SATSA : Seed Report

Date: 2016-10-20

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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 |
| grip | analogies | 8 |
| grip | block | 2 |
| grip | digit\_b | 2 |
| grip | digit\_f | 2 |
| grip | fig\_id | 6 |
| grip | information | 8 |
| grip | mmse | 8 |
| grip | symbol | 8 |
| grip | synonyms | 8 |

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

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

# female

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | analogies | block | digit\_b | digit\_f | information | mmse | symbol | synonyms | mean(sd) |
| a | Level | 21.48 (0.45) <.01 | 21.50 (0.45) <.01 | 21.51 (0.46) <.01 | 21.50 (0.45) <.01 | 21.47 (0.45) <.01 | 21.45 (0.45) <.01 | 21.50 (0.46) <.01 | 21.48 (0.46) <.01 | 21.49(0.02) |
| a | Slope | -0.57 (0.04) <.01 | -0.57 (0.04) <.01 | -0.57 (0.04) <.01 | -0.57 (0.04) <.01 | -0.57 (0.04) <.01 | -0.57 (0.05) <.01 | -0.57 (0.04) <.01 | -0.57 (0.04) <.01 | -0.57(0.00) |
| a | Level \* age | -0.19 (0.04) <.01 | -0.19 (0.04) <.01 | -0.19 (0.03) <.01 | -0.19 (0.04) <.01 | -0.19 (0.04) <.01 | -0.19 (0.04) <.01 | -0.19 (0.04) <.01 | -0.19 (0.04) <.01 | -0.19(0.00) |
| a | Level \* education | 0.32 (0.39) .41 | 0.36 (0.39) .35 | 0.28 (0.38) .46 | 0.29 (0.39) .46 | 0.29 (0.39) .45 | 0.31 (0.39) .43 | 0.32 (0.39) .41 | 0.31 (0.40) .44 | 0.31(0.02) |
| a | Level \* height | 0.15 (0.05) <.01 | 0.15 (0.05) <.01 | 0.15 (0.05) <.01 | 0.15 (0.05) <.01 | 0.15 (0.05) <.01 | 0.15 (0.05) .01 | 0.15 (0.05) <.01 | 0.15 (0.05) <.01 | 0.15(0.00) |
| a | Level \* smoking | 0.26 (0.64) .68 | 0.26 (0.63) .68 | 0.22 (0.63) .72 | 0.23 (0.64) .72 | 0.25 (0.63) .69 | 0.29 (0.63) .65 | 0.22 (0.62) .73 | 0.27 (0.63) .66 | 0.25(0.03) |
| a | Level \* cardio | -2.19 (0.82) .01 | -2.30 (0.85) .01 | -2.25 (0.81) .01 | -2.24 (0.80) <.01 | -2.17 (0.80) .01 | -2.16 (0.81) .01 | -2.27 (0.81) <.01 | -2.20 (0.81) .01 | -2.22(0.05) |
| a | Level \* diabetes | -2.02 (1.72) .24 | -1.14 (1.79) .52 | -1.13 (1.67) .50 | -1.11 (1.68) .51 | -2.02 (1.64) .22 | -2.01 (1.66) .23 | -1.15 (1.72) .50 | -2.04 (1.68) .22 | -1.58(0.48) |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01(0.00) |
| a | Slope \* education | 0.02 (0.03) .57 | 0.02 (0.03) .59 | 0.02 (0.03) .51 | 0.02 (0.03) .51 | 0.02 (0.03) .48 | 0.02 (0.03) .50 | 0.02 (0.03) .56 | 0.02 (0.03) .53 | 0.02(0.00) |
| a | Slope \* height | 0.00 (0.00) .92 | 0.00 (0.00) .97 | 0.00 (0.00) .94 | -0.00 (0.00) .90 | 0.00 (0.00) .95 | 0.00 (0.00) .99 | 0.00 (0.00) .93 | 0.00 (0.00) .93 | -0.00(0.00) |
| a | Slope \* smoking | 0.03 (0.06) .63 | 0.02 (0.05) .65 | 0.03 (0.06) .59 | 0.03 (0.05) .61 | 0.02 (0.05) .64 | 0.02 (0.05) .66 | 0.03 (0.05) .58 | 0.02 (0.05) .70 | 0.03(0.00) |
| a | Slope \* cardio | 0.01 (0.07) .93 | 0.01 (0.07) .84 | 0.01 (0.07) .85 | 0.01 (0.07) .85 | 0.00 (0.07) .96 | 0.01 (0.07) .89 | 0.02 (0.07) .82 | 0.01 (0.07) .91 | 0.01(0.00) |
| a | Slope \* diabetes | -0.31 (0.22) .16 | -0.45 (0.31) .15 | -0.46 (0.29) .12 | -0.46 (0.38) .23 | -0.32 (0.21) .14 | -0.30 (0.21) .16 | -0.46 (0.35) .19 | -0.32 (0.22) .15 | -0.38(0.08) |
| b | Level | 13.14 (0.30) <.01 | 16.49 (0.52) <.01 | 3.67 (0.10) <.01 | 5.55 (0.10) <.01 | 27.86 (0.57) <.01 | 28.05 (0.14) <.01 | 34.49 (0.74) <.01 | 17.72 (0.34) <.01 | --- |
| b | Slope | -0.12 (0.02) <.01 | -0.37 (0.03) <.01 | -0.04 (0.01) <.01 | -0.03 (0.01) <.01 | -0.29 (0.05) <.01 | -0.29 (0.03) <.01 | -0.82 (0.06) <.01 | -0.13 (0.02) <.01 | --- |
| b | Level \* age | -0.12 (0.02) <.01 | -0.28 (0.04) <.01 | -0.01 (0.01) .16 | -0.01 (0.01) .14 | -0.04 (0.05) .42 | -0.03 (0.01) .01 | -0.69 (0.06) <.01 | -0.04 (0.03) .19 | --- |
| b | Level \* education | 1.76 (0.23) <.01 | 2.23 (0.50) <.01 | 0.50 (0.10) <.01 | 0.32 (0.09) <.01 | 4.03 (0.78) <.01 | 0.32 (0.19) .09 | 3.29 (0.70) <.01 | 2.71 (0.48) <.01 | --- |
| b | Level \* height | 0.03 (0.03) .33 | 0.08 (0.06) .17 | 0.01 (0.01) .34 | 0.00 (0.01) .81 | 0.01 (0.07) .83 | -0.01 (0.02) .55 | 0.17 (0.09) .05 | 0.04 (0.05) .40 | --- |
| b | Level \* smoking | 0.50 (0.38) .19 | 0.11 (0.78) .89 | 0.24 (0.16) .13 | 0.03 (0.12) .80 | 1.08 (0.99) .28 | -0.07 (0.26) .79 | 0.95 (1.19) .42 | 1.09 (0.61) .08 | --- |
| b | Level \* cardio | -0.56 (0.64) .38 | -0.02 (1.18) .99 | 0.03 (0.21) .87 | -0.27 (0.22) .22 | -2.04 (1.12) .07 | -0.10 (0.26) .70 | -1.81 (1.54) .24 | -1.60 (0.84) .06 | --- |
| b | Level \* diabetes | -0.73 (0.97) .45 | -5.34 (2.46) .03 | 0.14 (0.38) .71 | -0.25 (0.34) .47 | 0.38 (1.75) .83 | -0.52 (0.50) .29 | -6.88 (2.92) .02 | -2.05 (1.07) .06 | --- |
| b | Slope \* age | -0.00 (0.00) .01 | -0.01 (0.00) <.01 | -0.00 (0.00) .02 | -0.00 (0.00) .12 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | -0.02 (0.00) <.01 | -0.01 (0.00) <.01 | --- |
| b | Slope \* education | 0.01 (0.02) .46 | 0.02 (0.03) .60 | -0.01 (0.01) .30 | -0.00 (0.00) .87 | -0.03 (0.05) .53 | 0.01 (0.03) .78 | 0.05 (0.04) .22 | 0.00 (0.02) .99 | --- |
| b | Slope \* height | 0.00 (0.00) .97 | -0.00 (0.00) .54 | 0.00 (0.00) .42 | 0.00 (0.00) .07 | 0.00 (0.00) .60 | 0.00 (0.00) .55 | 0.00 (0.01) .99 | 0.00 (0.00) .65 | --- |
| b | Slope \* smoking | 0.01 (0.03) .83 | -0.01 (0.05) .90 | 0.01 (0.01) .65 | 0.00 (0.01) .73 | 0.04 (0.06) .55 | 0.04 (0.04) .32 | -0.06 (0.08) .46 | -0.01 (0.03) .81 | --- |
| b | Slope \* cardio | 0.08 (0.06) .21 | 0.05 (0.09) .62 | 0.02 (0.02) .29 | 0.03 (0.01) .06 | 0.09 (0.09) .34 | 0.02 (0.05) .71 | -0.02 (0.16) .91 | 0.06 (0.05) .22 | --- |
| b | Slope \* diabetes | 0.05 (0.12) .69 | 0.08 (0.16) .63 | -0.02 (0.03) .64 | 0.02 (0.06) .71 | -0.17 (0.19) .38 | 0.12 (0.11) .27 | -0.18 (0.56) .74 | 0.13 (0.15) .41 | --- |
| a | Var (Level) | 13.88 (2.42) <.01 | 13.72 (2.40) <.01 | 13.77 (2.41) <.01 | 13.84 (2.37) <.01 | 13.98 (2.42) <.01 | 13.98 (2.43) <.01 | 13.80 (2.37) <.01 | 14.06 (2.42) <.01 | 13.88(0.12) |
| a | Var (Slope) | 0.02 (0.01) .06 | 0.02 (0.01) .08 | 0.02 (0.01) .08 | 0.02 (0.01) .07 | 0.02 (0.01) .05 | 0.02 (0.01) .05 | 0.02 (0.01) .08 | 0.02 (0.01) .08 | 0.02(0.00) |
| a | Var (Residual) | 21.60 (1.06) <.01 | 21.57 (1.04) <.01 | 21.55 (1.03) <.01 | 21.50 (1.05) <.01 | 21.57 (1.07) <.01 | 21.59 (1.05) <.01 | 21.55 (1.02) <.01 | 21.57 (1.07) <.01 | 21.56(0.03) |
| a | Covar (Level, Slope) | 0.06 (0.14) .64 | 0.09 (0.14) .53 | 0.08 (0.14) .53 | 0.08 (0.14) .57 | 0.04 (0.14) .77 | 0.04 (0.14) .76 | 0.07 (0.14) .61 | 0.06 (0.14) .69 | 0.07(0.02) |
| b | Var (Level) | 6.31 (0.80) <.01 | 34.74 (3.61) <.01 | 0.74 (0.10) <.01 | 0.70 (0.09) <.01 | 45.51 (4.18) <.01 | 0.78 (0.23) <.01 | 69.18 (6.73) <.01 | 18.32 (1.70) <.01 | --- |
| b | Var (Slope) | 0.01 (0.00) <.01 | 0.03 (0.01) <.01 | 0.00 (0.00) .01 | 0.00 (0.00) .55 | 0.10 (0.02) <.01 | 0.04 (0.00) <.01 | 0.09 (0.02) <.01 | 0.01 (0.00) <.01 | --- |
| b | Var (Residual) | 5.20 (0.27) <.01 | 11.26 (0.29) <.01 | 1.04 (0.04) <.01 | 0.61 (0.03) <.01 | 11.45 (0.49) <.01 | 3.13 (0.09) <.01 | 27.68 (0.83) <.01 | 4.45 (0.24) <.01 | --- |
| b | Covar (Level, Slope) | -0.06 (0.05) .28 | -0.34 (0.14) .01 | -0.01 (0.01) .22 | -0.00 (0.00) .51 | -0.65 (0.24) .01 | 0.06 (0.02) <.01 | -0.69 (0.37) .06 | -0.05 (0.07) .47 | --- |
| ab | Covar (Levels) | -0.07 (0.97) .94 | 4.25 (2.11) .04 | 0.38 (0.41) .36 | -0.10 (0.33) .77 | 2.53 (2.40) .29 | 0.10 (0.64) .88 | 7.15 (3.22) .03 | 1.67 (1.43) .24 | --- |
| ab | Covar (Slopes) | 0.01 (0.00) .20 | 0.00 (0.01) .89 | 0.00 (0.00) .34 | 0.00 (0.00) .45 | 0.03 (0.01) .03 | 0.01 (0.01) .34 | 0.02 (0.01) .25 | 0.00 (0.01) .47 | --- |
| ab | Covar (Residuals) | 1.22 (0.43) <.01 | 1.73 (0.61) <.01 | 0.18 (0.16) .27 | 0.11 (0.11) .32 | 0.87 (0.57) .13 | 1.07 (0.30) <.01 | 2.64 (0.95) <.01 | 0.63 (0.38) .10 | --- |
|  | Correlation of Levels | -0.008 | 0.195 | 0.118 | -0.032 | 0.100 | 0.029 | 0.23 | 0.104 | 0.09(0.09) |
|  | Correlation of Slopes | 0.363 | 0.041 | 0.324 | Inf | 0.643 | 0.268 | 0.40 | 0.276 | Inf(NaN) |
|  | Correlation of Residuals | 0.115 | 0.111 | 0.038 | 0.030 | 0.056 | 0.130 | 0.11 | 0.064 | 0.08(0.04) |
|  | N | 410 | 409 | 409 | 409 | 411 | 412 | 409 | 410 | 409.88(1.13) |
|  | occasions | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -8,149 | -9,091 | -7,157 | -6,805 | -9,359 | -8,109 | -9,587 | -8,456 | -8,339(1,001) |
|  | AIC | 16,381 | 18,265 | 14,395 | 13,691 | 18,801 | 16,299 | 19,256 | 16,994 | 16,760(2,003) |
|  | BIC | 16,546 | 18,429 | 14,560 | 13,856 | 18,965 | 16,464 | 19,420 | 17,159 | 16,925(2,003) |

