# ARBITRAGE BETWEEN CONSUMPTION AND SAVING FOR BEQUEST: THE ROLE OF SUBJECTIVE EXPECTED SURVIVAL AND SATISFACTION WITH THE QUALITY OF LIFE, SOUTH KOREA 2008–2014

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Arbitrage between consumption and saving occurs in a context of an aging society where family solidarity is deteriorating. Maximizing inter-temporal utility makes it possible to calculate the preference for saving. The arbitrage involves subjective satisfaction with the quality of life, anticipated survival, and consumption profiles. Simultaneous equations based on the *Korean Longitudinal Study on Aging, 2006–2014* (10,205 adults aged 45 and over) show that the preference for saving is determined only by and through these endogenous variables, with no other direct socioeconomic effects. People spending more money in education are those with the highest preference for saving. Socioeconomic variables influence the preference for saving in agreement to the economic theory of the life cycle, but through the structured filter of endogenous subjective variables and consumption profiles.

**Keywords:** Life Cycle Hypothesis, Subjectivity, Preferences, Consumption Profiles, Bequest

## 1. INTRODUCTION

We address the topic of the arbitrage between consumption and saving while appropriately raising the question of the possible influence of subjectivity, namely anticipated longevity and satisfaction with the quality of life, in the case of South Korea from 2006 to 2014. In the context of the steady increase of life expectancy

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in South Korea, individuals view their expected survival above or under the current sex-specific national life table. This deviation should modify both the distribution of consumption and the preference for saving (Levhari and Mirman, 1977; De Nardi et al., 2009; Cocco and Gomes, 2012), within the framework of life-cycle models pioneered by Yaari (1965). The economic theory of the life cycle predicts that people accumulate when they earn and dis-save when they are retired (Deaton, 2005; Bloom et al., 2006; Salm, 2010; Biro, 2013; Gan et al., 2015; Pak and Choung, 2017; Scholl and Le Blanc, 2017); that they invest less in bonds and more in risky assets (Menoncin, 2008; Cocco and Gomes, 2012); and that those with uncertain income and anticipating high longevity are likely to save more (Yang and Huang, 2009; Spaenjers and Spira, 2015). However, there are discordant voices: Post and Hanewald (2013) have found that people are aware of their time left to live, but that this information does not influence their saving behavior; and Huang et al. (2012) find that people anticipating shorter survival save more. Our Korean data can help us clarify if anticipated survival influences the preference for saving and, if so, how.

We test the extent to which individuals are aware of the longevity risk and how this awareness affects their saving behavior for bequest. Boucekkine et al. (2002) and Chen and Paul Lau (2016) brought realism into economics by specifying survival probability as an exponential function decreasing with age, rather than a model of implying perpetual youth *à la* Blanchard–Yaari (Blanchard, 1985), where the survival probability is constant. Survival probabilities after 45 years of age are in fact close to Gompertz functions, which are exponentials of exponentials of a linear function of age. Here we push realism even further, not only using national life tables and the full analytical expression of survival probabilities but also taking subjective survival, on which decision-making is based, fully into consideration.

While anticipated survival indeed was shown to capture most of actual survival (Hurd et al., 1998; Hurd and McGarry, 2002; Siegel et al., 2003; Winter, 2008; Perozek, 2008; Gan et al., 2015), this variable in regressions is collinear with age, because people are aware that their probability of survival decreases with age. However, the deviation to current national mortality implied by anticipated mortality reveals people's optimism, realism, or pessimism toward the end of life. It could therefore affect people's arbitrage between consumption items and saving, beyond the mere age effect.

We exploit the open-access five-wave *Korean Longitudinal Study of Ageing* (KloSA) dataset, which contains detailed variables on consumption and savings for 10,254 persons aged 45–107 years followed from 2006 to 2014. As the economic theory of the life cycle involves some appreciation of the time left to live and some attitude toward oneself and the others, we propose to test this theory in the Korean context and in the light of the KLoSA dataset, which gathers detailed economic and socioeconomic data with subjective appreciation of these variables, and this through a representative five-wave follow-up survey. The Korean context may challenge the theory, because of the transition of this society from Confucian values based on family responsibilities, among which

is the primary role devoted to the eldest son as protector of the family and his elderly parents, to a modern economy, where women are emancipated, educated, and have fewer children, if at all.

