | 0.00 (0.00) .34 | 0.00 (0.00) .32 | 0.00 (0.00) .52 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 60.30 (6.32) <.01 | 55.22 (6.10) <.01 | 53.56 (5.95) <.01 | 54.93 (6.33) <.01 |
| b | Var (Slope) | 0.78 (0.35) .03 | 0.80 (0.36) .03 | 0.79 (0.36) .03 | 0.83 (0.38) .03 |
| b | Var (Residual) | 20.73 (1.24) <.01 | 20.74 (1.25) <.01 | 20.67 (1.25) <.01 | 20.37 (1.30) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .14 | -0.01 (0.00) .06 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.40 (1.19) .73 | -0.53 (1.20) .66 | -0.57 (1.18) .63 | -1.14 (1.22) .35 |
|  | Correlation of Levels | 0.271 | 0.216 | 0.1719 | 0.162 |
|  | Correlation of Slopes | 0.321 | 0.355 | 0.2495 | 0.139 |
|  | Correlation of Residuals | -0.014 | -0.013 | -0.0092 | -0.014 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,630 | -4,612 | -4,568 | -4,250 |
|  | AIC | 9,303 | 9,274 | 9,194 | 8,582 |
|  | BIC | 9,384 | 9,371 | 9,305 | 8,736 |

## digit\_b

Gender = *male*; Process (a) = *fev*; Process (b) = *digit\_b*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.20 (0.06) <.01 | 0.11 (0.06) .08 | 0.10 (0.06) .09 | 0.13 (0.06) .03 |
| ab | Covar (Slopes) | -0.00 (0.00) .47 | -0.00 (0.00) .54 | -0.00 (0.00) .49 | -0.00 (0.00) .61 |
| ab | Covar (Residuals) | 0.00 (0.01) .98 | -0.00 (0.01) .95 | -0.00 (0.01) .88 | -0.00 (0.01) .77 |
| er | Corr (Levels) | 0.21 (0.06) <.01 | 0.12 (0.07) .08 | 0.12 (0.07) .09 | 0.16 (0.07) .03 |
| er | Corr (Slopes) | -0.40 (0.62) .52 | -0.33 (0.59) .58 | -0.35 (0.57) .53 | -0.43 (0.98) .66 |
| er | Corr (Residuals) | -0.00 (0.04) .98 | -0.00 (0.04) .95 | -0.01 (0.04) .88 | -0.01 (0.04) .77 |
| a | Level | 2.40 (0.06) <.01 | 2.09 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.02) .12 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.03 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.12 (0.08) .15 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .35 |
| a | Slope \* education | --- | -0.00 (0.00) .50 | -0.00 (0.00) .39 | -0.00 (0.00) .63 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.05 (0.12) .69 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .30 |
| b | Level | 6.53 (0.20) <.01 | 4.95 (0.28) <.01 | 4.93 (0.28) <.01 | 4.73 (0.34) <.01 |
| b | Slope | 0.03 (0.05) .54 | -0.00 (0.08) .99 | 0.01 (0.09) .90 | 0.11 (0.10) .25 |
| b | Level \* age | -0.03 (0.02) .04 | -0.04 (0.01) .02 | -0.04 (0.01) .02 | -0.03 (0.02) .04 |
| b | Level \* education | --- | 0.19 (0.03) <.01 | 0.19 (0.03) <.01 | 0.20 (0.03) <.01 |
| b | Level \* height | --- | --- | 0.37 (1.42) .80 | 0.44 (1.46) .76 |
| b | Level \* smoking | --- | --- | --- | 0.15 (0.21) .49 |
| b | Level \* cardio | --- | --- | --- | 0.25 (0.22) .27 |
| b | Level \* diabetes | --- | --- | --- | 0.04 (0.23) .84 |
| b | Slope \* age | -0.00 (0.00) .56 | -0.00 (0.00) .46 | -0.00 (0.00) .50 | -0.00 (0.00) .30 |
| b | Slope \* education | --- | 0.00 (0.01) .58 | 0.00 (0.01) .88 | -0.00 (0.01) .57 |
| b | Slope \* height | --- | --- | 0.69 (0.39) .08 | 0.71 (0.41) .08 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.06) .69 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.07) .74 |
| b | Slope \* diabetes | --- | --- | --- | -0.05 (0.06) .44 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .34 | 0.00 (0.00) .34 | 0.00 (0.00) .31 | 0.00 (0.00) .55 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 2.90 (0.28) <.01 | 2.44 (0.25) <.01 | 2.45 (0.25) <.01 | 2.54 (0.27) <.01 |
| b | Var (Slope) | 0.03 (0.02) .16 | 0.03 (0.02) .14 | 0.03 (0.02) .15 | 0.02 (0.02) .28 |
| b | Var (Residual) | 1.57 (0.09) <.01 | 1.57 (0.09) <.01 | 1.57 (0.09) <.01 | 1.57 (0.09) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .11 | -0.01 (0.00) .13 | -0.01 (0.00) .06 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | 0.00 (0.06) .99 | -0.02 (0.06) .78 | -0.02 (0.06) .75 | -0.03 (0.06) .61 |
|  | Correlation of Levels | 0.21 | 0.1250 | 0.1239 | 0.163 |
|  | Correlation of Slopes | -0.36 | -0.3482 | -0.3592 | -0.426 |
|  | Correlation of Residuals | 0.00 | -0.0037 | -0.0074 | -0.011 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,867 | -2,836 | -2,804 | -2,605 |
|  | AIC | 5,776 | 5,722 | 5,665 | 5,292 |
|  | BIC | 5,857 | 5,818 | 5,777 | 5,446 |

## digit\_f

Gender = *male*; Process (a) = *fev*; Process (b) = *digit\_f*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.17 (0.06) .01 | 0.07 (0.06) .18 | 0.06 (0.06) .26 | 0.06 (0.06) .27 |
| ab | Covar (Slopes) | 0.00 (0.00) .67 | 0.00 (0.00) .64 | 0.00 (0.00) .66 | 0.00 (0.00) .78 |
| ab | Covar (Residuals) | -0.01 (0.01) .44 | -0.01 (0.01) .43 | -0.01 (0.01) .39 | -0.01 (0.01) .56 |
| er | Corr (Levels) | 0.18 (0.06) <.01 | 0.09 (0.07) .18 | 0.08 (0.07) .26 | 0.08 (0.07) .27 |
| er | Corr (Slopes) | 0.29 (0.78) .71 | 0.32 (0.77) .68 | 0.30 (0.77) .69 | 0.26 (1.03) .80 |
| er | Corr (Residuals) | -0.03 (0.04) .44 | -0.03 (0.04) .43 | -0.04 (0.04) .39 | -0.02 (0.04) .56 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.01) .11 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .06 | -0.00 (0.00) .04 | -0.00 (0.00) .31 |
| a | Slope \* education | --- | -0.00 (0.00) .47 | -0.00 (0.00) .36 | -0.00 (0.00) .56 |
| a | Slope \* height | --- | --- | 0.11 (0.11) .34 | 0.06 (0.12) .63 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .32 |
| b | Level | 8.94 (0.17) <.01 | 7.29 (0.25) <.01 | 7.21 (0.25) <.01 | 7.01 (0.30) <.01 |
| b | Slope | -0.04 (0.04) .29 | 0.01 (0.08) .94 | 0.02 (0.08) .82 | 0.13 (0.09) .16 |
| b | Level \* age | -0.04 (0.02) .01 | -0.04 (0.01) <.01 | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.20 (0.02) <.01 | 0.21 (0.02) <.01 | 0.20 (0.02) <.01 |
| b | Level \* height | --- | --- | 0.09 (1.41) .95 | 0.36 (1.43) .80 |
| b | Level \* smoking | --- | --- | --- | 0.43 (0.21) .04 |
| b | Level \* cardio | --- | --- | --- | 0.22 (0.23) .34 |
| b | Level \* diabetes | --- | --- | --- | -0.14 (0.23) .53 |
| b | Slope \* age | 0.00 (0.00) .64 | 0.00 (0.00) .68 | 0.00 (0.00) .63 | -0.00 (0.00) .76 |
| b | Slope \* education | --- | -0.01 (0.01) .51 | -0.01 (0.01) .38 | -0.01 (0.01) .18 |
| b | Slope \* height | --- | --- | 0.23 (0.40) .57 | 0.11 (0.41) .79 |
| b | Slope \* smoking | --- | --- | --- | -0.08 (0.06) .16 |
| b | Slope \* cardio | --- | --- | --- | -0.08 (0.07) .22 |
| b | Slope \* diabetes | --- | --- | --- | 0.02 (0.06) .73 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .29 | 0.00 (0.00) .28 | 0.00 (0.00) .26 | 0.00 (0.00) .40 |
| a | Var (Residual) | 0.05 (0.00) <.01 | 0.05 (0.00) <.01 | 0.05 (0.00) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 2.80 (0.28) <.01 | 2.29 (0.26) <.01 | 2.22 (0.25) <.01 | 2.15 (0.26) <.01 |
| b | Var (Slope) | 0.02 (0.02) .48 | 0.02 (0.02) .47 | 0.02 (0.02) .48 | 0.01 (0.02) .58 |
| b | Var (Residual) | 1.57 (0.10) <.01 | 1.58 (0.10) <.01 | 1.58 (0.10) <.01 | 1.51 (0.09) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .06 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.03 (0.07) .68 | -0.02 (0.06) .78 | -0.01 (0.06) .87 | -0.02 (0.06) .72 |
|  | Correlation of Levels | 0.181 | 0.090 | 0.079 | 0.079 |
|  | Correlation of Slopes | 0.243 | 0.500 | 0.250 | 0.289 |
|  | Correlation of Residuals | -0.033 | -0.033 | -0.037 | -0.027 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,849 | -2,817 | -2,782 | -2,560 |
|  | AIC | 5,740 | 5,683 | 5,623 | 5,202 |
|  | BIC | 5,821 | 5,780 | 5,734 | 5,357 |