## analogies

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 21.02 (0.32) <.01 | 20.84 (0.35) <.01 | 20.82 (0.36) <.01 | 21.48 (0.45) <.01 |
| a | Slope | -0.57 (0.03) <.01 | -0.58 (0.04) <.01 | -0.58 (0.04) <.01 | -0.57 (0.04) <.01 |
| a | Level \* age | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.24 (0.03) <.01 | -0.19 (0.04) <.01 |
| a | Level \* education | --- | 0.53 (0.40) .19 | 0.40 (0.40) .31 | 0.32 (0.39) .41 |
| a | Level \* height | --- | --- | 0.13 (0.05) .01 | 0.15 (0.05) <.01 |
| a | Level \* smoking | --- | --- | --- | 0.26 (0.64) .68 |
| a | Level \* cardio | --- | --- | --- | -2.19 (0.82) .01 |
| a | Level \* diabetes | --- | --- | --- | -2.02 (1.72) .24 |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.01 (0.03) .65 | 0.01 (0.03) .67 | 0.02 (0.03) .57 |
| a | Slope \* height | --- | --- | 0.00 (0.00) .93 | 0.00 (0.00) .92 |
| a | Slope \* smoking | --- | --- | --- | 0.03 (0.06) .63 |
| a | Slope \* cardio | --- | --- | --- | 0.01 (0.07) .93 |
| a | Slope \* diabetes | --- | --- | --- | -0.31 (0.22) .16 |
| b | Level | 13.72 (0.23) <.01 | 13.02 (0.23) <.01 | 13.05 (0.24) <.01 | 13.14 (0.30) <.01 |
| b | Slope | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 | -0.10 (0.02) <.01 | -0.12 (0.02) <.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 | 1.89 (0.21) <.01 | 1.76 (0.23) <.01 |
| b | Level \* height | --- | --- | 0.02 (0.03) .52 | 0.03 (0.03) .33 |
| b | Level \* smoking | --- | --- | --- | 0.50 (0.38) .19 |
| b | Level \* cardio | --- | --- | --- | -0.56 (0.64) .38 |
| b | Level \* diabetes | --- | --- | --- | -0.73 (0.97) .45 |
| b | Slope \* age | -0.00 (0.00) <.01 | -0.00 (0.00) <.01 | -0.00 (0.00) .01 | -0.00 (0.00) .01 |
| b | Slope \* education | --- | 0.00 (0.02) .82 | 0.00 (0.02) .93 | 0.01 (0.02) .46 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .49 | 0.00 (0.00) .97 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.03) .83 |
| b | Slope \* cardio | --- | --- | --- | 0.08 (0.06) .21 |
| b | Slope \* diabetes | --- | --- | --- | 0.05 (0.12) .69 |
| a | Var (Level) | 17.47 (2.32) <.01 | 17.50 (2.35) <.01 | 16.97 (2.30) <.01 | 13.88 (2.42) <.01 |
| a | Var (Slope) | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.02 (0.01) .06 |
| a | Var (Residual) | 21.66 (0.93) <.01 | 21.57 (0.95) <.01 | 21.68 (0.97) <.01 | 21.60 (1.06) <.01 |
| a | Covar (Level, Slope) | -0.07 (0.14) .63 | -0.07 (0.14) .60 | -0.05 (0.14) .70 | 0.06 (0.14) .64 |
| b | Var (Level) | 7.78 (0.80) <.01 | 6.08 (0.69) <.01 | 6.08 (0.70) <.01 | 6.31 (0.80) <.01 |
| b | Var (Slope) | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| b | Var (Residual) | 5.13 (0.22) <.01 | 5.16 (0.23) <.01 | 5.17 (0.23) <.01 | 5.20 (0.27) <.01 |
| b | Covar (Level, Slope) | -0.03 (0.05) .53 | -0.05 (0.04) .30 | -0.05 (0.05) .27 | -0.06 (0.05) .28 |
| ab | Covar (Levels) | 1.11 (0.94) .24 | 0.54 (0.86) .53 | 0.58 (0.86) .50 | -0.07 (0.97) .94 |
| ab | Covar (Slopes) | 0.01 (0.00) .09 | 0.01 (0.00) .07 | 0.01 (0.00) .07 | 0.01 (0.00) .20 |
| ab | Covar (Residuals) | 1.18 (0.36) <.01 | 1.30 (0.37) <.01 | 1.26 (0.38) <.01 | 1.22 (0.43) <.01 |
|  | Correlation of Levels | 0.095 | 0.053 | 0.058 | -0.008 |
|  | Correlation of Slopes | 0.377 | 0.448 | 0.455 | 0.363 |
|  | Correlation of Residuals | 0.112 | 0.123 | 0.119 | 0.115 |
|  | N | 508 | 486 | 477 | 410 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,004 | -9,613 | -9,472 | -8,149 |
|  | AIC | 20,050 | 19,277 | 19,002 | 16,381 |
|  | BIC | 20,139 | 19,381 | 19,122 | 16,546 |

## block

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

|  |  |  |
| --- | --- | --- |
| process | label | aehplus |
| a | Level | 21.50 (0.45) <.01 |
| a | Slope | -0.57 (0.04) <.01 |
| a | Level \* age | -0.19 (0.04) <.01 |
| a | Level \* education | 0.36 (0.39) .35 |
| a | Level \* height | 0.15 (0.05) <.01 |
| a | Level \* smoking | 0.26 (0.63) .68 |
| a | Level \* cardio | -2.30 (0.85) .01 |
| a | Level \* diabetes | -1.14 (1.79) .52 |
| a | Slope \* age | -0.01 (0.00) <.01 |
| a | Slope \* education | 0.02 (0.03) .59 |
| a | Slope \* height | 0.00 (0.00) .97 |
| a | Slope \* smoking | 0.02 (0.05) .65 |
| a | Slope \* cardio | 0.01 (0.07) .84 |
| a | Slope \* diabetes | -0.45 (0.31) .15 |
| b | Level | 16.49 (0.52) <.01 |
| b | Slope | -0.37 (0.03) <.01 |
| b | Level \* age | -0.28 (0.04) <.01 |
| b | Level \* education | 2.23 (0.50) <.01 |
| b | Level \* height | 0.08 (0.06) .17 |
| b | Level \* smoking | 0.11 (0.78) .89 |
| b | Level \* cardio | -0.02 (1.18) .99 |
| b | Level \* diabetes | -5.34 (2.46) .03 |
| b | Slope \* age | -0.01 (0.00) <.01 |
| b | Slope \* education | 0.02 (0.03) .60 |
| b | Slope \* height | -0.00 (0.00) .54 |
| b | Slope \* smoking | -0.01 (0.05) .90 |
| b | Slope \* cardio | 0.05 (0.09) .62 |
| b | Slope \* diabetes | 0.08 (0.16) .63 |
| a | Var (Level) | 13.72 (2.40) <.01 |
| a | Var (Slope) | 0.02 (0.01) .08 |
| a | Var (Residual) | 21.57 (1.04) <.01 |
| a | Covar (Level, Slope) | 0.09 (0.14) .53 |
| b | Var (Level) | 34.74 (3.61) <.01 |
| b | Var (Slope) | 0.03 (0.01) <.01 |
| b | Var (Residual) | 11.26 (0.29) <.01 |
| b | Covar (Level, Slope) | -0.34 (0.14) .01 |
| ab | Covar (Levels) | 4.25 (2.11) .04 |
| ab | Covar (Slopes) | 0.00 (0.01) .89 |
| ab | Covar (Residuals) | 1.73 (0.61) <.01 |
|  | Correlation of Levels | 0.195 |
|  | Correlation of Slopes | 0.041 |
|  | Correlation of Residuals | 0.111 |
|  | N | 409 |
|  | occasions | 7 |
|  | parameters | 41 |
|  | LL | -9,091 |
|  | AIC | 18,265 |
|  | BIC | 18,429 |

## digit\_b

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

|  |  |  |
| --- | --- | --- |
| process | label | aehplus |
| a | Level | 21.51 (0.46) <.01 |
| a | Slope | -0.57 (0.04) <.01 |
| a | Level \* age | -0.19 (0.03) <.01 |
| a | Level \* education | 0.28 (0.38) .46 |
| a | Level \* height | 0.15 (0.05) <.01 |
| a | Level \* smoking | 0.22 (0.63) .72 |
| a | Level \* cardio | -2.25 (0.81) .01 |
| a | Level \* diabetes | -1.13 (1.67) .50 |
| a | Slope \* age | -0.01 (0.00) <.01 |
| a | Slope \* education | 0.02 (0.03) .51 |
| a | Slope \* height | 0.00 (0.00) .94 |
| a | Slope \* smoking | 0.03 (0.06) .59 |
| a | Slope \* cardio | 0.01 (0.07) .85 |
| a | Slope \* diabetes | -0.46 (0.29) .12 |
| b | Level | 3.67 (0.10) <.01 |
| b | Slope | -0.04 (0.01) <.01 |
| b | Level \* age | -0.01 (0.01) .16 |
| b | Level \* education | 0.50 (0.10) <.01 |
| b | Level \* height | 0.01 (0.01) .34 |
| b | Level \* smoking | 0.24 (0.16) .13 |
| b | Level \* cardio | 0.03 (0.21) .87 |
| b | Level \* diabetes | 0.14 (0.38) .71 |
| b | Slope \* age | -0.00 (0.00) .02 |
| b | Slope \* education | -0.01 (0.01) .30 |
| b | Slope \* height | 0.00 (0.00) .42 |
| b | Slope \* smoking | 0.01 (0.01) .65 |
| b | Slope \* cardio | 0.02 (0.02) .29 |
| b | Slope \* diabetes | -0.02 (0.03) .64 |
| a | Var (Level) | 13.77 (2.41) <.01 |
| a | Var (Slope) | 0.02 (0.01) .08 |
| a | Var (Residual) | 21.55 (1.03) <.01 |
| a | Covar (Level, Slope) | 0.08 (0.14) .53 |
| b | Var (Level) | 0.74 (0.10) <.01 |
| b | Var (Slope) | 0.00 (0.00) .01 |
| b | Var (Residual) | 1.04 (0.04) <.01 |
| b | Covar (Level, Slope) | -0.01 (0.01) .22 |
| ab | Covar (Levels) | 0.38 (0.41) .36 |
| ab | Covar (Slopes) | 0.00 (0.00) .34 |
| ab | Covar (Residuals) | 0.18 (0.16) .27 |
|  | Correlation of Levels | 0.118 |
|  | Correlation of Slopes | 0.324 |
|  | Correlation of Residuals | 0.038 |
|  | N | 409 |
|  | occasions | 7 |
|  | parameters | 41 |
|  | LL | -7,157 |
|  | AIC | 14,395 |
|  | BIC | 14,560 |

## digit\_f

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

|  |  |  |
| --- | --- | --- |
| process | label | aehplus |
| a | Level | 21.50 (0.45) <.01 |
| a | Slope | -0.57 (0.04) <.01 |
| a | Level \* age | -0.19 (0.04) <.01 |
| a | Level \* education | 0.29 (0.39) .46 |
| a | Level \* height | 0.15 (0.05) <.01 |
| a | Level \* smoking | 0.23 (0.64) .72 |
| a | Level \* cardio | -2.24 (0.80) <.01 |
| a | Level \* diabetes | -1.11 (1.68) .51 |
| a | Slope \* age | -0.01 (0.00) <.01 |
| a | Slope \* education | 0.02 (0.03) .51 |
| a | Slope \* height | -0.00 (0.00) .90 |
| a | Slope \* smoking | 0.03 (0.05) .61 |
| a | Slope \* cardio | 0.01 (0.07) .85 |
| a | Slope \* diabetes | -0.46 (0.38) .23 |
| b | Level | 5.55 (0.10) <.01 |
| b | Slope | -0.03 (0.01) <.01 |
| b | Level \* age | -0.01 (0.01) .14 |
| b | Level \* education | 0.32 (0.09) <.01 |
| b | Level \* height | 0.00 (0.01) .81 |
| b | Level \* smoking | 0.03 (0.12) .80 |
| b | Level \* cardio | -0.27 (0.22) .22 |
| b | Level \* diabetes | -0.25 (0.34) .47 |
| b | Slope \* age | -0.00 (0.00) .12 |
| b | Slope \* education | -0.00 (0.00) .87 |
| b | Slope \* height | 0.00 (0.00) .07 |
| b | Slope \* smoking | 0.00 (0.01) .73 |
| b | Slope \* cardio | 0.03 (0.01) .06 |
| b | Slope \* diabetes | 0.02 (0.06) .71 |
| a | Var (Level) | 13.84 (2.37) <.01 |
| a | Var (Slope) | 0.02 (0.01) .07 |
| a | Var (Residual) | 21.50 (1.05) <.01 |
| a | Covar (Level, Slope) | 0.08 (0.14) .57 |
| b | Var (Level) | 0.70 (0.09) <.01 |
| b | Var (Slope) | 0.00 (0.00) .55 |
| b | Var (Residual) | 0.61 (0.03) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.00) .51 |
| ab | Covar (Levels) | -0.10 (0.33) .77 |
| ab | Covar (Slopes) | 0.00 (0.00) .45 |
| ab | Covar (Residuals) | 0.11 (0.11) .32 |
|  | Correlation of Levels | -0.032 |
|  | Correlation of Slopes | Inf |
|  | Correlation of Residuals | 0.030 |
|  | N | 409 |
|  | occasions | 7 |
|  | parameters | 41 |
|  | LL | -6,805 |
|  | AIC | 13,691 |
|  | BIC | 13,856 |

