SATSA : Seed Report

Date: 2018-12-21

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

# Available models

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

|  |  |  |
| --- | --- | --- |
| process\_a | process\_b | n\_models |
| fev | analogies | 10 |
| fev | block | 10 |
| fev | digit\_b | 10 |
| fev | digit\_f | 10 |
| fev | fig\_id | 6 |
| fev | fig\_mem | 10 |
| fev | information | 10 |
| fev | mmse | 10 |
| fev | rotate | 10 |
| fev | symbol | 10 |
| fev | synonyms | 10 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| satsa | female | 0 | fev | analogies | 1 |
| satsa | female | 0 | fev | block | 1 |
| satsa | female | 0 | fev | digit\_b | 1 |
| satsa | female | 0 | fev | digit\_f | 1 |
| satsa | female | 0 | fev | fig\_mem | 1 |
| satsa | female | 0 | fev | information | 1 |
| satsa | female | 0 | fev | mmse | 1 |
| satsa | female | 0 | fev | rotate | 1 |
| satsa | female | 0 | fev | symbol | 1 |
| satsa | female | 0 | fev | synonyms | 1 |
| satsa | female | a | fev | analogies | 1 |
| satsa | female | a | fev | block | 1 |
| satsa | female | a | fev | digit\_b | 1 |
| satsa | female | a | fev | digit\_f | 1 |
| satsa | female | a | fev | fig\_id | 1 |
| satsa | female | a | fev | fig\_mem | 1 |
| satsa | female | a | fev | information | 1 |
| satsa | female | a | fev | mmse | 1 |
| satsa | female | a | fev | rotate | 1 |
| satsa | female | a | fev | symbol | 1 |
| satsa | female | a | fev | synonyms | 1 |
| satsa | female | ae | fev | analogies | 1 |
| satsa | female | ae | fev | block | 1 |
| satsa | female | ae | fev | digit\_b | 1 |
| satsa | female | ae | fev | digit\_f | 1 |
| satsa | female | ae | fev | fig\_id | 1 |
| satsa | female | ae | fev | fig\_mem | 1 |
| satsa | female | ae | fev | information | 1 |
| satsa | female | ae | fev | mmse | 1 |
| satsa | female | ae | fev | rotate | 1 |
| satsa | female | ae | fev | symbol | 1 |
| satsa | female | ae | fev | synonyms | 1 |
| satsa | female | aeh | fev | analogies | 1 |
| satsa | female | aeh | fev | block | 1 |
| satsa | female | aeh | fev | digit\_b | 1 |
| satsa | female | aeh | fev | digit\_f | 1 |
| satsa | female | aeh | fev | fig\_id | 1 |
| satsa | female | aeh | fev | fig\_mem | 1 |
| satsa | female | aeh | fev | information | 1 |
| satsa | female | aeh | fev | mmse | 1 |
| satsa | female | aeh | fev | rotate | 1 |
| satsa | female | aeh | fev | symbol | 1 |
| satsa | female | aeh | fev | synonyms | 1 |
| satsa | female | aehplus | fev | analogies | 1 |
| satsa | female | aehplus | fev | block | 1 |
| satsa | female | aehplus | fev | digit\_b | 1 |
| satsa | female | aehplus | fev | digit\_f | 1 |
| satsa | female | aehplus | fev | fig\_mem | 1 |
| satsa | female | aehplus | fev | information | 1 |
| satsa | female | aehplus | fev | mmse | 1 |
| satsa | female | aehplus | fev | rotate | 1 |
| satsa | female | aehplus | fev | symbol | 1 |
| satsa | female | aehplus | fev | synonyms | 1 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| study\_name | subgroup | model\_type | process\_a | process\_b | n\_models |
| satsa | male | 0 | fev | analogies | 1 |
| satsa | male | 0 | fev | block | 1 |
| satsa | male | 0 | fev | digit\_b | 1 |
| satsa | male | 0 | fev | digit\_f | 1 |
| satsa | male | 0 | fev | fig\_mem | 1 |
| satsa | male | 0 | fev | information | 1 |
| satsa | male | 0 | fev | mmse | 1 |
| satsa | male | 0 | fev | rotate | 1 |
| satsa | male | 0 | fev | symbol | 1 |
| satsa | male | 0 | fev | synonyms | 1 |
| satsa | male | a | fev | analogies | 1 |
| satsa | male | a | fev | block | 1 |
| satsa | male | a | fev | digit\_b | 1 |
| satsa | male | a | fev | digit\_f | 1 |
| satsa | male | a | fev | fig\_id | 1 |
| satsa | male | a | fev | fig\_mem | 1 |
| satsa | male | a | fev | information | 1 |
| satsa | male | a | fev | mmse | 1 |
| satsa | male | a | fev | rotate | 1 |
| satsa | male | a | fev | symbol | 1 |
| satsa | male | a | fev | synonyms | 1 |
| satsa | male | ae | fev | analogies | 1 |
| satsa | male | ae | fev | block | 1 |
| satsa | male | ae | fev | digit\_b | 1 |
| satsa | male | ae | fev | digit\_f | 1 |
| satsa | male | ae | fev | fig\_id | 1 |
| satsa | male | ae | fev | fig\_mem | 1 |
| satsa | male | ae | fev | information | 1 |
| satsa | male | ae | fev | mmse | 1 |
| satsa | male | ae | fev | rotate | 1 |
| satsa | male | ae | fev | symbol | 1 |
| satsa | male | ae | fev | synonyms | 1 |
| satsa | male | aeh | fev | analogies | 1 |
| satsa | male | aeh | fev | block | 1 |
| satsa | male | aeh | fev | digit\_b | 1 |
| satsa | male | aeh | fev | digit\_f | 1 |
| satsa | male | aeh | fev | fig\_id | 1 |
| satsa | male | aeh | fev | fig\_mem | 1 |
| satsa | male | aeh | fev | information | 1 |
| satsa | male | aeh | fev | mmse | 1 |
| satsa | male | aeh | fev | rotate | 1 |
| satsa | male | aeh | fev | symbol | 1 |
| satsa | male | aeh | fev | synonyms | 1 |
| satsa | male | aehplus | fev | analogies | 1 |
| satsa | male | aehplus | fev | block | 1 |
| satsa | male | aehplus | fev | digit\_b | 1 |
| satsa | male | aehplus | fev | digit\_f | 1 |
| satsa | male | aehplus | fev | fig\_mem | 1 |
| satsa | male | aehplus | fev | information | 1 |
| satsa | male | aehplus | fev | mmse | 1 |
| satsa | male | aehplus | fev | rotate | 1 |
| satsa | male | aehplus | fev | symbol | 1 |
| satsa | male | aehplus | fev | synonyms | 1 |

# female

Gender = *female*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *analogies*, *block*, *digit\_b*, *digit\_f*, *fig\_id*, *fig\_mem*, *information*, *mmse*, *rotate*, *symbol*, *synonyms*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | analogies | block | digit\_b | digit\_f | fig\_mem | information | mmse | rotate | symbol | synonyms | mean(sd) |
| ab | Covar (Levels) | 0.20 (0.07) .01 | 0.41 (0.15) .01 | 0.08 (0.03) <.01 | 0.02 (0.02) .37 | 0.10 (0.08) .25 | 0.06 (0.15) .66 | -0.02 (0.05) .72 | 1.13 (0.35) <.01 | 0.25 (0.20) .22 | 0.23 (0.10) .01 | — |
| ab | Covar (Slopes) | 0.00 (0.00) .36 | 0.00 (0.00) .44 | 0.00 (0.00) .17 | 0.00 (0.00) .92 | 0.00 (0.00) .29 | 0.00 (0.00) .05 | 0.00 (0.00) .10 | 0.00 (0.00) .99 | -0.00 (0.00) .39 | 0.00 (0.00) .21 | — |
|  | Covar (Residuals) | — | — | — | — | — | — | — | — | — | — | — |
| er | Corr (Levels) | 0.27 (0.10) <.01 | 0.24 (0.09) <.01 | 0.31 (0.10) <.01 | 0.09 (0.10) .37 | 0.10 (0.08) .25 | 0.03 (0.07) .66 | -0.07 (0.18) .72 | 0.29 (0.08) <.01 | 0.10 (0.08) .22 | 0.18 (0.07) .01 | — |
| er | Corr (Slopes) | 0.17 (0.19) .37 | 0.19 (0.24) .43 | 0.34 (0.24) .17 | 0.06 (0.61) .92 | 0.25 (0.24) .29 | 0.31 (0.16) .06 | 0.36 (0.20) .07 | 0.03 (1.72) .99 | -0.16 (0.20) .42 | 0.33 (0.25) .18 | — |
| er | Corr (Residuals) | 0.02 (0.04) .65 | 0.07 (0.04) .09 | -0.03 (0.05) .51 | 0.11 (0.04) .01 | 0.06 (0.04) .21 | 0.11 (0.04) .01 | 0.14 (0.05) <.01 | 0.01 (0.04) .81 | 0.04 (0.05) .38 | 0.08 (0.04) .08 | — |
| a | Level | 1.80 (0.03) <.01 | 1.80 (0.04) <.01 | 1.80 (0.04) <.01 | 1.80 (0.04) <.01 | 1.80 (0.03) <.01 | 1.80 (0.04) <.01 | 1.80 (0.04) <.01 | 1.80 (0.04) <.01 | 1.80 (0.04) <.01 | 1.80 (0.04) <.01 | 1.80(0.00) |
| a | Slope | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.03(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) |
| a | Level \* education | 0.04 (0.03) .19 | 0.04 (0.03) .19 | 0.04 (0.03) .24 | 0.04 (0.03) .20 | 0.04 (0.03) .20 | 0.04 (0.03) .19 | 0.04 (0.03) .19 | 0.04 (0.03) .16 | 0.04 (0.03) .19 | 0.04 (0.03) .19 | 0.04(0.00) |
| a | Level \* height | 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 \* smoking | -0.06 (0.04) .20 | -0.05 (0.04) .25 | -0.05 (0.05) .25 | -0.05 (0.04) .25 | -0.06 (0.04) .20 | -0.06 (0.04) .20 | -0.06 (0.04) .20 | -0.05 (0.04) .22 | -0.06 (0.05) .22 | -0.05 (0.04) .23 | -0.05(0.00) |
| a | Level \* cardio | -0.12 (0.06) .04 | -0.12 (0.06) .05 | -0.12 (0.06) .05 | -0.12 (0.06) .05 | -0.12 (0.06) .05 | -0.12 (0.06) .05 | -0.11 (0.06) .07 | -0.12 (0.06) .05 | -0.12 (0.06) .06 | -0.12 (0.06) .04 | -0.12(0.00) |
| a | Level \* diabetes | -0.10 (0.17) .57 | -0.10 (0.11) .34 | -0.11 (0.10) .26 | -0.09 (0.12) .44 | -0.10 (0.10) .34 | -0.10 (0.10) .31 | -0.11 (0.11) .34 | -0.10 (0.11) .41 | -0.10 (0.16) .56 | -0.10 (0.11) .34 | -0.10(0.01) |
| a | Slope \* age | 0.00 (0.00) .13 | 0.00 (0.00) .23 | 0.00 (0.00) .15 | 0.00 (0.00) .14 | 0.00 (0.00) .12 | 0.00 (0.00) .18 | 0.00 (0.00) .50 | 0.00 (0.00) .12 | 0.00 (0.00) .19 | 0.00 (0.00) .13 | 0.00(0.00) |
| a | Slope \* education | 0.00 (0.00) .99 | 0.00 (0.00) .97 | 0.00 (0.00) .92 | 0.00 (0.00) .95 | 0.00 (0.00) .97 | 0.00 (0.00) .96 | 0.00 (0.00) .91 | 0.00 (0.00) .94 | 0.00 (0.00) .96 | 0.00 (0.00) .98 | 0.00(0.00) |
| a | Slope \* height | 0.00 (0.00) .59 | 0.00 (0.00) .49 | 0.00 (0.00) .47 | 0.00 (0.00) .56 | 0.00 (0.00) .60 | 0.00 (0.00) .50 | 0.00 (0.00) .58 | 0.00 (0.00) .40 | 0.00 (0.00) .50 | 0.00 (0.00) .62 | 0.00(0.00) |
| a | Slope \* smoking | -0.00 (0.00) .52 | -0.00 (0.00) .46 | -0.00 (0.00) .44 | -0.00 (0.00) .46 | -0.00 (0.00) .53 | -0.00 (0.00) .57 | -0.00 (0.00) .65 | -0.00 (0.00) .47 | -0.00 (0.00) .52 | -0.00 (0.00) .47 | -0.00(0.00) |
| a | Slope \* cardio | -0.00 (0.01) .86 | -0.00 (0.01) .88 | -0.00 (0.01) .82 | -0.00 (0.01) .87 | -0.00 (0.01) .84 | -0.00 (0.01) .91 | -0.00 (0.01) .84 | -0.00 (0.01) .87 | -0.00 (0.01) .84 | -0.00 (0.01) .91 | -0.00(0.00) |
| a | Slope \* diabetes | -0.00 (0.04) .88 | -0.00 (0.01) .74 | -0.00 (0.01) .67 | -0.00 (0.02) .79 | -0.00 (0.01) .72 | -0.00 (0.01) .82 | -0.00 (0.01) .93 | -0.00 (0.02) .76 | -0.01 (0.03) .85 | -0.00 (0.02) .83 | -0.00(0.00) |
| b | Level | 13.13 (0.30) <.01 | 16.50 (0.52) <.01 | 3.65 (0.10) <.01 | 5.54 (0.10) <.01 | 20.45 (0.34) <.01 | 27.86 (0.57) <.01 | 28.05 (0.14) <.01 | 41.52 (1.57) <.01 | 34.48 (0.75) <.01 | 17.70 (0.34) <.01 | — |
| b | Slope | -0.12 (0.03) <.01 | -0.36 (0.04) <.01 | -0.04 (0.01) <.01 | -0.03 (0.01) <.01 | -0.18 (0.03) <.01 | -0.28 (0.05) <.01 | -0.29 (0.03) <.01 | -0.96 (0.11) <.01 | -0.83 (0.06) <.01 | -0.12 (0.02) <.01 | — |
| b | Level \* age | -0.12 (0.02) <.01 | -0.28 (0.04) <.01 | -0.01 (0.01) .15 | -0.01 (0.01) .14 | -0.08 (0.03) <.01 | -0.04 (0.05) .39 | -0.03 (0.01) .01 | -0.66 (0.11) <.01 | -0.69 (0.06) <.01 | -0.04 (0.03) .18 | — |
| b | Level \* education | 1.76 (0.24) <.01 | 2.22 (0.50) <.01 | 0.52 (0.11) <.01 | 0.32 (0.09) <.01 | 1.25 (0.33) <.01 | 4.01 (0.78) <.01 | 0.32 (0.18) .08 | 0.91 (1.21) .45 | 3.34 (0.71) <.01 | 2.70 (0.47) <.01 | — |
| b | Level \* height | 0.03 (0.03) .34 | 0.08 (0.06) .17 | 0.01 (0.01) .36 | 0.00 (0.01) .80 | 0.01 (0.04) .72 | 0.01 (0.07) .84 | -0.01 (0.02) .54 | 0.19 (0.16) .23 | 0.17 (0.09) .05 | 0.04 (0.05) .44 | — |
| b | Level \* smoking | 0.55 (0.40) .17 | 0.18 (0.80) .82 | 0.26 (0.17) .12 | 0.04 (0.13) .73 | 0.52 (0.49) .28 | 1.07 (1.00) .28 | -0.05 (0.27) .84 | 0.88 (1.93) .65 | 1.02 (1.22) .40 | 1.10 (0.61) .07 | — |
| b | Level \* cardio | -0.54 (0.63) .40 | 0.02 (1.11) .99 | 0.01 (0.20) .94 | -0.27 (0.23) .23 | 0.55 (0.64) .39 | -2.03 (1.14) .07 | -0.10 (0.26) .71 | 1.95 (2.68) .47 | -1.79 (1.54) .25 | -1.55 (0.84) .07 | — |
| b | Level \* diabetes | -1.38 (1.14) .23 | -5.49 (2.31) .02 | 0.12 (0.37) .75 | -0.25 (0.41) .53 | -0.96 (1.53) .53 | 0.35 (1.77) .84 | -0.73 (0.56) .19 | -9.14 (11.76) .44 | -6.99 (2.81) .01 | -2.64 (1.17) .02 | — |
| b | Slope \* age | -0.00 (0.00) .02 | -0.01 (0.00) <.01 | -0.00 (0.00) .06 | -0.00 (0.00) .16 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | -0.04 (0.01) <.01 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | — |
| b | Slope \* education | 0.02 (0.02) .40 | 0.02 (0.03) .51 | -0.01 (0.01) .25 | 0.00 (0.00) .95 | -0.00 (0.02) .95 | -0.03 (0.05) .56 | 0.01 (0.03) .76 | 0.19 (0.07) .01 | 0.05 (0.04) .24 | 0.00 (0.03) .92 | — |
| b | Slope \* height | 0.00 (0.00) .86 | -0.00 (0.00) .47 | 0.00 (0.00) .38 | 0.00 (0.00) .08 | -0.00 (0.00) .73 | 0.00 (0.00) .55 | 0.00 (0.00) .55 | -0.02 (0.01) .12 | -0.00 (0.01) .86 | 0.00 (0.00) .68 | — |
| b | Slope \* smoking | 0.00 (0.03) .92 | -0.01 (0.05) .83 | 0.00 (0.01) .69 | 0.00 (0.01) .76 | -0.07 (0.04) .05 | 0.04 (0.06) .52 | 0.04 (0.04) .33 | -0.13 (0.12) .27 | -0.06 (0.08) .39 | -0.01 (0.03) .80 | — |
| b | Slope \* cardio | 0.07 (0.06) .23 | 0.04 (0.09) .69 | 0.02 (0.02) .26 | 0.03 (0.01) .07 | 0.00 (0.05) .92 | 0.08 (0.09) .35 | 0.01 (0.05) .77 | 0.07 (0.28) .79 | -0.02 (0.17) .92 | 0.06 (0.05) .24 | — |
| b | Slope \* diabetes | 0.07 (0.26) .77 | 0.10 (0.18) .58 | -0.01 (0.03) .74 | 0.02 (0.07) .73 | -0.21 (0.16) .20 | -0.19 (0.18) .29 | 0.14 (0.12) .23 | -0.87 (1.11) .43 | -0.21 (1.42) .88 | 0.08 (0.36) .81 | — |
| a | Var (Level) | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09(0.00) |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00(0.00) |
|  | Var (Residual) | — | — | — | — | — | — | — | — | — | — | — |
| b | Var (Level) | 6.36 (0.82) <.01 | 34.23 (3.65) <.01 | 0.82 (0.11) <.01 | 0.70 (0.10) <.01 | 11.14 (1.26) <.01 | 45.81 (4.27) <.01 | 0.76 (0.23) <.01 | 179.11 (21.62) <.01 | 69.71 (6.71) <.01 | 18.43 (1.74) <.01 | — |
| b | Var (Slope) | 0.01 (0.00) <.01 | 0.03 (0.01) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .72 | 0.02 (0.00) <.01 | 0.10 (0.02) <.01 | 0.04 (0.00) <.01 | 0.00 (0.08) .96 | 0.09 (0.02) <.01 | 0.01 (0.00) .01 | — |
|  | Var (Residual) | — | — | — | — | — | — | — | — | — | — | — |
| a | Covar (Level, Slope) | -0.00 (0.00) .21 | -0.00 (0.00) .16 | -0.00 (0.00) .21 | -0.00 (0.00) .25 | -0.00 (0.00) .19 | -0.00 (0.00) .15 | -0.00 (0.00) .25 | -0.00 (0.00) .18 | -0.00 (0.00) .20 | -0.00 (0.00) .19 | -0.00(0.00) |
| b | Covar (Level, Slope) | -0.06 (0.05) .23 | -0.33 (0.14) .02 | -0.01 (0.01) .05 | -0.00 (0.00) .58 | -0.14 (0.08) .06 | -0.65 (0.23) <.01 | 0.06 (0.02) <.01 | 0.49 (1.05) .64 | -0.69 (0.38) .07 | -0.05 (0.07) .45 | — |
|  | Correlation of Levels | 0.27 | 0.24 | 0.31 | 0.085 | 0.098 | 0.031 | -0.066 | 0.29 | 0.1 | 0.18 | 0.15(0.12) |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN | NaN | Inf | Inf | NaN | -Inf | NaN | — |
|  | Correlation of Residuals | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | — |
|  | N | 407 | 408 | 409 | 409 | 409 | 410 | 411 | 407 | 408 | 409 | 408.70(1.25) |
|  | occasions | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 41 | 43 | 43 | 43 | 41 | 41 | 41 | 41 | 43 | 41 | 41.80(1.03) |
|  | LL | -3,823 | -4,778 | -2,837 | -2,492 | -4,187 | -5,023 | -3,775 | -5,700 | -5,281 | -4,115 | -4,201(1,029) |
|  | AIC | 7,729 | 9,643 | 5,760 | 5,070 | 8,457 | 10,129 | 7,632 | 11,481 | 10,649 | 8,312 | 8,486(2,058) |
|  | BIC | 7,893 | 9,815 | 5,932 | 5,242 | 8,621 | 10,293 | 7,796 | 11,646 | 10,821 | 8,477 | 8,654(2,057) |