Based on this KLoSA survey, Pak and Choung (2017), by regressing the logarithms of financial wealth, total net worth, and direct saving on socioeconomic variables, supported the claim that consumption and saving behavior depend on rational expectations. However, rational forward-looking decision-makers should base their decisions on inter-temporal criteria and not on current indicators. This is what we clarify, by characterizing the arbitrage between consumption and saving as resulting from an inter-temporal optimization criterion (rather than on current consumption and savings, which may be distorted by inter-temporal choice). The subjective expected survival and the subjective quality of life are key variables in this arbitrage, and we include them properly, as functions of their socioeconomic determinants (Hamermesh, 1985; Hurd and McGarry, 1995; Mirowsky and Ross, 2000; Khwaja et al., 2007; Popham and Mitchell, 2007; Delavande and Rohwedder, 2011; Adams et al., 2014). The deviation to the sex-specific current national life table might influence the arbitrage between saving and consumption items, because, as we explained, it also reflects an attitude toward the future, net the effect of age. We shall thus distinguish this deviation as an explanatory variable, itself explained in terms of socioeconomic variables, leading us to estimate an endogenous system.

Our second difference with Pak and Choung (2017) is that we distinguish consumption items, because we test the hypothesis that the arbitrage between consumption and saving may depend on the structure of consumption (Coile et al., 2002; Hurd et al., 2004; Bloom et al., 2007; Delavande and Willis, 2008; Salm, 2010; Gan et al., 2015).

We first present the method, which consists first in estimating the deviation to sex-specific mortality, thereby estimating a variable dealing with the subjective appreciation of the future that is not collinear with age, second in estimating the preference for saving for bequest as the solution of the maximization program of an inter-temporal utility, third in relating this preference to three facets of subjectivity: that of the present through satisfaction with the quality of life, that of the future through the deviation to sex-specific mortality, and that of lifestyle, through consumption profiles. Because saving results from a choice, it is consistent that we relate it to the choice of other consumption items. All these variables are endogenous as well as they have their own socioeconomic determinants. We estimate their effects at current age in a system of simultaneous equations.

The final result is our highlighting the prior role of subjectivity in the arbitrage between consumption and saving. The econometric estimation shows that the preference for saving is directly influenced only by endogenous subjective variables and consumption profiles. The economic theory of the life cycle works through the filter of those variables, and appears as gendered, with men's higher preference for saving, and related to family, with household heads of larger families saving more. Preference for saving and its subjective determinants are estimated along with age. We will highlight trade-offs and loops, whereby

satisfaction with the quality of life appears to be the primary variable motivating both the estimate of the deviation to national mortality and the preference for saving for bequest, and where subjectivity influences the arbitrage between consumption and saving for bequest.

## 2. THEORY

### 2.1. Preliminary: Subjective Survival and Subjective Deviation to National Mortality

The measure of the deviation of subjective expected survival to the national life table must take account of the expression of the life table survival function $\ell_a^N(.)$, which is

$$\ell_a^N(b) = \exp(-\int_a^b \mu^N(t)\,dt), \tag{1}$$

where $a$ is current age, $b$ is the forecast horizon, and $\mu^N$ is the hazard rate associated with the sex-specific national life table. The subjective expected survival corresponds to a survival probability at age $b$:

$$\ell_a(b) = \exp(-\int_a^b \mu(t)\,dt), \tag{2}$$

which identifies a subjective age-specific hazard rate $\mu(.)$. The deviation $\delta$ of the subjective expected survival $\ell_a(b)$ to $\ell_a^N(b)$ is

$$\delta(a,b) = -\frac{1}{b-a}\ln\left(\frac{\ell_a(b)}{\ell_a^N(b)}\right), \tag{3}$$

which results from $\delta(a,b) = \mu(t) - \mu^N(t)$ assumed constant for all ages $t$ in $[a,b]$ (the respondent's subjective survival reflects a deviation, applying until the forecast age, with respect to national mortality). It is independent of age, contrary to, for example, the ratio $\ell_a(b)/\ell_a^N(b)$, which still depends on age $b$, and for that reason, mechanically has a significant coefficient when regressed on age. Figure 1b shows the sharp and accelerated decline with age after 60 years of age for both sexes of the average deviation $\delta$ for the 15-year horizon. Women anticipate a higher mortality than men, and people after 70–79 years of age overestimate their time left to live.