## digit\_o

Gender = *male*; Process (a) = *fev*; Process (b) = *digit\_o*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.08 (0.05) .11 | 0.02 (0.05) .69 | -0.01 (0.04) .78 | -0.01 (0.04) .74 |
| ab | Covar (Slopes) | 0.00 (0.00) .91 | 0.00 (0.00) .89 | 0.00 (0.00) .90 | 0.00 (0.00) .96 |
| ab | Covar (Residuals) | 0.00 (0.01) .99 | 0.00 (0.01) .99 | 0.00 (0.01) .98 | 0.00 (0.01) .95 |
| er | Corr (Levels) | 0.12 (0.07) .10 | 0.03 (0.08) .69 | -0.02 (0.08) .78 | -0.02 (0.08) .74 |
| er | Corr (Slopes) | 0.16 (1.44) .91 | 0.21 (1.52) .89 | 0.18 (1.50) .90 | 0.09 (1.68) .96 |
| er | Corr (Residuals) | 0.00 (0.05) .99 | 0.00 (0.05) .99 | 0.00 (0.05) .98 | 0.00 (0.05) .95 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .08 | -0.02 (0.01) .13 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) .01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .18 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .31 |
| a | Slope \* education | --- | -0.00 (0.00) .50 | -0.00 (0.00) .37 | -0.00 (0.00) .59 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .36 | 0.06 (0.12) .63 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .31 |
| b | Level | 7.74 (0.14) <.01 | 6.76 (0.22) <.01 | 6.79 (0.21) <.01 | 6.89 (0.25) <.01 |
| b | Slope | -0.03 (0.04) .46 | -0.05 (0.06) .39 | -0.05 (0.06) .46 | -0.04 (0.09) .62 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.12 (0.02) <.01 | 0.10 (0.02) <.01 | 0.10 (0.02) <.01 |
| b | Level \* height | --- | --- | 2.59 (1.10) .02 | 2.91 (1.11) .01 |
| b | Level \* smoking | --- | --- | --- | -0.02 (0.16) .92 |
| b | Level \* cardio | --- | --- | --- | 0.21 (0.19) .28 |
| b | Level \* diabetes | --- | --- | --- | -0.19 (0.17) .27 |
| b | Slope \* age | -0.00 (0.00) .35 | -0.00 (0.00) .30 | -0.00 (0.00) .28 | -0.00 (0.00) .20 |
| b | Slope \* education | --- | 0.00 (0.01) .59 | 0.00 (0.01) .69 | 0.01 (0.01) .37 |
| b | Slope \* height | --- | --- | 0.09 (0.32) .77 | 0.06 (0.33) .86 |
| b | Slope \* smoking | --- | --- | --- | -0.00 (0.05) .99 |
| b | Slope \* cardio | --- | --- | --- | -0.03 (0.06) .64 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.05) .59 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .29 | 0.00 (0.00) .27 | 0.00 (0.00) .42 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 1.39 (0.25) <.01 | 1.21 (0.23) <.01 | 1.18 (0.23) <.01 | 1.20 (0.23) <.01 |
| b | Var (Slope) | 0.00 (0.02) .79 | 0.00 (0.02) .81 | 0.00 (0.02) .81 | 0.00 (0.02) .83 |
| b | Var (Residual) | 1.25 (0.09) <.01 | 1.25 (0.09) <.01 | 1.25 (0.09) <.01 | 1.19 (0.08) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | 0.01 (0.06) .83 | 0.00 (0.06) .93 | 0.01 (0.06) .92 | 0.01 (0.06) .90 |
|  | Correlation of Levels | 0.12 | 0.032 | -0.023 | -0.0248 |
|  | Correlation of Slopes | 0.00 | 0.447 | 0.000 | 0.0000 |
|  | Correlation of Residuals | 0.00 | 0.000 | 0.000 | 0.0043 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,606 | -2,580 | -2,548 | -2,348 |
|  | AIC | 5,255 | 5,211 | 5,154 | 4,778 |
|  | BIC | 5,336 | 5,307 | 5,265 | 4,932 |

## ideas

Gender = *male*; Process (a) = *fev*; Process (b) = *ideas*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.02 (0.02) .17 | 0.01 (0.02) .41 | 0.00 (0.02) .94 | -0.00 (0.02) .82 |
| ab | Covar (Slopes) | -0.00 (0.00) .59 | -0.00 (0.00) .60 | -0.00 (0.00) .64 | -0.00 (0.00) .32 |
| ab | Covar (Residuals) | 0.00 (0.00) .47 | 0.00 (0.00) .49 | 0.00 (0.00) .57 | 0.00 (0.00) .41 |
| er | Corr (Levels) | 0.10 (0.09) .29 | 0.07 (0.10) .49 | 0.01 (0.08) .94 | -0.02 (0.08) .82 |
| er | Corr (Slopes) | -0.14 (0.26) .58 | -0.14 (0.26) .59 | -0.13 (0.26) .63 | -0.36 (0.38) .34 |
| er | Corr (Residuals) | 0.04 (0.05) .48 | 0.04 (0.05) .50 | 0.03 (0.05) .58 | 0.04 (0.05) .42 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.03 (0.01) <.01 | -0.02 (0.01) .09 | -0.02 (0.02) .14 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .04 | -0.00 (0.00) .04 | -0.00 (0.00) .04 | -0.00 (0.00) .28 |
| a | Slope \* education | --- | -0.00 (0.00) .52 | -0.00 (0.00) .40 | -0.00 (0.00) .67 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .40 | 0.05 (0.12) .70 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 7.88 (0.04) <.01 | 7.74 (0.08) <.01 | 7.74 (0.08) <.01 | 7.72 (0.09) <.01 |
| b | Slope | -0.02 (0.02) .22 | -0.01 (0.03) .67 | -0.01 (0.03) .83 | 0.00 (0.04) .99 |
| b | Level \* age | -0.01 (0.01) .14 | -0.01 (0.01) .13 | -0.01 (0.01) .15 | -0.01 (0.01) .28 |
| b | Level \* education | --- | 0.02 (0.01) .08 | 0.02 (0.01) .09 | 0.02 (0.01) .06 |
| b | Level \* height | --- | --- | 0.63 (0.39) .10 | 0.83 (0.41) .04 |
| b | Level \* smoking | --- | --- | --- | -0.07 (0.07) .35 |
| b | Level \* cardio | --- | --- | --- | 0.07 (0.07) .28 |
| b | Level \* diabetes | --- | --- | --- | -0.02 (0.07) .81 |
| b | Slope \* age | 0.00 (0.00) .07 | 0.00 (0.00) .09 | 0.00 (0.00) .08 | 0.00 (0.00) .12 |
| b | Slope \* education | --- | -0.00 (0.00) .84 | -0.00 (0.00) .69 | -0.00 (0.00) .35 |
| b | Slope \* height | --- | --- | -0.09 (0.14) .54 | -0.16 (0.14) .25 |
| b | Slope \* smoking | --- | --- | --- | 0.04 (0.03) .16 |
| b | Slope \* cardio | --- | --- | --- | -0.01 (0.02) .71 |
| b | Slope \* diabetes | --- | --- | --- | 0.00 (0.03) .94 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .31 | 0.00 (0.00) .31 | 0.00 (0.00) .28 | 0.00 (0.00) .47 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 0.18 (0.14) .21 | 0.17 (0.14) .21 | 0.17 (0.14) .22 | 0.20 (0.15) .19 |
| b | Var (Slope) | 0.02 (0.02) .25 | 0.02 (0.02) .24 | 0.02 (0.02) .26 | 0.03 (0.02) .23 |
| b | Var (Residual) | 0.21 (0.05) <.01 | 0.21 (0.05) <.01 | 0.21 (0.05) <.01 | 0.18 (0.05) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | -0.06 (0.05) .26 | -0.05 (0.05) .26 | -0.05 (0.05) .26 | -0.06 (0.05) .23 |
|  | Correlation of Levels | 0.098 | 0.066 | 0.0046 | -0.017 |
|  | Correlation of Slopes | -0.209 | -0.209 | -0.2132 | -0.385 |
|  | Correlation of Residuals | 0.041 | 0.030 | 0.0305 | 0.043 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -1,410 | -1,398 | -1,366 | -1,216 |
|  | AIC | 2,863 | 2,846 | 2,791 | 2,514 |
|  | BIC | 2,944 | 2,943 | 2,902 | 2,669 |