## analogies

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.26 (0.07) <.01 | 0.21 (0.07) <.01 | 0.19 (0.07) <.01 | 0.20 (0.07) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .28 | 0.00 (0.00) .48 | 0.00 (0.00) .42 | 0.00 (0.00) .36 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.27 (0.10) <.01 |
| er | Corr (Slopes) | — | — | — | 0.17 (0.19) .37 |
| er | Corr (Residuals) | — | — | — | 0.02 (0.04) .65 |
| a | Level | 1.78 (0.02) <.01 | 1.75 (0.03) <.01 | 1.75 (0.03) <.01 | 1.80 (0.03) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .08 | 0.03 (0.03) .27 | 0.04 (0.03) .19 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.06 (0.04) .20 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .04 |
| a | Level \* diabetes | — | — | — | -0.10 (0.17) .57 |
| a | Slope \* age | 0.00 (0.00) .28 | 0.00 (0.00) .16 | 0.00 (0.00) .14 | 0.00 (0.00) .13 |
| a | Slope \* education | — | 0.00 (0.00) .86 | 0.00 (0.00) .90 | 0.00 (0.00) .99 |
| a | Slope \* height | — | — | 0.00 (0.00) .61 | 0.00 (0.00) .59 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .52 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .86 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.04) .88 |
| b | Level | 13.73 (0.23) <.01 | 13.03 (0.23) <.01 | 13.05 (0.24) <.01 | 13.13 (0.30) <.01 |
| b | Slope | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 | -0.12 (0.03) <.01 |
| b | Level \* age | -0.16 (0.02) <.01 | -0.12 (0.02) <.01 | -0.12 (0.02) <.01 | -0.12 (0.02) <.01 |
| b | Level \* education | — | 1.92 (0.21) <.01 | 1.90 (0.21) <.01 | 1.76 (0.24) <.01 |
| b | Level \* height | — | — | 0.02 (0.03) .55 | 0.03 (0.03) .34 |
| b | Level \* smoking | — | — | — | 0.55 (0.40) .17 |
| b | Level \* cardio | — | — | — | -0.54 (0.63) .40 |
| b | Level \* diabetes | — | — | — | -1.38 (1.14) .23 |
| b | Slope \* age | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) .01 | -0.00 (0.00) .02 |
| b | Slope \* education | — | 0.00 (0.02) .80 | 0.00 (0.02) .90 | 0.02 (0.02) .40 |
| b | Slope \* height | — | — | 0.00 (0.00) .56 | 0.00 (0.00) .86 |
| b | Slope \* smoking | — | — | — | 0.00 (0.03) .92 |
| b | Slope \* cardio | — | — | — | 0.07 (0.06) .23 |
| b | Slope \* diabetes | — | — | — | 0.07 (0.26) .77 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 7.88 (0.82) <.01 | 6.16 (0.69) <.01 | 6.17 (0.71) <.01 | 6.36 (0.82) <.01 |
| b | Var (Slope) | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .47 | -0.00 (0.00) .32 | -0.00 (0.00) .25 | -0.00 (0.00) .21 |
| b | Covar (Level, Slope) | -0.03 (0.05) .50 | -0.05 (0.04) .26 | -0.06 (0.05) .22 | -0.06 (0.05) .23 |
|  | Correlation of Levels | 0.29 | 0.27 | 0.25 | 0.27 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 507 | 485 | 476 | 407 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,725 | -4,496 | -4,408 | -3,823 |
|  | AIC | 9,492 | 9,042 | 8,875 | 7,729 |
|  | BIC | 9,581 | 9,147 | 8,996 | 7,893 |

## block

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.51 (0.14) <.01 | 0.43 (0.14) <.01 | 0.39 (0.13) <.01 | 0.41 (0.15) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .14 | 0.00 (0.00) .23 | 0.00 (0.00) .24 | 0.00 (0.00) .44 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.24 (0.09) <.01 |
| er | Corr (Slopes) | — | — | — | 0.19 (0.24) .43 |
| er | Corr (Residuals) | — | — | — | 0.07 (0.04) .09 |
| a | Level | 1.78 (0.03) <.01 | 1.75 (0.03) <.01 | 1.75 (0.02) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .09 | 0.03 (0.03) .27 | 0.04 (0.03) .19 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.05 (0.04) .25 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .05 |
| a | Level \* diabetes | — | — | — | -0.10 (0.11) .34 |
| a | Slope \* age | 0.00 (0.00) .46 | 0.00 (0.00) .27 | 0.00 (0.00) .23 | 0.00 (0.00) .23 |
| a | Slope \* education | — | 0.00 (0.00) .81 | 0.00 (0.00) .87 | 0.00 (0.00) .97 |
| a | Slope \* height | — | — | 0.00 (0.00) .55 | 0.00 (0.00) .49 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .46 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .88 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.01) .74 |
| b | Level | 17.24 (0.40) <.01 | 16.25 (0.41) <.01 | 16.25 (0.42) <.01 | 16.50 (0.52) <.01 |
| b | Slope | -0.37 (0.03) <.01 | -0.37 (0.03) <.01 | -0.37 (0.03) <.01 | -0.36 (0.04) <.01 |
| b | Level \* age | -0.37 (0.04) <.01 | -0.32 (0.04) <.01 | -0.31 (0.04) <.01 | -0.28 (0.04) <.01 |
| b | Level \* education | — | 2.40 (0.43) <.01 | 2.38 (0.45) <.01 | 2.22 (0.50) <.01 |
| b | Level \* height | — | — | 0.07 (0.06) .24 | 0.08 (0.06) .17 |
| b | Level \* smoking | — | — | — | 0.18 (0.80) .82 |
| b | Level \* cardio | — | — | — | 0.02 (1.11) .99 |
| b | Level \* diabetes | — | — | — | -5.49 (2.31) .02 |
| 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 | — | 0.01 (0.03) .73 | 0.01 (0.03) .77 | 0.02 (0.03) .51 |
| b | Slope \* height | — | — | -0.00 (0.00) .47 | -0.00 (0.00) .47 |
| b | Slope \* smoking | — | — | — | -0.01 (0.05) .83 |
| b | Slope \* cardio | — | — | — | 0.04 (0.09) .69 |
| b | Slope \* diabetes | — | — | — | 0.10 (0.18) .58 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 40.07 (3.59) <.01 | 35.72 (3.24) <.01 | 36.04 (3.30) <.01 | 34.23 (3.65) <.01 |
| b | Var (Slope) | 0.03 (0.01) <.01 | 0.03 (0.01) <.01 | 0.03 (0.01) <.01 | 0.03 (0.01) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .40 | -0.00 (0.00) .28 | -0.00 (0.00) .20 | -0.00 (0.00) .16 |
| b | Covar (Level, Slope) | -0.35 (0.13) .01 | -0.36 (0.13) <.01 | -0.35 (0.13) .01 | -0.33 (0.14) .02 |
|  | Correlation of Levels | 0.25 | 0.23 | 0.22 | 0.24 |
|  | Correlation of Slopes | Inf | Inf | Inf | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 512 | 490 | 477 | 408 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 43 |
|  | LL | -8,020 | -7,190 | -5,539 | -4,778 |
|  | AIC | 16,089 | 14,434 | 11,136 | 9,643 |
|  | BIC | 16,195 | 14,547 | 11,256 | 9,815 |

## digit\_b

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.07 (0.02) <.01 | 0.07 (0.02) <.01 | 0.07 (0.02) <.01 | 0.08 (0.03) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .03 | 0.00 (0.00) .04 | 0.00 (0.00) .04 | 0.00 (0.00) .17 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.31 (0.10) <.01 |
| er | Corr (Slopes) | — | — | — | 0.34 (0.24) .17 |
| er | Corr (Residuals) | — | — | — | -0.03 (0.05) .51 |
| a | Level | 1.78 (0.03) <.01 | 1.75 (0.03) <.01 | 1.75 (0.03) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .10 | 0.03 (0.03) .30 | 0.04 (0.03) .24 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.05 (0.05) .25 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .05 |
| a | Level \* diabetes | — | — | — | -0.11 (0.10) .26 |
| a | Slope \* age | 0.00 (0.00) .32 | 0.00 (0.00) .18 | 0.00 (0.00) .15 | 0.00 (0.00) .15 |
| a | Slope \* education | — | 0.00 (0.00) .80 | 0.00 (0.00) .85 | 0.00 (0.00) .92 |
| a | Slope \* height | — | — | 0.00 (0.00) .48 | 0.00 (0.00) .47 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .44 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .82 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.01) .67 |
| b | Level | 3.94 (0.07) <.01 | 3.77 (0.07) <.01 | 3.77 (0.07) <.01 | 3.65 (0.10) <.01 |
| b | Slope | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.02 (0.01) .01 | -0.01 (0.01) .03 | -0.01 (0.01) .15 |
| b | Level \* education | — | 0.49 (0.09) <.01 | 0.46 (0.09) <.01 | 0.52 (0.11) <.01 |
| b | Level \* height | — | — | 0.01 (0.01) .42 | 0.01 (0.01) .36 |
| b | Level \* smoking | — | — | — | 0.26 (0.17) .12 |
| b | Level \* cardio | — | — | — | 0.01 (0.20) .94 |
| b | Level \* diabetes | — | — | — | 0.12 (0.37) .75 |
| b | Slope \* age | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) .02 | -0.00 (0.00) .06 |
| b | Slope \* education | — | -0.01 (0.01) .17 | -0.01 (0.01) .19 | -0.01 (0.01) .25 |
| b | Slope \* height | — | — | 0.00 (0.00) .28 | 0.00 (0.00) .38 |
| b | Slope \* smoking | — | — | — | 0.00 (0.01) .69 |
| b | Slope \* cardio | — | — | — | 0.02 (0.02) .26 |
| b | Slope \* diabetes | — | — | — | -0.01 (0.03) .74 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 0.92 (0.10) <.01 | 0.76 (0.09) <.01 | 0.73 (0.09) <.01 | 0.82 (0.11) <.01 |
| b | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .45 | -0.00 (0.00) .31 | -0.00 (0.00) .23 | -0.00 (0.00) .21 |
| b | Covar (Level, Slope) | -0.01 (0.01) .05 | -0.01 (0.01) .12 | -0.01 (0.01) .19 | -0.01 (0.01) .05 |
|  | Correlation of Levels | 0.24 | 0.24 | 0.27 | 0.31 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 512 | 490 | 478 | 409 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 43 |
|  | LL | -5,668 | -4,918 | -3,295 | -2,837 |
|  | AIC | 11,387 | 9,890 | 6,649 | 5,760 |
|  | BIC | 11,493 | 10,003 | 6,770 | 5,932 |

