| Panel A. Independent Effect of Desktop         | Coefficients (95% CI) | P value | n     |
|--|-----------------------|---------|-------|
| Baseline difference                            |                       |         |       |
| Aged 45 and 64                                 | 0.12 (0.08, 0.15)     | <.001   | 25925 |
| Aged 65 and above                              | 0.17 (0.08,0.25)      | <.001   | 8031  |
| Longitudinal protective association in 2 years |                       |         |       |
| Aged 45 and 64                                 | 0.02 (-0.02, 0.06)    | .31     | 25925 |
| Aged 65 and above                              | 0.00 (-0.10, 0.09)    | .91     | 8031  |
| Longitudinal protective association in 4 years |                       |         |       |
| Aged 45 and 64                                 | 0.05 (0.01, 0.08)     | .03     | 25925 |
| Aged 65 and above                              | -0.01 (-0.12, 0.08)   | .77     | 8031  |
| Panel B. Independent Effect of Cellphone       | Coefficients (95% CI) | P value | n     |
| Baseline difference                            |                       |         |       |
| Aged 45 and 64                                 | 0.11 (0.07, 0.15)     | <.001   | 25925 |
| Aged 65 and above                              | 0.10 (0.06, 0.16)     | <.001   | 8031  |
| Longitudinal protective association in 2 years |                       |         |       |
| Aged 45 and 64                                 | -0.02 (-0.06, 0.03)   | .42     | 25925 |
| Aged 65 and above                              | 0.01 (-0.04, 0.07)    | .62     | 8031  |
| Longitudinal protective association in 4 years |                       |         |       |
| Aged 45 and 64                                 | 0.02 (-0.03, 0.06)    | .43     | 25925 |
| Aged 65 and above                              | 0.02 (-0.04, 0.08)    | .60     | 8031  |

Multimedia Appendix 4. Adjusted association between digital device ownership and cognitive function by age

Notes: adjusted for demographic (sex, education, marriage, rural or urban residence) and health behavior (smoke, drink) as well as health condition risk factors (self-reported hypertension, diabetes, and stroke).