## line

Gender = *male*; Process (a) = *fev*; Process (b) = *line*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.41 (0.10) <.01 | 0.29 (0.09) <.01 | 0.21 (0.08) .01 | 0.17 (0.08) .05 |
| ab | Covar (Slopes) | 0.00 (0.00) .65 | 0.00 (0.00) .64 | 0.00 (0.00) .68 | 0.00 (0.00) .60 |
| ab | Covar (Residuals) | -0.01 (0.02) .68 | -0.01 (0.02) .68 | -0.01 (0.02) .68 | -0.01 (0.02) .68 |
| er | Corr (Levels) | 0.31 (0.06) <.01 | 0.24 (0.07) <.01 | 0.19 (0.07) .01 | 0.15 (0.08) .04 |
| er | Corr (Slopes) | 0.21 (0.47) .65 | 0.23 (0.48) .64 | 0.21 (0.50) .68 | 0.39 (0.74) .60 |
| er | Corr (Residuals) | -0.02 (0.04) .68 | -0.02 (0.04) .68 | -0.02 (0.04) .68 | -0.02 (0.04) .68 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.02) .11 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.67 (0.41) <.01 | 1.98 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) .01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .31 |
| a | Slope \* education | --- | -0.00 (0.00) .54 | -0.00 (0.00) .41 | -0.00 (0.00) .58 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .36 | 0.06 (0.12) .61 |
| a | Slope \* smoking | --- | --- | --- | 0.05 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .10 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .32 |
| b | Level | 11.60 (0.26) <.01 | 9.54 (0.43) <.01 | 9.63 (0.43) <.01 | 10.31 (0.50) <.01 |
| b | Slope | 0.04 (0.07) .61 | -0.01 (0.12) .90 | 0.03 (0.12) .80 | -0.03 (0.14) .84 |
| b | Level \* age | -0.01 (0.02) .60 | -0.02 (0.02) .44 | -0.01 (0.02) .70 | -0.02 (0.02) .36 |
| b | Level \* education | --- | 0.25 (0.04) <.01 | 0.22 (0.04) <.01 | 0.21 (0.05) <.01 |
| b | Level \* height | --- | --- | 4.61 (2.22) .04 | 5.35 (2.29) .02 |
| b | Level \* smoking | --- | --- | --- | -0.86 (0.30) <.01 |
| b | Level \* cardio | --- | --- | --- | -0.00 (0.35) .99 |
| b | Level \* diabetes | --- | --- | --- | -0.34 (0.34) .32 |
| b | Slope \* age | 0.00 (0.01) .90 | 0.00 (0.01) .99 | 0.00 (0.01) .92 | 0.00 (0.01) .82 |
| b | Slope \* education | --- | 0.01 (0.01) .54 | 0.00 (0.01) .97 | 0.00 (0.01) .94 |
| b | Slope \* height | --- | --- | 0.88 (0.55) .11 | 1.00 (0.58) .08 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.09) .89 |
| b | Slope \* cardio | --- | --- | --- | 0.11 (0.12) .33 |
| b | Slope \* diabetes | --- | --- | --- | 0.06 (0.10) .54 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .29 | 0.00 (0.00) .48 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 5.64 (0.68) <.01 | 4.84 (0.57) <.01 | 4.64 (0.55) <.01 | 4.47 (0.56) <.01 |
| b | Var (Slope) | 0.07 (0.04) .11 | 0.07 (0.04) .11 | 0.05 (0.04) .17 | 0.05 (0.04) .22 |
| b | Var (Residual) | 3.35 (0.30) <.01 | 3.35 (0.30) <.01 | 3.31 (0.30) <.01 | 3.28 (0.30) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .11 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.16 (0.13) .22 | -0.18 (0.12) .15 | -0.20 (0.12) .11 | -0.20 (0.12) .08 |
|  | Correlation of Levels | 0.306 | 0.242 | 0.189 | 0.155 |
|  | Correlation of Slopes | 0.241 | 0.244 | 0.277 | 0.295 |
|  | Correlation of Residuals | -0.018 | -0.018 | -0.018 | -0.018 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,302 | -3,274 | -3,223 | -2,982 |
|  | AIC | 6,647 | 6,598 | 6,505 | 6,046 |
|  | BIC | 6,728 | 6,694 | 6,616 | 6,201 |

## logic\_de

Gender = *male*; Process (a) = *fev*; Process (b) = *logic\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.40 (0.14) <.01 | 0.28 (0.12) .03 | 0.21 (0.12) .07 | 0.23 (0.12) .05 |
| ab | Covar (Slopes) | 0.00 (0.01) .95 | 0.00 (0.01) .99 | -0.00 (0.01) .91 | 0.00 (0.01) .90 |
| ab | Covar (Residuals) | -0.01 (0.02) .78 | -0.01 (0.02) .80 | -0.00 (0.02) .85 | -0.01 (0.02) .76 |
| er | Corr (Levels) | 0.21 (0.07) <.01 | 0.16 (0.07) .02 | 0.12 (0.07) .07 | 0.14 (0.07) .04 |
| er | Corr (Slopes) | -0.02 (0.34) .95 | 0.00 (0.34) .99 | -0.04 (0.34) .91 | 0.05 (0.44) .90 |
| er | Corr (Residuals) | -0.01 (0.04) .78 | -0.01 (0.04) .79 | -0.01 (0.04) .85 | -0.01 (0.04) .76 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .08 | -0.02 (0.02) .12 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .34 |
| a | Slope \* education | --- | -0.00 (0.00) .49 | -0.00 (0.00) .38 | -0.00 (0.00) .60 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.05 (0.12) .66 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .31 |
| b | Level | 10.02 (0.37) <.01 | 7.83 (0.67) <.01 | 7.82 (0.67) <.01 | 7.56 (0.83) <.01 |
| b | Slope | 0.40 (0.10) <.01 | 0.26 (0.18) .13 | 0.29 (0.17) .09 | 0.20 (0.23) .38 |
| b | Level \* age | -0.12 (0.03) <.01 | -0.12 (0.03) <.01 | -0.12 (0.03) <.01 | -0.12 (0.03) <.01 |
| b | Level \* education | --- | 0.26 (0.06) <.01 | 0.26 (0.06) <.01 | 0.27 (0.07) <.01 |
| b | Level \* height | --- | --- | 2.38 (3.00) .43 | 2.23 (3.01) .46 |
| b | Level \* smoking | --- | --- | --- | -0.04 (0.43) .92 |
| b | Level \* cardio | --- | --- | --- | 0.68 (0.49) .16 |
| b | Level \* diabetes | --- | --- | --- | 0.66 (0.47) .15 |
| b | Slope \* age | -0.01 (0.01) .15 | -0.01 (0.01) .12 | -0.01 (0.01) .13 | -0.01 (0.01) .10 |
| b | Slope \* education | --- | 0.02 (0.02) .29 | 0.01 (0.02) .42 | 0.02 (0.02) .40 |
| b | Slope \* height | --- | --- | 0.21 (0.88) .81 | 0.39 (0.85) .65 |
| b | Slope \* smoking | --- | --- | --- | 0.07 (0.14) .62 |
| b | Slope \* cardio | --- | --- | --- | 0.23 (0.15) .13 |
| b | Slope \* diabetes | --- | --- | --- | -0.07 (0.15) .65 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .31 | 0.00 (0.00) .31 | 0.00 (0.00) .29 | 0.00 (0.00) .49 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 11.49 (1.12) <.01 | 10.59 (1.03) <.01 | 10.48 (1.04) <.01 | 10.74 (1.09) <.01 |
| b | Var (Slope) | 0.32 (0.11) <.01 | 0.32 (0.10) <.01 | 0.31 (0.10) <.01 | 0.30 (0.11) <.01 |
| b | Var (Residual) | 5.66 (0.36) <.01 | 5.66 (0.36) <.01 | 5.66 (0.36) <.01 | 5.54 (0.37) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.22 (0.26) .38 | -0.30 (0.26) .23 | -0.27 (0.25) .29 | -0.33 (0.26) .20 |
|  | Correlation of Levels | 0.211 | 0.156 | 0.1244 | 0.136 |
|  | Correlation of Slopes | 0.000 | 0.000 | -0.0572 | 0.058 |
|  | Correlation of Residuals | -0.012 | -0.012 | -0.0078 | -0.014 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,738 | -3,717 | -3,680 | -3,419 |
|  | AIC | 7,519 | 7,485 | 7,417 | 6,920 |
|  | BIC | 7,600 | 7,581 | 7,529 | 7,074 |

## logic\_im

Gender = *male*; Process (a) = *fev*; Process (b) = *logic\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.37 (0.13) <.01 | 0.23 (0.12) .06 | 0.14 (0.11) .20 | 0.16 (0.11) .14 |
| ab | Covar (Slopes) | 0.00 (0.01) .98 | 0.00 (0.01) .96 | 0.00 (0.01) .99 | 0.00 (0.01) .90 |
| ab | Covar (Residuals) | -0.01 (0.02) .71 | -0.01 (0.02) .71 | -0.01 (0.02) .75 | -0.01 (0.02) .78 |
| er | Corr (Levels) | 0.21 (0.07) <.01 | 0.14 (0.07) .05 | 0.10 (0.07) .19 | 0.11 (0.07) .14 |
| er | Corr (Slopes) | 0.01 (0.51) .98 | 0.02 (0.52) .96 | -0.00 (0.52) .99 | 0.12 (1.05) .91 |
| er | Corr (Residuals) | -0.02 (0.04) .71 | -0.02 (0.04) .71 | -0.01 (0.04) .75 | -0.01 (0.04) .78 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .07 | -0.02 (0.01) .12 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .33 |
| a | Slope \* education | --- | -0.00 (0.00) .49 | -0.00 (0.00) .38 | -0.00 (0.00) .60 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .39 | 0.05 (0.12) .67 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .31 |
| b | Level | 11.85 (0.35) <.01 | 9.38 (0.63) <.01 | 9.42 (0.63) <.01 | 9.24 (0.79) <.01 |
| b | Slope | 0.20 (0.08) .01 | 0.20 (0.16) .21 | 0.22 (0.16) .17 | 0.24 (0.20) .23 |
| b | Level \* age | -0.13 (0.03) <.01 | -0.13 (0.03) <.01 | -0.13 (0.03) <.01 | -0.13 (0.03) <.01 |
| b | Level \* education | --- | 0.30 (0.06) <.01 | 0.28 (0.06) <.01 | 0.28 (0.07) <.01 |
| b | Level \* height | --- | --- | 4.07 (2.95) .17 | 3.84 (2.94) .19 |
| b | Level \* smoking | --- | --- | --- | 0.06 (0.41) .88 |
| b | Level \* cardio | --- | --- | --- | 0.60 (0.48) .21 |
| b | Level \* diabetes | --- | --- | --- | 0.54 (0.45) .22 |
| b | Slope \* age | -0.00 (0.01) .95 | -0.00 (0.01) .89 | -0.00 (0.01) .89 | -0.00 (0.01) .71 |
| b | Slope \* education | --- | 0.00 (0.02) .95 | -0.00 (0.02) .96 | -0.00 (0.02) .96 |
| b | Slope \* height | --- | --- | -0.11 (0.79) .89 | 0.11 (0.76) .88 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.12) .86 |
| b | Slope \* cardio | --- | --- | --- | 0.04 (0.15) .77 |
| b | Slope \* diabetes | --- | --- | --- | -0.15 (0.14) .28 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .32 | 0.00 (0.00) .32 | 0.00 (0.00) .29 | 0.00 (0.00) .49 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 9.52 (1.05) <.01 | 8.36 (0.93) <.01 | 8.15 (0.93) <.01 | 8.31 (0.98) <.01 |
| b | Var (Slope) | 0.11 (0.09) .22 | 0.11 (0.09) .22 | 0.10 (0.09) .25 | 0.04 (0.09) .64 |
| b | Var (Residual) | 6.52 (0.37) <.01 | 6.52 (0.37) <.01 | 6.50 (0.36) <.01 | 6.50 (0.38) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | 0.07 (0.22) .76 | 0.06 (0.22) .78 | 0.09 (0.21) .66 | 0.13 (0.21) .55 |
|  | Correlation of Levels | 0.214 | 0.144 | 0.095 | 0.108 |
|  | Correlation of Slopes | 0.000 | 0.000 | 0.000 | 0.158 |
|  | Correlation of Residuals | -0.016 | -0.016 | -0.015 | -0.013 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,760 | -3,737 | -3,697 | -3,438 |
|  | AIC | 7,562 | 7,523 | 7,452 | 6,958 |
|  | BIC | 7,642 | 7,620 | 7,563 | 7,113 |