## digit\_f

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.03 (0.02) .16 | 0.02 (0.02) .29 | 0.02 (0.02) .25 | 0.02 (0.02) .37 |
| ab | Covar (Slopes) | 0.00 (0.00) .51 | 0.00 (0.00) .57 | 0.00 (0.00) .59 | 0.00 (0.00) .92 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.09 (0.10) .37 |
| er | Corr (Slopes) | — | — | — | 0.06 (0.61) .92 |
| er | Corr (Residuals) | — | — | — | 0.11 (0.04) .01 |
| a | Level | 1.78 (0.03) <.01 | 1.75 (0.03) <.01 | 1.75 (0.02) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.04 (0.03) .11 | 0.03 (0.03) .31 | 0.04 (0.03) .20 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.05 (0.04) .25 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .05 |
| a | Level \* diabetes | — | — | — | -0.09 (0.12) .44 |
| a | Slope \* age | 0.00 (0.00) .30 | 0.00 (0.00) .16 | 0.00 (0.00) .14 | 0.00 (0.00) .14 |
| a | Slope \* education | — | 0.00 (0.00) .77 | 0.00 (0.00) .83 | 0.00 (0.00) .95 |
| a | Slope \* height | — | — | 0.00 (0.00) .57 | 0.00 (0.00) .56 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .46 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .87 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.02) .79 |
| b | Level | 5.62 (0.07) <.01 | 5.53 (0.07) <.01 | 5.52 (0.07) <.01 | 5.54 (0.10) <.01 |
| b | Slope | -0.02 (0.00) <.01 | -0.02 (0.01) <.01 | -0.02 (0.01) <.01 | -0.03 (0.01) <.01 |
| b | Level \* age | -0.02 (0.01) <.01 | -0.02 (0.01) <.01 | -0.02 (0.01) .01 | -0.01 (0.01) .14 |
| b | Level \* education | — | 0.27 (0.07) <.01 | 0.26 (0.07) <.01 | 0.32 (0.09) <.01 |
| b | Level \* height | — | — | 0.00 (0.01) .96 | 0.00 (0.01) .80 |
| b | Level \* smoking | — | — | — | 0.04 (0.13) .73 |
| b | Level \* cardio | — | — | — | -0.27 (0.23) .23 |
| b | Level \* diabetes | — | — | — | -0.25 (0.41) .53 |
| b | Slope \* age | -0.00 (0.00) .02 | -0.00 (0.00) .05 | -0.00 (0.00) .19 | -0.00 (0.00) .16 |
| b | Slope \* education | — | 0.00 (0.00) .63 | 0.00 (0.00) .93 | 0.00 (0.00) .95 |
| b | Slope \* height | — | — | 0.00 (0.00) .01 | 0.00 (0.00) .08 |
| b | Slope \* smoking | — | — | — | 0.00 (0.01) .76 |
| b | Slope \* cardio | — | — | — | 0.03 (0.01) .07 |
| b | Slope \* diabetes | — | — | — | 0.02 (0.07) .73 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 0.73 (0.09) <.01 | 0.70 (0.09) <.01 | 0.69 (0.08) <.01 | 0.70 (0.10) <.01 |
| b | Var (Slope) | 0.00 (0.00) .63 | 0.00 (0.00) .63 | 0.00 (0.00) .68 | 0.00 (0.00) .72 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .48 | -0.00 (0.00) .32 | -0.00 (0.00) .24 | -0.00 (0.00) .25 |
| b | Covar (Level, Slope) | 0.00 (0.00) .98 | -0.00 (0.00) .78 | -0.00 (0.00) .71 | -0.00 (0.00) .58 |
|  | Correlation of Levels | 0.099 | 0.075 | 0.089 | 0.085 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 512 | 490 | 478 | 409 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 43 |
|  | LL | -5,261 | -4,512 | -2,890 | -2,492 |
|  | AIC | 10,572 | 9,078 | 5,837 | 5,070 |
|  | BIC | 10,678 | 9,191 | 5,958 | 5,242 |

## fig\_id

Gender = *female*; Process (a) = *fev*; Process (b) = *fig\_id*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | ae | aeh |
| ab | Covar (Levels) | 0.26 (0.13) .04 | 0.24 (0.13) .05 | 0.21 (0.12) .06 |
| ab | Covar (Slopes) | 0.00 (0.00) .21 | 0.00 (0.00) .19 | 0.00 (0.00) .19 |
|  | Covar (Residuals) | — | — | — |
| er | Corr (Levels) | — | — | — |
| er | Corr (Slopes) | — | — | — |
| er | Corr (Residuals) | — | — | — |
| a | Level | 1.78 (0.02) <.01 | 1.76 (0.03) <.01 | 1.75 (0.03) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .10 | 0.03 (0.03) .30 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 |
| a | Level \* smoking | — | — | — |
| a | Level \* cardio | — | — | — |
| a | Level \* diabetes | — | — | — |
| a | Slope \* age | 0.00 (0.00) .36 | 0.00 (0.00) .19 | 0.00 (0.00) .16 |
| a | Slope \* education | — | 0.00 (0.00) .78 | 0.00 (0.00) .84 |
| a | Slope \* height | — | — | 0.00 (0.00) .49 |
| a | Slope \* smoking | — | — | — |
| a | Slope \* cardio | — | — | — |
| a | Slope \* diabetes | — | — | — |
| b | Level | 27.99 (0.40) <.01 | 27.65 (0.44) <.01 | 27.64 (0.45) <.01 |
| b | Slope | -0.53 (0.04) <.01 | -0.56 (0.04) <.01 | -0.56 (0.04) <.01 |
| b | Level \* age | -0.49 (0.04) <.01 | -0.48 (0.04) <.01 | -0.47 (0.04) <.01 |
| b | Level \* education | — | 0.76 (0.54) .16 | 0.71 (0.55) .20 |
| b | Level \* height | — | — | 0.04 (0.06) .52 |
| b | Level \* smoking | — | — | — |
| b | Level \* cardio | — | — | — |
| b | Level \* diabetes | — | — | — |
| b | Slope \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | — | 0.07 (0.03) .04 | 0.06 (0.04) .06 |
| b | Slope \* height | — | — | 0.00 (0.00) .62 |
| b | Slope \* smoking | — | — | — |
| b | Slope \* cardio | — | — | — |
| b | Slope \* diabetes | — | — | — |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — |
| b | Var (Level) | 36.51 (3.48) <.01 | 36.44 (3.50) <.01 | 36.75 (3.61) <.01 |
| b | Var (Slope) | 0.11 (0.02) <.01 | 0.10 (0.02) <.01 | 0.10 (0.02) <.01 |
|  | Var (Residual) | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .43 | -0.00 (0.00) .27 | -0.00 (0.00) .20 |
| b | Covar (Level, Slope) | -0.52 (0.21) .01 | -0.56 (0.21) .01 | -0.57 (0.22) .01 |
|  | Correlation of Levels | 0.13 | 0.12 | 0.12 |
|  | Correlation of Slopes | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA |
|  | N | 509 | 487 | 478 |
|  | occasions | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 |
|  | LL | -6,194 | -5,946 | -5,836 |
|  | AIC | 12,430 | 11,941 | 11,731 |
|  | BIC | 12,519 | 12,046 | 11,852 |

## fig\_mem

Gender = *female*; Process (a) = *fev*; Process (b) = *fig\_mem*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.15 (0.08) .06 | 0.12 (0.08) .13 | 0.14 (0.07) .07 | 0.10 (0.08) .25 |
| ab | Covar (Slopes) | 0.00 (0.00) .20 | 0.00 (0.00) .31 | 0.00 (0.00) .31 | 0.00 (0.00) .29 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.10 (0.08) .25 |
| er | Corr (Slopes) | — | — | — | 0.25 (0.24) .29 |
| er | Corr (Residuals) | — | — | — | 0.06 (0.04) .21 |
| a | Level | 1.78 (0.03) <.01 | 1.75 (0.03) <.01 | 1.75 (0.02) <.01 | 1.80 (0.03) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .10 | 0.03 (0.03) .30 | 0.04 (0.03) .20 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.06 (0.04) .20 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .05 |
| a | Level \* diabetes | — | — | — | -0.10 (0.10) .34 |
| a | Slope \* age | 0.00 (0.00) .33 | 0.00 (0.00) .16 | 0.00 (0.00) .14 | 0.00 (0.00) .12 |
| a | Slope \* education | — | 0.00 (0.00) .80 | 0.00 (0.00) .85 | 0.00 (0.00) .97 |
| a | Slope \* height | — | — | 0.00 (0.00) .58 | 0.00 (0.00) .60 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .53 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .84 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.01) .72 |
| b | Level | 20.80 (0.24) <.01 | 20.35 (0.26) <.01 | 20.41 (0.26) <.01 | 20.45 (0.34) <.01 |
| b | Slope | -0.20 (0.02) <.01 | -0.19 (0.02) <.01 | -0.18 (0.02) <.01 | -0.18 (0.03) <.01 |
| b | Level \* age | -0.14 (0.02) <.01 | -0.11 (0.02) <.01 | -0.11 (0.02) <.01 | -0.08 (0.03) <.01 |
| b | Level \* education | — | 1.24 (0.29) <.01 | 1.30 (0.30) <.01 | 1.25 (0.33) <.01 |
| b | Level \* height | — | — | -0.01 (0.04) .72 | 0.01 (0.04) .72 |
| b | Level \* smoking | — | — | — | 0.52 (0.49) .28 |
| b | Level \* cardio | — | — | — | 0.55 (0.64) .39 |
| b | Level \* diabetes | — | — | — | -0.96 (1.53) .53 |
| 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 | — | -0.01 (0.02) .71 | -0.01 (0.02) .60 | -0.00 (0.02) .95 |
| b | Slope \* height | — | — | 0.00 (0.00) .97 | -0.00 (0.00) .73 |
| b | Slope \* smoking | — | — | — | -0.07 (0.04) .05 |
| b | Slope \* cardio | — | — | — | 0.00 (0.05) .92 |
| b | Slope \* diabetes | — | — | — | -0.21 (0.16) .20 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 12.43 (1.22) <.01 | 11.79 (1.16) <.01 | 11.60 (1.16) <.01 | 11.14 (1.26) <.01 |
| b | Var (Slope) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .46 | -0.00 (0.00) .31 | -0.00 (0.00) .23 | -0.00 (0.00) .19 |
| b | Covar (Level, Slope) | -0.13 (0.07) .06 | -0.14 (0.07) .05 | -0.14 (0.07) .05 | -0.14 (0.08) .06 |
|  | Correlation of Levels | 0.14 | 0.11 | 0.13 | 0.098 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 512 | 490 | 478 | 409 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 41 |
|  | LL | -7,305 | -6,506 | -4,855 | -4,187 |
|  | AIC | 14,661 | 13,066 | 9,768 | 8,457 |
|  | BIC | 14,767 | 13,179 | 9,888 | 8,621 |

## information

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.26 (0.15) .09 | 0.18 (0.14) .20 | 0.11 (0.13) .37 | 0.06 (0.15) .66 |
| ab | Covar (Slopes) | 0.00 (0.00) .02 | 0.00 (0.00) .05 | 0.00 (0.00) .05 | 0.00 (0.00) .05 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.03 (0.07) .66 |
| er | Corr (Slopes) | — | — | — | 0.31 (0.16) .06 |
| er | Corr (Residuals) | — | — | — | 0.11 (0.04) .01 |
| a | Level | 1.78 (0.03) <.01 | 1.75 (0.03) <.01 | 1.75 (0.03) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .10 | 0.03 (0.03) .29 | 0.04 (0.03) .19 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.06 (0.04) .20 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .05 |
| a | Level \* diabetes | — | — | — | -0.10 (0.10) .31 |
| a | Slope \* age | 0.00 (0.00) .49 | 0.00 (0.00) .27 | 0.00 (0.00) .21 | 0.00 (0.00) .18 |
| a | Slope \* education | — | 0.00 (0.00) .77 | 0.00 (0.00) .84 | 0.00 (0.00) .96 |
| a | Slope \* height | — | — | 0.00 (0.00) .46 | 0.00 (0.00) .50 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .57 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .91 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.01) .82 |
| b | Level | 29.03 (0.48) <.01 | 27.59 (0.44) <.01 | 27.70 (0.43) <.01 | 27.86 (0.57) <.01 |
| b | Slope | -0.31 (0.03) <.01 | -0.30 (0.04) <.01 | -0.29 (0.04) <.01 | -0.28 (0.05) <.01 |
| b | Level \* age | -0.14 (0.04) <.01 | -0.05 (0.04) .20 | -0.04 (0.04) .30 | -0.04 (0.05) .39 |
| b | Level \* education | — | 4.15 (0.65) <.01 | 4.26 (0.66) <.01 | 4.01 (0.78) <.01 |
| b | Level \* height | — | — | 0.01 (0.06) .86 | 0.01 (0.07) .84 |
| b | Level \* smoking | — | — | — | 1.07 (1.00) .28 |
| b | Level \* cardio | — | — | — | -2.03 (1.14) .07 |
| b | Level \* diabetes | — | — | — | 0.35 (1.77) .84 |
| b | Slope \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | — | -0.03 (0.04) .39 | -0.04 (0.04) .31 | -0.03 (0.05) .56 |
| b | Slope \* height | — | — | 0.00 (0.00) .41 | 0.00 (0.00) .55 |
| b | Slope \* smoking | — | — | — | 0.04 (0.06) .52 |
| b | Slope \* cardio | — | — | — | 0.08 (0.09) .35 |
| b | Slope \* diabetes | — | — | — | -0.19 (0.18) .29 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 57.33 (4.67) <.01 | 47.01 (3.75) <.01 | 45.04 (3.68) <.01 | 45.81 (4.27) <.01 |
| b | Var (Slope) | 0.11 (0.01) <.01 | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.10 (0.02) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .38 | -0.00 (0.00) .27 | -0.00 (0.00) .18 | -0.00 (0.00) .15 |
| b | Covar (Level, Slope) | -0.58 (0.22) .01 | -0.51 (0.21) .01 | -0.48 (0.20) .02 | -0.65 (0.23) <.01 |
|  | Correlation of Levels | 0.11 | 0.081 | 0.057 | 0.031 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 512 | 490 | 479 | 410 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 41 |
|  | LL | -8,370 | -7,497 | -5,837 | -5,023 |
|  | AIC | 16,790 | 15,047 | 11,733 | 10,129 |
|  | BIC | 16,896 | 15,161 | 11,854 | 10,293 |

## mmse

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | -0.02 (0.04) .61 | -0.02 (0.04) .55 | -0.02 (0.04) .66 | -0.02 (0.05) .72 |
| ab | Covar (Slopes) | 0.00 (0.00) .12 | 0.00 (0.00) .12 | 0.00 (0.00) .14 | 0.00 (0.00) .10 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | -0.07 (0.18) .72 |
| er | Corr (Slopes) | — | — | — | 0.36 (0.20) .07 |
| er | Corr (Residuals) | — | — | — | 0.14 (0.05) <.01 |
| a | Level | 1.78 (0.02) <.01 | 1.76 (0.03) <.01 | 1.75 (0.03) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .09 | 0.03 (0.03) .27 | 0.04 (0.03) .19 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.06 (0.04) .20 |
| a | Level \* cardio | — | — | — | -0.11 (0.06) .07 |
| a | Level \* diabetes | — | — | — | -0.11 (0.11) .34 |
| a | Slope \* age | 0.00 (0.00) .83 | 0.00 (0.00) .56 | 0.00 (0.00) .49 | 0.00 (0.00) .50 |
| a | Slope \* education | — | 0.00 (0.00) .81 | 0.00 (0.00) .86 | 0.00 (0.00) .91 |
| a | Slope \* height | — | — | 0.00 (0.00) .59 | 0.00 (0.00) .58 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .65 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .84 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.01) .93 |
| b | Level | 28.10 (0.10) <.01 | 27.94 (0.10) <.01 | 27.97 (0.10) <.01 | 28.05 (0.14) <.01 |
| b | Slope | -0.27 (0.02) <.01 | -0.27 (0.02) <.01 | -0.27 (0.02) <.01 | -0.29 (0.03) <.01 |
| b | Level \* age | -0.04 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) .01 |
| b | Level \* education | — | 0.38 (0.14) .01 | 0.41 (0.14) <.01 | 0.32 (0.18) .08 |
| b | Level \* height | — | — | -0.02 (0.02) .31 | -0.01 (0.02) .54 |
| b | Level \* smoking | — | — | — | -0.05 (0.27) .84 |
| b | Level \* cardio | — | — | — | -0.10 (0.26) .71 |
| b | Level \* diabetes | — | — | — | -0.73 (0.56) .19 |
| 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 (0.02) .98 | -0.00 (0.02) .93 | 0.01 (0.03) .76 |
| b | Slope \* height | — | — | 0.00 (0.00) .73 | 0.00 (0.00) .55 |
| b | Slope \* smoking | — | — | — | 0.04 (0.04) .33 |
| b | Slope \* cardio | — | — | — | 0.01 (0.05) .77 |
| b | Slope \* diabetes | — | — | — | 0.14 (0.12) .23 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 0.75 (0.19) <.01 | 0.74 (0.19) <.01 | 0.73 (0.19) <.01 | 0.76 (0.23) <.01 |
| b | Var (Slope) | 0.05 (0.00) <.01 | 0.04 (0.00) <.01 | 0.04 (0.00) <.01 | 0.04 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .59 | 0.00 (0.00) .40 | -0.00 (0.00) .30 | -0.00 (0.00) .25 |
| b | Covar (Level, Slope) | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.06 (0.02) <.01 |
|  | Correlation of Levels | -0.077 | -0.087 | -0.067 | -0.066 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 511 | 489 | 480 | 411 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -4,689 | -4,479 | -4,397 | -3,775 |
|  | AIC | 9,420 | 9,007 | 8,852 | 7,632 |
|  | BIC | 9,509 | 9,112 | 8,973 | 7,796 |