## fig\_id

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | ae | aeh |
| a | Level | 21.04 (0.33) <.01 | 20.86 (0.36) <.01 | 20.83 (0.36) <.01 |
| a | Slope | -0.57 (0.03) <.01 | -0.58 (0.04) <.01 | -0.58 (0.04) <.01 |
| a | Level \* age | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.24 (0.03) <.01 |
| a | Level \* education | --- | 0.54 (0.40) .18 | 0.41 (0.40) .30 |
| a | Level \* height | --- | --- | 0.13 (0.05) .01 |
| a | Level \* smoking | --- | --- | --- |
| a | Level \* cardio | --- | --- | --- |
| a | Level \* diabetes | --- | --- | --- |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.02 (0.03) .61 | 0.01 (0.03) .65 |
| a | Slope \* height | --- | --- | 0.00 (0.00) .92 |
| a | Slope \* smoking | --- | --- | --- |
| a | Slope \* cardio | --- | --- | --- |
| a | Slope \* diabetes | --- | --- | --- |
| b | Level | 27.98 (0.40) <.01 | 27.62 (0.44) <.01 | 27.62 (0.44) <.01 |
| b | Slope | -0.53 (0.04) <.01 | -0.56 (0.04) <.01 | -0.56 (0.05) <.01 |
| b | Level \* age | -0.49 (0.04) <.01 | -0.48 (0.04) <.01 | -0.47 (0.04) <.01 |
| b | Level \* education | --- | 0.79 (0.53) .13 | 0.75 (0.54) .16 |
| b | Level \* height | --- | --- | 0.04 (0.06) .49 |
| 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 (0.03) .07 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .50 |
| b | Slope \* smoking | --- | --- | --- |
| b | Slope \* cardio | --- | --- | --- |
| b | Slope \* diabetes | --- | --- | --- |
| a | Var (Level) | 17.51 (2.33) <.01 | 17.63 (2.38) <.01 | 17.08 (2.33) <.01 |
| a | Var (Slope) | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.03 (0.01) .01 |
| a | Var (Residual) | 21.64 (0.93) <.01 | 21.53 (0.95) <.01 | 21.64 (0.96) <.01 |
| a | Covar (Level, Slope) | -0.07 (0.14) .62 | -0.08 (0.15) .58 | -0.06 (0.14) .68 |
| b | Var (Level) | 36.27 (3.47) <.01 | 36.23 (3.48) <.01 | 36.52 (3.56) <.01 |
| b | Var (Slope) | 0.11 (0.02) <.01 | 0.10 (0.02) <.01 | 0.10 (0.02) <.01 |
| b | Var (Residual) | 18.03 (0.74) <.01 | 17.79 (0.74) <.01 | 17.83 (0.75) <.01 |
| b | Covar (Level, Slope) | -0.47 (0.21) .03 | -0.51 (0.21) .01 | -0.52 (0.21) .02 |
| ab | Covar (Levels) | 6.07 (2.08) <.01 | 5.73 (2.10) .01 | 5.35 (2.13) .01 |
| ab | Covar (Slopes) | 0.02 (0.01) .11 | 0.02 (0.01) .13 | 0.02 (0.01) .16 |
| ab | Covar (Residuals) | -0.87 (0.58) .14 | -0.63 (0.60) .29 | -0.62 (0.61) .31 |
|  | Correlation of Levels | 0.241 | 0.227 | 0.214 |
|  | Correlation of Slopes | 0.328 | 0.325 | 0.297 |
|  | Correlation of Residuals | -0.044 | -0.032 | -0.032 |
|  | N | 508 | 486 | 477 |
|  | occasions | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 |
|  | LL | -11,485 | -11,076 | -10,914 |
|  | AIC | 23,013 | 22,202 | 21,886 |
|  | BIC | 23,102 | 22,307 | 22,007 |

## information

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 21.04 (0.33) <.01 | 20.86 (0.36) <.01 | 20.83 (0.36) <.01 | 21.47 (0.45) <.01 |
| a | Slope | -0.58 (0.03) <.01 | -0.59 (0.04) <.01 | -0.59 (0.04) <.01 | -0.57 (0.04) <.01 |
| a | Level \* age | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.24 (0.03) <.01 | -0.19 (0.04) <.01 |
| a | Level \* education | --- | 0.50 (0.40) .22 | 0.37 (0.40) .36 | 0.29 (0.39) .45 |
| a | Level \* height | --- | --- | 0.13 (0.05) .01 | 0.15 (0.05) <.01 |
| a | Level \* smoking | --- | --- | --- | 0.25 (0.63) .69 |
| a | Level \* cardio | --- | --- | --- | -2.17 (0.80) .01 |
| a | Level \* diabetes | --- | --- | --- | -2.02 (1.64) .22 |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.02 (0.03) .53 | 0.02 (0.03) .56 | 0.02 (0.03) .48 |
| a | Slope \* height | --- | --- | 0.00 (0.00) .88 | 0.00 (0.00) .95 |
| a | Slope \* smoking | --- | --- | --- | 0.02 (0.05) .64 |
| a | Slope \* cardio | --- | --- | --- | 0.00 (0.07) .96 |
| a | Slope \* diabetes | --- | --- | --- | -0.32 (0.21) .14 |
| b | Level | 29.02 (0.46) <.01 | 27.59 (0.44) <.01 | 27.71 (0.43) <.01 | 27.86 (0.57) <.01 |
| b | Slope | -0.31 (0.03) <.01 | -0.30 (0.04) <.01 | -0.30 (0.04) <.01 | -0.29 (0.05) <.01 |
| b | Level \* age | -0.14 (0.04) <.01 | -0.05 (0.04) .23 | -0.04 (0.04) .33 | -0.04 (0.05) .42 |
| b | Level \* education | --- | 4.14 (0.64) <.01 | 4.26 (0.66) <.01 | 4.03 (0.78) <.01 |
| b | Level \* height | --- | --- | 0.01 (0.06) .86 | 0.01 (0.07) .83 |
| b | Level \* smoking | --- | --- | --- | 1.08 (0.99) .28 |
| b | Level \* cardio | --- | --- | --- | -2.04 (1.12) .07 |
| b | Level \* diabetes | --- | --- | --- | 0.38 (1.75) .83 |
| 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) .53 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .45 | 0.00 (0.00) .60 |
| b | Slope \* smoking | --- | --- | --- | 0.04 (0.06) .55 |
| b | Slope \* cardio | --- | --- | --- | 0.09 (0.09) .34 |
| b | Slope \* diabetes | --- | --- | --- | -0.17 (0.19) .38 |
| a | Var (Level) | 17.52 (2.32) <.01 | 17.63 (2.36) <.01 | 17.07 (2.32) <.01 | 13.98 (2.42) <.01 |
| a | Var (Slope) | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.02 (0.01) .05 |
| a | Var (Residual) | 21.63 (0.93) <.01 | 21.55 (0.97) <.01 | 21.66 (0.99) <.01 | 21.57 (1.07) <.01 |
| a | Covar (Level, Slope) | -0.09 (0.14) .53 | -0.10 (0.14) .49 | -0.08 (0.14) .57 | 0.04 (0.14) .77 |
| b | Var (Level) | 57.22 (4.60) <.01 | 46.92 (3.74) <.01 | 44.95 (3.65) <.01 | 45.51 (4.18) <.01 |
| b | Var (Slope) | 0.11 (0.01) <.01 | 0.10 (0.01) <.01 | 0.10 (0.01) <.01 | 0.10 (0.02) <.01 |
| b | Var (Residual) | 10.92 (0.40) <.01 | 10.97 (0.41) <.01 | 11.05 (0.43) <.01 | 11.45 (0.49) <.01 |
| b | Covar (Level, Slope) | -0.59 (0.23) .01 | -0.51 (0.21) .02 | -0.48 (0.21) .02 | -0.65 (0.24) .01 |
| ab | Covar (Levels) | 4.33 (2.31) .06 | 2.93 (2.20) .18 | 2.89 (2.21) .19 | 2.53 (2.40) .29 |
| ab | Covar (Slopes) | 0.04 (0.01) <.01 | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.03 (0.01) .03 |
| ab | Covar (Residuals) | 0.96 (0.49) .05 | 0.89 (0.50) .07 | 0.85 (0.51) .10 | 0.87 (0.57) .13 |
|  | Correlation of Levels | 0.137 | 0.102 | 0.104 | 0.100 |
|  | Correlation of Slopes | 0.583 | 0.569 | 0.602 | 0.643 |
|  | Correlation of Residuals | 0.062 | 0.058 | 0.055 | 0.056 |
|  | N | 510 | 488 | 479 | 411 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -11,516 | -11,074 | -10,909 | -9,359 |
|  | AIC | 23,074 | 22,198 | 21,875 | 18,801 |
|  | BIC | 23,163 | 22,303 | 21,996 | 18,965 |

## mmse

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 21.02 (0.32) <.01 | 20.85 (0.35) <.01 | 20.82 (0.36) <.01 | 21.45 (0.45) <.01 |
| a | Slope | -0.57 (0.04) <.01 | -0.58 (0.04) <.01 | -0.58 (0.04) <.01 | -0.57 (0.05) <.01 |
| a | Level \* age | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.24 (0.03) <.01 | -0.19 (0.04) <.01 |
| a | Level \* education | --- | 0.51 (0.40) .20 | 0.38 (0.40) .33 | 0.31 (0.39) .43 |
| a | Level \* height | --- | --- | 0.13 (0.05) .01 | 0.15 (0.05) .01 |
| a | Level \* smoking | --- | --- | --- | 0.29 (0.63) .65 |
| a | Level \* cardio | --- | --- | --- | -2.16 (0.81) .01 |
| a | Level \* diabetes | --- | --- | --- | -2.01 (1.66) .23 |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.02 (0.03) .57 | 0.02 (0.03) .59 | 0.02 (0.03) .50 |
| a | Slope \* height | --- | --- | 0.00 (0.00) .99 | 0.00 (0.00) .99 |
| a | Slope \* smoking | --- | --- | --- | 0.02 (0.05) .66 |
| a | Slope \* cardio | --- | --- | --- | 0.01 (0.07) .89 |
| a | Slope \* diabetes | --- | --- | --- | -0.30 (0.21) .16 |
| b | Level | 28.10 (0.10) <.01 | 27.94 (0.11) <.01 | 27.97 (0.11) <.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 | --- | 0.37 (0.14) .01 | 0.40 (0.14) .01 | 0.32 (0.19) .09 |
| b | Level \* height | --- | --- | -0.02 (0.02) .30 | -0.01 (0.02) .55 |
| b | Level \* smoking | --- | --- | --- | -0.07 (0.26) .79 |
| b | Level \* cardio | --- | --- | --- | -0.10 (0.26) .70 |
| b | Level \* diabetes | --- | --- | --- | -0.52 (0.50) .29 |
| 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) .97 | -0.00 (0.02) .92 | 0.01 (0.03) .78 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .71 | 0.00 (0.00) .55 |
| b | Slope \* smoking | --- | --- | --- | 0.04 (0.04) .32 |
| b | Slope \* cardio | --- | --- | --- | 0.02 (0.05) .71 |
| b | Slope \* diabetes | --- | --- | --- | 0.12 (0.11) .27 |
| a | Var (Level) | 17.51 (2.32) <.01 | 17.59 (2.35) <.01 | 17.07 (2.31) <.01 | 13.98 (2.43) <.01 |
| a | Var (Slope) | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.02 (0.01) .05 |
| a | Var (Residual) | 21.66 (0.94) <.01 | 21.57 (0.96) <.01 | 21.67 (0.97) <.01 | 21.59 (1.05) <.01 |
| a | Covar (Level, Slope) | -0.09 (0.14) .54 | -0.09 (0.14) .51 | -0.07 (0.14) .59 | 0.04 (0.14) .76 |
| b | Var (Level) | 0.76 (0.20) <.01 | 0.74 (0.20) <.01 | 0.74 (0.20) <.01 | 0.78 (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 |
| b | Var (Residual) | 3.13 (0.07) <.01 | 3.07 (0.07) <.01 | 3.08 (0.08) <.01 | 3.13 (0.09) <.01 |
| b | Covar (Level, Slope) | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.05 (0.02) <.01 | 0.06 (0.02) <.01 |
| ab | Covar (Levels) | 0.24 (0.54) .65 | 0.11 (0.55) .84 | 0.16 (0.56) .77 | 0.10 (0.64) .88 |
| ab | Covar (Slopes) | 0.01 (0.01) .14 | 0.01 (0.01) .23 | 0.01 (0.01) .26 | 0.01 (0.01) .34 |
| ab | Covar (Residuals) | 0.89 (0.25) <.01 | 0.90 (0.26) <.01 | 0.91 (0.27) <.01 | 1.07 (0.30) <.01 |
|  | Correlation of Levels | 0.067 | 0.031 | 0.046 | 0.029 |
|  | Correlation of Slopes | 0.329 | 0.284 | 0.295 | 0.268 |
|  | Correlation of Residuals | 0.108 | 0.111 | 0.112 | 0.130 |
|  | N | 511 | 489 | 480 | 412 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -9,977 | -9,604 | -9,470 | -8,109 |
|  | AIC | 19,995 | 19,258 | 18,998 | 16,299 |
|  | BIC | 20,084 | 19,363 | 19,119 | 16,464 |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 21.04 (0.30) <.01 | 20.85 (0.34) <.01 | 20.82 (0.33) <.01 | 21.50 (0.46) <.01 |
| a | Slope | -0.57 (0.03) <.01 | -0.58 (0.03) <.01 | -0.58 (0.03) <.01 | -0.57 (0.04) <.01 |
| a | Level \* age | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.24 (0.03) <.01 | -0.19 (0.04) <.01 |
| a | Level \* education | --- | 0.53 (0.39) .17 | 0.40 (0.40) .31 | 0.32 (0.39) .41 |
| a | Level \* height | --- | --- | 0.13 (0.04) <.01 | 0.15 (0.05) <.01 |
| a | Level \* smoking | --- | --- | --- | 0.22 (0.62) .73 |
| a | Level \* cardio | --- | --- | --- | -2.27 (0.81) <.01 |
| a | Level \* diabetes | --- | --- | --- | -1.15 (1.72) .50 |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.01 (0.02) .51 | 0.01 (0.02) .56 | 0.02 (0.03) .56 |
| a | Slope \* height | --- | --- | 0.00 (0.00) .94 | 0.00 (0.00) .93 |
| a | Slope \* smoking | --- | --- | --- | 0.03 (0.05) .58 |
| a | Slope \* cardio | --- | --- | --- | 0.02 (0.07) .82 |
| a | Slope \* diabetes | --- | --- | --- | -0.46 (0.35) .19 |
| b | Level | 35.41 (0.55) <.01 | 33.80 (0.59) <.01 | 33.84 (0.59) <.01 | 34.49 (0.74) <.01 |
| b | Slope | -0.85 (0.04) <.01 | -0.86 (0.04) <.01 | -0.86 (0.04) <.01 | -0.82 (0.06) <.01 |
| b | Level \* age | -0.83 (0.05) <.01 | -0.75 (0.05) <.01 | -0.73 (0.05) <.01 | -0.69 (0.06) <.01 |
| b | Level \* education | --- | 4.06 (0.69) <.01 | 3.96 (0.70) <.01 | 3.29 (0.70) <.01 |
| b | Level \* height | --- | --- | 0.10 (0.08) .22 | 0.17 (0.09) .05 |
| b | Level \* smoking | --- | --- | --- | 0.95 (1.19) .42 |
| b | Level \* cardio | --- | --- | --- | -1.81 (1.54) .24 |
| b | Level \* diabetes | --- | --- | --- | -6.88 (2.92) .02 |
| 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) .80 | 0.00 (0.04) .93 | 0.05 (0.04) .22 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .35 | 0.00 (0.01) .99 |
| b | Slope \* smoking | --- | --- | --- | -0.06 (0.08) .46 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.16) .91 |
| b | Slope \* diabetes | --- | --- | --- | -0.18 (0.56) .74 |
| a | Var (Level) | 17.51 (2.27) <.01 | 17.65 (2.30) <.01 | 17.10 (2.35) <.01 | 13.80 (2.37) <.01 |
| a | Var (Slope) | 0.03 (0.01) .03 | 0.03 (0.01) .03 | 0.03 (0.01) .04 | 0.02 (0.01) .08 |
| a | Var (Residual) | 21.65 (1.00) <.01 | 21.54 (1.02) <.01 | 21.64 (1.03) <.01 | 21.55 (1.02) <.01 |
| a | Covar (Level, Slope) | -0.06 (0.14) .65 | -0.08 (0.14) .58 | -0.06 (0.14) .67 | 0.07 (0.14) .61 |
| b | Var (Level) | 80.63 (7.05) <.01 | 73.03 (6.75) <.01 | 72.57 (6.80) <.01 | 69.18 (6.73) <.01 |
| b | Var (Slope) | 0.10 (0.03) <.01 | 0.09 (0.03) <.01 | 0.09 (0.03) <.01 | 0.09 (0.02) <.01 |
| b | Var (Residual) | 27.39 (2.34) <.01 | 27.54 (2.45) <.01 | 27.44 (2.45) <.01 | 27.68 (0.83) <.01 |
| b | Covar (Level, Slope) | -0.36 (0.34) .28 | -0.55 (0.33) .09 | -0.57 (0.33) .08 | -0.69 (0.37) .06 |
| ab | Covar (Levels) | 9.29 (2.71) <.01 | 8.50 (2.63) <.01 | 7.69 (2.58) <.01 | 7.15 (3.22) .03 |
| ab | Covar (Slopes) | 0.02 (0.01) .05 | 0.02 (0.01) .04 | 0.02 (0.01) .05 | 0.02 (0.01) .25 |
| ab | Covar (Residuals) | 2.33 (0.77) <.01 | 2.37 (0.80) <.01 | 2.45 (0.80) <.01 | 2.64 (0.95) <.01 |
|  | Correlation of Levels | 0.247 | 0.237 | 0.22 | 0.23 |
|  | Correlation of Slopes | 0.443 | 0.473 | 0.46 | 0.40 |
|  | Correlation of Residuals | 0.096 | 0.097 | 0.10 | 0.11 |
|  | N | 508 | 486 | 477 | 409 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -11,783 | -11,348 | -11,181 | -9,587 |
|  | AIC | 23,608 | 22,745 | 22,421 | 19,256 |
|  | BIC | 23,697 | 22,850 | 22,542 | 19,420 |