## matrices

Gender = *male*; Process (a) = *fev*; Process (b) = *matrices*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.36 (0.08) <.01 | 0.22 (0.08) <.01 | 0.11 (0.07) .10 | 0.07 (0.07) .28 |
| ab | Covar (Slopes) | 0.01 (0.00) .11 | 0.01 (0.00) .12 | 0.01 (0.00) .12 | 0.00 (0.00) .45 |
| ab | Covar (Residuals) | -0.01 (0.02) .51 | -0.01 (0.02) .51 | -0.01 (0.02) .56 | -0.01 (0.02) .70 |
| er | Corr (Levels) | 0.29 (0.06) <.01 | 0.21 (0.07) <.01 | 0.12 (0.07) .11 | 0.08 (0.08) .28 |
| er | Corr (Slopes) | 0.90 (0.80) .26 | 0.87 (0.77) .26 | 0.85 (0.75) .26 | 0.43 (0.68) .52 |
| er | Corr (Residuals) | -0.03 (0.04) .51 | -0.03 (0.04) .51 | -0.02 (0.04) .55 | -0.02 (0.04) .70 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .10 | -0.02 (0.01) .15 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.72 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .06 | -0.00 (0.00) .38 |
| a | Slope \* education | --- | -0.00 (0.00) .43 | -0.00 (0.00) .34 | -0.00 (0.00) .58 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .43 | 0.05 (0.12) .67 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .34 |
| b | Level | 13.08 (0.26) <.01 | 10.71 (0.41) <.01 | 10.88 (0.39) <.01 | 10.98 (0.46) <.01 |
| b | Slope | 0.03 (0.07) .65 | 0.11 (0.12) .39 | 0.10 (0.12) .41 | 0.06 (0.15) .68 |
| b | Level \* age | -0.07 (0.02) <.01 | -0.08 (0.02) <.01 | -0.07 (0.02) <.01 | -0.07 (0.02) <.01 |
| b | Level \* education | --- | 0.28 (0.04) <.01 | 0.24 (0.04) <.01 | 0.24 (0.04) <.01 |
| b | Level \* height | --- | --- | 8.68 (2.17) <.01 | 9.24 (2.21) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.50 (0.28) .07 |
| b | Level \* cardio | --- | --- | --- | 0.60 (0.31) .05 |
| b | Level \* diabetes | --- | --- | --- | -0.07 (0.33) .82 |
| b | Slope \* age | -0.01 (0.01) .31 | -0.01 (0.01) .31 | -0.01 (0.01) .27 | -0.01 (0.01) .25 |
| b | Slope \* education | --- | -0.01 (0.01) .51 | -0.01 (0.01) .61 | -0.01 (0.01) .60 |
| b | Slope \* height | --- | --- | -0.18 (0.76) .81 | -0.34 (0.79) .66 |
| b | Slope \* smoking | --- | --- | --- | 0.13 (0.09) .13 |
| b | Slope \* cardio | --- | --- | --- | 0.02 (0.11) .86 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.10) .78 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .30 | 0.00 (0.00) .28 | 0.00 (0.00) .35 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 4.88 (0.67) <.01 | 3.84 (0.58) <.01 | 3.32 (0.49) <.01 | 3.18 (0.49) <.01 |
| b | Var (Slope) | 0.05 (0.05) .30 | 0.05 (0.05) .26 | 0.05 (0.05) .28 | 0.05 (0.05) .27 |
| b | Var (Residual) | 3.06 (0.32) <.01 | 3.06 (0.32) <.01 | 3.06 (0.32) <.01 | 3.12 (0.33) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .09 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .05 |
| b | Covar (Level, Slope) | -0.16 (0.15) .28 | -0.15 (0.14) .28 | -0.12 (0.13) .33 | -0.10 (0.13) .45 |
|  | Correlation of Levels | 0.291 | 0.211 | 0.117 | 0.081 |
|  | Correlation of Slopes | 1.000 | 0.971 | 0.990 | 0.408 |
|  | Correlation of Residuals | -0.027 | -0.027 | -0.024 | -0.016 |
|  | N | 336 | 336 | 331 | 308 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,015 | -2,980 | -2,932 | -2,733 |
|  | AIC | 6,071 | 6,009 | 5,922 | 5,547 |
|  | BIC | 6,151 | 6,105 | 6,033 | 5,700 |

## mmse

Gender = *male*; Process (a) = *fev*; Process (b) = *mmse*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.16 (0.07) .02 | 0.09 (0.07) .18 | 0.05 (0.07) .43 | 0.03 (0.06) .63 |
| ab | Covar (Slopes) | -0.00 (0.01) .51 | -0.00 (0.01) .57 | -0.00 (0.01) .41 | -0.00 (0.01) .44 |
| ab | Covar (Residuals) | 0.00 (0.01) .80 | 0.00 (0.01) .82 | 0.00 (0.01) .79 | 0.00 (0.01) .72 |
| er | Corr (Levels) | 0.16 (0.09) .07 | 0.10 (0.09) .25 | 0.06 (0.09) .48 | 0.04 (0.08) .66 |
| er | Corr (Slopes) | -0.33 (0.51) .52 | -0.28 (0.50) .57 | -0.39 (0.47) .41 | -0.58 (0.79) .46 |
| er | Corr (Residuals) | 0.01 (0.05) .80 | 0.01 (0.05) .82 | 0.01 (0.05) .79 | 0.02 (0.05) .72 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.02) .07 | -0.03 (0.02) .10 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.70 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .26 |
| a | Slope \* education | --- | -0.00 (0.00) .60 | -0.00 (0.00) .45 | -0.00 (0.00) .68 |
| a | Slope \* height | --- | --- | 0.12 (0.12) .32 | 0.07 (0.12) .56 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .15 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 28.63 (0.17) <.01 | 27.38 (0.30) <.01 | 27.43 (0.30) <.01 | 27.35 (0.32) <.01 |
| b | Slope | -0.07 (0.05) .16 | -0.02 (0.10) .86 | -0.03 (0.10) .78 | -0.00 (0.12) .99 |
| b | Level \* age | -0.08 (0.02) <.01 | -0.09 (0.02) <.01 | -0.08 (0.02) <.01 | -0.08 (0.02) <.01 |
| b | Level \* education | --- | 0.15 (0.03) <.01 | 0.14 (0.03) <.01 | 0.14 (0.03) <.01 |
| b | Level \* height | --- | --- | 2.86 (1.28) .03 | 3.05 (1.31) .02 |
| b | Level \* smoking | --- | --- | --- | -0.08 (0.24) .73 |
| b | Level \* cardio | --- | --- | --- | 0.27 (0.27) .30 |
| b | Level \* diabetes | --- | --- | --- | 0.02 (0.21) .94 |
| b | Slope \* age | 0.00 (0.01) .94 | -0.00 (0.01) .92 | -0.00 (0.01) .82 | -0.00 (0.01) .57 |
| b | Slope \* education | --- | -0.00 (0.01) .64 | -0.00 (0.01) .72 | -0.01 (0.01) .50 |
| b | Slope \* height | --- | --- | 0.01 (0.55) .98 | -0.05 (0.56) .93 |
| b | Slope \* smoking | --- | --- | --- | -0.03 (0.08) .73 |
| b | Slope \* cardio | --- | --- | --- | 0.11 (0.08) .20 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.08) .39 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .30 | 0.00 (0.00) .26 | 0.00 (0.00) .46 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 3.04 (1.57) .05 | 2.74 (1.48) .06 | 2.72 (1.49) .07 | 2.48 (1.52) .10 |
| b | Var (Slope) | 0.12 (0.08) .11 | 0.13 (0.08) .11 | 0.12 (0.08) .13 | 0.08 (0.08) .29 |
| b | Var (Residual) | 1.89 (0.16) <.01 | 1.90 (0.16) <.01 | 1.90 (0.16) <.01 | 1.93 (0.17) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.33 (0.32) .30 | -0.34 (0.33) .29 | -0.33 (0.32) .30 | -0.26 (0.32) .42 |
|  | Correlation of Levels | 0.16 | 0.10 | 0.061 | 0.037 |
|  | Correlation of Slopes | -0.36 | -0.35 | -0.455 | -0.549 |
|  | Correlation of Residuals | 0.01 | 0.01 | 0.014 | 0.017 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,963 | -2,941 | -2,907 | -2,692 |
|  | AIC | 5,969 | 5,931 | 5,872 | 5,467 |
|  | BIC | 6,050 | 6,028 | 5,984 | 5,621 |