## rotate

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.87 (0.31) <.01 | 0.86 (0.32) .01 | 0.89 (0.31) <.01 | 1.13 (0.35) <.01 |
| ab | Covar (Slopes) | 0.00 (0.00) .27 | 0.00 (0.00) .36 | 0.00 (0.00) .34 | 0.00 (0.00) .99 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.29 (0.08) <.01 |
| er | Corr (Slopes) | — | — | — | 0.03 (1.72) .99 |
| er | Corr (Residuals) | — | — | — | 0.01 (0.04) .81 |
| a | Level | 1.78 (0.03) <.01 | 1.75 (0.03) <.01 | 1.75 (0.03) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .09 | 0.03 (0.03) .27 | 0.04 (0.03) .16 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.05 (0.04) .22 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .05 |
| a | Level \* diabetes | — | — | — | -0.10 (0.11) .41 |
| a | Slope \* age | 0.00 (0.00) .28 | 0.00 (0.00) .15 | 0.00 (0.00) .12 | 0.00 (0.00) .12 |
| a | Slope \* education | — | 0.00 (0.00) .82 | 0.00 (0.00) .88 | 0.00 (0.00) .94 |
| a | Slope \* height | — | — | 0.00 (0.00) .50 | 0.00 (0.00) .40 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .47 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .87 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.02) .76 |
| b | Level | 42.65 (1.12) <.01 | 41.83 (1.24) <.01 | 41.78 (1.25) <.01 | 41.52 (1.57) <.01 |
| b | Slope | -1.00 (0.10) <.01 | -1.07 (0.11) <.01 | -1.04 (0.11) <.01 | -0.96 (0.11) <.01 |
| b | Level \* age | -0.74 (0.09) <.01 | -0.70 (0.10) <.01 | -0.68 (0.10) <.01 | -0.66 (0.11) <.01 |
| b | Level \* education | — | 1.81 (1.04) .08 | 1.54 (1.06) .15 | 0.91 (1.21) .45 |
| b | Level \* height | — | — | 0.17 (0.15) .24 | 0.19 (0.16) .23 |
| b | Level \* smoking | — | — | — | 0.88 (1.93) .65 |
| b | Level \* cardio | — | — | — | 1.95 (2.68) .47 |
| b | Level \* diabetes | — | — | — | -9.14 (11.76) .44 |
| b | Slope \* age | -0.04 (0.01) <.01 | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.04 (0.01) <.01 |
| b | Slope \* education | — | 0.15 (0.07) .03 | 0.15 (0.07) .02 | 0.19 (0.07) .01 |
| b | Slope \* height | — | — | -0.01 (0.01) .23 | -0.02 (0.01) .12 |
| b | Slope \* smoking | — | — | — | -0.13 (0.12) .27 |
| b | Slope \* cardio | — | — | — | 0.07 (0.28) .79 |
| b | Slope \* diabetes | — | — | — | -0.87 (1.11) .43 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 192.91 (20.96) <.01 | 190.55 (20.97) <.01 | 192.07 (21.49) <.01 | 179.11 (21.62) <.01 |
| b | Var (Slope) | 0.10 (0.08) .21 | 0.06 (0.08) .39 | 0.06 (0.08) .42 | 0.00 (0.08) .96 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .49 | -0.00 (0.00) .31 | -0.00 (0.00) .23 | -0.00 (0.00) .18 |
| b | Covar (Level, Slope) | 0.19 (0.97) .84 | 0.15 (0.97) .88 | 0.10 (0.99) .92 | 0.49 (1.05) .64 |
|  | Correlation of Levels | 0.2 | 0.2 | 0.22 | 0.29 |
|  | Correlation of Slopes | Inf | Inf | Inf | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 512 | 490 | 476 | 407 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 41 |
|  | LL | -9,126 | -8,284 | -6,610 | -5,700 |
|  | AIC | 18,301 | 16,622 | 13,278 | 11,481 |
|  | BIC | 18,407 | 16,735 | 13,399 | 11,646 |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.42 (0.21) .04 | 0.32 (0.20) .11 | 0.24 (0.20) .21 | 0.25 (0.20) .22 |
| ab | Covar (Slopes) | 0.00 (0.00) .95 | 0.00 (0.00) .79 | 0.00 (0.00) .84 | -0.00 (0.00) .39 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.10 (0.08) .22 |
| er | Corr (Slopes) | — | — | — | -0.16 (0.20) .42 |
| er | Corr (Residuals) | — | — | — | 0.04 (0.05) .38 |
| a | Level | 1.78 (0.02) <.01 | 1.76 (0.02) <.01 | 1.75 (0.02) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.02) .06 | 0.03 (0.02) .23 | 0.04 (0.03) .19 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.06 (0.05) .22 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .06 |
| a | Level \* diabetes | — | — | — | -0.10 (0.16) .56 |
| a | Slope \* age | 0.00 (0.00) .34 | 0.00 (0.00) .17 | 0.00 (0.00) .13 | 0.00 (0.00) .19 |
| a | Slope \* education | — | 0.00 (0.00) .76 | 0.00 (0.00) .83 | 0.00 (0.00) .96 |
| a | Slope \* height | — | — | 0.00 (0.00) .57 | 0.00 (0.00) .50 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .52 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .84 |
| a | Slope \* diabetes | — | — | — | -0.01 (0.03) .85 |
| b | Level | 35.42 (0.55) <.01 | 33.81 (0.59) <.01 | 33.86 (0.59) <.01 | 34.48 (0.75) <.01 |
| b | Slope | -0.85 (0.04) <.01 | -0.86 (0.04) <.01 | -0.86 (0.04) <.01 | -0.83 (0.06) <.01 |
| b | Level \* age | -0.83 (0.05) <.01 | -0.76 (0.05) <.01 | -0.73 (0.05) <.01 | -0.69 (0.06) <.01 |
| b | Level \* education | — | 4.04 (0.70) <.01 | 3.94 (0.70) <.01 | 3.34 (0.71) <.01 |
| b | Level \* height | — | — | 0.10 (0.08) .23 | 0.17 (0.09) .05 |
| b | Level \* smoking | — | — | — | 1.02 (1.22) .40 |
| b | Level \* cardio | — | — | — | -1.79 (1.54) .25 |
| b | Level \* diabetes | — | — | — | -6.99 (2.81) .01 |
| b | Slope \* age | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | — | 0.01 (0.04) .82 | 0.00 (0.04) .92 | 0.05 (0.04) .24 |
| b | Slope \* height | — | — | 0.00 (0.00) .50 | -0.00 (0.01) .86 |
| b | Slope \* smoking | — | — | — | -0.06 (0.08) .39 |
| b | Slope \* cardio | — | — | — | -0.02 (0.17) .92 |
| b | Slope \* diabetes | — | — | — | -0.21 (1.42) .88 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 80.96 (7.12) <.01 | 73.12 (6.76) <.01 | 72.69 (6.82) <.01 | 69.71 (6.71) <.01 |
| b | Var (Slope) | 0.10 (0.03) <.01 | 0.09 (0.03) <.01 | 0.09 (0.03) <.01 | 0.09 (0.02) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .55 | -0.00 (0.00) .39 | -0.00 (0.00) .34 | -0.00 (0.00) .20 |
| b | Covar (Level, Slope) | -0.38 (0.33) .25 | -0.56 (0.32) .08 | -0.59 (0.33) .07 | -0.69 (0.38) .07 |
|  | Correlation of Levels | 0.15 | 0.12 | 0.096 | 0.1 |
|  | Correlation of Slopes | NaN | NaN | NaN | -Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 508 | 486 | 477 | 408 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 43 |
|  | LL | -6,503 | -6,229 | -6,116 | -5,281 |
|  | AIC | 13,048 | 12,507 | 12,289 | 10,649 |
|  | BIC | 13,137 | 12,612 | 12,410 | 10,821 |

## synonyms

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.36 (0.11) <.01 | 0.30 (0.09) <.01 | 0.26 (0.09) <.01 | 0.23 (0.10) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .30 | 0.00 (0.00) .31 | 0.00 (0.00) .26 | 0.00 (0.00) .21 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.18 (0.07) .01 |
| er | Corr (Slopes) | — | — | — | 0.33 (0.25) .18 |
| er | Corr (Residuals) | — | — | — | 0.08 (0.04) .08 |
| a | Level | 1.77 (0.02) <.01 | 1.75 (0.03) <.01 | 1.75 (0.03) <.01 | 1.80 (0.04) <.01 |
| a | Slope | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 |
| a | Level \* age | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 |
| a | Level \* education | — | 0.05 (0.03) .09 | 0.03 (0.03) .28 | 0.04 (0.03) .19 |
| a | Level \* height | — | — | 0.01 (0.00) <.01 | 0.02 (0.00) <.01 |
| a | Level \* smoking | — | — | — | -0.05 (0.04) .23 |
| a | Level \* cardio | — | — | — | -0.12 (0.06) .04 |
| a | Level \* diabetes | — | — | — | -0.10 (0.11) .34 |
| a | Slope \* age | 0.00 (0.00) .27 | 0.00 (0.00) .15 | 0.00 (0.00) .14 | 0.00 (0.00) .13 |
| a | Slope \* education | — | 0.00 (0.00) .81 | 0.00 (0.00) .87 | 0.00 (0.00) .98 |
| a | Slope \* height | — | — | 0.00 (0.00) .60 | 0.00 (0.00) .62 |
| a | Slope \* smoking | — | — | — | -0.00 (0.00) .47 |
| a | Slope \* cardio | — | — | — | -0.00 (0.01) .91 |
| a | Slope \* diabetes | — | — | — | -0.00 (0.02) .83 |
| b | Level | 18.36 (0.29) <.01 | 17.32 (0.28) <.01 | 17.41 (0.28) <.01 | 17.70 (0.34) <.01 |
| b | Slope | -0.11 (0.02) <.01 | -0.11 (0.02) <.01 | -0.11 (0.02) <.01 | -0.12 (0.02) <.01 |
| b | Level \* age | -0.12 (0.03) <.01 | -0.06 (0.03) .01 | -0.06 (0.03) .04 | -0.04 (0.03) .18 |
| b | Level \* education | — | 2.90 (0.40) <.01 | 2.93 (0.41) <.01 | 2.70 (0.47) <.01 |
| b | Level \* height | — | — | 0.01 (0.04) .78 | 0.04 (0.05) .44 |
| b | Level \* smoking | — | — | — | 1.10 (0.61) .07 |
| b | Level \* cardio | — | — | — | -1.55 (0.84) .07 |
| b | Level \* diabetes | — | — | — | -2.64 (1.17) .02 |
| 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 (0.02) .80 | -0.01 (0.02) .78 | 0.00 (0.03) .92 |
| b | Slope \* height | — | — | 0.00 (0.00) .34 | 0.00 (0.00) .68 |
| b | Slope \* smoking | — | — | — | -0.01 (0.03) .80 |
| b | Slope \* cardio | — | — | — | 0.06 (0.05) .24 |
| b | Slope \* diabetes | — | — | — | 0.08 (0.36) .81 |
| a | Var (Level) | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.09 (0.01) <.01 | 0.09 (0.01) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 24.71 (2.11) <.01 | 20.23 (1.80) <.01 | 19.96 (1.80) <.01 | 18.43 (1.74) <.01 |
| b | Var (Slope) | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) .01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .44 | -0.00 (0.00) .29 | -0.00 (0.00) .23 | -0.00 (0.00) .19 |
| b | Covar (Level, Slope) | -0.04 (0.07) .56 | -0.06 (0.07) .41 | -0.05 (0.07) .47 | -0.05 (0.07) .45 |
|  | Correlation of Levels | 0.23 | 0.21 | 0.19 | 0.18 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 509 | 487 | 478 | 409 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -5,134 | -4,887 | -4,791 | -4,115 |
|  | AIC | 10,311 | 9,825 | 9,641 | 8,312 |
|  | BIC | 10,400 | 9,930 | 9,762 | 8,477 |

## Summary

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

Computed correlations:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Levels | analogies | . | 0.29 | 0.27 | 0.25 | 0.27 |
| Correlation of Levels | block | . | 0.25 | 0.23 | 0.22 | 0.24 |
| Correlation of Levels | digit\_b | . | 0.24 | 0.24 | 0.27 | 0.31 |
| Correlation of Levels | digit\_f | . | 0.10 | 0.07 | 0.09 | 0.09 |
| Correlation of Levels | fig\_id | . | 0.13 | 0.12 | 0.12 | . |
| Correlation of Levels | fig\_mem | . | 0.14 | 0.11 | 0.13 | 0.10 |
| Correlation of Levels | information | . | 0.11 | 0.08 | 0.06 | 0.03 |
| Correlation of Levels | mmse | . | -0.08 | -0.09 | -0.07 | -0.07 |
| Correlation of Levels | rotate | . | 0.20 | 0.20 | 0.22 | 0.29 |
| Correlation of Levels | symbol | . | 0.15 | 0.12 | 0.10 | 0.10 |
| Correlation of Levels | synonyms | . | 0.23 | 0.21 | 0.19 | 0.18 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Slopes | analogies | . | . | . | . | . |
| Correlation of Slopes | block | . | Inf | Inf | Inf | . |
| Correlation of Slopes | digit\_b | . | . | . | . | . |
| Correlation of Slopes | digit\_f | . | . | . | . | . |
| Correlation of Slopes | fig\_id | . | Inf | Inf | Inf | . |
| Correlation of Slopes | fig\_mem | . | . | . | . | . |
| Correlation of Slopes | information | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | mmse | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | rotate | . | Inf | Inf | Inf | . |
| Correlation of Slopes | symbol | . | . | . | . | -Inf |
| Correlation of Slopes | synonyms | . | . | . | . | . |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Residuals | analogies | 0.00 | 0.00 | 0.02 | 0.02 | 0.02 |
| Correlation of Residuals | block | 0.07 | 0.07 | 0.08 | 0.07 | 0.07 |
| Correlation of Residuals | digit\_b | -0.03 | -0.02 | -0.02 | -0.02 | -0.04 |
| Correlation of Residuals | digit\_f | 0.04 | 0.04 | 0.05 | 0.06 | 0.11 |
| Correlation of Residuals | fig\_id | . | -0.04 | -0.04 | -0.04 | . |
| Correlation of Residuals | fig\_mem | 0.08 | 0.08 | 0.07 | 0.06 | 0.05 |
| Correlation of Residuals | information | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 |
| Correlation of Residuals | mmse | 0.15 | 0.15 | 0.13 | 0.13 | 0.14 |
| Correlation of Residuals | rotate | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Correlation of Residuals | symbol | 0.03 | 0.03 | 0.04 | 0.04 | 0.04 |
| Correlation of Residuals | synonyms | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 |

P-values for corresponding covariances:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Covariance of Levels | analogies | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Covariance of Levels | block | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Covariance of Levels | digit\_b | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Levels | digit\_f | 0.00 | 0.16 | 0.29 | 0.25 | 0.37 |
| Covariance of Levels | fig\_id | . | 0.04 | 0.05 | 0.06 | . |
| Covariance of Levels | fig\_mem | 0.00 | 0.06 | 0.13 | 0.07 | 0.25 |
| Covariance of Levels | information | 0.00 | 0.09 | 0.20 | 0.37 | 0.66 |
| Covariance of Levels | mmse | 0.13 | 0.61 | 0.55 | 0.66 | 0.72 |
| Covariance of Levels | rotate | 0.00 | 0.00 | 0.01 | 0.00 | 0.00 |
| Covariance of Levels | symbol | 0.00 | 0.04 | 0.11 | 0.21 | 0.22 |
| Covariance of Levels | synonyms | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Covariance of Slopes | analogies | 0.30 | 0.28 | 0.48 | 0.42 | 0.36 |
| Covariance of Slopes | block | 0.21 | 0.14 | 0.23 | 0.24 | 0.44 |
| Covariance of Slopes | digit\_b | 0.03 | 0.03 | 0.04 | 0.04 | 0.17 |
| Covariance of Slopes | digit\_f | 0.59 | 0.51 | 0.57 | 0.59 | 0.92 |
| Covariance of Slopes | fig\_id | . | 0.21 | 0.19 | 0.19 | . |
| Covariance of Slopes | fig\_mem | 0.34 | 0.20 | 0.31 | 0.31 | 0.29 |
| Covariance of Slopes | information | 0.06 | 0.02 | 0.05 | 0.05 | 0.05 |
| Covariance of Slopes | mmse | 0.09 | 0.12 | 0.12 | 0.14 | 0.10 |
| Covariance of Slopes | rotate | 0.44 | 0.27 | 0.36 | 0.34 | 0.99 |
| Covariance of Slopes | symbol | 0.56 | 0.95 | 0.79 | 0.84 | 0.39 |
| Covariance of Slopes | synonyms | 0.43 | 0.30 | 0.31 | 0.26 | 0.21 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Covariance of Residuals | analogies | 1.00 | 0.95 | 0.62 | 0.61 | 0.65 |
| Covariance of Residuals | block | 0.04 | 0.03 | 0.02 | 0.04 | 0.09 |
| Covariance of Residuals | digit\_b | 0.56 | 0.63 | 0.64 | 0.69 | 0.51 |
| Covariance of Residuals | digit\_f | 0.20 | 0.18 | 0.08 | 0.08 | 0.01 |
| Covariance of Residuals | fig\_id | . | 0.26 | 0.19 | 0.24 | . |
| Covariance of Residuals | fig\_mem | 0.05 | 0.05 | 0.09 | 0.11 | 0.21 |
| Covariance of Residuals | information | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Covariance of Residuals | mmse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Residuals | rotate | 0.87 | 0.71 | 0.84 | 0.85 | 0.81 |
| Covariance of Residuals | symbol | 0.39 | 0.34 | 0.21 | 0.27 | 0.38 |
| Covariance of Residuals | synonyms | 0.06 | 0.05 | 0.04 | 0.05 | 0.09 |