## synonyms

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 21.04 (0.32) <.01 | 20.86 (0.36) <.01 | 20.83 (0.36) <.01 | 21.48 (0.46) <.01 |
| a | Slope | -0.57 (0.03) <.01 | -0.59 (0.04) <.01 | -0.59 (0.04) <.01 | -0.57 (0.04) <.01 |
| a | Level \* age | -0.27 (0.03) <.01 | -0.26 (0.03) <.01 | -0.24 (0.03) <.01 | -0.19 (0.04) <.01 |
| a | Level \* education | --- | 0.52 (0.41) .20 | 0.39 (0.41) .34 | 0.31 (0.40) .44 |
| a | Level \* height | --- | --- | 0.13 (0.05) .01 | 0.15 (0.05) <.01 |
| a | Level \* smoking | --- | --- | --- | 0.27 (0.63) .66 |
| a | Level \* cardio | --- | --- | --- | -2.20 (0.81) .01 |
| a | Level \* diabetes | --- | --- | --- | -2.04 (1.68) .22 |
| a | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 |
| a | Slope \* education | --- | 0.02 (0.03) .57 | 0.02 (0.03) .59 | 0.02 (0.03) .53 |
| a | Slope \* height | --- | --- | 0.00 (0.00) .92 | 0.00 (0.00) .93 |
| a | Slope \* smoking | --- | --- | --- | 0.02 (0.05) .70 |
| a | Slope \* cardio | --- | --- | --- | 0.01 (0.07) .91 |
| a | Slope \* diabetes | --- | --- | --- | -0.32 (0.22) .15 |
| b | Level | 18.37 (0.29) <.01 | 17.33 (0.28) <.01 | 17.41 (0.28) <.01 | 17.72 (0.34) <.01 |
| b | Slope | -0.11 (0.02) <.01 | -0.11 (0.02) <.01 | -0.11 (0.02) <.01 | -0.13 (0.02) <.01 |
| b | Level \* age | -0.12 (0.03) <.01 | -0.06 (0.02) .01 | -0.05 (0.03) .04 | -0.04 (0.03) .19 |
| b | Level \* education | --- | 2.91 (0.41) <.01 | 2.94 (0.42) <.01 | 2.71 (0.48) <.01 |
| b | Level \* height | --- | --- | 0.01 (0.04) .75 | 0.04 (0.05) .40 |
| b | Level \* smoking | --- | --- | --- | 1.09 (0.61) .08 |
| b | Level \* cardio | --- | --- | --- | -1.60 (0.84) .06 |
| b | Level \* diabetes | --- | --- | --- | -2.05 (1.07) .06 |
| 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) .81 | -0.01 (0.02) .78 | 0.00 (0.02) .99 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .31 | 0.00 (0.00) .65 |
| b | Slope \* smoking | --- | --- | --- | -0.01 (0.03) .81 |
| b | Slope \* cardio | --- | --- | --- | 0.06 (0.05) .22 |
| b | Slope \* diabetes | --- | --- | --- | 0.13 (0.15) .41 |
| a | Var (Level) | 17.59 (2.33) <.01 | 17.68 (2.38) <.01 | 17.13 (2.33) <.01 | 14.06 (2.42) <.01 |
| a | Var (Slope) | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.03 (0.01) .01 | 0.02 (0.01) .08 |
| a | Var (Residual) | 21.66 (0.93) <.01 | 21.55 (0.96) <.01 | 21.65 (0.97) <.01 | 21.57 (1.07) <.01 |
| a | Covar (Level, Slope) | -0.08 (0.14) .59 | -0.09 (0.14) .53 | -0.07 (0.14) .62 | 0.06 (0.14) .69 |
| b | Var (Level) | 24.59 (2.09) <.01 | 20.10 (1.76) <.01 | 19.83 (1.75) <.01 | 18.32 (1.70) <.01 |
| b | Var (Slope) | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 | 0.01 (0.00) <.01 |
| b | Var (Residual) | 4.53 (0.20) <.01 | 4.49 (0.21) <.01 | 4.50 (0.21) <.01 | 4.45 (0.24) <.01 |
| b | Covar (Level, Slope) | -0.04 (0.07) .56 | -0.05 (0.06) .42 | -0.05 (0.07) .49 | -0.05 (0.07) .47 |
| ab | Covar (Levels) | 3.02 (1.49) .04 | 2.00 (1.37) .14 | 1.83 (1.37) .18 | 1.67 (1.43) .24 |
| ab | Covar (Slopes) | 0.01 (0.00) .20 | 0.01 (0.00) .17 | 0.01 (0.00) .15 | 0.00 (0.01) .47 |
| ab | Covar (Residuals) | 0.64 (0.36) .07 | 0.64 (0.36) .08 | 0.63 (0.36) .08 | 0.63 (0.38) .10 |
|  | Correlation of Levels | 0.145 | 0.106 | 0.099 | 0.104 |
|  | Correlation of Slopes | 0.379 | 0.373 | 0.392 | 0.276 |
|  | Correlation of Residuals | 0.064 | 0.065 | 0.064 | 0.064 |
|  | N | 508 | 486 | 477 | 410 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -10,426 | -10,019 | -9,869 | -8,456 |
|  | AIC | 20,894 | 20,088 | 19,796 | 16,994 |
|  | BIC | 20,983 | 20,193 | 19,917 | 17,159 |

## Summary

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

Computed correlations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Levels | analogies | 0.10 | 0.05 | 0.06 | -0.01 |
| Correlation of Levels | block | . | . | . | 0.19 |
| Correlation of Levels | digit\_b | . | . | . | 0.12 |
| Correlation of Levels | digit\_f | . | . | . | -0.03 |
| Correlation of Levels | fig\_id | 0.24 | 0.23 | 0.21 | . |
| Correlation of Levels | information | 0.14 | 0.10 | 0.10 | 0.10 |
| Correlation of Levels | mmse | 0.07 | 0.03 | 0.05 | 0.03 |
| Correlation of Levels | symbol | 0.25 | 0.24 | 0.22 | 0.23 |
| Correlation of Levels | synonyms | 0.15 | 0.11 | 0.10 | 0.10 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Slopes | analogies | 0.38 | 0.45 | 0.45 | 0.36 |
| Correlation of Slopes | block | . | . | . | 0.04 |
| Correlation of Slopes | digit\_b | . | . | . | 0.32 |
| Correlation of Slopes | digit\_f | . | . | . | Inf |
| Correlation of Slopes | fig\_id | 0.33 | 0.32 | 0.30 | . |
| Correlation of Slopes | information | 0.58 | 0.57 | 0.60 | 0.64 |
| Correlation of Slopes | mmse | 0.33 | 0.28 | 0.29 | 0.27 |
| Correlation of Slopes | symbol | 0.44 | 0.47 | 0.46 | 0.40 |
| Correlation of Slopes | synonyms | 0.38 | 0.37 | 0.39 | 0.28 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Residuals | analogies | 0.11 | 0.12 | 0.12 | 0.12 |
| Correlation of Residuals | block | . | . | . | 0.11 |
| Correlation of Residuals | digit\_b | . | . | . | 0.04 |
| Correlation of Residuals | digit\_f | . | . | . | 0.03 |
| Correlation of Residuals | fig\_id | -0.04 | -0.03 | -0.03 | . |
| Correlation of Residuals | information | 0.06 | 0.06 | 0.06 | 0.06 |
| Correlation of Residuals | mmse | 0.11 | 0.11 | 0.11 | 0.13 |
| Correlation of Residuals | symbol | 0.10 | 0.10 | 0.10 | 0.11 |
| Correlation of Residuals | synonyms | 0.06 | 0.06 | 0.06 | 0.06 |

P-values for corresponding covariances:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Levels | analogies | 0.24 | 0.53 | 0.50 | 0.94 |
| Covariance of Levels | block | . | . | . | 0.04 |
| Covariance of Levels | digit\_b | . | . | . | 0.36 |
| Covariance of Levels | digit\_f | . | . | . | 0.77 |
| Covariance of Levels | fig\_id | 0.00 | 0.01 | 0.01 | . |
| Covariance of Levels | information | 0.06 | 0.18 | 0.19 | 0.29 |
| Covariance of Levels | mmse | 0.65 | 0.84 | 0.77 | 0.88 |
| Covariance of Levels | symbol | 0.00 | 0.00 | 0.00 | 0.03 |
| Covariance of Levels | synonyms | 0.04 | 0.14 | 0.18 | 0.24 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Slopes | analogies | 0.09 | 0.07 | 0.07 | 0.20 |
| Covariance of Slopes | block | . | . | . | 0.89 |
| Covariance of Slopes | digit\_b | . | . | . | 0.34 |
| Covariance of Slopes | digit\_f | . | . | . | 0.45 |
| Covariance of Slopes | fig\_id | 0.11 | 0.13 | 0.16 | . |
| Covariance of Slopes | information | 0.00 | 0.01 | 0.01 | 0.03 |
| Covariance of Slopes | mmse | 0.14 | 0.23 | 0.26 | 0.34 |
| Covariance of Slopes | symbol | 0.05 | 0.04 | 0.05 | 0.25 |
| Covariance of Slopes | synonyms | 0.20 | 0.17 | 0.15 | 0.47 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Residuals | analogies | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Residuals | block | . | . | . | 0.00 |
| Covariance of Residuals | digit\_b | . | . | . | 0.27 |
| Covariance of Residuals | digit\_f | . | . | . | 0.32 |
| Covariance of Residuals | fig\_id | 0.14 | 0.29 | 0.31 | . |
| Covariance of Residuals | information | 0.05 | 0.07 | 0.10 | 0.13 |
| Covariance of Residuals | mmse | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Residuals | symbol | 0.00 | 0.00 | 0.00 | 0.00 |
| Covariance of Residuals | synonyms | 0.07 | 0.08 | 0.08 | 0.10 |