## nart

Gender = *male*; Process (a) = *fev*; Process (b) = *nart*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.31 (0.07) <.01 | 0.15 (0.06) .02 | 0.11 (0.06) .06 | 0.11 (0.06) .07 |
| ab | Covar (Slopes) | -0.00 (0.00) .53 | -0.00 (0.00) .52 | -0.00 (0.00) .55 | 0.00 (0.00) .98 |
| ab | Covar (Residuals) | -0.00 (0.01) .88 | -0.00 (0.01) .88 | -0.00 (0.01) .87 | -0.00 (0.01) .70 |
| er | Corr (Levels) | 0.24 (0.06) <.01 | 0.14 (0.06) .01 | 0.11 (0.06) .06 | 0.11 (0.06) .07 |
| er | Corr (Slopes) | -0.31 (0.50) .54 | -0.31 (0.50) .54 | -0.29 (0.49) .56 | -0.01 (0.59) .98 |
| er | Corr (Residuals) | -0.01 (0.05) .88 | -0.01 (0.05) .88 | -0.01 (0.05) .87 | -0.02 (0.05) .70 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .05 | -0.03 (0.01) .09 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.01 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .18 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .06 | -0.00 (0.00) .36 |
| a | Slope \* education | --- | -0.00 (0.00) .54 | -0.00 (0.00) .42 | -0.00 (0.00) .61 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .40 | 0.05 (0.12) .68 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .10 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .30 |
| b | Level | 7.71 (0.22) <.01 | 4.81 (0.34) <.01 | 4.83 (0.34) <.01 | 5.08 (0.41) <.01 |
| b | Slope | 0.07 (0.04) .06 | 0.14 (0.07) .05 | 0.14 (0.07) .05 | 0.12 (0.08) .14 |
| b | Level \* age | 0.02 (0.02) .43 | 0.01 (0.02) .59 | 0.01 (0.02) .46 | 0.01 (0.02) .55 |
| b | Level \* education | --- | 0.35 (0.03) <.01 | 0.34 (0.03) <.01 | 0.31 (0.04) <.01 |
| b | Level \* height | --- | --- | 2.70 (1.66) .10 | 2.78 (1.68) .10 |
| b | Level \* smoking | --- | --- | --- | 0.17 (0.24) .47 |
| b | Level \* cardio | --- | --- | --- | -0.01 (0.27) .96 |
| b | Level \* diabetes | --- | --- | --- | -0.07 (0.25) .77 |
| b | Slope \* age | -0.00 (0.00) .24 | -0.00 (0.00) .23 | -0.00 (0.00) .21 | -0.00 (0.00) .22 |
| b | Slope \* education | --- | -0.01 (0.01) .20 | -0.01 (0.01) .19 | -0.01 (0.01) .35 |
| b | Slope \* height | --- | --- | 0.08 (0.26) .75 | 0.09 (0.27) .75 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.04) .63 |
| b | Slope \* cardio | --- | --- | --- | 0.04 (0.05) .40 |
| b | Slope \* diabetes | --- | --- | --- | -0.06 (0.06) .30 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .29 | 0.00 (0.00) .28 | 0.00 (0.00) .26 | 0.00 (0.00) .48 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 5.33 (0.54) <.01 | 3.77 (0.37) <.01 | 3.69 (0.38) <.01 | 3.55 (0.40) <.01 |
| b | Var (Slope) | 0.02 (0.01) .25 | 0.02 (0.01) .25 | 0.02 (0.01) .25 | 0.02 (0.02) .22 |
| b | Var (Residual) | 0.73 (0.09) <.01 | 0.73 (0.09) <.01 | 0.73 (0.09) <.01 | 0.74 (0.10) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .10 | -0.01 (0.00) .11 | -0.01 (0.00) .05 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | -0.16 (0.08) .04 | -0.13 (0.06) .04 | -0.13 (0.06) .05 | -0.15 (0.07) .04 |
|  | Correlation of Levels | 0.2393 | 0.1393 | 0.1117 | 0.109 |
|  | Correlation of Slopes | -0.2425 | -0.2425 | -0.2425 | 0.000 |
|  | Correlation of Residuals | -0.0054 | -0.0054 | -0.0054 | -0.021 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,541 | -2,480 | -2,448 | -2,275 |
|  | AIC | 5,124 | 5,010 | 4,954 | 4,632 |
|  | BIC | 5,205 | 5,107 | 5,065 | 4,787 |

## num\_comp

Gender = *male*; Process (a) = *fev*; Process (b) = *num\_comp*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.60 (0.24) .01 | 0.28 (0.22) .20 | 0.06 (0.21) .77 | 0.06 (0.21) .77 |
| ab | Covar (Slopes) | -0.02 (0.01) .08 | -0.02 (0.01) .08 | -0.02 (0.01) .09 | -0.02 (0.01) .13 |
| ab | Covar (Residuals) | 0.02 (0.03) .46 | 0.02 (0.03) .48 | 0.02 (0.03) .53 | 0.02 (0.03) .63 |
| er | Corr (Levels) | 0.16 (0.06) .01 | 0.09 (0.07) .20 | 0.02 (0.07) .77 | 0.02 (0.07) .77 |
| er | Corr (Slopes) | -0.88 (0.49) .08 | -0.89 (0.50) .08 | -0.85 (0.48) .08 | -0.75 (0.49) .13 |
| er | Corr (Residuals) | 0.03 (0.04) .46 | 0.03 (0.04) .48 | 0.03 (0.04) .53 | 0.02 (0.04) .64 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .06 | -0.02 (0.02) .10 | -0.06 (0.02) <.01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.69 (0.40) <.01 | 2.00 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .32 |
| a | Slope \* education | --- | -0.00 (0.00) .58 | -0.00 (0.00) .45 | -0.00 (0.00) .71 |
| a | Slope \* height | --- | --- | 0.09 (0.11) .40 | 0.05 (0.12) .68 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .24 |
| b | Level | 26.06 (0.65) <.01 | 20.85 (1.03) <.01 | 21.20 (1.02) <.01 | 21.18 (1.29) <.01 |
| b | Slope | -0.02 (0.13) .85 | 0.29 (0.26) .26 | 0.33 (0.26) .20 | 0.35 (0.32) .28 |
| b | Level \* age | -0.18 (0.06) <.01 | -0.19 (0.05) <.01 | -0.17 (0.05) <.01 | -0.18 (0.06) <.01 |
| b | Level \* education | --- | 0.63 (0.10) <.01 | 0.53 (0.10) <.01 | 0.53 (0.11) <.01 |
| b | Level \* height | --- | --- | 17.39 (5.06) <.01 | 16.81 (5.10) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.60 (0.78) .44 |
| b | Level \* cardio | --- | --- | --- | 0.57 (0.85) .50 |
| b | Level \* diabetes | --- | --- | --- | 1.38 (0.86) .11 |
| b | Slope \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | --- | -0.04 (0.03) .16 | -0.04 (0.03) .12 | -0.05 (0.03) .07 |
| b | Slope \* height | --- | --- | -0.24 (1.08) .82 | 0.13 (1.12) .90 |
| b | Slope \* smoking | --- | --- | --- | 0.26 (0.18) .16 |
| b | Slope \* cardio | --- | --- | --- | -0.15 (0.19) .42 |
| b | Slope \* diabetes | --- | --- | --- | -0.17 (0.18) .34 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .29 | 0.00 (0.00) .28 | 0.00 (0.00) .28 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 |
| b | Var (Level) | 42.16 (3.76) <.01 | 37.18 (3.39) <.01 | 35.55 (3.21) <.01 | 35.35 (3.32) <.01 |
| b | Var (Slope) | 0.41 (0.26) .12 | 0.39 (0.26) .13 | 0.38 (0.26) .14 | 0.41 (0.28) .14 |
| b | Var (Residual) | 13.85 (1.55) <.01 | 13.84 (1.55) <.01 | 13.70 (1.54) <.01 | 13.62 (1.61) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .14 | -0.01 (0.00) .06 | -0.01 (0.00) .06 |
| b | Covar (Level, Slope) | -0.32 (0.93) .73 | -0.03 (0.82) .97 | -0.12 (0.82) .89 | -0.29 (0.85) .73 |
|  | Correlation of Levels | 0.165 | 0.086 | 0.020 | 0.02 |
|  | Correlation of Slopes | -0.991 | -1.011 | -0.977 | -0.89 |
|  | Correlation of Residuals | 0.031 | 0.029 | 0.026 | 0.02 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,333 | -4,308 | -4,257 | -3,958 |
|  | AIC | 8,707 | 8,667 | 8,573 | 7,997 |
|  | BIC | 8,788 | 8,763 | 8,684 | 8,152 |

## symbol

Gender = *male*; Process (a) = *fev*; Process (b) = *symbol*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 1.59 (0.37) <.01 | 1.13 (0.36) <.01 | 0.75 (0.32) .02 | 0.72 (0.33) .03 |
| ab | Covar (Slopes) | -0.00 (0.02) .89 | -0.00 (0.02) .91 | -0.00 (0.02) .89 | -0.01 (0.02) .60 |
| ab | Covar (Residuals) | 0.05 (0.04) .25 | 0.05 (0.04) .25 | 0.05 (0.04) .27 | 0.06 (0.04) .17 |
| er | Corr (Levels) | 0.30 (0.06) <.01 | 0.24 (0.07) <.01 | 0.17 (0.07) .02 | 0.16 (0.07) .02 |
| er | Corr (Slopes) | -0.07 (0.50) .89 | -0.06 (0.53) .91 | -0.07 (0.49) .89 | -0.36 (0.81) .65 |
| er | Corr (Residuals) | 0.05 (0.04) .26 | 0.05 (0.05) .25 | 0.05 (0.04) .27 | 0.06 (0.05) .17 |
| a | Level | 2.40 (0.06) <.01 | 2.09 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .05 | -0.02 (0.01) .10 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.65 (0.41) <.01 | 1.96 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .33 |
| a | Slope \* education | --- | -0.00 (0.00) .58 | -0.00 (0.00) .43 | -0.00 (0.00) .68 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .39 | 0.05 (0.12) .70 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .11 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .33 |
| b | Level | 42.77 (0.99) <.01 | 34.93 (1.58) <.01 | 35.18 (1.53) <.01 | 35.55 (1.93) <.01 |
| b | Slope | 0.09 (0.17) .61 | -0.33 (0.32) .29 | -0.28 (0.32) .39 | -0.13 (0.43) .77 |
| b | Level \* age | -0.45 (0.08) <.01 | -0.47 (0.07) <.01 | -0.45 (0.07) <.01 | -0.46 (0.07) <.01 |
| b | Level \* education | --- | 0.94 (0.15) <.01 | 0.86 (0.15) <.01 | 0.87 (0.16) <.01 |
| b | Level \* height | --- | --- | 22.00 (6.30) <.01 | 22.37 (6.41) <.01 |
| b | Level \* smoking | --- | --- | --- | -0.83 (1.07) .44 |
| b | Level \* cardio | --- | --- | --- | 0.85 (1.13) .45 |
| b | Level \* diabetes | --- | --- | --- | 0.08 (1.26) .95 |
| b | Slope \* age | -0.05 (0.02) <.01 | -0.06 (0.02) <.01 | -0.05 (0.02) <.01 | -0.05 (0.02) <.01 |
| b | Slope \* education | --- | 0.05 (0.03) .10 | 0.04 (0.04) .23 | 0.02 (0.04) .58 |
| b | Slope \* height | --- | --- | 1.51 (1.56) .33 | 2.08 (1.59) .19 |
| b | Slope \* smoking | --- | --- | --- | 0.06 (0.23) .79 |
| b | Slope \* cardio | --- | --- | --- | 0.14 (0.27) .60 |
| b | Slope \* diabetes | --- | --- | --- | -0.18 (0.27) .50 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .30 | 0.00 (0.00) .30 | 0.00 (0.00) .28 | 0.00 (0.00) .49 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 89.47 (8.75) <.01 | 78.10 (7.82) <.01 | 72.66 (7.07) <.01 | 71.21 (7.27) <.01 |
| b | Var (Slope) | 0.85 (0.43) .05 | 0.81 (0.42) .06 | 0.80 (0.41) .05 | 0.65 (0.42) .12 |
| b | Var (Residual) | 19.75 (1.53) <.01 | 19.79 (1.53) <.01 | 19.80 (1.52) <.01 | 20.05 (1.62) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .12 | -0.01 (0.00) .13 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | 1.79 (1.51) .24 | 1.00 (1.43) .48 | 0.85 (1.37) .54 | 1.25 (1.39) .37 |
|  | Correlation of Levels | 0.300 | 0.236 | 0.166 | 0.165 |
|  | Correlation of Slopes | -0.069 | -0.070 | -0.071 | -0.314 |
|  | Correlation of Residuals | 0.051 | 0.052 | 0.049 | 0.063 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,636 | -4,609 | -4,560 | -4,241 |
|  | AIC | 9,314 | 9,268 | 9,179 | 8,565 |
|  | BIC | 9,395 | 9,364 | 9,290 | 8,719 |