# male

Gender = *male*; Model type: *aehplus*; Process (a) = *fev*; Process (b): *analogies*, *block*, *digit\_b*, *digit\_f*, *fig\_id*, *fig\_mem*, *information*, *mmse*, *rotate*, *symbol*, *synonyms*

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | analogies | block | digit\_b | digit\_f | fig\_mem | information | mmse | rotate | symbol | synonyms | mean(sd) |
| ab | Covar (Levels) | 0.15 (0.14) .29 | 0.62 (0.25) .01 | 0.09 (0.04) .03 | 0.07 (0.04) .12 | 0.40 (0.17) .02 | 0.35 (0.27) .20 | 0.12 (0.09) .19 | 1.50 (0.69) .03 | 0.96 (0.41) .02 | 0.30 (0.20) .14 | — |
| ab | Covar (Slopes) | 0.00 (0.00) .94 | 0.00 (0.00) .49 | 0.00 (0.00) .41 | 0.00 (0.00) .75 | 0.00 (0.00) .89 | 0.00 (0.00) .92 | 0.00 (0.00) .28 | 0.00 (0.00) .73 | 0.00 (0.00) .81 | 0.00 (0.00) .81 | — |
|  | Covar (Residuals) | — | — | — | — | — | — | — | — | — | — | — |
| er | Corr (Levels) | 0.11 (0.10) .29 | 0.20 (0.08) .01 | 0.20 (0.09) .03 | 0.15 (0.09) .11 | 0.23 (0.09) .01 | 0.11 (0.08) .18 | 0.16 (0.12) .18 | 0.19 (0.08) .02 | 0.20 (0.08) .01 | 0.13 (0.08) .13 | — |
| er | Corr (Slopes) | -0.04 (0.62) .95 | 0.14 (0.21) .49 | -0.50 (0.69) .47 | 0.20 (0.61) .75 | 0.05 (0.38) .89 | -0.03 (0.30) .93 | 0.35 (0.30) .24 | 0.14 (0.38) .72 | 0.07 (0.27) .80 | 0.10 (0.41) .81 | — |
| er | Corr (Residuals) | 0.06 (0.05) .25 | 0.01 (0.05) .89 | -0.03 (0.04) .42 | 0.05 (0.05) .36 | 0.01 (0.04) .82 | 0.11 (0.05) .03 | 0.05 (0.05) .28 | 0.02 (0.05) .69 | 0.01 (0.06) .82 | 0.04 (0.05) .34 | — |
| a | Level | 2.55 (0.07) <.01 | 2.50 (0.07) <.01 | 2.50 (0.07) <.01 | 2.50 (0.07) <.01 | 2.55 (0.08) <.01 | 2.54 (0.07) <.01 | 2.55 (0.08) <.01 | 2.55 (0.07) <.01 | 2.50 (0.07) <.01 | 2.55 (0.07) <.01 | 2.53(0.02) |
| a | Slope | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 | -0.04 (0.01) <.01 | -0.05 (0.01) <.01 | -0.04 (0.01) <.01 | -0.05 (0.01) <.01 | -0.04(0.00) |
| a | Level \* age | -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 \* education | 0.04 (0.04) .34 | 0.05 (0.04) .26 | 0.04 (0.04) .27 | 0.05 (0.04) .28 | 0.04 (0.04) .40 | 0.04 (0.04) .33 | 0.04 (0.04) .36 | 0.04 (0.04) .36 | 0.04 (0.04) .29 | 0.04 (0.04) .35 | 0.04(0.00) |
| a | Level \* height | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.03 (0.01) <.01 | 0.03 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 | 0.04 (0.01) <.01 | 0.03(0.00) |
| a | Level \* smoking | -0.11 (0.08) .19 | -0.10 (0.08) .22 | -0.10 (0.08) .23 | -0.10 (0.08) .21 | -0.11 (0.08) .17 | -0.11 (0.08) .19 | -0.11 (0.08) .18 | -0.11 (0.08) .18 | -0.09 (0.08) .26 | -0.11 (0.08) .19 | -0.10(0.01) |
| a | Level \* cardio | -0.27 (0.12) .03 | -0.27 (0.12) .02 | -0.26 (0.12) .02 | -0.27 (0.12) .03 | -0.28 (0.12) .02 | -0.26 (0.12) .03 | -0.26 (0.12) .03 | -0.27 (0.12) .03 | -0.27 (0.12) .02 | -0.27 (0.13) .03 | -0.27(0.00) |
| a | Level \* diabetes | -0.46 (0.46) .32 | -0.42 (0.23) .07 | -0.42 (0.22) .06 | -0.43 (0.21) .05 | -0.45 (0.38) .24 | -0.48 (0.24) .05 | -0.47 (0.23) .04 | -0.46 (0.28) .10 | -0.43 (0.27) .11 | -0.47 (0.24) .05 | -0.45(0.02) |
| a | Slope \* age | 0.00 (0.00) .42 | 0.00 (0.00) .93 | 0.00 (0.00) .81 | 0.00 (0.00) .85 | 0.00 (0.00) .42 | 0.00 (0.00) .46 | 0.00 (0.00) .58 | 0.00 (0.00) .45 | 0.00 (0.00) .94 | 0.00 (0.00) .43 | 0.00(0.00) |
| a | Slope \* education | 0.00 (0.00) .93 | 0.00 (0.00) .86 | 0.00 (0.00) .90 | 0.00 (0.00) .90 | 0.00 (0.00) .84 | 0.00 (0.00) .94 | 0.00 (0.00) .88 | 0.00 (0.00) .92 | 0.00 (0.00) .95 | 0.00 (0.00) .92 | 0.00(0.00) |
| a | Slope \* height | 0.00 (0.00) .71 | 0.00 (0.00) .95 | 0.00 (0.00) .98 | 0.00 (0.00) .99 | 0.00 (0.00) .78 | 0.00 (0.00) .71 | 0.00 (0.00) .68 | 0.00 (0.00) .71 | 0.00 (0.00) .98 | 0.00 (0.00) .71 | 0.00(0.00) |
| a | Slope \* smoking | 0.00 (0.01) .99 | -0.00 (0.01) .81 | -0.00 (0.01) .79 | -0.00 (0.01) .87 | 0.00 (0.01) .93 | 0.00 (0.01) .97 | 0.00 (0.01) .95 | 0.00 (0.01) .93 | -0.00 (0.01) .79 | 0.00 (0.01) .96 | -0.00(0.00) |
| a | Slope \* cardio | 0.00 (0.01) .58 | 0.00 (0.01) .51 | 0.00 (0.01) .57 | 0.00 (0.01) .56 | 0.00 (0.01) .46 | 0.00 (0.01) .58 | 0.00 (0.01) .61 | 0.00 (0.01) .57 | 0.00 (0.01) .55 | 0.00 (0.01) .53 | 0.00(0.00) |
| a | Slope \* diabetes | 0.02 (0.16) .91 | 0.02 (0.05) .75 | 0.02 (0.03) .52 | 0.02 (0.03) .61 | 0.01 (0.06) .79 | 0.02 (0.05) .69 | 0.02 (0.04) .64 | 0.02 (0.06) .78 | 0.02 (0.03) .63 | 0.02 (0.04) .67 | 0.02(0.00) |
| b | Level | 13.18 (0.48) <.01 | 16.04 (0.77) <.01 | 3.86 (0.17) <.01 | 5.35 (0.13) <.01 | 18.46 (0.52) <.01 | 30.66 (0.81) <.01 | 27.14 (0.24) <.01 | 49.46 (2.65) <.01 | 32.73 (1.15) <.01 | 15.88 (0.56) <.01 | — |
| b | Slope | -0.13 (0.04) <.01 | -0.42 (0.07) <.01 | -0.05 (0.01) <.01 | -0.02 (0.01) .06 | -0.16 (0.04) <.01 | -0.18 (0.06) <.01 | -0.14 (0.03) <.01 | -1.58 (0.20) <.01 | -0.92 (0.09) <.01 | -0.08 (0.04) .03 | — |
| b | Level \* age | -0.17 (0.03) <.01 | -0.37 (0.05) <.01 | -0.02 (0.01) .05 | -0.01 (0.01) .17 | -0.16 (0.04) <.01 | -0.15 (0.06) .02 | -0.07 (0.02) <.01 | -1.00 (0.16) <.01 | -0.69 (0.08) <.01 | -0.09 (0.04) .03 | — |
| b | Level \* education | 1.57 (0.23) <.01 | 2.29 (0.46) <.01 | 0.32 (0.09) <.01 | 0.24 (0.07) <.01 | 1.05 (0.31) <.01 | 2.61 (0.59) <.01 | 0.28 (0.19) .14 | 4.04 (1.18) <.01 | 3.65 (0.64) <.01 | 2.36 (0.36) <.01 | — |
| b | Level \* height | 0.10 (0.04) .01 | 0.10 (0.07) .15 | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 | 0.00 (0.04) .95 | 0.09 (0.08) .21 | 0.06 (0.03) .04 | 0.09 (0.17) .59 | 0.23 (0.10) .02 | 0.15 (0.06) .01 | — |
| b | Level \* smoking | 0.01 (0.47) .99 | 0.31 (0.88) .73 | 0.03 (0.17) .86 | -0.01 (0.14) .95 | 0.24 (0.58) .68 | 0.86 (0.87) .32 | 0.66 (0.30) .03 | -2.19 (2.47) .37 | -0.47 (1.28) .71 | 1.23 (0.62) .05 | — |
| b | Level \* cardio | -0.23 (0.68) .74 | -0.27 (1.08) .80 | -0.22 (0.22) .32 | -0.07 (0.23) .75 | 0.06 (0.83) .94 | -2.64 (1.13) .02 | -0.44 (0.31) .16 | 0.44 (3.37) .90 | -1.20 (1.97) .54 | -2.05 (0.91) .02 | — |
| b | Level \* diabetes | -1.33 (3.59) .71 | -4.29 (8.87) .63 | -0.24 (0.83) .77 | -0.67 (0.50) .18 | -1.75 (4.09) .67 | 1.55 (2.67) .56 | 0.14 (0.92) .88 | -4.85 (16.80) .77 | -0.68 (5.47) .90 | -0.91 (2.52) .72 | — |
| b | Slope \* age | -0.00 (0.00) .10 | -0.02 (0.00) <.01 | -0.00 (0.00) .02 | -0.00 (0.00) .31 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) .02 | -0.06 (0.01) <.01 | -0.03 (0.01) <.01 | -0.01 (0.00) .01 | — |
| b | Slope \* education | 0.01 (0.02) .53 | -0.02 (0.02) .40 | -0.01 (0.01) .07 | -0.00 (0.01) .55 | 0.00 (0.02) .96 | -0.02 (0.03) .50 | 0.01 (0.02) .58 | 0.05 (0.09) .59 | 0.03 (0.04) .51 | -0.03 (0.01) .04 | — |
| b | Slope \* height | 0.00 (0.00) .55 | 0.01 (0.00) .19 | 0.00 (0.00) .99 | -0.00 (0.00) .48 | 0.00 (0.00) .21 | 0.00 (0.00) .39 | 0.00 (0.00) .93 | 0.03 (0.01) .03 | 0.01 (0.01) .31 | -0.00 (0.00) .79 | — |
| b | Slope \* smoking | 0.01 (0.03) .69 | -0.04 (0.06) .53 | 0.01 (0.01) .36 | 0.01 (0.01) .50 | -0.04 (0.04) .32 | 0.02 (0.05) .63 | -0.03 (0.04) .34 | 0.13 (0.17) .43 | -0.12 (0.09) .16 | -0.02 (0.03) .61 | — |
| b | Slope \* cardio | 0.02 (0.05) .64 | 0.01 (0.10) .95 | -0.01 (0.02) .66 | -0.01 (0.02) .47 | -0.08 (0.08) .33 | 0.01 (0.06) .85 | 0.01 (0.04) .88 | 0.01 (0.25) .98 | 0.00 (0.14) .99 | 0.04 (0.05) .45 | — |
| b | Slope \* diabetes | -0.13 (0.75) .86 | 0.19 (0.41) .65 | 0.02 (0.10) .82 | 0.02 (0.10) .84 | 0.09 (0.59) .88 | 0.05 (0.35) .89 | 0.08 (0.14) .58 | -0.19 (1.14) .87 | -0.05 (0.53) .92 | 0.10 (0.41) .81 | — |
| a | Var (Level) | 0.27 (0.03) <.01 | 0.30 (0.03) <.01 | 0.30 (0.04) <.01 | 0.30 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.03) <.01 | 0.27 (0.04) <.01 | 0.30 (0.03) <.01 | 0.27 (0.03) <.01 | 0.28(0.02) |
| a | Var (Slope) | 0.00 (0.00) .02 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .02 | 0.00 (0.00) .02 | 0.00 (0.00) .01 | 0.00 (0.00) .01 | 0.00 (0.00) <.01 | 0.00 (0.00) .01 | 0.00(0.00) |
|  | Var (Residual) | — | — | — | — | — | — | — | — | — | — | — |
| b | Var (Level) | 6.83 (1.07) <.01 | 32.76 (4.00) <.01 | 0.66 (0.13) <.01 | 0.68 (0.11) <.01 | 11.69 (1.81) <.01 | 39.78 (4.41) <.01 | 1.85 (0.25) <.01 | 228.51 (30.56) <.01 | 76.40 (9.71) <.01 | 20.55 (2.54) <.01 | — |
| b | Var (Slope) | 0.00 (0.00) .42 | 0.04 (0.01) <.01 | 0.00 (0.00) .56 | 0.00 (0.00) .57 | 0.01 (0.01) .15 | 0.04 (0.01) <.01 | 0.01 (0.00) <.01 | 0.25 (0.13) .05 | 0.07 (0.03) .01 | 0.01 (0.00) .10 | — |
|  | Var (Residual) | — | — | — | — | — | — | — | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .44 | -0.00 (0.00) .58 | -0.00 (0.00) .56 | -0.00 (0.00) .55 | 0.00 (0.00) .38 | 0.00 (0.00) .40 | 0.00 (0.00) .50 | 0.00 (0.00) .44 | -0.00 (0.00) .52 | 0.00 (0.00) .43 | 0.00(0.00) |
| b | Covar (Level, Slope) | -0.03 (0.07) .66 | -0.26 (0.20) .18 | -0.00 (0.01) .81 | -0.00 (0.01) .51 | -0.07 (0.09) .40 | -0.41 (0.19) .03 | -0.04 (0.03) .19 | -0.82 (1.50) .58 | -0.83 (0.42) .05 | -0.06 (0.08) .48 | — |
|  | Correlation of Levels | 0.11 | 0.2 | 0.2 | 0.15 | 0.23 | 0.11 | 0.16 | 0.19 | 0.2 | 0.13 | 0.17(0.04) |
|  | Correlation of Slopes | NaN | Inf | NaN | NaN | NaN | NaN | Inf | Inf | NaN | NaN | Inf(NaN) |
|  | Correlation of Residuals | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | — |
|  | N | 299 | 299 | 299 | 299 | 298 | 299 | 299 | 298 | 299 | 299 | 298.80(0.42) |
|  | occasions | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 41 | 43 | 43 | 43 | 41 | 41 | 41 | 41 | 43 | 41 | 41.80(1.03) |
|  | LL | -3,106 | -3,672 | -2,195 | -2,115 | -3,365 | -3,669 | -2,754 | -4,568 | -4,050 | -3,237 | -3,273( 775) |
|  | AIC | 6,293 | 7,431 | 4,477 | 4,315 | 6,811 | 7,420 | 5,591 | 9,218 | 8,186 | 6,557 | 6,630(1,550) |
|  | BIC | 6,445 | 7,590 | 4,636 | 4,474 | 6,963 | 7,571 | 5,743 | 9,370 | 8,346 | 6,709 | 6,785(1,548) |