# male

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| process | label | analogies | block | digit\_b | digit\_f | information | mmse | symbol | synonyms | mean(sd) |
| a | Level | 37.73 (1.50) <.01 | 36.86 (0.85) <.01 | 36.86 (0.83) <.01 | 36.83 (0.82) <.01 | 37.69 (1.54) <.01 | 37.57 (1.58) <.01 | 36.84 (0.83) <.01 | 37.67 (1.60) <.01 | 37.26(0.44) |
| a | Slope | -0.87 (0.20) <.01 | -0.96 (0.08) <.01 | -0.95 (0.08) <.01 | -0.95 (0.08) <.01 | -0.87 (0.20) <.01 | -0.87 (0.22) <.01 | -0.95 (0.08) <.01 | -0.86 (0.20) <.01 | -0.91(0.05) |
| a | Level \* age | -0.51 (0.12) <.01 | -0.47 (0.06) <.01 | -0.46 (0.06) <.01 | -0.47 (0.06) <.01 | -0.50 (0.12) <.01 | -0.51 (0.12) <.01 | -0.47 (0.06) <.01 | -0.50 (0.13) <.01 | -0.49(0.02) |
| a | Level \* education | -0.08 (0.99) .93 | 0.10 (0.57) .86 | 0.08 (0.56) .89 | 0.07 (0.56) .90 | -0.09 (1.00) .93 | -0.08 (0.99) .94 | 0.06 (0.57) .92 | -0.09 (1.02) .93 | -0.00(0.09) |
| a | Level \* height | 0.30 (0.17) .09 | 0.37 (0.09) <.01 | 0.38 (0.09) <.01 | 0.37 (0.09) <.01 | 0.30 (0.16) .07 | 0.30 (0.17) .07 | 0.37 (0.09) <.01 | 0.31 (0.17) .07 | 0.34(0.04) |
| a | Level \* smoking | 0.64 (1.88) .73 | 1.68 (1.04) .11 | 1.65 (1.03) .11 | 1.68 (1.02) .10 | 0.70 (1.89) .71 | 0.74 (1.85) .69 | 1.74 (1.04) .10 | 0.69 (1.95) .72 | 1.19(0.53) |
| a | Level \* cardio | -0.94 (2.77) .73 | -0.41 (1.50) .78 | -0.40 (1.49) .79 | -0.35 (1.50) .81 | -0.93 (2.71) .73 | -0.89 (2.68) .74 | -0.38 (1.43) .79 | -0.93 (2.89) .75 | -0.65(0.29) |
| a | Level \* diabetes | -1.81 (5.96) .76 | -2.66 (3.13) .40 | -2.50 (4.97) .62 | -2.51 (3.94) .52 | -1.81 (6.42) .78 | -1.78 (8.71) .84 | -2.56 (3.08) .41 | -1.92 (5.58) .73 | -2.19(0.39) |
| a | Slope \* age | -0.02 (0.02) .30 | -0.02 (0.01) <.01 | -0.02 (0.01) <.01 | -0.02 (0.01) <.01 | -0.02 (0.01) .25 | -0.02 (0.01) .27 | -0.02 (0.01) <.01 | -0.02 (0.01) .25 | -0.02(0.00) |
| a | Slope \* education | -0.00 (0.10) .99 | -0.01 (0.04) .82 | -0.00 (0.04) .94 | -0.00 (0.04) .95 | -0.00 (0.10) .99 | 0.00 (0.10) .99 | -0.00 (0.04) .95 | 0.00 (0.10) .99 | -0.00(0.00) |
| a | Slope \* height | -0.00 (0.02) .87 | -0.00 (0.01) .78 | -0.00 (0.01) .71 | -0.00 (0.01) .75 | -0.00 (0.02) .88 | -0.00 (0.02) .91 | -0.00 (0.01) .68 | -0.00 (0.02) .84 | -0.00(0.00) |
| a | Slope \* smoking | 0.02 (0.21) .93 | 0.01 (0.08) .86 | 0.02 (0.08) .79 | 0.02 (0.08) .80 | 0.01 (0.20) .95 | 0.00 (0.20) .98 | 0.01 (0.08) .94 | 0.00 (0.20) .99 | 0.01(0.01) |
| a | Slope \* cardio | 0.06 (0.26) .81 | 0.05 (0.10) .62 | 0.05 (0.10) .62 | 0.05 (0.11) .62 | 0.06 (0.25) .80 | 0.05 (0.25) .84 | 0.04 (0.10) .66 | 0.04 (0.25) .87 | 0.05(0.01) |
| a | Slope \* diabetes | -0.19 (1.01) .85 | -0.11 (0.44) .81 | -0.18 (0.81) .82 | -0.19 (0.51) .71 | -0.21 (1.29) .87 | -0.23 (1.12) .84 | -0.19 (0.90) .83 | -0.17 (1.01) .87 | -0.18(0.04) |
| b | Level | 13.13 (0.47) <.01 | 15.97 (0.77) <.01 | 3.83 (0.18) <.01 | 5.34 (0.14) <.01 | 30.60 (0.85) <.01 | 27.13 (0.24) <.01 | 32.62 (1.15) <.01 | 15.91 (0.59) <.01 | --- |
| b | Slope | -0.11 (0.04) <.01 | -0.41 (0.06) <.01 | -0.05 (0.01) <.01 | -0.02 (0.01) .08 | -0.16 (0.06) <.01 | -0.14 (0.03) <.01 | -0.89 (0.08) <.01 | -0.07 (0.04) .05 | --- |
| b | Level \* age | -0.17 (0.03) <.01 | -0.38 (0.06) <.01 | -0.02 (0.01) .05 | -0.01 (0.01) .20 | -0.14 (0.06) .03 | -0.07 (0.02) <.01 | -0.70 (0.08) <.01 | -0.10 (0.04) .02 | --- |
| b | Level \* education | 1.58 (0.23) <.01 | 2.31 (0.47) <.01 | 0.31 (0.09) <.01 | 0.25 (0.07) <.01 | 2.60 (0.60) <.01 | 0.29 (0.18) .10 | 3.72 (0.66) <.01 | 2.37 (0.37) <.01 | --- |
| b | Level \* height | 0.10 (0.04) <.01 | 0.10 (0.07) .16 | 0.04 (0.01) <.01 | 0.05 (0.01) <.01 | 0.10 (0.08) .19 | 0.06 (0.03) .04 | 0.23 (0.10) .02 | 0.15 (0.06) .01 | --- |
| b | Level \* smoking | 0.02 (0.47) .96 | 0.32 (0.85) .70 | 0.03 (0.17) .85 | 0.01 (0.14) .97 | 0.91 (0.91) .32 | 0.67 (0.28) .02 | -0.42 (1.27) .74 | 1.20 (0.66) .07 | --- |
| b | Level \* cardio | -0.19 (0.66) .77 | -0.24 (1.06) .82 | -0.22 (0.21) .30 | -0.06 (0.22) .78 | -2.67 (1.18) .02 | -0.42 (0.32) .19 | -1.12 (1.94) .56 | -2.05 (0.91) .02 | --- |
| b | Level \* diabetes | -1.32 (2.11) .53 | -4.29 (5.79) .46 | -0.25 (1.30) .84 | -0.74 (0.61) .22 | 1.56 (3.32) .64 | 0.13 (1.46) .93 | -0.74 (12.06) .95 | -0.93 (2.54) .71 | --- |
| b | Slope \* age | -0.00 (0.00) .23 | -0.02 (0.00) <.01 | -0.00 (0.00) .02 | -0.00 (0.00) .20 | -0.01 (0.00) <.01 | -0.01 (0.00) .03 | -0.03 (0.01) <.01 | -0.00 (0.00) .02 | --- |
| b | Slope \* education | 0.00 (0.02) .77 | -0.03 (0.02) .26 | -0.01 (0.01) .05 | -0.00 (0.01) .35 | -0.02 (0.03) .45 | 0.01 (0.01) .64 | 0.01 (0.04) .87 | -0.04 (0.01) .02 | --- |
| b | Slope \* height | 0.00 (0.00) .57 | 0.01 (0.00) .21 | 0.00 (0.00) .91 | -0.00 (0.00) .40 | 0.00 (0.00) .52 | 0.00 (0.00) .98 | 0.00 (0.01) .36 | -0.00 (0.00) .84 | --- |
| b | Slope \* smoking | 0.01 (0.04) .73 | -0.04 (0.06) .56 | 0.01 (0.01) .41 | 0.01 (0.01) .60 | 0.02 (0.05) .73 | -0.03 (0.04) .37 | -0.13 (0.09) .14 | -0.02 (0.03) .63 | --- |
| b | Slope \* cardio | 0.02 (0.05) .69 | -0.00 (0.11) .97 | -0.01 (0.02) .65 | -0.01 (0.02) .48 | 0.01 (0.06) .85 | 0.00 (0.04) .93 | -0.02 (0.14) .91 | 0.04 (0.05) .46 | --- |
| b | Slope \* diabetes | -0.14 (0.21) .51 | 0.16 (0.48) .74 | 0.03 (0.23) .91 | 0.03 (0.13) .81 | 0.05 (0.31) .86 | 0.07 (0.16) .67 | -0.03 (1.02) .98 | 0.10 (0.32) .76 | --- |
| a | Var (Level) | 27.40 (14.95) .07 | 35.60 (5.67) <.01 | 35.40 (5.38) <.01 | 35.36 (5.23) <.01 | 26.19 (15.02) .08 | 27.57 (15.46) .07 | 35.59 (5.30) <.01 | 27.49 (16.13) .09 | 31.32(4.47) |
| a | Var (Slope) | 0.04 (0.12) .77 | 0.03 (0.03) .31 | 0.04 (0.03) .21 | 0.04 (0.03) .22 | 0.04 (0.12) .74 | 0.04 (0.12) .75 | 0.04 (0.03) .25 | 0.03 (0.12) .79 | 0.04(0.00) |
| a | Var (Residual) | 117.10 (3.67) <.01 | 35.19 (2.28) <.01 | 34.99 (2.26) <.01 | 34.98 (2.30) <.01 | 117.55 (3.29) <.01 | 117.01 (3.57) <.01 | 35.02 (2.32) <.01 | 117.27 (3.04) <.01 | 76.14(43.93) |
| a | Covar (Level, Slope) | 0.79 (1.11) .48 | 0.34 (0.39) .37 | 0.29 (0.36) .42 | 0.30 (0.35) .39 | 0.81 (1.09) .46 | 0.81 (1.14) .48 | 0.33 (0.35) .35 | 0.81 (1.11) .46 | 0.56(0.26) |
| b | Var (Level) | 6.86 (1.05) <.01 | 32.88 (3.93) <.01 | 0.67 (0.11) <.01 | 0.64 (0.11) <.01 | 40.09 (4.55) <.01 | 1.85 (0.26) <.01 | 76.28 (9.30) <.01 | 20.59 (2.51) <.01 | --- |
| b | Var (Slope) | 0.00 (0.00) .40 | 0.04 (0.01) <.01 | 0.00 (0.00) .59 | 0.00 (0.00) .66 | 0.04 (0.01) <.01 | 0.01 (0.00) <.01 | 0.07 (0.03) .01 | 0.01 (0.00) .08 | --- |
| b | Var (Residual) | 5.59 (0.31) <.01 | 9.73 (0.56) <.01 | 0.84 (0.04) <.01 | 0.70 (0.03) <.01 | 7.40 (0.36) <.01 | 1.87 (0.08) <.01 | 23.70 (1.06) <.01 | 4.00 (0.26) <.01 | --- |
| b | Covar (Level, Slope) | -0.04 (0.07) .58 | -0.28 (0.20) .15 | -0.00 (0.01) .78 | -0.00 (0.01) .82 | -0.45 (0.20) .02 | -0.04 (0.03) .20 | -0.85 (0.39) .03 | -0.07 (0.09) .46 | --- |
| ab | Covar (Levels) | 1.15 (3.39) .73 | 12.35 (3.77) <.01 | 1.43 (0.64) .03 | 0.84 (0.66) .20 | 4.48 (7.53) .55 | 2.19 (2.13) .30 | 14.81 (5.05) <.01 | 6.52 (4.91) .18 | --- |
| ab | Covar (Slopes) | 0.01 (0.02) .79 | 0.02 (0.01) .09 | 0.00 (0.00) .71 | 0.00 (0.00) .70 | 0.02 (0.04) .59 | 0.01 (0.02) .59 | -0.00 (0.02) .91 | -0.00 (0.02) .90 | --- |
| ab | Covar (Residuals) | 3.61 (2.34) .12 | 2.10 (0.87) .01 | -0.14 (0.26) .58 | 0.16 (0.23) .47 | 1.04 (2.71) .70 | 0.74 (1.33) .58 | 3.38 (1.36) .01 | -0.71 (1.82) .70 | --- |
|  | Correlation of Levels | 0.084 | 0.36 | 0.295 | 0.177 | 0.138 | 0.31 | 0.284 | 0.274 | 0.24(0.10) |
|  | Correlation of Slopes | 0.500 | 0.66 | Inf | Inf | 0.562 | 0.46 | -0.038 | -0.191 | Inf(NaN) |
|  | Correlation of Residuals | 0.141 | 0.11 | -0.026 | 0.033 | 0.035 | 0.05 | 0.117 | -0.033 | 0.05(0.07) |
|  | N | 300 | 298 | 299 | 299 | 300 | 300 | 299 | 300 | 299.38(0.74) |
|  | occasions | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7.00(0.00) |
|  | parameters | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41.00(0.00) |
|  | LL | -6,705 | -6,738 | -5,280 | -5,201 | -7,277 | -6,355 | -7,127 | -6,844 | -6,441( 791) |
|  | AIC | 13,492 | 13,557 | 10,642 | 10,484 | 14,637 | 12,793 | 14,335 | 13,769 | 12,964(1,582) |
|  | BIC | 13,644 | 13,709 | 10,794 | 10,636 | 14,789 | 12,945 | 14,487 | 13,921 | 13,116(1,582) |

## analogies

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 38.58 (0.94) <.01 | 38.57 (1.06) <.01 | 38.20 (1.05) <.01 | 37.73 (1.50) <.01 |
| a | Slope | -0.90 (0.13) <.01 | -0.90 (0.14) <.01 | -0.90 (0.14) <.01 | -0.87 (0.20) <.01 |
| a | Level \* age | -0.57 (0.10) <.01 | -0.58 (0.10) <.01 | -0.52 (0.10) <.01 | -0.51 (0.12) <.01 |
| a | Level \* education | --- | 0.00 (0.83) .99 | -0.32 (0.88) .72 | -0.08 (0.99) .93 |
| a | Level \* height | --- | --- | 0.27 (0.15) .07 | 0.30 (0.17) .09 |
| a | Level \* smoking | --- | --- | --- | 0.64 (1.88) .73 |
| a | Level \* cardio | --- | --- | --- | -0.94 (2.77) .73 |
| a | Level \* diabetes | --- | --- | --- | -1.81 (5.96) .76 |
| a | Slope \* age | -0.02 (0.01) .14 | -0.02 (0.01) .18 | -0.02 (0.01) .18 | -0.02 (0.02) .30 |
| a | Slope \* education | --- | 0.02 (0.07) .81 | 0.02 (0.08) .82 | -0.00 (0.10) .99 |
| a | Slope \* height | --- | --- | -0.00 (0.01) .89 | -0.00 (0.02) .87 |
| a | Slope \* smoking | --- | --- | --- | 0.02 (0.21) .93 |
| a | Slope \* cardio | --- | --- | --- | 0.06 (0.26) .81 |
| a | Slope \* diabetes | --- | --- | --- | -0.19 (1.01) .85 |
| b | Level | 14.22 (0.33) <.01 | 13.17 (0.35) <.01 | 13.04 (0.35) <.01 | 13.13 (0.47) <.01 |
| b | Slope | -0.11 (0.02) <.01 | -0.11 (0.03) <.01 | -0.11 (0.03) <.01 | -0.11 (0.04) <.01 |
| b | Level \* age | -0.22 (0.03) <.01 | -0.20 (0.03) <.01 | -0.18 (0.03) <.01 | -0.17 (0.03) <.01 |
| b | Level \* education | --- | 1.74 (0.19) <.01 | 1.60 (0.20) <.01 | 1.58 (0.23) <.01 |
| b | Level \* height | --- | --- | 0.10 (0.03) <.01 | 0.10 (0.04) <.01 |
| b | Level \* smoking | --- | --- | --- | 0.02 (0.47) .96 |
| b | Level \* cardio | --- | --- | --- | -0.19 (0.66) .77 |
| b | Level \* diabetes | --- | --- | --- | -1.32 (2.11) .53 |
| b | Slope \* age | -0.00 (0.00) .02 | -0.00 (0.00) .06 | -0.00 (0.00) .05 | -0.00 (0.00) .23 |
| b | Slope \* education | --- | 0.01 (0.02) .62 | 0.01 (0.02) .66 | 0.00 (0.02) .77 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .82 | 0.00 (0.00) .57 |
| b | Slope \* smoking | --- | --- | --- | 0.01 (0.04) .73 |
| b | Slope \* cardio | --- | --- | --- | 0.02 (0.05) .69 |
| b | Slope \* diabetes | --- | --- | --- | -0.14 (0.21) .51 |
| a | Var (Level) | 35.66 (12.61) <.01 | 36.14 (13.06) .01 | 31.87 (13.37) .02 | 27.40 (14.95) .07 |
| a | Var (Slope) | 0.02 (0.09) .81 | 0.02 (0.09) .82 | 0.02 (0.10) .80 | 0.04 (0.12) .77 |
| a | Var (Residual) | 103.07 (2.08) <.01 | 104.43 (2.18) <.01 | 105.56 (2.77) <.01 | 117.10 (3.67) <.01 |
| a | Covar (Level, Slope) | 0.64 (0.93) .49 | 0.64 (0.95) .50 | 0.67 (0.94) .48 | 0.79 (1.11) .48 |
| b | Var (Level) | 10.25 (1.41) <.01 | 7.20 (1.01) <.01 | 6.88 (0.96) <.01 | 6.86 (1.05) <.01 |
| b | Var (Slope) | 0.00 (0.00) .33 | 0.00 (0.00) .40 | 0.00 (0.00) .41 | 0.00 (0.00) .40 |
| b | Var (Residual) | 5.53 (0.29) <.01 | 5.56 (0.29) <.01 | 5.59 (0.29) <.01 | 5.59 (0.31) <.01 |
| b | Covar (Level, Slope) | -0.02 (0.07) .78 | -0.02 (0.06) .76 | -0.03 (0.06) .63 | -0.04 (0.07) .58 |
| ab | Covar (Levels) | 2.09 (3.13) .50 | 1.99 (2.93) .50 | 0.98 (2.93) .74 | 1.15 (3.39) .73 |
| ab | Covar (Slopes) | 0.00 (0.02) .76 | 0.00 (0.02) .79 | 0.00 (0.02) .79 | 0.01 (0.02) .79 |
| ab | Covar (Residuals) | 3.24 (1.82) .07 | 3.28 (1.88) .08 | 3.32 (1.93) .08 | 3.61 (2.34) .12 |
|  | Correlation of Levels | 0.11 | 0.12 | 0.066 | 0.084 |
|  | Correlation of Slopes | 0.53 | 0.53 | 0.500 | 0.500 |
|  | Correlation of Residuals | 0.14 | 0.14 | 0.137 | 0.141 |
|  | N | 347 | 341 | 338 | 300 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,870 | -7,703 | -7,630 | -6,705 |
|  | AIC | 15,782 | 15,456 | 15,317 | 13,492 |
|  | BIC | 15,863 | 15,552 | 15,428 | 13,644 |