## word\_de

Gender = *male*; Process (a) = *fev*; Process (b) = *word\_de*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.18 (0.07) .01 | 0.11 (0.07) .13 | 0.07 (0.07) .29 | 0.08 (0.07) .25 |
| ab | Covar (Slopes) | 0.00 (0.00) .74 | 0.00 (0.00) .73 | 0.00 (0.00) .73 | 0.00 (0.00) .43 |
| ab | Covar (Residuals) | -0.00 (0.01) .90 | -0.00 (0.01) .91 | -0.00 (0.01) .93 | 0.00 (0.01) .92 |
| er | Corr (Levels) | 0.19 (0.07) .01 | 0.12 (0.08) .12 | 0.08 (0.08) .28 | 0.10 (0.08) .25 |
| er | Corr (Slopes) | 0.20 (0.61) .74 | 0.20 (0.61) .74 | 0.20 (0.59) .73 | 0.69 (1.04) .50 |
| er | Corr (Residuals) | -0.00 (0.04) .90 | -0.00 (0.04) .91 | -0.00 (0.04) .93 | 0.00 (0.05) .92 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.03 (0.01) .08 | -0.02 (0.02) .13 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.70 (0.41) <.01 | 2.01 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .16 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .06 | -0.00 (0.00) .06 | -0.00 (0.00) .04 | -0.00 (0.00) .30 |
| a | Slope \* education | --- | -0.00 (0.00) .51 | -0.00 (0.00) .40 | -0.00 (0.00) .62 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .39 | 0.06 (0.12) .65 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .13 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .32 |
| b | Level | 5.92 (0.18) <.01 | 4.72 (0.29) <.01 | 4.73 (0.29) <.01 | 4.80 (0.37) <.01 |
| b | Slope | 0.05 (0.05) .34 | 0.06 (0.08) .46 | 0.07 (0.09) .44 | 0.11 (0.11) .34 |
| b | Level \* age | -0.10 (0.01) <.01 | -0.10 (0.01) <.01 | -0.10 (0.01) <.01 | -0.10 (0.01) <.01 |
| b | Level \* education | --- | 0.14 (0.03) <.01 | 0.14 (0.03) <.01 | 0.14 (0.03) <.01 |
| b | Level \* height | --- | --- | 1.26 (1.33) .34 | 1.62 (1.36) .23 |
| b | Level \* smoking | --- | --- | --- | -0.20 (0.22) .36 |
| b | Level \* cardio | --- | --- | --- | 0.23 (0.24) .35 |
| b | Level \* diabetes | --- | --- | --- | 0.23 (0.26) .36 |
| b | Slope \* age | 0.00 (0.00) .80 | 0.00 (0.00) .84 | 0.00 (0.00) .86 | 0.00 (0.00) .94 |
| b | Slope \* education | --- | -0.00 (0.01) .85 | -0.00 (0.01) .79 | -0.00 (0.01) .71 |
| b | Slope \* height | --- | --- | 0.11 (0.46) .82 | 0.19 (0.45) .68 |
| b | Slope \* smoking | --- | --- | --- | -0.06 (0.07) .35 |
| b | Slope \* cardio | --- | --- | --- | 0.08 (0.07) .25 |
| b | Slope \* diabetes | --- | --- | --- | -0.08 (0.07) .21 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .33 | 0.00 (0.00) .33 | 0.00 (0.00) .30 | 0.00 (0.00) .52 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 2.78 (0.31) <.01 | 2.50 (0.30) <.01 | 2.46 (0.30) <.01 | 2.45 (0.31) <.01 |
| b | Var (Slope) | 0.04 (0.02) .07 | 0.04 (0.02) .07 | 0.04 (0.02) .07 | 0.03 (0.02) .20 |
| b | Var (Residual) | 1.67 (0.11) <.01 | 1.67 (0.11) <.01 | 1.67 (0.11) <.01 | 1.68 (0.12) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .11 | -0.01 (0.00) .12 | -0.01 (0.00) .05 | -0.01 (0.00) .07 |
| b | Covar (Level, Slope) | -0.01 (0.08) .94 | -0.01 (0.07) .92 | -0.00 (0.07) .95 | 0.01 (0.08) .90 |
|  | Correlation of Levels | 0.1920 | 0.1245 | 0.0848 | 0.0943 |
|  | Correlation of Slopes | 0.1562 | 0.1562 | 0.1562 | 0.5669 |
|  | Correlation of Residuals | -0.0036 | -0.0036 | -0.0036 | 0.0036 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,896 | -2,876 | -2,844 | -2,639 |
|  | AIC | 5,834 | 5,803 | 5,746 | 5,361 |
|  | BIC | 5,915 | 5,899 | 5,858 | 5,515 |

## word\_im

Gender = *male*; Process (a) = *fev*; Process (b) = *word\_im*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.31 (0.12) .01 | 0.14 (0.11) .20 | 0.08 (0.11) .43 | 0.06 (0.11) .56 |
| ab | Covar (Slopes) | 0.00 (0.01) .64 | 0.00 (0.01) .63 | 0.00 (0.01) .70 | 0.00 (0.01) .53 |
| ab | Covar (Residuals) | 0.05 (0.02) .07 | 0.05 (0.02) .06 | 0.05 (0.02) .05 | 0.05 (0.03) .04 |
| er | Corr (Levels) | 0.20 (0.07) .01 | 0.10 (0.08) .20 | 0.06 (0.08) .42 | 0.05 (0.08) .56 |
| er | Corr (Slopes) | 0.32 (0.74) .66 | 0.34 (0.75) .65 | 0.26 (0.70) .72 | 0.54 (0.97) .58 |
| er | Corr (Residuals) | 0.09 (0.05) .07 | 0.09 (0.05) .06 | 0.09 (0.05) .05 | 0.10 (0.05) .04 |
| a | Level | 2.39 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.34 (0.12) <.01 |
| a | Slope | -0.03 (0.01) <.01 | -0.02 (0.01) .12 | -0.02 (0.02) .18 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.69 (0.41) <.01 | 2.00 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.19 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .17 |
| a | Level \* diabetes | --- | --- | --- | -0.19 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .05 | -0.00 (0.00) .05 | -0.00 (0.00) .04 | -0.00 (0.00) .27 |
| a | Slope \* education | --- | -0.00 (0.00) .46 | -0.00 (0.00) .36 | -0.00 (0.00) .55 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.06 (0.12) .64 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.02 (0.02) .12 |
| a | Slope \* diabetes | --- | --- | --- | 0.01 (0.01) .35 |
| b | Level | 17.90 (0.32) <.01 | 15.16 (0.54) <.01 | 15.13 (0.55) <.01 | 15.42 (0.69) <.01 |
| b | Slope | 0.21 (0.08) .01 | 0.20 (0.15) .17 | 0.19 (0.15) .20 | 0.19 (0.20) .35 |
| b | Level \* age | -0.14 (0.03) <.01 | -0.15 (0.02) <.01 | -0.15 (0.02) <.01 | -0.15 (0.03) <.01 |
| b | Level \* education | --- | 0.33 (0.05) <.01 | 0.33 (0.05) <.01 | 0.30 (0.06) <.01 |
| b | Level \* height | --- | --- | 1.88 (2.24) .40 | 2.02 (2.29) .38 |
| b | Level \* smoking | --- | --- | --- | -0.27 (0.37) .46 |
| b | Level \* cardio | --- | --- | --- | 0.24 (0.41) .56 |
| b | Level \* diabetes | --- | --- | --- | 0.37 (0.44) .40 |
| b | Slope \* age | 0.00 (0.01) .96 | 0.00 (0.01) .96 | -0.00 (0.01) .91 | -0.00 (0.01) .82 |
| b | Slope \* education | --- | 0.00 (0.02) .88 | 0.00 (0.02) .80 | 0.01 (0.02) .56 |
| b | Slope \* height | --- | --- | -0.18 (0.75) .81 | -0.05 (0.77) .95 |
| b | Slope \* smoking | --- | --- | --- | -0.05 (0.13) .69 |
| b | Slope \* cardio | --- | --- | --- | 0.12 (0.14) .39 |
| b | Slope \* diabetes | --- | --- | --- | -0.14 (0.13) .30 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.29 (0.03) <.01 | 0.28 (0.02) <.01 | 0.26 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .35 | 0.00 (0.00) .36 | 0.00 (0.00) .34 | 0.00 (0.00) .58 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 7.96 (0.90) <.01 | 6.50 (0.86) <.01 | 6.45 (0.85) <.01 | 6.36 (0.87) <.01 |
| b | Var (Slope) | 0.07 (0.06) .30 | 0.07 (0.07) .31 | 0.07 (0.07) .29 | 0.07 (0.07) .29 |
| b | Var (Residual) | 6.08 (0.33) <.01 | 6.10 (0.34) <.01 | 6.06 (0.33) <.01 | 6.03 (0.34) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .13 | -0.01 (0.00) .15 | -0.01 (0.00) .07 | -0.01 (0.00) .09 |
| b | Covar (Level, Slope) | 0.35 (0.22) .12 | 0.33 (0.22) .13 | 0.32 (0.22) .14 | 0.27 (0.22) .22 |
|  | Correlation of Levels | 0.196 | 0.103 | 0.063 | 0.047 |
|  | Correlation of Slopes | 0.367 | 0.367 | 0.239 | 0.471 |
|  | Correlation of Residuals | 0.087 | 0.089 | 0.091 | 0.098 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,691 | -3,662 | -3,624 | -3,366 |
|  | AIC | 7,425 | 7,374 | 7,305 | 6,814 |
|  | BIC | 7,506 | 7,471 | 7,416 | 6,968 |