## analogies

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.40 (0.15) .01 | 0.27 (0.14) .05 | 0.15 (0.13) .24 | 0.15 (0.14) .29 |
| ab | Covar (Slopes) | 0.00 (0.00) .97 | 0.00 (0.00) .96 | 0.00 (0.00) .98 | 0.00 (0.00) .94 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.11 (0.10) .29 |
| er | Corr (Slopes) | — | — | — | -0.04 (0.62) .95 |
| er | Corr (Residuals) | — | — | — | 0.06 (0.05) .25 |
| a | Level | 2.53 (0.05) <.01 | 2.48 (0.06) <.01 | 2.43 (0.06) <.01 | 2.55 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.05 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .36 | 0.04 (0.04) .34 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.11 (0.08) .19 |
| a | Level \* cardio | — | — | — | -0.27 (0.12) .03 |
| a | Level \* diabetes | — | — | — | -0.46 (0.46) .32 |
| a | Slope \* age | 0.00 (0.00) .42 | 0.00 (0.00) .52 | 0.00 (0.00) .37 | 0.00 (0.00) .42 |
| a | Slope \* education | — | 0.00 (0.00) .95 | 0.00 (0.00) .90 | 0.00 (0.00) .93 |
| a | Slope \* height | — | — | 0.00 (0.00) .22 | 0.00 (0.00) .71 |
| a | Slope \* smoking | — | — | — | 0.00 (0.01) .99 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .58 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.16) .91 |
| b | Level | 14.24 (0.33) <.01 | 13.20 (0.35) <.01 | 13.07 (0.36) <.01 | 13.18 (0.48) <.01 |
| b | Slope | -0.12 (0.02) <.01 | -0.13 (0.02) <.01 | -0.12 (0.03) <.01 | -0.13 (0.04) <.01 |
| b | Level \* age | -0.23 (0.03) <.01 | -0.20 (0.03) <.01 | -0.18 (0.03) <.01 | -0.17 (0.03) <.01 |
| b | Level \* education | — | 1.73 (0.19) <.01 | 1.60 (0.20) <.01 | 1.57 (0.23) <.01 |
| b | Level \* height | — | — | 0.10 (0.03) <.01 | 0.10 (0.04) .01 |
| b | Level \* smoking | — | — | — | 0.01 (0.47) .99 |
| b | Level \* cardio | — | — | — | -0.23 (0.68) .74 |
| b | Level \* diabetes | — | — | — | -1.33 (3.59) .71 |
| b | Slope \* age | -0.00 (0.00) .01 | -0.00 (0.00) .02 | -0.00 (0.00) .02 | -0.00 (0.00) .10 |
| b | Slope \* education | — | 0.01 (0.01) .40 | 0.01 (0.01) .47 | 0.01 (0.02) .53 |
| b | Slope \* height | — | — | 0.00 (0.00) .84 | 0.00 (0.00) .55 |
| b | Slope \* smoking | — | — | — | 0.01 (0.03) .69 |
| b | Slope \* cardio | — | — | — | 0.02 (0.05) .64 |
| b | Slope \* diabetes | — | — | — | -0.13 (0.75) .86 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .01 | 0.00 (0.00) .02 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 10.17 (1.40) <.01 | 7.13 (1.02) <.01 | 6.82 (0.98) <.01 | 6.83 (1.07) <.01 |
| b | Var (Slope) | 0.00 (0.00) .38 | 0.00 (0.00) .46 | 0.00 (0.00) .47 | 0.00 (0.00) .42 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .79 | 0.00 (0.00) .83 | 0.00 (0.00) .70 | 0.00 (0.00) .44 |
| b | Covar (Level, Slope) | -0.01 (0.07) .91 | -0.01 (0.06) .86 | -0.02 (0.06) .73 | -0.03 (0.07) .66 |
|  | Correlation of Levels | 0.22 | 0.17 | 0.11 | 0.11 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,748 | -3,642 | -3,589 | -3,106 |
|  | AIC | 7,539 | 7,335 | 7,236 | 6,293 |
|  | BIC | 7,620 | 7,430 | 7,346 | 6,445 |

## block

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 1.06 (0.27) <.01 | 0.90 (0.26) <.01 | 0.78 (0.24) <.01 | 0.62 (0.25) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .11 | 0.00 (0.00) .13 | 0.00 (0.00) .11 | 0.00 (0.00) .49 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.20 (0.08) .01 |
| er | Corr (Slopes) | — | — | — | 0.14 (0.21) .49 |
| er | Corr (Residuals) | — | — | — | 0.01 (0.05) .89 |
| a | Level | 2.52 (0.06) <.01 | 2.47 (0.06) <.01 | 2.42 (0.06) <.01 | 2.50 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .36 | 0.05 (0.04) .26 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.10 (0.08) .22 |
| a | Level \* cardio | — | — | — | -0.27 (0.12) .02 |
| a | Level \* diabetes | — | — | — | -0.42 (0.23) .07 |
| a | Slope \* age | 0.00 (0.00) .56 | 0.00 (0.00) .69 | 0.00 (0.00) .54 | 0.00 (0.00) .93 |
| a | Slope \* education | — | 0.00 (0.00) .96 | 0.00 (0.00) .92 | 0.00 (0.00) .86 |
| a | Slope \* height | — | — | 0.00 (0.00) .25 | 0.00 (0.00) .95 |
| a | Slope \* smoking | — | — | — | -0.00 (0.01) .81 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .51 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.05) .75 |
| b | Level | 17.43 (0.56) <.01 | 16.07 (0.56) <.01 | 15.93 (0.57) <.01 | 16.04 (0.77) <.01 |
| b | Slope | -0.43 (0.04) <.01 | -0.42 (0.04) <.01 | -0.42 (0.04) <.01 | -0.42 (0.07) <.01 |
| b | Level \* age | -0.46 (0.05) <.01 | -0.43 (0.05) <.01 | -0.40 (0.05) <.01 | -0.37 (0.05) <.01 |
| b | Level \* education | — | 2.27 (0.40) <.01 | 2.18 (0.40) <.01 | 2.29 (0.46) <.01 |
| b | Level \* height | — | — | 0.10 (0.06) .13 | 0.10 (0.07) .15 |
| b | Level \* smoking | — | — | — | 0.31 (0.88) .73 |
| b | Level \* cardio | — | — | — | -0.27 (1.08) .80 |
| b | Level \* diabetes | — | — | — | -4.29 (8.87) .63 |
| b | Slope \* age | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | — | 0.01 (0.02) .75 | -0.00 (0.02) .93 | -0.02 (0.02) .40 |
| b | Slope \* height | — | — | 0.01 (0.00) .13 | 0.01 (0.00) .19 |
| b | Slope \* smoking | — | — | — | -0.04 (0.06) .53 |
| b | Slope \* cardio | — | — | — | 0.01 (0.10) .95 |
| b | Slope \* diabetes | — | — | — | 0.19 (0.41) .65 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.30 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 40.31 (4.35) <.01 | 35.62 (3.90) <.01 | 34.88 (3.87) <.01 | 32.76 (4.00) <.01 |
| b | Var (Slope) | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .85 | 0.00 (0.00) .87 | 0.00 (0.00) .74 | -0.00 (0.00) .58 |
| b | Covar (Level, Slope) | -0.27 (0.18) .14 | -0.29 (0.18) .10 | -0.32 (0.18) .07 | -0.26 (0.20) .18 |
|  | Correlation of Levels | 0.29 | 0.26 | 0.24 | 0.2 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 43 |
|  | LL | -5,994 | -5,411 | -4,242 | -3,672 |
|  | AIC | 12,038 | 10,876 | 8,541 | 7,431 |
|  | BIC | 12,134 | 10,980 | 8,652 | 7,590 |

## digit\_b

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.15 (0.04) <.01 | 0.13 (0.04) <.01 | 0.09 (0.04) .02 | 0.09 (0.04) .03 |
| ab | Covar (Slopes) | 0.00 (0.00) .85 | 0.00 (0.00) .72 | 0.00 (0.00) .78 | 0.00 (0.00) .41 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.20 (0.09) .03 |
| er | Corr (Slopes) | — | — | — | -0.50 (0.69) .47 |
| er | Corr (Residuals) | — | — | — | -0.03 (0.04) .42 |
| a | Level | 2.53 (0.06) <.01 | 2.48 (0.06) <.01 | 2.43 (0.06) <.01 | 2.50 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .36 | 0.04 (0.04) .27 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.10 (0.08) .23 |
| a | Level \* cardio | — | — | — | -0.26 (0.12) .02 |
| a | Level \* diabetes | — | — | — | -0.42 (0.22) .06 |
| a | Slope \* age | 0.00 (0.00) .40 | 0.00 (0.00) .50 | 0.00 (0.00) .35 | 0.00 (0.00) .81 |
| a | Slope \* education | — | 0.00 (0.00) .99 | 0.00 (0.00) .92 | 0.00 (0.00) .90 |
| a | Slope \* height | — | — | 0.00 (0.00) .22 | 0.00 (0.00) .98 |
| a | Slope \* smoking | — | — | — | -0.00 (0.01) .79 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .57 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.03) .52 |
| b | Level | 4.09 (0.10) <.01 | 3.88 (0.11) <.01 | 3.84 (0.11) <.01 | 3.86 (0.17) <.01 |
| b | Slope | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 | -0.05 (0.01) <.01 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.02 (0.01) .02 | -0.02 (0.01) .05 |
| b | Level \* education | — | 0.35 (0.07) <.01 | 0.30 (0.07) <.01 | 0.32 (0.09) <.01 |
| b | Level \* height | — | — | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| b | Level \* smoking | — | — | — | 0.03 (0.17) .86 |
| b | Level \* cardio | — | — | — | -0.22 (0.22) .32 |
| b | Level \* diabetes | — | — | — | -0.24 (0.83) .77 |
| b | Slope \* age | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) .02 |
| b | Slope \* education | — | -0.01 (0.00) .05 | -0.01 (0.00) .07 | -0.01 (0.01) .07 |
| b | Slope \* height | — | — | 0.00 (0.00) .99 | 0.00 (0.00) .99 |
| b | Slope \* smoking | — | — | — | 0.01 (0.01) .36 |
| b | Slope \* cardio | — | — | — | -0.01 (0.02) .66 |
| b | Slope \* diabetes | — | — | — | 0.02 (0.10) .82 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.30 (0.04) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 0.77 (0.10) <.01 | 0.69 (0.10) <.01 | 0.65 (0.10) <.01 | 0.66 (0.13) <.01 |
| b | Var (Slope) | 0.00 (0.00) .55 | 0.00 (0.00) .57 | 0.00 (0.00) .59 | 0.00 (0.00) .56 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .80 | 0.00 (0.00) .83 | 0.00 (0.00) .67 | -0.00 (0.00) .56 |
| b | Covar (Level, Slope) | 0.00 (0.01) .96 | 0.00 (0.01) .96 | -0.00 (0.01) .91 | -0.00 (0.01) .81 |
|  | Correlation of Levels | 0.3 | 0.27 | 0.21 | 0.2 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 43 |
|  | LL | -4,307 | -3,744 | -2,581 | -2,195 |
|  | AIC | 8,663 | 7,543 | 5,219 | 4,477 |
|  | BIC | 8,759 | 7,646 | 5,330 | 4,636 |

## digit\_f

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.13 (0.04) <.01 | 0.11 (0.04) .01 | 0.06 (0.04) .10 | 0.07 (0.04) .12 |
| ab | Covar (Slopes) | 0.00 (0.00) .74 | 0.00 (0.00) .78 | 0.00 (0.00) .87 | 0.00 (0.00) .75 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.15 (0.09) .11 |
| er | Corr (Slopes) | — | — | — | 0.20 (0.61) .75 |
| er | Corr (Residuals) | — | — | — | 0.05 (0.05) .36 |
| a | Level | 2.52 (0.06) <.01 | 2.48 (0.06) <.01 | 2.43 (0.06) <.01 | 2.50 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .37 | 0.05 (0.04) .28 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.10 (0.08) .21 |
| a | Level \* cardio | — | — | — | -0.27 (0.12) .03 |
| a | Level \* diabetes | — | — | — | -0.43 (0.21) .05 |
| a | Slope \* age | 0.00 (0.00) .41 | 0.00 (0.00) .51 | 0.00 (0.00) .36 | 0.00 (0.00) .85 |
| a | Slope \* education | — | 0.00 (0.00) .93 | 0.00 (0.00) .89 | 0.00 (0.00) .90 |
| a | Slope \* height | — | — | 0.00 (0.00) .22 | 0.00 (0.00) .99 |
| a | Slope \* smoking | — | — | — | -0.00 (0.01) .87 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .56 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.03) .61 |
| b | Level | 5.50 (0.10) <.01 | 5.33 (0.10) <.01 | 5.26 (0.10) <.01 | 5.35 (0.13) <.01 |
| b | Slope | -0.02 (0.01) .01 | -0.02 (0.01) .03 | -0.02 (0.01) .04 | -0.02 (0.01) .06 |
| b | Level \* age | -0.03 (0.01) <.01 | -0.03 (0.01) <.01 | -0.02 (0.01) .03 | -0.01 (0.01) .17 |
| b | Level \* education | — | 0.31 (0.06) <.01 | 0.26 (0.06) <.01 | 0.24 (0.07) <.01 |
| b | Level \* height | — | — | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 |
| b | Level \* smoking | — | — | — | -0.01 (0.14) .95 |
| b | Level \* cardio | — | — | — | -0.07 (0.23) .75 |
| b | Level \* diabetes | — | — | — | -0.67 (0.50) .18 |
| b | Slope \* age | 0.00 (0.00) .51 | 0.00 (0.00) .56 | -0.00 (0.00) .45 | -0.00 (0.00) .31 |
| b | Slope \* education | — | -0.00 (0.00) .54 | -0.00 (0.00) .54 | -0.00 (0.01) .55 |
| b | Slope \* height | — | — | -0.00 (0.00) .46 | -0.00 (0.00) .48 |
| b | Slope \* smoking | — | — | — | 0.01 (0.01) .50 |
| b | Slope \* cardio | — | — | — | -0.01 (0.02) .47 |
| b | Slope \* diabetes | — | — | — | 0.02 (0.10) .84 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.30 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 0.79 (0.11) <.01 | 0.72 (0.11) <.01 | 0.64 (0.10) <.01 | 0.68 (0.11) <.01 |
| b | Var (Slope) | 0.00 (0.00) .81 | 0.00 (0.00) .49 | 0.00 (0.00) .77 | 0.00 (0.00) .57 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .80 | 0.00 (0.00) .84 | 0.00 (0.00) .71 | -0.00 (0.00) .55 |
| b | Covar (Level, Slope) | -0.00 (0.00) .54 | -0.00 (0.00) .45 | -0.00 (0.00) .69 | -0.00 (0.01) .51 |
|  | Correlation of Levels | 0.25 | 0.22 | 0.14 | 0.15 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 43 |
|  | LL | -4,169 | -3,622 | -2,456 | -2,115 |
|  | AIC | 8,388 | 7,298 | 4,971 | 4,315 |
|  | BIC | 8,484 | 7,402 | 5,081 | 4,474 |

## fig\_id

Gender = *male*; Process (a) = *fev*; Process (b) = *fig\_id*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | ae | aeh |
| ab | Covar (Levels) | 0.95 (0.27) <.01 | 0.79 (0.26) <.01 | 0.61 (0.24) .01 |
| ab | Covar (Slopes) | 0.00 (0.00) .40 | 0.00 (0.00) .42 | 0.00 (0.00) .38 |
|  | Covar (Residuals) | — | — | — |
| er | Corr (Levels) | — | — | — |
| er | Corr (Slopes) | — | — | — |
| er | Corr (Residuals) | — | — | — |
| a | Level | 2.53 (0.05) <.01 | 2.48 (0.06) <.01 | 2.43 (0.06) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .37 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 |
| a | Level \* smoking | — | — | — |
| a | Level \* cardio | — | — | — |
| a | Level \* diabetes | — | — | — |
| a | Slope \* age | 0.00 (0.00) .39 | 0.00 (0.00) .49 | 0.00 (0.00) .35 |
| a | Slope \* education | — | 0.00 (0.00) .94 | 0.00 (0.00) .90 |
| a | Slope \* height | — | — | 0.00 (0.00) .23 |
| a | Slope \* smoking | — | — | — |
| a | Slope \* cardio | — | — | — |
| a | Slope \* diabetes | — | — | — |
| b | Level | 26.80 (0.50) <.01 | 25.54 (0.59) <.01 | 25.37 (0.62) <.01 |
| b | Slope | -0.57 (0.06) <.01 | -0.58 (0.06) <.01 | -0.59 (0.06) <.01 |
| b | Level \* age | -0.44 (0.05) <.01 | -0.40 (0.05) <.01 | -0.37 (0.05) <.01 |
| b | Level \* education | — | 2.13 (0.34) <.01 | 1.94 (0.35) <.01 |
| b | Level \* height | — | — | 0.14 (0.06) .02 |
| b | Level \* smoking | — | — | — |
| b | Level \* cardio | — | — | — |
| b | Level \* diabetes | — | — | — |
| b | Slope \* age | -0.03 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 |
| b | Slope \* education | — | 0.04 (0.03) .15 | 0.03 (0.03) .28 |
| b | Slope \* height | — | — | 0.01 (0.00) .14 |
| b | Slope \* smoking | — | — | — |
| b | Slope \* cardio | — | — | — |
| b | Slope \* diabetes | — | — | — |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — |
| b | Var (Level) | 33.63 (3.74) <.01 | 29.47 (3.51) <.01 | 28.91 (3.47) <.01 |
| b | Var (Slope) | 0.07 (0.02) <.01 | 0.07 (0.02) <.01 | 0.07 (0.02) <.01 |
|  | Var (Residual) | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .82 | 0.00 (0.00) .85 | 0.00 (0.00) .70 |
| b | Covar (Level, Slope) | 0.01 (0.18) .96 | -0.10 (0.20) .61 | -0.17 (0.20) .40 |
|  | Correlation of Levels | 0.28 | 0.25 | 0.21 |
|  | Correlation of Slopes | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA |
|  | N | 347 | 341 | 338 |
|  | occasions | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 |
|  | LL | -4,609 | -4,519 | -4,459 |
|  | AIC | 9,259 | 9,089 | 8,975 |
|  | BIC | 9,340 | 9,185 | 9,086 |