## block

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

|  |  |  |
| --- | --- | --- |
| process | label | aehplus |
| a | Level | 36.86 (0.85) <.01 |
| a | Slope | -0.96 (0.08) <.01 |
| a | Level \* age | -0.47 (0.06) <.01 |
| a | Level \* education | 0.10 (0.57) .86 |
| a | Level \* height | 0.37 (0.09) <.01 |
| a | Level \* smoking | 1.68 (1.04) .11 |
| a | Level \* cardio | -0.41 (1.50) .78 |
| a | Level \* diabetes | -2.66 (3.13) .40 |
| a | Slope \* age | -0.02 (0.01) <.01 |
| a | Slope \* education | -0.01 (0.04) .82 |
| a | Slope \* height | -0.00 (0.01) .78 |
| a | Slope \* smoking | 0.01 (0.08) .86 |
| a | Slope \* cardio | 0.05 (0.10) .62 |
| a | Slope \* diabetes | -0.11 (0.44) .81 |
| b | Level | 15.97 (0.77) <.01 |
| b | Slope | -0.41 (0.06) <.01 |
| b | Level \* age | -0.38 (0.06) <.01 |
| b | Level \* education | 2.31 (0.47) <.01 |
| b | Level \* height | 0.10 (0.07) .16 |
| b | Level \* smoking | 0.32 (0.85) .70 |
| b | Level \* cardio | -0.24 (1.06) .82 |
| b | Level \* diabetes | -4.29 (5.79) .46 |
| b | Slope \* age | -0.02 (0.00) <.01 |
| b | Slope \* education | -0.03 (0.02) .26 |
| b | Slope \* height | 0.01 (0.00) .21 |
| b | Slope \* smoking | -0.04 (0.06) .56 |
| b | Slope \* cardio | -0.00 (0.11) .97 |
| b | Slope \* diabetes | 0.16 (0.48) .74 |
| a | Var (Level) | 35.60 (5.67) <.01 |
| a | Var (Slope) | 0.03 (0.03) .31 |
| a | Var (Residual) | 35.19 (2.28) <.01 |
| a | Covar (Level, Slope) | 0.34 (0.39) .37 |
| b | Var (Level) | 32.88 (3.93) <.01 |
| b | Var (Slope) | 0.04 (0.01) <.01 |
| b | Var (Residual) | 9.73 (0.56) <.01 |
| b | Covar (Level, Slope) | -0.28 (0.20) .15 |
| ab | Covar (Levels) | 12.35 (3.77) <.01 |
| ab | Covar (Slopes) | 0.02 (0.01) .09 |
| ab | Covar (Residuals) | 2.10 (0.87) .01 |
|  | Correlation of Levels | 0.36 |
|  | Correlation of Slopes | 0.66 |
|  | Correlation of Residuals | 0.11 |
|  | N | 298 |
|  | occasions | 7 |
|  | parameters | 41 |
|  | LL | -6,738 |
|  | AIC | 13,557 |
|  | BIC | 13,709 |

## digit\_b

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

|  |  |  |
| --- | --- | --- |
| process | label | aehplus |
| a | Level | 36.86 (0.83) <.01 |
| a | Slope | -0.95 (0.08) <.01 |
| a | Level \* age | -0.46 (0.06) <.01 |
| a | Level \* education | 0.08 (0.56) .89 |
| a | Level \* height | 0.38 (0.09) <.01 |
| a | Level \* smoking | 1.65 (1.03) .11 |
| a | Level \* cardio | -0.40 (1.49) .79 |
| a | Level \* diabetes | -2.50 (4.97) .62 |
| a | Slope \* age | -0.02 (0.01) <.01 |
| a | Slope \* education | -0.00 (0.04) .94 |
| a | Slope \* height | -0.00 (0.01) .71 |
| a | Slope \* smoking | 0.02 (0.08) .79 |
| a | Slope \* cardio | 0.05 (0.10) .62 |
| a | Slope \* diabetes | -0.18 (0.81) .82 |
| b | Level | 3.83 (0.18) <.01 |
| b | Slope | -0.05 (0.01) <.01 |
| b | Level \* age | -0.02 (0.01) .05 |
| b | Level \* education | 0.31 (0.09) <.01 |
| b | Level \* height | 0.04 (0.01) <.01 |
| b | Level \* smoking | 0.03 (0.17) .85 |
| b | Level \* cardio | -0.22 (0.21) .30 |
| b | Level \* diabetes | -0.25 (1.30) .84 |
| b | Slope \* age | -0.00 (0.00) .02 |
| b | Slope \* education | -0.01 (0.01) .05 |
| b | Slope \* height | 0.00 (0.00) .91 |
| b | Slope \* smoking | 0.01 (0.01) .41 |
| b | Slope \* cardio | -0.01 (0.02) .65 |
| b | Slope \* diabetes | 0.03 (0.23) .91 |
| a | Var (Level) | 35.40 (5.38) <.01 |
| a | Var (Slope) | 0.04 (0.03) .21 |
| a | Var (Residual) | 34.99 (2.26) <.01 |
| a | Covar (Level, Slope) | 0.29 (0.36) .42 |
| b | Var (Level) | 0.67 (0.11) <.01 |
| b | Var (Slope) | 0.00 (0.00) .59 |
| b | Var (Residual) | 0.84 (0.04) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.01) .78 |
| ab | Covar (Levels) | 1.43 (0.64) .03 |
| ab | Covar (Slopes) | 0.00 (0.00) .71 |
| ab | Covar (Residuals) | -0.14 (0.26) .58 |
|  | Correlation of Levels | 0.295 |
|  | Correlation of Slopes | Inf |
|  | Correlation of Residuals | -0.026 |
|  | N | 299 |
|  | occasions | 7 |
|  | parameters | 41 |
|  | LL | -5,280 |
|  | AIC | 10,642 |
|  | BIC | 10,794 |

## digit\_f

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

|  |  |  |
| --- | --- | --- |
| process | label | aehplus |
| a | Level | 36.83 (0.82) <.01 |
| a | Slope | -0.95 (0.08) <.01 |
| a | Level \* age | -0.47 (0.06) <.01 |
| a | Level \* education | 0.07 (0.56) .90 |
| a | Level \* height | 0.37 (0.09) <.01 |
| a | Level \* smoking | 1.68 (1.02) .10 |
| a | Level \* cardio | -0.35 (1.50) .81 |
| a | Level \* diabetes | -2.51 (3.94) .52 |
| a | Slope \* age | -0.02 (0.01) <.01 |
| a | Slope \* education | -0.00 (0.04) .95 |
| a | Slope \* height | -0.00 (0.01) .75 |
| a | Slope \* smoking | 0.02 (0.08) .80 |
| a | Slope \* cardio | 0.05 (0.11) .62 |
| a | Slope \* diabetes | -0.19 (0.51) .71 |
| b | Level | 5.34 (0.14) <.01 |
| b | Slope | -0.02 (0.01) .08 |
| b | Level \* age | -0.01 (0.01) .20 |
| b | Level \* education | 0.25 (0.07) <.01 |
| b | Level \* height | 0.05 (0.01) <.01 |
| b | Level \* smoking | 0.01 (0.14) .97 |
| b | Level \* cardio | -0.06 (0.22) .78 |
| b | Level \* diabetes | -0.74 (0.61) .22 |
| b | Slope \* age | -0.00 (0.00) .20 |
| b | Slope \* education | -0.00 (0.01) .35 |
| b | Slope \* height | -0.00 (0.00) .40 |
| b | Slope \* smoking | 0.01 (0.01) .60 |
| b | Slope \* cardio | -0.01 (0.02) .48 |
| b | Slope \* diabetes | 0.03 (0.13) .81 |
| a | Var (Level) | 35.36 (5.23) <.01 |
| a | Var (Slope) | 0.04 (0.03) .22 |
| a | Var (Residual) | 34.98 (2.30) <.01 |
| a | Covar (Level, Slope) | 0.30 (0.35) .39 |
| b | Var (Level) | 0.64 (0.11) <.01 |
| b | Var (Slope) | 0.00 (0.00) .66 |
| b | Var (Residual) | 0.70 (0.03) <.01 |
| b | Covar (Level, Slope) | -0.00 (0.01) .82 |
| ab | Covar (Levels) | 0.84 (0.66) .20 |
| ab | Covar (Slopes) | 0.00 (0.00) .70 |
| ab | Covar (Residuals) | 0.16 (0.23) .47 |
|  | Correlation of Levels | 0.177 |
|  | Correlation of Slopes | Inf |
|  | Correlation of Residuals | 0.033 |
|  | N | 299 |
|  | occasions | 7 |
|  | parameters | 41 |
|  | LL | -5,201 |
|  | AIC | 10,484 |
|  | BIC | 10,636 |

## fig\_id

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| process | label | a | ae | aeh |
| a | Level | 38.65 (0.94) <.01 | 38.61 (1.06) <.01 | 38.24 (1.05) <.01 |
| a | Slope | -0.92 (0.13) <.01 | -0.94 (0.14) <.01 | -0.93 (0.14) <.01 |
| a | Level \* age | -0.57 (0.10) <.01 | -0.58 (0.10) <.01 | -0.52 (0.11) <.01 |
| a | Level \* education | --- | 0.04 (0.85) .96 | -0.29 (0.92) .75 |
| a | Level \* height | --- | --- | 0.27 (0.15) .06 |
| a | Level \* smoking | --- | --- | --- |
| a | Level \* cardio | --- | --- | --- |
| a | Level \* diabetes | --- | --- | --- |
| a | Slope \* age | -0.02 (0.01) .10 | -0.02 (0.01) .12 | -0.02 (0.01) .12 |
| a | Slope \* education | --- | 0.01 (0.08) .88 | 0.01 (0.09) .87 |
| a | Slope \* height | --- | --- | -0.00 (0.01) .81 |
| a | Slope \* smoking | --- | --- | --- |
| a | Slope \* cardio | --- | --- | --- |
| a | Slope \* diabetes | --- | --- | --- |
| b | Level | 26.79 (0.51) <.01 | 25.52 (0.60) <.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 | -0.41 (0.05) <.01 | -0.38 (0.05) <.01 |
| b | Level \* education | --- | 2.15 (0.34) <.01 | 1.96 (0.35) <.01 |
| b | Level \* height | --- | --- | 0.13 (0.06) .04 |
| 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 | --- | 0.03 (0.03) .23 | 0.03 (0.03) .35 |
| b | Slope \* height | --- | --- | 0.01 (0.00) .10 |
| b | Slope \* smoking | --- | --- | --- |
| b | Slope \* cardio | --- | --- | --- |
| b | Slope \* diabetes | --- | --- | --- |
| a | Var (Level) | 37.06 (12.91) <.01 | 37.78 (13.55) <.01 | 33.62 (14.32) .02 |
| a | Var (Slope) | 0.02 (0.09) .83 | 0.02 (0.09) .83 | 0.02 (0.10) .81 |
| a | Var (Residual) | 102.87 (1.63) <.01 | 104.19 (1.72) <.01 | 105.21 (2.27) <.01 |
| a | Covar (Level, Slope) | 0.61 (0.93) .51 | 0.60 (0.96) .53 | 0.64 (0.98) .51 |
| b | Var (Level) | 34.33 (3.91) <.01 | 30.19 (3.68) <.01 | 29.73 (3.75) <.01 |
| b | Var (Slope) | 0.07 (0.02) <.01 | 0.07 (0.02) <.01 | 0.07 (0.02) <.01 |
| b | Var (Residual) | 15.79 (0.77) <.01 | 15.90 (0.80) <.01 | 16.01 (0.81) <.01 |
| b | Covar (Level, Slope) | -0.03 (0.19) .88 | -0.13 (0.21) .53 | -0.20 (0.21) .34 |
| ab | Covar (Levels) | 13.34 (5.31) .01 | 13.59 (5.11) .01 | 12.04 (5.04) .02 |
| ab | Covar (Slopes) | 0.02 (0.04) .68 | 0.02 (0.05) .69 | 0.02 (0.05) .71 |
| ab | Covar (Residuals) | -4.44 (2.54) .08 | -4.46 (2.65) .09 | -4.39 (2.71) .10 |
|  | Correlation of Levels | 0.37 | 0.40 | 0.38 |
|  | Correlation of Slopes | 0.47 | 0.47 | 0.44 |
|  | Correlation of Residuals | -0.11 | -0.11 | -0.11 |
|  | N | 347 | 341 | 338 |
|  | occasions | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 |
|  | LL | -8,731 | -8,580 | -8,501 |
|  | AIC | 17,504 | 17,210 | 17,059 |
|  | BIC | 17,585 | 17,306 | 17,170 |