## word\_rec

Gender = *male*; Process (a) = *fev*; Process (b) = *word\_rec*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.04 (0.04) .31 | 0.02 (0.04) .61 | -0.01 (0.04) .87 | 0.00 (0.04) .93 |
| ab | Covar (Slopes) | -0.00 (0.00) .36 | -0.00 (0.00) .34 | -0.00 (0.00) .28 | -0.00 (0.00) .22 |
| ab | Covar (Residuals) | 0.01 (0.01) .21 | 0.01 (0.01) .20 | 0.01 (0.01) .18 | 0.01 (0.01) .19 |
| er | Corr (Levels) | 0.07 (0.07) .31 | 0.04 (0.08) .61 | -0.01 (0.07) .87 | 0.01 (0.08) .93 |
| er | Corr (Slopes) | -0.38 (0.37) .31 | -0.39 (0.37) .29 | -0.44 (0.36) .22 | -0.58 (0.43) .18 |
| er | Corr (Residuals) | 0.06 (0.05) .20 | 0.06 (0.05) .18 | 0.06 (0.05) .17 | 0.06 (0.05) .17 |
| a | Level | 2.40 (0.06) <.01 | 2.08 (0.09) <.01 | 2.11 (0.09) <.01 | 2.35 (0.12) <.01 |
| a | Slope | -0.04 (0.01) <.01 | -0.02 (0.01) .10 | -0.02 (0.02) .16 | -0.06 (0.02) .01 |
| a | Level \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | --- | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.02 (0.01) .02 |
| a | Level \* height | --- | --- | 1.71 (0.41) <.01 | 2.02 (0.42) <.01 |
| a | Level \* smoking | --- | --- | --- | -0.18 (0.07) <.01 |
| a | Level \* cardio | --- | --- | --- | -0.11 (0.08) .18 |
| a | Level \* diabetes | --- | --- | --- | -0.20 (0.08) .02 |
| a | Slope \* age | -0.00 (0.00) .07 | -0.00 (0.00) .07 | -0.00 (0.00) .06 | -0.00 (0.00) .36 |
| a | Slope \* education | --- | -0.00 (0.00) .43 | -0.00 (0.00) .33 | -0.00 (0.00) .54 |
| a | Slope \* height | --- | --- | 0.10 (0.11) .38 | 0.06 (0.12) .64 |
| a | Slope \* smoking | --- | --- | --- | 0.06 (0.01) <.01 |
| a | Slope \* cardio | --- | --- | --- | -0.03 (0.02) .10 |
| a | Slope \* diabetes | --- | --- | --- | 0.02 (0.01) .28 |
| b | Level | 9.76 (0.08) <.01 | 9.45 (0.15) <.01 | 9.42 (0.15) <.01 | 9.37 (0.20) <.01 |
| b | Slope | 0.02 (0.02) .27 | 0.06 (0.05) .20 | 0.06 (0.05) .23 | 0.09 (0.06) .17 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* education | --- | 0.04 (0.02) .02 | 0.04 (0.02) .02 | 0.04 (0.02) .01 |
| b | Level \* height | --- | --- | 0.90 (0.70) .20 | 0.86 (0.74) .25 |
| b | Level \* smoking | --- | --- | --- | -0.20 (0.14) .13 |
| b | Level \* cardio | --- | --- | --- | 0.10 (0.16) .54 |
| b | Level \* diabetes | --- | --- | --- | 0.26 (0.14) .06 |
| b | Slope \* age | 0.00 (0.00) .67 | 0.00 (0.00) .67 | 0.00 (0.00) .76 | 0.00 (0.00) .90 |
| b | Slope \* education | --- | -0.00 (0.00) .45 | -0.00 (0.01) .61 | -0.00 (0.01) .43 |
| b | Slope \* height | --- | --- | -0.40 (0.24) .10 | -0.36 (0.25) .15 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.04) .66 |
| b | Slope \* cardio | --- | --- | --- | 0.07 (0.04) .11 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (0.04) .42 |
| a | Var (Level) | 0.31 (0.03) <.01 | 0.30 (0.03) <.01 | 0.28 (0.02) <.01 | 0.27 (0.02) <.01 |
| a | Var (Slope) | 0.00 (0.00) .26 | 0.00 (0.00) .26 | 0.00 (0.00) .23 | 0.00 (0.00) .41 |
| a | Var (Residual) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Var (Level) | 0.97 (0.25) <.01 | 0.95 (0.24) <.01 | 0.88 (0.23) <.01 | 0.91 (0.24) <.01 |
| b | Var (Slope) | 0.03 (0.02) .06 | 0.03 (0.02) .07 | 0.03 (0.02) .07 | 0.03 (0.02) .08 |
| b | Var (Residual) | 0.44 (0.07) <.01 | 0.44 (0.07) <.01 | 0.44 (0.07) <.01 | 0.45 (0.08) <.01 |
| a | Covar (Level, Slope) | -0.01 (0.00) .07 | -0.01 (0.00) .08 | -0.01 (0.00) .04 | -0.01 (0.00) .05 |
| b | Covar (Level, Slope) | -0.11 (0.06) .05 | -0.11 (0.06) .05 | -0.10 (0.05) .07 | -0.10 (0.05) .06 |
|  | Correlation of Levels | 0.074 | 0.041 | -0.012 | 0.0061 |
|  | Correlation of Slopes | -0.522 | -0.530 | -0.387 | -0.5477 |
|  | Correlation of Residuals | 0.056 | 0.063 | 0.063 | 0.0626 |
|  | N | 349 | 349 | 344 | 321 |
|  | occasions | 4 | 4 | 4 | 4 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -2,057 | -2,046 | -2,009 | -1,875 |
|  | AIC | 4,156 | 4,141 | 4,076 | 3,833 |
|  | BIC | 4,237 | 4,238 | 4,187 | 3,987 |