## fig\_mem

Gender = *male*; Process (a) = *fev*; Process (b) = *fig\_mem*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.41 (0.18) .02 | 0.35 (0.17) .04 | 0.35 (0.17) .04 | 0.40 (0.17) .02 |
| ab | Covar (Slopes) | 0.00 (0.00) .46 | 0.00 (0.00) .50 | 0.00 (0.00) .46 | 0.00 (0.00) .89 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.23 (0.09) .01 |
| er | Corr (Slopes) | — | — | — | 0.05 (0.38) .89 |
| er | Corr (Residuals) | — | — | — | 0.01 (0.04) .82 |
| a | Level | 2.53 (0.05) <.01 | 2.48 (0.06) <.01 | 2.43 (0.06) <.01 | 2.55 (0.08) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.05 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .07 | 0.04 (0.04) .41 | 0.04 (0.04) .40 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.11 (0.08) .17 |
| a | Level \* cardio | — | — | — | -0.28 (0.12) .02 |
| a | Level \* diabetes | — | — | — | -0.45 (0.38) .24 |
| a | Slope \* age | 0.00 (0.00) .39 | 0.00 (0.00) .50 | 0.00 (0.00) .38 | 0.00 (0.00) .42 |
| a | Slope \* education | — | 0.00 (0.00) .87 | 0.00 (0.00) .85 | 0.00 (0.00) .84 |
| a | Slope \* height | — | — | 0.00 (0.00) .25 | 0.00 (0.00) .78 |
| a | Slope \* smoking | — | — | — | 0.00 (0.01) .93 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .46 |
| a | Slope \* diabetes | — | — | — | 0.01 (0.06) .79 |
| b | Level | 19.00 (0.33) <.01 | 18.42 (0.35) <.01 | 18.43 (0.36) <.01 | 18.46 (0.52) <.01 |
| b | Slope | -0.18 (0.03) <.01 | -0.18 (0.03) <.01 | -0.18 (0.03) <.01 | -0.16 (0.04) <.01 |
| b | Level \* age | -0.19 (0.03) <.01 | -0.19 (0.03) <.01 | -0.19 (0.04) <.01 | -0.16 (0.04) <.01 |
| b | Level \* education | — | 0.95 (0.26) <.01 | 0.94 (0.27) <.01 | 1.05 (0.31) <.01 |
| b | Level \* height | — | — | -0.00 (0.04) .98 | 0.00 (0.04) .95 |
| b | Level \* smoking | — | — | — | 0.24 (0.58) .68 |
| b | Level \* cardio | — | — | — | 0.06 (0.83) .94 |
| b | Level \* diabetes | — | — | — | -1.75 (4.09) .67 |
| 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 | — | 0.01 (0.02) .42 | 0.01 (0.02) .63 | 0.00 (0.02) .96 |
| b | Slope \* height | — | — | 0.00 (0.00) .14 | 0.00 (0.00) .21 |
| b | Slope \* smoking | — | — | — | -0.04 (0.04) .32 |
| b | Slope \* cardio | — | — | — | -0.08 (0.08) .33 |
| b | Slope \* diabetes | — | — | — | 0.09 (0.59) .88 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .02 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 13.21 (1.80) <.01 | 12.08 (1.68) <.01 | 12.14 (1.70) <.01 | 11.69 (1.81) <.01 |
| b | Var (Slope) | 0.01 (0.01) .04 | 0.01 (0.01) .04 | 0.01 (0.01) .05 | 0.01 (0.01) .15 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .78 | 0.00 (0.00) .80 | 0.00 (0.00) .66 | 0.00 (0.00) .38 |
| b | Covar (Level, Slope) | -0.14 (0.08) .08 | -0.13 (0.08) .09 | -0.14 (0.08) .09 | -0.07 (0.09) .40 |
|  | Correlation of Levels | 0.2 | 0.18 | 0.18 | 0.23 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 337 | 298 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 41 |
|  | LL | -5,629 | -5,054 | -3,892 | -3,365 |
|  | AIC | 11,308 | 10,163 | 7,842 | 6,811 |
|  | BIC | 11,404 | 10,266 | 7,952 | 6,963 |

## information

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.73 (0.30) .01 | 0.53 (0.27) .05 | 0.39 (0.26) .14 | 0.35 (0.27) .20 |
| ab | Covar (Slopes) | 0.00 (0.00) .90 | 0.00 (0.00) .88 | 0.00 (0.00) .97 | 0.00 (0.00) .92 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.11 (0.08) .18 |
| er | Corr (Slopes) | — | — | — | -0.03 (0.30) .93 |
| er | Corr (Residuals) | — | — | — | 0.11 (0.05) .03 |
| a | Level | 2.52 (0.06) <.01 | 2.47 (0.06) <.01 | 2.43 (0.06) <.01 | 2.54 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .36 | 0.04 (0.04) .33 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.11 (0.08) .19 |
| a | Level \* cardio | — | — | — | -0.26 (0.12) .03 |
| a | Level \* diabetes | — | — | — | -0.48 (0.24) .05 |
| a | Slope \* age | 0.00 (0.00) .46 | 0.00 (0.00) .59 | 0.00 (0.00) .44 | 0.00 (0.00) .46 |
| a | Slope \* education | — | 0.00 (0.00) .95 | 0.00 (0.00) .92 | 0.00 (0.00) .94 |
| a | Slope \* height | — | — | 0.00 (0.00) .21 | 0.00 (0.00) .71 |
| a | Slope \* smoking | — | — | — | 0.00 (0.01) .97 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .58 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.05) .69 |
| b | Level | 32.68 (0.59) <.01 | 30.87 (0.55) <.01 | 30.72 (0.55) <.01 | 30.66 (0.81) <.01 |
| b | Slope | -0.20 (0.04) <.01 | -0.18 (0.04) <.01 | -0.18 (0.04) <.01 | -0.18 (0.06) <.01 |
| b | Level \* age | -0.20 (0.06) <.01 | -0.16 (0.05) <.01 | -0.15 (0.05) .01 | -0.15 (0.06) .02 |
| b | Level \* education | — | 2.88 (0.54) <.01 | 2.72 (0.54) <.01 | 2.61 (0.59) <.01 |
| b | Level \* height | — | — | 0.11 (0.07) .11 | 0.09 (0.08) .21 |
| b | Level \* smoking | — | — | — | 0.86 (0.87) .32 |
| b | Level \* cardio | — | — | — | -2.64 (1.13) .02 |
| b | Level \* diabetes | — | — | — | 1.55 (2.67) .56 |
| b | Slope \* age | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 |
| b | Slope \* education | — | -0.02 (0.03) .54 | -0.02 (0.03) .51 | -0.02 (0.03) .50 |
| b | Slope \* height | — | — | 0.00 (0.00) .67 | 0.00 (0.00) .39 |
| b | Slope \* smoking | — | — | — | 0.02 (0.05) .63 |
| b | Slope \* cardio | — | — | — | 0.01 (0.06) .85 |
| b | Slope \* diabetes | — | — | — | 0.05 (0.35) .89 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .02 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 46.60 (4.66) <.01 | 39.54 (3.99) <.01 | 39.24 (3.87) <.01 | 39.78 (4.41) <.01 |
| b | Var (Slope) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .80 | 0.00 (0.00) .82 | 0.00 (0.00) .68 | 0.00 (0.00) .40 |
| b | Covar (Level, Slope) | -0.37 (0.19) .05 | -0.33 (0.17) .05 | -0.35 (0.17) .04 | -0.41 (0.19) .03 |
|  | Correlation of Levels | 0.18 | 0.15 | 0.11 | 0.11 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 41 |
|  | LL | -5,986 | -5,395 | -4,230 | -3,669 |
|  | AIC | 12,022 | 10,844 | 8,517 | 7,420 |
|  | BIC | 12,118 | 10,947 | 8,628 | 7,571 |

## mmse

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.20 (0.09) .03 | 0.18 (0.09) .04 | 0.12 (0.09) .18 | 0.12 (0.09) .19 |
| ab | Covar (Slopes) | 0.00 (0.00) .16 | 0.00 (0.00) .18 | 0.00 (0.00) .19 | 0.00 (0.00) .28 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.16 (0.12) .18 |
| er | Corr (Slopes) | — | — | — | 0.35 (0.30) .24 |
| er | Corr (Residuals) | — | — | — | 0.05 (0.05) .28 |
| a | Level | 2.52 (0.06) <.01 | 2.47 (0.06) <.01 | 2.42 (0.06) <.01 | 2.55 (0.08) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .37 | 0.04 (0.04) .36 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.11 (0.08) .18 |
| a | Level \* cardio | — | — | — | -0.26 (0.12) .03 |
| a | Level \* diabetes | — | — | — | -0.47 (0.23) .04 |
| a | Slope \* age | 0.00 (0.00) .68 | 0.00 (0.00) .83 | 0.00 (0.00) .64 | 0.00 (0.00) .58 |
| a | Slope \* education | — | 0.00 (0.00) .96 | 0.00 (0.00) .92 | 0.00 (0.00) .88 |
| a | Slope \* height | — | — | -0.00 (0.00) .20 | 0.00 (0.00) .68 |
| a | Slope \* smoking | — | — | — | 0.00 (0.01) .95 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .61 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.04) .64 |
| b | Level | 27.75 (0.17) <.01 | 27.58 (0.19) <.01 | 27.51 (0.18) <.01 | 27.14 (0.24) <.01 |
| b | Slope | -0.15 (0.02) <.01 | -0.15 (0.02) <.01 | -0.15 (0.02) <.01 | -0.14 (0.03) <.01 |
| b | Level \* age | -0.09 (0.01) <.01 | -0.08 (0.01) <.01 | -0.07 (0.01) <.01 | -0.07 (0.02) <.01 |
| b | Level \* education | — | 0.29 (0.18) .10 | 0.24 (0.18) .18 | 0.28 (0.19) .14 |
| b | Level \* height | — | — | 0.05 (0.02) .03 | 0.06 (0.03) .04 |
| b | Level \* smoking | — | — | — | 0.66 (0.30) .03 |
| b | Level \* cardio | — | — | — | -0.44 (0.31) .16 |
| b | Level \* diabetes | — | — | — | 0.14 (0.92) .88 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) .01 | -0.01 (0.00) .02 |
| b | Slope \* education | — | 0.02 (0.01) .14 | 0.02 (0.01) .22 | 0.01 (0.02) .58 |
| b | Slope \* height | — | — | 0.00 (0.00) .70 | 0.00 (0.00) .93 |
| b | Slope \* smoking | — | — | — | -0.03 (0.04) .34 |
| b | Slope \* cardio | — | — | — | 0.01 (0.04) .88 |
| b | Slope \* diabetes | — | — | — | 0.08 (0.14) .58 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 2.08 (0.21) <.01 | 1.99 (0.22) <.01 | 1.91 (0.22) <.01 | 1.85 (0.25) <.01 |
| b | Var (Slope) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .93 | 0.00 (0.00) .95 | 0.00 (0.00) .80 | 0.00 (0.00) .50 |
| b | Covar (Level, Slope) | -0.04 (0.02) .05 | -0.05 (0.02) .03 | -0.05 (0.02) .02 | -0.04 (0.03) .19 |
|  | Correlation of Levels | 0.24 | 0.22 | 0.16 | 0.16 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 346 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,290 | -3,234 | -3,183 | -2,754 |
|  | AIC | 6,623 | 6,519 | 6,424 | 5,591 |
|  | BIC | 6,703 | 6,615 | 6,535 | 5,743 |

## rotate

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 2.26 (0.63) <.01 | 1.99 (0.62) <.01 | 1.83 (0.62) <.01 | 1.50 (0.69) .03 |
| ab | Covar (Slopes) | 0.00 (0.00) .56 | 0.00 (0.00) .64 | 0.00 (0.00) .48 | 0.00 (0.00) .73 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.19 (0.08) .02 |
| er | Corr (Slopes) | — | — | — | 0.14 (0.38) .72 |
| er | Corr (Residuals) | — | — | — | 0.02 (0.05) .69 |
| a | Level | 2.53 (0.05) <.01 | 2.48 (0.06) <.01 | 2.43 (0.06) <.01 | 2.55 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.05 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .37 | 0.04 (0.04) .36 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.11 (0.08) .18 |
| a | Level \* cardio | — | — | — | -0.27 (0.12) .03 |
| a | Level \* diabetes | — | — | — | -0.46 (0.28) .10 |
| a | Slope \* age | 0.00 (0.00) .41 | 0.00 (0.00) .52 | 0.00 (0.00) .38 | 0.00 (0.00) .45 |
| a | Slope \* education | — | 0.00 (0.00) .93 | 0.00 (0.00) .89 | 0.00 (0.00) .92 |
| a | Slope \* height | — | — | 0.00 (0.00) .25 | 0.00 (0.00) .71 |
| a | Slope \* smoking | — | — | — | 0.00 (0.01) .93 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .57 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.06) .78 |
| b | Level | 50.48 (1.75) <.01 | 48.14 (1.92) <.01 | 48.09 (2.00) <.01 | 49.46 (2.65) <.01 |
| b | Slope | -1.37 (0.15) <.01 | -1.40 (0.16) <.01 | -1.45 (0.16) <.01 | -1.58 (0.20) <.01 |
| b | Level \* age | -1.09 (0.14) <.01 | -1.03 (0.14) <.01 | -1.02 (0.15) <.01 | -1.00 (0.16) <.01 |
| b | Level \* education | — | 3.94 (1.02) <.01 | 3.76 (1.02) <.01 | 4.04 (1.18) <.01 |
| b | Level \* height | — | — | 0.09 (0.16) .58 | 0.09 (0.17) .59 |
| b | Level \* smoking | — | — | — | -2.19 (2.47) .37 |
| b | Level \* cardio | — | — | — | 0.44 (3.37) .90 |
| b | Level \* diabetes | — | — | — | -4.85 (16.80) .77 |
| b | Slope \* age | -0.06 (0.01) <.01 | -0.06 (0.01) <.01 | -0.05 (0.01) <.01 | -0.06 (0.01) <.01 |
| b | Slope \* education | — | 0.10 (0.08) .21 | 0.07 (0.08) .38 | 0.05 (0.09) .59 |
| b | Slope \* height | — | — | 0.03 (0.01) <.01 | 0.03 (0.01) .03 |
| b | Slope \* smoking | — | — | — | 0.13 (0.17) .43 |
| b | Slope \* cardio | — | — | — | 0.01 (0.25) .98 |
| b | Slope \* diabetes | — | — | — | -0.19 (1.14) .87 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.27 (0.04) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 230.60 (27.84) <.01 | 219.69 (27.02) <.01 | 219.56 (27.22) <.01 | 228.51 (30.56) <.01 |
| b | Var (Slope) | 0.32 (0.12) <.01 | 0.31 (0.11) .01 | 0.27 (0.11) .01 | 0.25 (0.13) .05 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .81 | 0.00 (0.00) .83 | 0.00 (0.00) .69 | 0.00 (0.00) .44 |
| b | Covar (Level, Slope) | 0.05 (1.40) .97 | -0.28 (1.34) .84 | -0.82 (1.35) .54 | -0.82 (1.50) .58 |
|  | Correlation of Levels | 0.26 | 0.23 | 0.23 | 0.19 |
|  | Correlation of Slopes | Inf | Inf | Inf | Inf |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 337 | 298 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 25 | 27 | 29 | 41 |
|  | LL | -7,057 | -6,466 | -5,287 | -4,568 |
|  | AIC | 14,165 | 12,986 | 10,631 | 9,218 |
|  | BIC | 14,261 | 13,090 | 10,742 | 9,370 |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 1.59 (0.37) <.01 | 1.34 (0.35) <.01 | 1.05 (0.32) <.01 | 0.96 (0.41) .02 |
| ab | Covar (Slopes) | 0.00 (0.00) .18 | 0.00 (0.00) .17 | 0.00 (0.00) .15 | 0.00 (0.00) .81 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.20 (0.08) .01 |
| er | Corr (Slopes) | — | — | — | 0.07 (0.27) .80 |
| er | Corr (Residuals) | — | — | — | 0.01 (0.06) .82 |
| a | Level | 2.52 (0.05) <.01 | 2.48 (0.05) <.01 | 2.43 (0.05) <.01 | 2.50 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.03) .01 | 0.04 (0.03) .26 | 0.04 (0.04) .29 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.03 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.09 (0.08) .26 |
| a | Level \* cardio | — | — | — | -0.27 (0.12) .02 |
| a | Level \* diabetes | — | — | — | -0.43 (0.27) .11 |
| a | Slope \* age | 0.00 (0.00) .33 | 0.00 (0.00) .48 | 0.00 (0.00) .33 | 0.00 (0.00) .94 |
| a | Slope \* education | — | 0.00 (0.00) .87 | 0.00 (0.00) .84 | 0.00 (0.00) .95 |
| a | Slope \* height | — | — | 0.00 (0.00) .14 | 0.00 (0.00) .98 |
| a | Slope \* smoking | — | — | — | -0.00 (0.01) .79 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .55 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.03) .63 |
| b | Level | 34.49 (0.84) <.01 | 32.27 (0.89) <.01 | 31.95 (0.87) <.01 | 32.73 (1.15) <.01 |
| b | Slope | -0.96 (0.07) <.01 | -0.98 (0.07) <.01 | -0.98 (0.07) <.01 | -0.92 (0.09) <.01 |
| b | Level \* age | -0.86 (0.07) <.01 | -0.80 (0.07) <.01 | -0.75 (0.07) <.01 | -0.69 (0.08) <.01 |
| b | Level \* education | — | 3.84 (0.59) <.01 | 3.57 (0.62) <.01 | 3.65 (0.64) <.01 |
| b | Level \* height | — | — | 0.23 (0.10) .02 | 0.23 (0.10) .02 |
| b | Level \* smoking | — | — | — | -0.47 (1.28) .71 |
| b | Level \* cardio | — | — | — | -1.20 (1.97) .54 |
| b | Level \* diabetes | — | — | — | -0.68 (5.47) .90 |
| b | Slope \* age | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.00) <.01 | -0.03 (0.01) <.01 |
| b | Slope \* education | — | 0.06 (0.03) .04 | 0.05 (0.03) .10 | 0.03 (0.04) .51 |
| b | Slope \* height | — | — | 0.00 (0.01) .39 | 0.01 (0.01) .31 |
| b | Slope \* smoking | — | — | — | -0.12 (0.09) .16 |
| b | Slope \* cardio | — | — | — | 0.00 (0.14) .99 |
| b | Slope \* diabetes | — | — | — | -0.05 (0.53) .92 |
| a | Var (Level) | 0.34 (0.03) <.01 | 0.34 (0.03) <.01 | 0.29 (0.03) <.01 | 0.30 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) .01 | 0.00 (0.00) .01 | 0.00 (0.00) .01 | 0.00 (0.00) <.01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 92.30 (8.33) <.01 | 78.40 (7.84) <.01 | 76.21 (7.52) <.01 | 76.40 (9.71) <.01 |
| b | Var (Slope) | 0.08 (0.02) <.01 | 0.08 (0.02) <.01 | 0.08 (0.02) <.01 | 0.07 (0.03) .01 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .73 | 0.00 (0.00) .79 | 0.00 (0.00) .62 | -0.00 (0.00) .52 |
| b | Covar (Level, Slope) | -0.57 (0.38) .13 | -0.83 (0.35) .02 | -0.88 (0.36) .01 | -0.83 (0.42) .05 |
|  | Correlation of Levels | 0.29 | 0.26 | 0.22 | 0.2 |
|  | Correlation of Slopes | Inf | Inf | Inf | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 43 |
|  | LL | -4,866 | -4,758 | -4,698 | -4,050 |
|  | AIC | 9,774 | 9,567 | 9,453 | 8,186 |
|  | BIC | 9,855 | 9,662 | 9,564 | 8,346 |

