

Table S1. Definitions and original survey items of the variables

Variable	Category	Survey questions and coding
Sociodemographic factors		
Sex	Male, female	"What is your sex?"
Age (y)	65–74, 75–84, ≥ 85	"What is your date of birth?"
Education	None, elementary school, middle school, ≥ high school	"What is your highest level of education completed?"
Income	1st, 2nd, 3rd, 4th	"What was the total annual income of you and your household last year?" - Based on the distribution of responses, participants were grouped into quartiles (Q1–Q4), with Q1 representing the lowest 25% and Q4 the highest 25% of the income distribution.
Job	Not working, working	"During the past week, did you work for at least one hour for income?"
Household	Living alone, living with spouse, others	"Which of the following best describes your household composition?" - Living alone: older adult living alone - Living with spouse: older couple household - Others: older adult living alone or with a spouse+children, grandchildren, other relatives, or non-relatives
Residence area	Urban, rural	"What is the administrative classification of your residential area?" - Urban: 'dong' area - Rural: 'eup' or 'myeon' area
Social activities	< Once a month, ≥ Once a month	"In the past year, how frequently did you participate in social activities such as club meetings, social gatherings (e.g., alumni associations, savings groups), political or civic group activities, or religious activities (e.g., worship services, volunteer work at religious institutions, or fellowship events)?"
Health status		
Comorbidity	0, 1–2, ≥ 3	"Do you have any chronic diseases that have been diagnosed by a physician and persisted for more than 3 months?" - Interviewers recorded the total number of chronic diseases reported by respondents. - Based on this count, responses were categorized as 0, 1–2, or 3 or more comorbidities.
Fall history	Yes, no	"Have you experienced any falls (such as tripping, slipping, or collapsing) in the past year?"
Disability	Non-disabled, disabled	"Have you been officially diagnosed with a disability?"
Cognitive impairments	Yes, no	Cognitive function was assessed using the standardized Korean Mini-Mental State Examination, 2nd Edition [22]. Raw scores range from 0 to 30. Cognitive impairment was determined based on T-scores adjusted for age and educational attainment, with scores below the established cutoff indicating suspected cognitive impairment. Due to copyright restrictions, individual items of the instrument were not reproduced; the full scale is cited in the reference list.
Functional impairments	Yes, no	Functional impairment was defined as requiring assistance from others to perform activities of daily living (ADLs) or instrumental activities of daily living (IADLs). Respondents who reported difficulty completing one or more ADL or IADL tasks independently were categorized as having physical functional impairment.

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Variable	Category	Survey questions and coding
Frailty	Non-frail, pre-frail, frail	Frailty was assessed using the Korean version of the FRAIL scale, which is an adaptation of the original FRAIL scale developed by Morley et al. [23], with clinical reliability and validity verified by Jung et al. [24] in older Korean adults. The scale consists of 5 items: (1) Have you felt fatigued in the past month? (2) Do you have difficulty climbing 10 stairs without assistance or rest? (3) Do you have difficulty walking 300 meters alone without assistance? (4) Have you been diagnosed by a physician with 5 or more of the following 11 chronic conditions: hypertension, diabetes, cancer, chronic lung disease, myocardial infarction, heart failure, angina, asthma, arthritis, stroke, or kidney disease? (5) Have you lost more than 5% of your body weight over the past year? Respondents were categorized based on their total score as follows: - Non-frail: score of 0 - Pre-frail: score of 1–2 - FRAIL: score of 3 or higher
Digital literacy		
Digital literacy levels	0–8	Digital literacy level was assessed through the following question: “Without assistance, can you use a PC, smartphone, tablet PC, or kiosk to perform the following activities?” Participants were asked to respond with “yes” or “no” for each of the following 8 digital functions: (1) sending messages, (2) video calling, (3) information searching, (4) taking photos or videos, (5) using social networking services, (6) engaging in e-commerce, (7) conducting online banking transactions, and (8) searching for and installing applications. Each “yes” response was assigned 1 point and each “no” response was assigned 0 points. - The total digital literacy score ranged from 0 to 8 and was categorized as 0, 1–2, 3–4, or 5 or higher points
Perceived difficulties in coping with a digitalized society	Yes, no	“Do you experience difficulty adapting to the rapidly advancing information society?” - Yes: ‘very difficult,’ ‘difficult,’ or ‘moderate’ - No: ‘not difficult at all’ or ‘not difficult’
Dependent variables		
Self-rated health	Good, poor	“How would you describe your general health status?” - Good: ‘very healthy’ or ‘somewhat healthy’ - Poor: ‘not healthy at all,’ ‘not very healthy,’ or ‘average’
Depression	Yes, no	Depression was assessed using the short form geriatric depression scale [17], which consists of 15 items. The items include questions such as: (1) Are you generally satisfied with your current life? (2) Have you recently experienced a significant decrease in activity or motivation? (3) Do you feel your life is empty? (4) Do you often feel bored? (5) Is your mood generally cheerful? (6) Do you often feel anxious, as if something bad is going to happen? (7) Are you generally in good spirits? (8) Do you frequently feel hopeless? (9) Do you prefer staying at home rather than going out? (10) Do you feel that your memory is worse than that of others your age? (11) Are you glad to be alive now? (12) Do you feel that you are a useless person? (13) Are you physically energetic? (14) Do you feel that your current situation is hopeless? (15) Do you think you are worse off than most other people? - Each item was scored 1 point for a depressive answer and 0 points for a non-depressive answer. The total score ranged from 0 to 15. Participants with a total score of 8 or higher were classified as having depressive symptoms.

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Variable	Category	Survey questions and coding
Life satisfaction	1–5	Life satisfaction was assessed using 7 items asking: “How satisfied are you with the following aspects of your life?” as follows: (1) Your health status (2) Your financial situation (3) Your relationship with your spouse (if applicable) (4) Your relationship with your children (if applicable) (5) Your participation in social, leisure, and cultural activities (6) Your social relationships (e.g., neighbors, friends outside of family) (7) Your overall life - Each item was rated on a 5-point Likert scale (1 = very dissatisfied to 5 = very satisfied). A mean score was calculated across the answered items. If participants had no living spouse or children, items 3 and/or 4 were excluded from the average calculation. All other 5 items had no missing data.