

Supplementary Table 2. Determining the number of latent classes according cognitive function development trajectory

| Categorie | Information criteria | | | | | N (%) according to latent class | | | | | |
|------------------------------|----------------------|------------|--------------|----------------|---------|---------------------------------|-----------------|-----------------|-----------------|---------------|---------------|
| | AIC | BIC | Adjusted BIC | Log-likelihood | LMR-LRT | 1 | 2 | 3 | 4 | 5 | 6 |
| Overall (n=3,049) | | | | | | | | | | | |
| 2-class model | 82,167.019 | 82,227.245 | 82,195.471 | -41,073.510 | <0.001 | 789 (25.9) | 2,260 (74.1) | | | | |
| 3-class model | 80,374.194 | 80,452.488 | 80,411.181 | -40,174.097 | <0.001 | 961 (31.5) | 320 (10.5) | 1,768 (58.0) | | | |
| 4-class model | 79,655.838 | 79,752.199 | 79,701.361 | -39,811.919 | <0.001 | 1,377 (45.2) | 969 (31.8) | 522 (17.1) | 181 (5.9) | | |
| 5-class model | 79,315.191 | 79,429.620 | 79,369.250 | -39,638.596 | 0.032 | 994 (32.6) | 151 (5.0) | 161 (5.3) | 1,375 (45.1) | 368 (12.0) | |
| 6-class model | 79,102.243 | 79,234.740 | 79,164.837 | -39,529.122 | 0.438 | 976 (32.0) | 173 (5.7) | 156 (5.1) | 1,327 (43.6) | 47 (1.5) | 370 (12.1) |
| Living alone (n=502) | | | | | | | | | | | |
| 2-class model | 13,568.512 | 13,610.698 | 13,578.957 | -6,774.256 | <0.001 | 321 (64.0) | 181 (36.0) | | | | |
| 3-class model | 13,259.717 | 13,314.559 | 13,273.296 | -6,616.859 | 0.005 | 238 (47.4) | 192 (38.3) | 72 (14.3) | | | |
| 4-class model | 13,163.244 | 13,230.742 | 13,179.956 | -6,565.622 | 0.036 | 33 (6.6) | 190 (37.8) | 111 (22.1) | 168 (33.5) | | |
| 5-class model | 13,101.951 | 13,182.104 | 13,121.797 | -6,531.975 | 0.027 | 163 (32.5) | 31 (6.2) | 34 (6.8) | 95 (18.9) | 179 (35.6) | |
| 6-class model | 13,075.496 | 13,168.305 | 13,098.476 | -6,515.748 | 0.108 | 30 (6.0) | 31 (6.2) | 29 (5.8) | 106 (21.1) | 139 (27.7) | 167 (33.2) |
| Living with family (n=2,547) | | | | | | | | | | | |
| 2-class model | 68,551.103 | 68,609.530 | 68,577.757 | -34,265.552 | <0.001 | 605 (23.8) | 1,942 (76.2) | | | | |
| 3-class model | 67,077.589 | 67,153.544 | 67,112.239 | -33,525.794 | 0.005 | 1,523 (59.7) | 772 (30.3) | 252 (10.0) | | | |
| 4-class model | 66,456.482 | 66,549.965 | 66,499.129 | -33,212.241 | 0.002 | 1,183 (46.4) | 144 (5.7) | 816 (32.0) | 404 (15.9) | | |
| 5-class model | 66,184.815 | 66,295.826 | 66,235.457 | -33,073.407 | 0.718 | 262 (10.3) | 1,198 (47.0) | 106 (4.2) | 142 (5.6) | 839 (32.9) | |

Abbreviations: AIC, Akaike information criterion; BIC, Bayesian information criterion; LMR-LRT, lo-mendell-rubin adjusted likelihood ratio test.