## synonyms

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| ab | Covar (Levels) | 0.64 (0.22) <.01 | 0.46 (0.20) .02 | 0.27 (0.20) .18 | 0.30 (0.20) .14 |
| ab | Covar (Slopes) | 0.00 (0.00) .48 | 0.00 (0.00) .63 | 0.00 (0.00) .66 | 0.00 (0.00) .81 |
|  | Covar (Residuals) | — | — | — | — |
| er | Corr (Levels) | — | — | — | 0.13 (0.08) .13 |
| er | Corr (Slopes) | — | — | — | 0.10 (0.41) .81 |
| er | Corr (Residuals) | — | — | — | 0.04 (0.05) .34 |
| a | Level | 2.52 (0.05) <.01 | 2.48 (0.06) <.01 | 2.43 (0.06) <.01 | 2.55 (0.07) <.01 |
| a | Slope | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.00) <.01 | -0.05 (0.01) <.01 |
| a | Level \* age | -0.05 (0.00) <.01 | -0.05 (0.00) <.01 | -0.04 (0.00) <.01 | -0.04 (0.01) <.01 |
| a | Level \* education | — | 0.08 (0.04) .06 | 0.04 (0.04) .37 | 0.04 (0.04) .35 |
| a | Level \* height | — | — | 0.04 (0.01) <.01 | 0.04 (0.01) <.01 |
| a | Level \* smoking | — | — | — | -0.11 (0.08) .19 |
| a | Level \* cardio | — | — | — | -0.27 (0.13) .03 |
| a | Level \* diabetes | — | — | — | -0.47 (0.24) .05 |
| a | Slope \* age | 0.00 (0.00) .44 | 0.00 (0.00) .55 | 0.00 (0.00) .40 | 0.00 (0.00) .43 |
| a | Slope \* education | — | 0.00 (0.00) .97 | 0.00 (0.00) .93 | 0.00 (0.00) .92 |
| a | Slope \* height | — | — | 0.00 (0.00) .22 | 0.00 (0.00) .71 |
| a | Slope \* smoking | — | — | — | 0.00 (0.01) .96 |
| a | Slope \* cardio | — | — | — | 0.00 (0.01) .53 |
| a | Slope \* diabetes | — | — | — | 0.02 (0.04) .67 |
| b | Level | 17.77 (0.38) <.01 | 16.25 (0.40) <.01 | 16.03 (0.40) <.01 | 15.88 (0.56) <.01 |
| b | Slope | -0.11 (0.02) <.01 | -0.09 (0.02) <.01 | -0.09 (0.02) <.01 | -0.08 (0.04) .03 |
| b | Level \* age | -0.20 (0.04) <.01 | -0.16 (0.04) <.01 | -0.13 (0.04) <.01 | -0.09 (0.04) .03 |
| b | Level \* education | — | 2.59 (0.31) <.01 | 2.39 (0.31) <.01 | 2.36 (0.36) <.01 |
| b | Level \* height | — | — | 0.16 (0.05) <.01 | 0.15 (0.06) .01 |
| b | Level \* smoking | — | — | — | 1.23 (0.62) .05 |
| b | Level \* cardio | — | — | — | -2.05 (0.91) .02 |
| b | Level \* diabetes | — | — | — | -0.91 (2.52) .72 |
| 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 | — | -0.03 (0.01) .04 | -0.02 (0.01) .06 | -0.03 (0.01) .04 |
| b | Slope \* height | — | — | -0.00 (0.00) .62 | -0.00 (0.00) .79 |
| b | Slope \* smoking | — | — | — | -0.02 (0.03) .61 |
| b | Slope \* cardio | — | — | — | 0.04 (0.05) .45 |
| b | Slope \* diabetes | — | — | — | 0.10 (0.41) .81 |
| a | Var (Level) | 0.34 (0.04) <.01 | 0.34 (0.04) <.01 | 0.29 (0.03) <.01 | 0.27 (0.03) <.01 |
| a | Var (Slope) | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) <.01 | 0.00 (0.00) .01 |
|  | Var (Residual) | — | — | — | — |
| b | Var (Level) | 28.73 (2.98) <.01 | 22.56 (2.39) <.01 | 21.83 (2.34) <.01 | 20.55 (2.54) <.01 |
| b | Var (Slope) | 0.01 (0.00) .05 | 0.01 (0.00) .06 | 0.01 (0.00) .07 | 0.01 (0.00) .10 |
|  | Var (Residual) | — | — | — | — |
| a | Covar (Level, Slope) | 0.00 (0.00) .83 | 0.00 (0.00) .86 | 0.00 (0.00) .73 | 0.00 (0.00) .43 |
| b | Covar (Level, Slope) | -0.09 (0.08) .29 | -0.04 (0.07) .58 | -0.04 (0.07) .62 | -0.06 (0.08) .48 |
|  | Correlation of Levels | 0.21 | 0.17 | 0.11 | 0.13 |
|  | Correlation of Slopes | NaN | NaN | NaN | NaN |
|  | Correlation of Residuals | NA | NA | NA | NA |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -3,889 | -3,789 | -3,736 | -3,237 |
|  | AIC | 7,820 | 7,628 | 7,529 | 6,557 |
|  | BIC | 7,901 | 7,724 | 7,640 | 6,709 |

## Summary

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

Computed correlations:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Levels | analogies | . | 0.22 | 0.17 | 0.11 | 0.11 |
| Correlation of Levels | block | . | 0.29 | 0.26 | 0.24 | 0.20 |
| Correlation of Levels | digit\_b | . | 0.30 | 0.27 | 0.21 | 0.20 |
| Correlation of Levels | digit\_f | . | 0.25 | 0.22 | 0.14 | 0.15 |
| Correlation of Levels | fig\_id | . | 0.28 | 0.25 | 0.21 | . |
| Correlation of Levels | fig\_mem | . | 0.20 | 0.18 | 0.18 | 0.23 |
| Correlation of Levels | information | . | 0.18 | 0.15 | 0.11 | 0.11 |
| Correlation of Levels | mmse | . | 0.24 | 0.22 | 0.16 | 0.16 |
| Correlation of Levels | rotate | . | 0.26 | 0.23 | 0.23 | 0.19 |
| Correlation of Levels | symbol | . | 0.29 | 0.26 | 0.22 | 0.20 |
| Correlation of Levels | synonyms | . | 0.21 | 0.17 | 0.11 | 0.13 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Slopes | analogies | . | . | . | . | . |
| Correlation of Slopes | block | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | digit\_b | . | . | . | . | . |
| Correlation of Slopes | digit\_f | . | . | . | . | . |
| Correlation of Slopes | fig\_id | . | Inf | Inf | Inf | . |
| Correlation of Slopes | fig\_mem | . | . | . | . | . |
| Correlation of Slopes | information | . | . | . | . | . |
| Correlation of Slopes | mmse | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | rotate | . | Inf | Inf | Inf | Inf |
| Correlation of Slopes | symbol | . | Inf | Inf | Inf | . |
| Correlation of Slopes | synonyms | . | . | . | . | . |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Correlation of Residuals | analogies | 0.07 | 0.07 | 0.08 | 0.07 | 0.06 |
| Correlation of Residuals | block | 0.01 | 0.01 | 0.01 | 0.00 | 0.02 |
| Correlation of Residuals | digit\_b | -0.02 | -0.01 | -0.01 | -0.02 | -0.07 |
| Correlation of Residuals | digit\_f | 0.04 | 0.04 | 0.04 | 0.04 | 0.14 |
| Correlation of Residuals | fig\_id | . | -0.05 | -0.05 | -0.04 | . |
| Correlation of Residuals | fig\_mem | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| Correlation of Residuals | information | 0.08 | 0.09 | 0.09 | 0.08 | 0.11 |
| Correlation of Residuals | mmse | 0.03 | 0.03 | 0.03 | 0.03 | 0.05 |
| Correlation of Residuals | rotate | 0.01 | 0.02 | 0.02 | 0.03 | 0.02 |
| Correlation of Residuals | symbol | -0.03 | -0.02 | -0.02 | -0.02 | 0.03 |
| Correlation of Residuals | synonyms | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 |

P-values for corresponding covariances:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Covariance of Levels | analogies | 0.00 | 0.01 | 0.05 | 0.24 | 0.29 |
| Covariance of Levels | block | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| Covariance of Levels | digit\_b | 0.00 | 0.00 | 0.00 | 0.02 | 0.03 |
| Covariance of Levels | digit\_f | 0.00 | 0.00 | 0.01 | 0.10 | 0.12 |
| Covariance of Levels | fig\_id | . | 0.00 | 0.00 | 0.01 | . |
| Covariance of Levels | fig\_mem | 0.00 | 0.02 | 0.04 | 0.04 | 0.02 |
| Covariance of Levels | information | 0.00 | 0.01 | 0.05 | 0.14 | 0.20 |
| Covariance of Levels | mmse | 0.00 | 0.03 | 0.04 | 0.18 | 0.19 |
| Covariance of Levels | rotate | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 |
| Covariance of Levels | symbol | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 |
| Covariance of Levels | synonyms | 0.00 | 0.00 | 0.02 | 0.18 | 0.14 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Covariance of Slopes | analogies | 0.72 | 0.97 | 0.96 | 0.98 | 0.94 |
| Covariance of Slopes | block | 0.05 | 0.11 | 0.13 | 0.11 | 0.49 |
| Covariance of Slopes | digit\_b | 0.98 | 0.85 | 0.72 | 0.78 | 0.41 |
| Covariance of Slopes | digit\_f | 0.68 | 0.74 | 0.78 | 0.87 | 0.75 |
| Covariance of Slopes | fig\_id | . | 0.40 | 0.42 | 0.38 | . |
| Covariance of Slopes | fig\_mem | 0.22 | 0.46 | 0.50 | 0.46 | 0.89 |
| Covariance of Slopes | information | 0.76 | 0.90 | 0.88 | 0.97 | 0.92 |
| Covariance of Slopes | mmse | 0.08 | 0.16 | 0.18 | 0.19 | 0.28 |
| Covariance of Slopes | rotate | 0.27 | 0.56 | 0.64 | 0.48 | 0.73 |
| Covariance of Slopes | symbol | 0.17 | 0.18 | 0.17 | 0.15 | 0.81 |
| Covariance of Slopes | synonyms | 0.30 | 0.48 | 0.63 | 0.66 | 0.81 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| label | process\_b | 0 | a | ae | aeh | aehplus |
| Covariance of Residuals | analogies | 0.14 | 0.14 | 0.10 | 0.14 | 0.26 |
| Covariance of Residuals | block | 0.88 | 0.83 | 0.86 | 0.98 | 0.89 |
| Covariance of Residuals | digit\_b | 0.60 | 0.68 | 0.73 | 0.58 | 0.42 |
| Covariance of Residuals | digit\_f | 0.44 | 0.43 | 0.40 | 0.43 | 0.36 |
| Covariance of Residuals | fig\_id | . | 0.20 | 0.21 | 0.26 | . |
| Covariance of Residuals | fig\_mem | 0.86 | 0.79 | 0.77 | 0.79 | 0.82 |
| Covariance of Residuals | information | 0.06 | 0.04 | 0.05 | 0.06 | 0.03 |
| Covariance of Residuals | mmse | 0.46 | 0.42 | 0.43 | 0.45 | 0.29 |
| Covariance of Residuals | rotate | 0.72 | 0.68 | 0.54 | 0.50 | 0.69 |
| Covariance of Residuals | symbol | 0.49 | 0.53 | 0.61 | 0.59 | 0.82 |
| Covariance of Residuals | synonyms | 0.58 | 0.52 | 0.48 | 0.45 | 0.34 |

#Session Info

R version 3.5.1 (2018-07-02)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows >= 8 x64 (build 9200)  
  
Matrix products: default  
  
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] bindrcpp\_0.2.2 ggplot2\_3.1.0 magrittr\_1.5 knitr\_1.21   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_1.0.0 highr\_0.7 pillar\_1.3.1 compiler\_3.5.1 plyr\_1.8.4 bindr\_0.1.1   
 [7] tools\_3.5.1 digest\_0.6.18 evaluate\_0.12 tibble\_1.4.2 gtable\_0.2.0 pkgconfig\_2.0.2   
[13] rlang\_0.3.0.1 yaml\_2.2.0 xfun\_0.4 withr\_2.1.2 dplyr\_0.7.8 stringr\_1.3.1   
[19] htmlwidgets\_1.3 hms\_0.4.2 grid\_3.5.1 DT\_0.5 tidyselect\_0.2.5 glue\_1.3.0   
[25] R6\_2.3.0 rmarkdown\_1.11 tidyr\_0.8.2 purrr\_0.2.5 readr\_1.3.0 scales\_1.0.0   
[31] htmltools\_0.3.6 assertthat\_0.2.0 testit\_0.9 colorspace\_1.3-2 stringi\_1.2.4 lazyeval\_0.2.1   
[37] munsell\_0.5.0 crayon\_1.3.4