## information

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 38.55 (0.93) <.01 | 38.53 (1.06) <.01 | 38.17 (1.06) <.01 | 37.69 (1.54) <.01 |
| a | Slope | -0.89 (0.13) <.01 | -0.90 (0.14) <.01 | -0.89 (0.14) <.01 | -0.87 (0.20) <.01 |
| a | Level \* age | -0.57 (0.09) <.01 | -0.57 (0.10) <.01 | -0.52 (0.10) <.01 | -0.50 (0.12) <.01 |
| a | Level \* education | --- | 0.01 (0.82) .99 | -0.31 (0.88) .72 | -0.09 (1.00) .93 |
| a | Level \* height | --- | --- | 0.27 (0.14) .06 | 0.30 (0.16) .07 |
| a | Level \* smoking | --- | --- | --- | 0.70 (1.89) .71 |
| a | Level \* cardio | --- | --- | --- | -0.93 (2.71) .73 |
| a | Level \* diabetes | --- | --- | --- | -1.81 (6.42) .78 |
| a | Slope \* age | -0.02 (0.01) .14 | -0.02 (0.01) .16 | -0.02 (0.01) .16 | -0.02 (0.01) .25 |
| a | Slope \* education | --- | 0.01 (0.07) .83 | 0.02 (0.08) .84 | -0.00 (0.10) .99 |
| a | Slope \* height | --- | --- | -0.00 (0.01) .93 | -0.00 (0.02) .88 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.20) .95 |
| a | Slope \* cardio | --- | --- | --- | 0.06 (0.25) .80 |
| a | Slope \* diabetes | --- | --- | --- | -0.21 (1.29) .87 |
| b | Level | 32.66 (0.55) <.01 | 30.86 (0.55) <.01 | 30.70 (0.55) <.01 | 30.60 (0.85) <.01 |
| b | Slope | -0.20 (0.04) <.01 | -0.18 (0.04) <.01 | -0.19 (0.04) <.01 | -0.16 (0.06) <.01 |
| b | Level \* age | -0.19 (0.06) <.01 | -0.16 (0.05) <.01 | -0.14 (0.06) .01 | -0.14 (0.06) .03 |
| b | Level \* education | --- | 2.86 (0.52) <.01 | 2.71 (0.55) <.01 | 2.60 (0.60) <.01 |
| b | Level \* height | --- | --- | 0.12 (0.07) .10 | 0.10 (0.08) .19 |
| b | Level \* smoking | --- | --- | --- | 0.91 (0.91) .32 |
| b | Level \* cardio | --- | --- | --- | -2.67 (1.18) .02 |
| b | Level \* diabetes | --- | --- | --- | 1.56 (3.32) .64 |
| 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) .53 | -0.02 (0.03) .45 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .78 | 0.00 (0.00) .52 |
| b | Slope \* smoking | --- | --- | --- | 0.02 (0.05) .73 |
| b | Slope \* cardio | --- | --- | --- | 0.01 (0.06) .85 |
| b | Slope \* diabetes | --- | --- | --- | 0.05 (0.31) .86 |
| a | Var (Level) | 34.62 (12.35) <.01 | 34.91 (12.80) .01 | 30.80 (13.16) .02 | 26.19 (15.02) .08 |
| a | Var (Slope) | 0.02 (0.09) .82 | 0.02 (0.09) .82 | 0.02 (0.10) .80 | 0.04 (0.12) .74 |
| a | Var (Residual) | 103.47 (1.93) <.01 | 104.88 (2.03) <.01 | 105.98 (2.52) <.01 | 117.55 (3.29) <.01 |
| a | Covar (Level, Slope) | 0.67 (0.92) .46 | 0.68 (0.94) .47 | 0.69 (0.93) .46 | 0.81 (1.09) .46 |
| b | Var (Level) | 46.83 (4.57) <.01 | 39.81 (3.95) <.01 | 39.55 (3.93) <.01 | 40.09 (4.55) <.01 |
| b | Var (Slope) | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.05 (0.01) <.01 | 0.04 (0.01) <.01 |
| b | Var (Residual) | 7.07 (0.30) <.01 | 7.04 (0.30) <.01 | 7.04 (0.30) <.01 | 7.40 (0.36) <.01 |
| b | Covar (Level, Slope) | -0.39 (0.19) .04 | -0.35 (0.17) .04 | -0.37 (0.17) .04 | -0.45 (0.20) .02 |
| ab | Covar (Levels) | 4.70 (6.45) .47 | 4.70 (6.25) .45 | 3.73 (6.22) .55 | 4.48 (7.53) .55 |
| ab | Covar (Slopes) | 0.02 (0.03) .57 | 0.02 (0.03) .60 | 0.02 (0.04) .60 | 0.02 (0.04) .59 |
| ab | Covar (Residuals) | 1.13 (1.93) .56 | 1.18 (1.98) .55 | 1.22 (2.02) .54 | 1.04 (2.71) .70 |
|  | Correlation of Levels | 0.117 | 0.126 | 0.107 | 0.138 |
|  | Correlation of Slopes | 0.545 | 0.484 | 0.517 | 0.562 |
|  | Correlation of Residuals | 0.042 | 0.043 | 0.045 | 0.035 |
|  | N | 347 | 341 | 338 | 300 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -8,506 | -8,352 | -8,276 | -7,277 |
|  | AIC | 17,055 | 16,754 | 16,610 | 14,637 |
|  | BIC | 17,135 | 16,849 | 16,721 | 14,789 |

## mmse

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 38.47 (0.98) <.01 | 38.45 (1.10) <.01 | 38.09 (1.09) <.01 | 37.57 (1.58) <.01 |
| a | Slope | -0.92 (0.14) <.01 | -0.94 (0.15) <.01 | -0.92 (0.15) <.01 | -0.87 (0.22) <.01 |
| a | Level \* age | -0.58 (0.10) <.01 | -0.58 (0.10) <.01 | -0.52 (0.11) <.01 | -0.51 (0.12) <.01 |
| a | Level \* education | --- | 0.02 (0.83) .98 | -0.30 (0.88) .73 | -0.08 (0.99) .94 |
| a | Level \* height | --- | --- | 0.27 (0.14) .06 | 0.30 (0.17) .07 |
| a | Level \* smoking | --- | --- | --- | 0.74 (1.85) .69 |
| a | Level \* cardio | --- | --- | --- | -0.89 (2.68) .74 |
| a | Level \* diabetes | --- | --- | --- | -1.78 (8.71) .84 |
| a | Slope \* age | -0.02 (0.01) .11 | -0.02 (0.01) .13 | -0.02 (0.01) .15 | -0.02 (0.01) .27 |
| a | Slope \* education | --- | 0.02 (0.07) .76 | 0.02 (0.08) .80 | 0.00 (0.10) .99 |
| a | Slope \* height | --- | --- | 0.00 (0.01) .99 | -0.00 (0.02) .91 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.20) .98 |
| a | Slope \* cardio | --- | --- | --- | 0.05 (0.25) .84 |
| a | Slope \* diabetes | --- | --- | --- | -0.23 (1.12) .84 |
| b | Level | 27.75 (0.18) <.01 | 27.59 (0.19) <.01 | 27.52 (0.18) <.01 | 27.13 (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 | -0.09 (0.01) <.01 | -0.08 (0.01) <.01 | -0.07 (0.02) <.01 |
| b | Level \* education | --- | 0.31 (0.17) .07 | 0.26 (0.17) .13 | 0.29 (0.18) .10 |
| b | Level \* height | --- | --- | 0.05 (0.02) .05 | 0.06 (0.03) .04 |
| b | Level \* smoking | --- | --- | --- | 0.67 (0.28) .02 |
| b | Level \* cardio | --- | --- | --- | -0.42 (0.32) .19 |
| b | Level \* diabetes | --- | --- | --- | 0.13 (1.46) .93 |
| b | Slope \* age | -0.00 (0.00) <.01 | -0.00 (0.00) .01 | -0.00 (0.00) .02 | -0.01 (0.00) .03 |
| b | Slope \* education | --- | 0.02 (0.01) .20 | 0.02 (0.01) .26 | 0.01 (0.01) .64 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .63 | 0.00 (0.00) .98 |
| b | Slope \* smoking | --- | --- | --- | -0.03 (0.04) .37 |
| b | Slope \* cardio | --- | --- | --- | 0.00 (0.04) .93 |
| b | Slope \* diabetes | --- | --- | --- | 0.07 (0.16) .67 |
| a | Var (Level) | 37.08 (13.03) <.01 | 37.61 (13.44) <.01 | 33.15 (13.65) .01 | 27.57 (15.46) .07 |
| a | Var (Slope) | 0.02 (0.09) .78 | 0.02 (0.09) .80 | 0.03 (0.10) .78 | 0.04 (0.12) .75 |
| a | Var (Residual) | 102.68 (2.13) <.01 | 104.07 (2.23) <.01 | 105.22 (2.62) <.01 | 117.01 (3.57) <.01 |
| a | Covar (Level, Slope) | 0.66 (0.95) .48 | 0.67 (0.97) .49 | 0.68 (0.96) .48 | 0.81 (1.14) .48 |
| b | Var (Level) | 2.10 (0.22) <.01 | 2.00 (0.23) <.01 | 1.92 (0.23) <.01 | 1.85 (0.26) <.01 |
| b | Var (Slope) | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.02 (0.00) <.01 | 0.01 (0.00) <.01 |
| b | Var (Residual) | 1.85 (0.06) <.01 | 1.87 (0.07) <.01 | 1.87 (0.07) <.01 | 1.87 (0.08) <.01 |
| b | Covar (Level, Slope) | -0.04 (0.02) .05 | -0.05 (0.02) .03 | -0.05 (0.02) .03 | -0.04 (0.03) .20 |
| ab | Covar (Levels) | 4.21 (1.78) .02 | 4.25 (1.84) .02 | 3.40 (1.83) .06 | 2.19 (2.13) .30 |
| ab | Covar (Slopes) | 0.01 (0.01) .48 | 0.01 (0.01) .52 | 0.01 (0.02) .55 | 0.01 (0.02) .59 |
| ab | Covar (Residuals) | 0.21 (0.94) .82 | 0.20 (0.98) .84 | 0.30 (1.02) .76 | 0.74 (1.33) .58 |
|  | Correlation of Levels | 0.477 | 0.489 | 0.426 | 0.31 |
|  | Correlation of Slopes | 0.500 | 0.510 | 0.490 | 0.46 |
|  | Correlation of Residuals | 0.015 | 0.014 | 0.022 | 0.05 |
|  | N | 347 | 341 | 338 | 300 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -7,412 | -7,296 | -7,227 | -6,355 |
|  | AIC | 14,866 | 14,641 | 14,512 | 12,793 |
|  | BIC | 14,947 | 14,737 | 14,623 | 12,945 |

## symbol

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 38.62 (0.94) <.01 | 38.61 (1.06) <.01 | 38.23 (1.05) <.01 | 36.84 (0.83) <.01 |
| a | Slope | -0.92 (0.13) <.01 | -0.93 (0.13) <.01 | -0.92 (0.14) <.01 | -0.95 (0.08) <.01 |
| a | Level \* age | -0.57 (0.10) <.01 | -0.58 (0.10) <.01 | -0.52 (0.11) <.01 | -0.47 (0.06) <.01 |
| a | Level \* education | --- | -0.01 (0.83) .99 | -0.34 (0.91) .71 | 0.06 (0.57) .92 |
| a | Level \* height | --- | --- | 0.28 (0.15) .06 | 0.37 (0.09) <.01 |
| a | Level \* smoking | --- | --- | --- | 1.74 (1.04) .10 |
| a | Level \* cardio | --- | --- | --- | -0.38 (1.43) .79 |
| a | Level \* diabetes | --- | --- | --- | -2.56 (3.08) .41 |
| a | Slope \* age | -0.02 (0.01) .11 | -0.02 (0.01) .12 | -0.02 (0.01) .12 | -0.02 (0.01) <.01 |
| a | Slope \* education | --- | 0.02 (0.07) .81 | 0.02 (0.08) .80 | -0.00 (0.04) .95 |
| a | Slope \* height | --- | --- | -0.00 (0.01) .81 | -0.00 (0.01) .68 |
| a | Slope \* smoking | --- | --- | --- | 0.01 (0.08) .94 |
| a | Slope \* cardio | --- | --- | --- | 0.04 (0.10) .66 |
| a | Slope \* diabetes | --- | --- | --- | -0.19 (0.90) .83 |
| b | Level | 34.49 (0.75) <.01 | 32.22 (0.76) <.01 | 31.91 (0.80) <.01 | 32.62 (1.15) <.01 |
| b | Slope | -0.94 (0.06) <.01 | -0.95 (0.06) <.01 | -0.96 (0.06) <.01 | -0.89 (0.08) <.01 |
| b | Level \* age | -0.86 (0.08) <.01 | -0.80 (0.07) <.01 | -0.75 (0.07) <.01 | -0.70 (0.08) <.01 |
| b | Level \* education | --- | 3.91 (0.56) <.01 | 3.63 (0.57) <.01 | 3.72 (0.66) <.01 |
| b | Level \* height | --- | --- | 0.23 (0.10) .01 | 0.23 (0.10) .02 |
| b | Level \* smoking | --- | --- | --- | -0.42 (1.27) .74 |
| b | Level \* cardio | --- | --- | --- | -1.12 (1.94) .56 |
| b | Level \* diabetes | --- | --- | --- | -0.74 (12.06) .95 |
| 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 | --- | 0.05 (0.04) .24 | 0.04 (0.04) .30 | 0.01 (0.04) .87 |
| b | Slope \* height | --- | --- | 0.00 (0.00) .37 | 0.00 (0.01) .36 |
| b | Slope \* smoking | --- | --- | --- | -0.13 (0.09) .14 |
| b | Slope \* cardio | --- | --- | --- | -0.02 (0.14) .91 |
| b | Slope \* diabetes | --- | --- | --- | -0.03 (1.02) .98 |
| a | Var (Level) | 35.65 (12.45) <.01 | 36.20 (12.94) <.01 | 32.08 (13.34) .02 | 35.59 (5.30) <.01 |
| a | Var (Slope) | 0.02 (0.09) .83 | 0.02 (0.09) .84 | 0.02 (0.10) .82 | 0.04 (0.03) .25 |
| a | Var (Residual) | 103.22 (1.72) <.01 | 104.59 (1.81) <.01 | 105.61 (2.34) <.01 | 35.02 (2.32) <.01 |
| a | Covar (Level, Slope) | 0.66 (0.91) .47 | 0.66 (0.93) .48 | 0.69 (0.93) .46 | 0.33 (0.35) .35 |
| b | Var (Level) | 92.38 (9.88) <.01 | 77.93 (8.39) <.01 | 75.84 (8.64) <.01 | 76.28 (9.30) <.01 |
| b | Var (Slope) | 0.08 (0.03) <.01 | 0.08 (0.03) <.01 | 0.08 (0.03) <.01 | 0.07 (0.03) .01 |
| b | Var (Residual) | 24.06 (1.01) <.01 | 24.20 (1.02) <.01 | 24.32 (1.04) <.01 | 23.70 (1.06) <.01 |
| b | Covar (Level, Slope) | -0.61 (0.38) .10 | -0.83 (0.36) .02 | -0.90 (0.36) .01 | -0.85 (0.39) .03 |
| ab | Covar (Levels) | 19.38 (8.73) .03 | 19.15 (8.52) .02 | 16.77 (8.31) .04 | 14.81 (5.05) <.01 |
| ab | Covar (Slopes) | 0.01 (0.04) .81 | 0.01 (0.05) .83 | 0.01 (0.05) .83 | -0.00 (0.02) .91 |
| ab | Covar (Residuals) | 4.35 (3.69) .24 | 4.39 (3.77) .24 | 4.44 (3.83) .25 | 3.38 (1.36) .01 |
|  | Correlation of Levels | 0.338 | 0.361 | 0.340 | 0.284 |
|  | Correlation of Slopes | 0.280 | 0.269 | 0.241 | -0.038 |
|  | Correlation of Residuals | 0.087 | 0.087 | 0.088 | 0.117 |
|  | N | 347 | 341 | 338 | 299 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -8,988 | -8,819 | -8,739 | -7,127 |
|  | AIC | 18,018 | 17,687 | 17,536 | 14,335 |
|  | BIC | 18,099 | 17,783 | 17,646 | 14,487 |