### 2.2. The rational agent's program

Using a Klein–Rubin–Stone–Geary utility function, the rational agent of age $a$ arbitrating between consumption items and saving at horizon $b$ solves the program:

$$\text{Max}_{c_i, i=1,\dots,I}\int_a^\omega \left(\sum_{i=1}^I \alpha_i \ln(1+c_i(b)) + \beta\mu(b)\,\text{sgn}(W(b))\ln(1+|W(b)|)\right)e^{-\eta b}\frac{\ell_a(b)}{e_a}\,db, \tag{4}$$
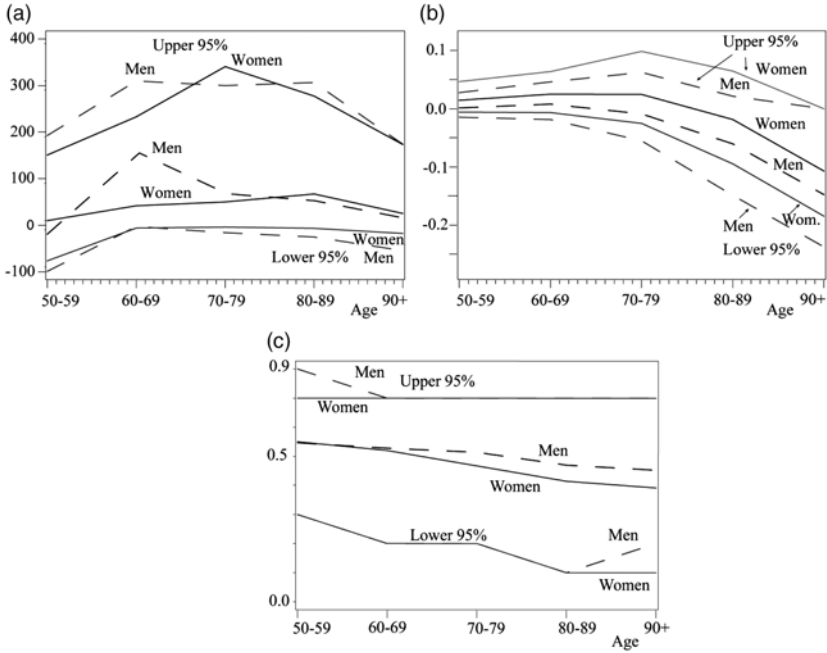
**FIGURE 1.** Relative preference for saving $\beta/\alpha_1$ computed from (6) with a discount rate $\eta$ at 5%, deviation $\delta$ of expected to sex-specific national mortality, and satisfaction with the quality of life (both between 0 and 1) with 95% confidence interval (cross-sectional weights) (data from the KLoSA dataset). (a) Preference for saving over preference for food. (b) Deviation from the national life table mortality. (c) Satisfaction with the quality of life (between 0 and 1).

under the dynamic

$$W'(b) = \rho W(b) - \sum_{i=1}^{I} c_i(b) - h(b) + R, \tag{5}$$

where $\omega$ is the terminal age (usually 120 years), "sgn" means "sign of," $\rho$ the interest rate, $\eta$ the time discount rate, $e_a = \int_a^\omega \ell_a(b)\,db$ the life expectancy at age $a$, and, at age $b$, $c_i(b)$ the expenditures for item $i$, $W(b)$ the amount of savings, $h(b)$ medical expenditures (apart from health insurance premium), $R(b)$ the budget, $I$ the total number of items, and $\beta$ and the $\alpha_i$s for each item $i$ are weights quantifying the preference distribution. The utility of consumption is weighted by the normal-ized probability of survival $\ell_a(b)/e_a$, and the utility of savings by $\mu(b)\ell_a(b)/e_a$, which is the probability distribution of deaths. Savings used for future consumption are already contained in the program of consumption at future ages, whereas the amount of savings present at the age of death is used as bequest.