## Summary

Study = *MAP*; Gender = *male*; Process (a) = *fev*

Computed correlations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Levels | bnt | 0.18 | 0.13 | 0.09 | 0.08 |
| Correlation of Levels | bstory\_de | 0.21 | 0.15 | 0.12 | 0.13 |
| Correlation of Levels | bstory\_im | 0.25 | 0.19 | 0.14 | 0.16 |
| Correlation of Levels | categories | 0.27 | 0.22 | 0.17 | 0.16 |
| Correlation of Levels | digit\_b | 0.21 | 0.12 | 0.12 | 0.16 |
| Correlation of Levels | digit\_f | 0.18 | 0.09 | 0.08 | 0.08 |
| Correlation of Levels | digit\_o | 0.12 | 0.03 | -0.02 | -0.02 |
| Correlation of Levels | ideas | 0.10 | 0.07 | 0.00 | -0.02 |
| Correlation of Levels | line | 0.31 | 0.24 | 0.19 | 0.15 |
| Correlation of Levels | logic\_de | 0.21 | 0.16 | 0.12 | 0.14 |
| Correlation of Levels | logic\_im | 0.21 | 0.14 | 0.10 | 0.11 |
| Correlation of Levels | matrices | 0.29 | 0.21 | 0.12 | 0.08 |
| Correlation of Levels | mmse | 0.16 | 0.10 | 0.06 | 0.04 |
| Correlation of Levels | nart | 0.24 | 0.14 | 0.11 | 0.11 |
| Correlation of Levels | num\_comp | 0.16 | 0.09 | 0.02 | 0.02 |
| Correlation of Levels | symbol | 0.30 | 0.24 | 0.17 | 0.16 |
| Correlation of Levels | word\_de | 0.19 | 0.12 | 0.08 | 0.09 |
| Correlation of Levels | word\_im | 0.20 | 0.10 | 0.06 | 0.05 |
| Correlation of Levels | word\_rec | 0.07 | 0.04 | -0.01 | 0.01 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Slopes | bnt | 0.00 | 0.00 | 0.00 | 0.00 |
| Correlation of Slopes | bstory\_de | 0.57 | 0.57 | 0.61 | 0.58 |
| Correlation of Slopes | bstory\_im | 0.72 | 0.74 | 0.74 | 1.07 |
| Correlation of Slopes | categories | 0.32 | 0.35 | 0.25 | 0.14 |
| Correlation of Slopes | digit\_b | -0.36 | -0.35 | -0.36 | -0.43 |
| Correlation of Slopes | digit\_f | 0.24 | 0.50 | 0.25 | 0.29 |
| Correlation of Slopes | digit\_o | 0.00 | 0.45 | 0.00 | 0.00 |
| Correlation of Slopes | ideas | -0.21 | -0.21 | -0.21 | -0.38 |
| Correlation of Slopes | line | 0.24 | 0.24 | 0.28 | 0.29 |
| Correlation of Slopes | logic\_de | 0.00 | 0.00 | -0.06 | 0.06 |
| Correlation of Slopes | logic\_im | 0.00 | 0.00 | 0.00 | 0.16 |
| Correlation of Slopes | matrices | 1.00 | 0.97 | 0.99 | 0.41 |
| Correlation of Slopes | mmse | -0.36 | -0.35 | -0.45 | -0.55 |
| Correlation of Slopes | nart | -0.24 | -0.24 | -0.24 | 0.00 |
| Correlation of Slopes | num\_comp | -0.99 | -1.01 | -0.98 | -0.89 |
| Correlation of Slopes | symbol | -0.07 | -0.07 | -0.07 | -0.31 |
| Correlation of Slopes | word\_de | 0.16 | 0.16 | 0.16 | 0.57 |
| Correlation of Slopes | word\_im | 0.37 | 0.37 | 0.24 | 0.47 |
| Correlation of Slopes | word\_rec | -0.52 | -0.53 | -0.39 | -0.55 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Residuals | bnt | -0.05 | -0.05 | -0.04 | -0.04 |
| Correlation of Residuals | bstory\_de | -0.03 | -0.03 | -0.03 | -0.02 |
| Correlation of Residuals | bstory\_im | -0.05 | -0.05 | -0.05 | -0.05 |
| Correlation of Residuals | categories | -0.01 | -0.01 | -0.01 | -0.01 |
| Correlation of Residuals | digit\_b | 0.00 | -0.00 | -0.01 | -0.01 |
| Correlation of Residuals | digit\_f | -0.03 | -0.03 | -0.04 | -0.03 |
| Correlation of Residuals | digit\_o | 0.00 | 0.00 | 0.00 | 0.00 |
| Correlation of Residuals | ideas | 0.04 | 0.03 | 0.03 | 0.04 |
| Correlation of Residuals | line | -0.02 | -0.02 | -0.02 | -0.02 |
| Correlation of Residuals | logic\_de | -0.01 | -0.01 | -0.01 | -0.01 |
| Correlation of Residuals | logic\_im | -0.02 | -0.02 | -0.01 | -0.01 |
| Correlation of Residuals | matrices | -0.03 | -0.03 | -0.02 | -0.02 |
| Correlation of Residuals | mmse | 0.01 | 0.01 | 0.01 | 0.02 |
| Correlation of Residuals | nart | -0.01 | -0.01 | -0.01 | -0.02 |
| Correlation of Residuals | num\_comp | 0.03 | 0.03 | 0.03 | 0.02 |
| Correlation of Residuals | symbol | 0.05 | 0.05 | 0.05 | 0.06 |
| Correlation of Residuals | word\_de | -0.00 | -0.00 | -0.00 | 0.00 |
| Correlation of Residuals | word\_im | 0.09 | 0.09 | 0.09 | 0.10 |
| Correlation of Residuals | word\_rec | 0.06 | 0.06 | 0.06 | 0.06 |

P-values for corresponding covariances:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Levels | bnt | 0.01 | 0.05 | 0.21 | 0.30 |
| Covariance of Levels | bstory\_de | 0.03 | 0.15 | 0.24 | 0.22 |
| Covariance of Levels | bstory\_im | 0.02 | 0.08 | 0.18 | 0.15 |
| Covariance of Levels | categories | 0.00 | 0.00 | 0.01 | 0.03 |
| Covariance of Levels | digit\_b | 0.00 | 0.08 | 0.09 | 0.03 |
| Covariance of Levels | digit\_f | 0.01 | 0.18 | 0.26 | 0.27 |
| Covariance of Levels | digit\_o | 0.11 | 0.69 | 0.78 | 0.74 |
| Covariance of Levels | ideas | 0.17 | 0.41 | 0.94 | 0.82 |
| Covariance of Levels | line | 0.00 | 0.00 | 0.01 | 0.05 |
| Covariance of Levels | logic\_de | 0.00 | 0.03 | 0.07 | 0.05 |
| Covariance of Levels | logic\_im | 0.00 | 0.06 | 0.20 | 0.14 |
| Covariance of Levels | matrices | 0.00 | 0.00 | 0.10 | 0.28 |
| Covariance of Levels | mmse | 0.02 | 0.18 | 0.43 | 0.63 |
| Covariance of Levels | nart | 0.00 | 0.02 | 0.06 | 0.07 |
| Covariance of Levels | num\_comp | 0.01 | 0.20 | 0.77 | 0.77 |
| Covariance of Levels | symbol | 0.00 | 0.00 | 0.02 | 0.03 |
| Covariance of Levels | word\_de | 0.01 | 0.13 | 0.29 | 0.25 |
| Covariance of Levels | word\_im | 0.01 | 0.20 | 0.43 | 0.56 |
| Covariance of Levels | word\_rec | 0.31 | 0.61 | 0.87 | 0.93 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Slopes | bnt | 0.97 | 0.97 | 0.88 | 0.89 |
| Covariance of Slopes | bstory\_de | 0.47 | 0.46 | 0.49 | 0.59 |
| Covariance of Slopes | bstory\_im | 0.20 | 0.21 | 0.21 | 0.28 |
| Covariance of Slopes | categories | 0.45 | 0.43 | 0.57 | 0.75 |
| Covariance of Slopes | digit\_b | 0.47 | 0.54 | 0.49 | 0.61 |
| Covariance of Slopes | digit\_f | 0.67 | 0.64 | 0.66 | 0.78 |
| Covariance of Slopes | digit\_o | 0.91 | 0.89 | 0.90 | 0.96 |
| Covariance of Slopes | ideas | 0.59 | 0.60 | 0.64 | 0.32 |
| Covariance of Slopes | line | 0.65 | 0.64 | 0.68 | 0.60 |
| Covariance of Slopes | logic\_de | 0.95 | 1.00 | 0.91 | 0.90 |
| Covariance of Slopes | logic\_im | 0.98 | 0.96 | 1.00 | 0.90 |
| Covariance of Slopes | matrices | 0.11 | 0.12 | 0.12 | 0.45 |
| Covariance of Slopes | mmse | 0.51 | 0.57 | 0.41 | 0.44 |
| Covariance of Slopes | nart | 0.53 | 0.52 | 0.55 | 0.98 |
| Covariance of Slopes | num\_comp | 0.08 | 0.08 | 0.09 | 0.13 |
| Covariance of Slopes | symbol | 0.89 | 0.91 | 0.89 | 0.60 |
| Covariance of Slopes | word\_de | 0.74 | 0.73 | 0.73 | 0.43 |
| Covariance of Slopes | word\_im | 0.64 | 0.63 | 0.70 | 0.53 |
| Covariance of Slopes | word\_rec | 0.36 | 0.34 | 0.28 | 0.22 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Residuals | bnt | 0.44 | 0.44 | 0.48 | 0.53 |
| Covariance of Residuals | bstory\_de | 0.53 | 0.53 | 0.49 | 0.66 |
| Covariance of Residuals | bstory\_im | 0.22 | 0.22 | 0.22 | 0.29 |
| Covariance of Residuals | categories | 0.76 | 0.78 | 0.84 | 0.76 |
| Covariance of Residuals | digit\_b | 0.98 | 0.95 | 0.88 | 0.77 |
| Covariance of Residuals | digit\_f | 0.44 | 0.43 | 0.39 | 0.56 |
| Covariance of Residuals | digit\_o | 0.99 | 0.99 | 0.98 | 0.95 |
| Covariance of Residuals | ideas | 0.47 | 0.49 | 0.57 | 0.41 |
| Covariance of Residuals | line | 0.68 | 0.68 | 0.68 | 0.68 |
| Covariance of Residuals | logic\_de | 0.78 | 0.80 | 0.85 | 0.76 |
| Covariance of Residuals | logic\_im | 0.71 | 0.71 | 0.75 | 0.78 |
| Covariance of Residuals | matrices | 0.51 | 0.51 | 0.56 | 0.70 |
| Covariance of Residuals | mmse | 0.80 | 0.82 | 0.79 | 0.72 |
| Covariance of Residuals | nart | 0.88 | 0.88 | 0.87 | 0.70 |
| Covariance of Residuals | num\_comp | 0.46 | 0.48 | 0.53 | 0.63 |
| Covariance of Residuals | symbol | 0.25 | 0.25 | 0.27 | 0.17 |
| Covariance of Residuals | word\_de | 0.90 | 0.91 | 0.93 | 0.92 |
| Covariance of Residuals | word\_im | 0.07 | 0.06 | 0.05 | 0.04 |
| Covariance of Residuals | word\_rec | 0.21 | 0.20 | 0.18 | 0.19 |

#Session Info

R version 3.3.1 (2016-06-21)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows >= 8 x64 (build 9200)  
  
locale:  
[1] LC\_COLLATE=English\_United States.1252 LC\_CTYPE=English\_United States.1252 LC\_MONETARY=English\_United States.1252  
[4] LC\_NUMERIC=C LC\_TIME=English\_United States.1252   
  
attached base packages:  
[1] stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] knitr\_1.14 ggplot2\_2.2.0 IalsaSynthesis\_0.1.8.9000 MplusAutomation\_0.6-4   
[5] magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 formatR\_1.4 plyr\_1.8.4 highr\_0.6 tools\_3.3.1 boot\_1.3-18   
 [7] digest\_0.6.10 evaluate\_0.10 tibble\_1.2 gtable\_0.2.0 lattice\_0.20-34 texreg\_1.36.7   
[13] DBI\_0.5-1 yaml\_2.1.13 proto\_0.3-10 coda\_0.18-1 dplyr\_0.5.0 stringr\_1.1.0   
[19] htmlwidgets\_0.7 grid\_3.3.1 DT\_0.2 R6\_2.2.0 gsubfn\_0.6-6 rmarkdown\_1.1   
[25] pander\_0.6.0 tidyr\_0.6.0 readr\_1.0.0 scales\_0.4.1 htmltools\_0.3.5 rsconnect\_0.5   
[31] assertthat\_0.1 testit\_0.5 xtable\_1.8-2 colorspace\_1.2-7 stringi\_1.1.2 lazyeval\_0.2.0   
[37] munsell\_0.4.3