## synonyms

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

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| process | label | a | ae | aeh | aehplus |
| a | Level | 38.57 (0.94) <.01 | 38.54 (1.07) <.01 | 38.17 (1.07) <.01 | 37.67 (1.60) <.01 |
| a | Slope | -0.90 (0.13) <.01 | -0.91 (0.14) <.01 | -0.90 (0.14) <.01 | -0.86 (0.20) <.01 |
| a | Level \* age | -0.57 (0.10) <.01 | -0.58 (0.10) <.01 | -0.52 (0.10) <.01 | -0.50 (0.13) <.01 |
| a | Level \* education | --- | 0.02 (0.85) .98 | -0.31 (0.90) .73 | -0.09 (1.02) .93 |
| a | Level \* height | --- | --- | 0.27 (0.14) .06 | 0.31 (0.17) .07 |
| a | Level \* smoking | --- | --- | --- | 0.69 (1.95) .72 |
| a | Level \* cardio | --- | --- | --- | -0.93 (2.89) .75 |
| a | Level \* diabetes | --- | --- | --- | -1.92 (5.58) .73 |
| a | Slope \* age | -0.02 (0.01) .14 | -0.02 (0.01) .17 | -0.02 (0.01) .16 | -0.02 (0.01) .25 |
| a | Slope \* education | --- | 0.02 (0.07) .81 | 0.02 (0.08) .82 | 0.00 (0.10) .99 |
| a | Slope \* height | --- | --- | -0.00 (0.01) .88 | -0.00 (0.02) .84 |
| a | Slope \* smoking | --- | --- | --- | 0.00 (0.20) .99 |
| a | Slope \* cardio | --- | --- | --- | 0.04 (0.25) .87 |
| a | Slope \* diabetes | --- | --- | --- | -0.17 (1.01) .87 |
| b | Level | 17.79 (0.40) <.01 | 16.24 (0.40) <.01 | 16.03 (0.41) <.01 | 15.91 (0.59) <.01 |
| b | Slope | -0.11 (0.02) <.01 | -0.09 (0.02) <.01 | -0.08 (0.02) <.01 | -0.07 (0.04) .05 |
| b | Level \* age | -0.20 (0.04) <.01 | -0.16 (0.04) <.01 | -0.13 (0.04) <.01 | -0.10 (0.04) .02 |
| b | Level \* education | --- | 2.60 (0.32) <.01 | 2.40 (0.32) <.01 | 2.37 (0.37) <.01 |
| b | Level \* height | --- | --- | 0.16 (0.05) <.01 | 0.15 (0.06) .01 |
| b | Level \* smoking | --- | --- | --- | 1.20 (0.66) .07 |
| b | Level \* cardio | --- | --- | --- | -2.05 (0.91) .02 |
| b | Level \* diabetes | --- | --- | --- | -0.93 (2.54) .71 |
| b | Slope \* age | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.01 (0.00) <.01 | -0.00 (0.00) .02 |
| b | Slope \* education | --- | -0.03 (0.01) .03 | -0.03 (0.01) .04 | -0.04 (0.01) .02 |
| b | Slope \* height | --- | --- | -0.00 (0.00) .68 | -0.00 (0.00) .84 |
| b | Slope \* smoking | --- | --- | --- | -0.02 (0.03) .63 |
| b | Slope \* cardio | --- | --- | --- | 0.04 (0.05) .46 |
| b | Slope \* diabetes | --- | --- | --- | 0.10 (0.32) .76 |
| a | Var (Level) | 35.59 (12.71) <.01 | 36.10 (13.17) .01 | 31.96 (13.67) .02 | 27.49 (16.13) .09 |
| a | Var (Slope) | 0.02 (0.09) .85 | 0.02 (0.09) .85 | 0.02 (0.10) .83 | 0.03 (0.12) .79 |
| a | Var (Residual) | 103.30 (1.54) <.01 | 104.64 (1.66) <.01 | 105.70 (2.25) <.01 | 117.27 (3.04) <.01 |
| a | Covar (Level, Slope) | 0.66 (0.92) .47 | 0.66 (0.94) .48 | 0.69 (0.94) .46 | 0.81 (1.11) .46 |
| b | Var (Level) | 28.85 (3.06) <.01 | 22.65 (2.43) <.01 | 21.91 (2.38) <.01 | 20.59 (2.51) <.01 |
| b | Var (Slope) | 0.01 (0.00) .05 | 0.01 (0.00) .06 | 0.01 (0.00) .06 | 0.01 (0.00) .08 |
| b | Var (Residual) | 3.91 (0.22) <.01 | 3.87 (0.22) <.01 | 3.87 (0.23) <.01 | 4.00 (0.26) <.01 |
| b | Covar (Level, Slope) | -0.10 (0.09) .27 | -0.05 (0.08) .54 | -0.04 (0.07) .59 | -0.07 (0.09) .46 |
| ab | Covar (Levels) | 7.67 (4.53) .09 | 7.57 (4.27) .08 | 5.96 (4.10) .15 | 6.52 (4.91) .18 |
| ab | Covar (Slopes) | -0.00 (0.02) .97 | -0.00 (0.02) .93 | -0.00 (0.02) .95 | -0.00 (0.02) .90 |
| ab | Covar (Residuals) | -0.59 (1.41) .68 | -0.64 (1.44) .66 | -0.57 (1.47) .69 | -0.71 (1.82) .70 |
|  | Correlation of Levels | 0.239 | 0.265 | 0.225 | 0.274 |
|  | Correlation of Slopes | -0.092 | -0.092 | -0.085 | -0.191 |
|  | Correlation of Residuals | -0.029 | -0.032 | -0.028 | -0.033 |
|  | N | 347 | 341 | 338 | 300 |
|  | occasions | 7 | 7 | 7 | 7 |
|  | parameters | 21 | 25 | 29 | 41 |
|  | LL | -8,016 | -7,854 | -7,783 | -6,844 |
|  | AIC | 16,075 | 15,759 | 15,624 | 13,769 |
|  | BIC | 16,155 | 15,854 | 15,735 | 13,921 |

## Summary

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

Computed correlations:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Levels | analogies | 0.11 | 0.12 | 0.07 | 0.08 |
| Correlation of Levels | block | . | . | . | 0.36 |
| Correlation of Levels | digit\_b | . | . | . | 0.29 |
| Correlation of Levels | digit\_f | . | . | . | 0.18 |
| Correlation of Levels | fig\_id | 0.37 | 0.40 | 0.38 | . |
| Correlation of Levels | information | 0.12 | 0.13 | 0.11 | 0.14 |
| Correlation of Levels | mmse | 0.48 | 0.49 | 0.43 | 0.31 |
| Correlation of Levels | symbol | 0.34 | 0.36 | 0.34 | 0.28 |
| Correlation of Levels | synonyms | 0.24 | 0.26 | 0.23 | 0.27 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Slopes | analogies | 0.53 | 0.53 | 0.50 | 0.50 |
| Correlation of Slopes | block | . | . | . | 0.66 |
| Correlation of Slopes | digit\_b | . | . | . | Inf |
| Correlation of Slopes | digit\_f | . | . | . | Inf |
| Correlation of Slopes | fig\_id | 0.47 | 0.47 | 0.44 | . |
| Correlation of Slopes | information | 0.54 | 0.48 | 0.52 | 0.56 |
| Correlation of Slopes | mmse | 0.50 | 0.51 | 0.49 | 0.46 |
| Correlation of Slopes | symbol | 0.28 | 0.27 | 0.24 | -0.04 |
| Correlation of Slopes | synonyms | -0.09 | -0.09 | -0.08 | -0.19 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Correlation of Residuals | analogies | 0.14 | 0.14 | 0.14 | 0.14 |
| Correlation of Residuals | block | . | . | . | 0.11 |
| Correlation of Residuals | digit\_b | . | . | . | -0.03 |
| Correlation of Residuals | digit\_f | . | . | . | 0.03 |
| Correlation of Residuals | fig\_id | -0.11 | -0.11 | -0.11 | . |
| Correlation of Residuals | information | 0.04 | 0.04 | 0.04 | 0.04 |
| Correlation of Residuals | mmse | 0.02 | 0.01 | 0.02 | 0.05 |
| Correlation of Residuals | symbol | 0.09 | 0.09 | 0.09 | 0.12 |
| Correlation of Residuals | synonyms | -0.03 | -0.03 | -0.03 | -0.03 |

P-values for corresponding covariances:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Levels | analogies | 0.50 | 0.50 | 0.74 | 0.73 |
| Covariance of Levels | block | . | . | . | 0.00 |
| Covariance of Levels | digit\_b | . | . | . | 0.03 |
| Covariance of Levels | digit\_f | . | . | . | 0.20 |
| Covariance of Levels | fig\_id | 0.01 | 0.01 | 0.02 | . |
| Covariance of Levels | information | 0.47 | 0.45 | 0.55 | 0.55 |
| Covariance of Levels | mmse | 0.02 | 0.02 | 0.06 | 0.30 |
| Covariance of Levels | symbol | 0.03 | 0.02 | 0.04 | 0.00 |
| Covariance of Levels | synonyms | 0.09 | 0.08 | 0.15 | 0.18 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Slopes | analogies | 0.76 | 0.79 | 0.79 | 0.79 |
| Covariance of Slopes | block | . | . | . | 0.09 |
| Covariance of Slopes | digit\_b | . | . | . | 0.71 |
| Covariance of Slopes | digit\_f | . | . | . | 0.70 |
| Covariance of Slopes | fig\_id | 0.68 | 0.69 | 0.71 | . |
| Covariance of Slopes | information | 0.57 | 0.60 | 0.60 | 0.59 |
| Covariance of Slopes | mmse | 0.48 | 0.52 | 0.55 | 0.59 |
| Covariance of Slopes | symbol | 0.81 | 0.83 | 0.83 | 0.91 |
| Covariance of Slopes | synonyms | 0.97 | 0.93 | 0.95 | 0.90 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| label | process\_b | a | ae | aeh | aehplus |
| Covariance of Residuals | analogies | 0.07 | 0.08 | 0.08 | 0.12 |
| Covariance of Residuals | block | . | . | . | 0.01 |
| Covariance of Residuals | digit\_b | . | . | . | 0.58 |
| Covariance of Residuals | digit\_f | . | . | . | 0.47 |
| Covariance of Residuals | fig\_id | 0.08 | 0.09 | 0.10 | . |
| Covariance of Residuals | information | 0.56 | 0.55 | 0.54 | 0.70 |
| Covariance of Residuals | mmse | 0.82 | 0.84 | 0.76 | 0.58 |
| Covariance of Residuals | symbol | 0.24 | 0.24 | 0.25 | 0.01 |
| Covariance of Residuals | synonyms | 0.68 | 0.66 | 0.69 | 0.70 |

#Session Info

R version 3.3.1 (2016-06-21)  
Platform: x86\_64-w64-mingw32/x64 (64-bit)  
Running under: Windows >= 8 x64 (build 9200)  
  
locale:  
[1] LC\_COLLATE=English\_United States.1252 LC\_CTYPE=English\_United States.1252 LC\_MONETARY=English\_United States.1252  
[4] LC\_NUMERIC=C LC\_TIME=English\_United States.1252   
  
attached base packages:  
[1] stats graphics grDevices utils datasets methods base   
  
other attached packages:  
[1] knitr\_1.14 ggplot2\_2.1.0 magrittr\_1.5   
  
loaded via a namespace (and not attached):  
 [1] Rcpp\_0.12.7 munsell\_0.4.3 testit\_0.5 colorspace\_1.2-7 R6\_2.2.0 stringr\_1.1.0   
 [7] highr\_0.6 plyr\_1.8.4 dplyr\_0.5.0 tools\_3.3.1 DT\_0.2 grid\_3.3.1   
[13] gtable\_0.2.0 DBI\_0.5-1 htmltools\_0.3.5 yaml\_2.1.13 lazyeval\_0.2.0 assertthat\_0.1   
[19] digest\_0.6.10 tibble\_1.2 formatR\_1.4 readr\_1.0.0 tidyr\_0.6.0 htmlwidgets\_0.7   
[25] rsconnect\_0.5 evaluate\_0.10 rmarkdown\_1.1 stringi\_1.1.2 scales\_0.4.0