For each age $b = a,\ldots,\omega$, the first-order conditions are

$$
\begin{cases}
\dfrac{\alpha_j}{1 + c_j(b)} = \dfrac{\alpha_1}{1 + c_1(b)}, \, j = 1, ..., I \\[4mm]
\dfrac{\beta}{\alpha_1}(\mu^N(b) + \delta) = \dfrac{1 + |W(b)|}{1 + c_1(b)}\left(-\rho + \dfrac{1 + c_1'(b)}{1 + c_1(b)} + \mu^N(b) + \delta + \eta\right).
\end{cases} \tag{6}
$$

That is, the ratio of preference weights $\alpha_j/\alpha_1$ is equal to the ratio of the marginal rates of substitution $(1 + c_j)/(1 + c_1)$; likewise for the ratio $\beta/\alpha_1$, but modulated by the resultant of the competing risks of interest rate, discount rate, elasticity in food consumption, and mortality rate. To avoid taking a particular item as the reference, this system (6) is equivalent to

$$
\begin{cases}
\dfrac{\alpha_j}{1 + c_j(b)} = \dfrac{\alpha_1}{1 + c_1(b)}, \quad j = 1, ..., I \\[4mm]
\dfrac{\beta}{\displaystyle\sum_{j=1}^{I}\alpha_j} = \dfrac{1 + |W(b)|}{I + \displaystyle\sum_{j=1}^{I} c_j(b)}\left(1 + \dfrac{1}{\mu^N(b) + \delta}\left(-\rho + \eta + \dfrac{1 + c_1'(b)}{1 + c_1(b)}\right)\right).
\end{cases} \tag{7}
$$

## 2.3. Predictions of the model

Equation (7) allows us to compute the value of $\beta/\sum_{j=1}^{I}\alpha_j$, under a given value of the discount rate $\eta$. It now remains to understand its socioeconomic determinants. From (7), we deduce that the optimal inter-temporal ratio $\beta/\sum_{j=1}^{I}\alpha_j$ of preferences is not reduced to the ratio $(1 + |W(b)|)/(I + \sum_{j=1}^{I} c_j(b))$ of financial assets to total consumption, but also implies the elasticity $c_j(b)$ of food consumption, and through it, because of the first equation of (7), the elasticity of any other consumption item. This ratio is also expected to decrease with the subjective deviation $\delta$ to current sex-specific national mortality. Equation (7) cannot be estimated in a simple way, because $\delta$, which is subjective, is likely to depend on economic variables. It is therefore necessary to introduce a possible dependence of $\delta$ on subjective economic variables, which should comprise consumption profiles (which reflect a subjective attitude toward consumption) and "satisfaction with the quality of life" (the derived subjective benefit). Both these explanatory dimensions may depend on objective socioeconomic variables, including consumption $c_j(b)$ and financial assets $W(b)$. In summary, (7) predicts the possible negative influence of the subjective deviation to the current sex-specific national mortality. Its subjective nature refers to an economic assessment, itself a function of socioeconomic variables. This is the difficulty inherent in dealing with the preference for saving and it is a logical development of (6): the dependence on objective variables also goes through subjective assessments; and the appreciation of the remaining time to live is expressed through consumption profiles reflecting lifestyle and the subjective appreciation of economic well-being (through satisfaction with the quality of life). In order to take into account these determination loops, we now

estimate an endogenous model linking the preference for saving, the subjective deviation to the current national life table, and satisfaction with the quality of life.

## 3. THE ECONOMETRIC MODEL

### 3.1. Estimations

Equation (7) holds true also at current age $a$, which allows us to estimate the $\alpha_j/\alpha_1$ and $\beta/\sum_{j=1}^{I}\alpha_j$ at age $a$. Now, we relate this relative preference to its likely determinants, through the econometric system at current age of multilevel simultaneous regressions (with endogenous variables) linked to one another through a variance–covariance matrix:

$$\left(\frac{\beta}{\sum_{j=1}^{I}\alpha_j}\right)_{it} = \gamma_1'X_{it} + \gamma_{1,\delta}\delta_{it} + \gamma_{1,Q}Q_{it} + \sum_{k=1}^{3}\gamma_{1,k,C}C_{kit} + \upsilon_i + \varepsilon_{1,it}$$

$$\delta_{it} = \gamma_2'X_{it} + \gamma_{2,Q}Q_{it} + \sum_{k=1}^{3}\gamma_{2,k,C}C_{kit} + \upsilon_i + \varepsilon_{2,it}$$

$$Q_{it} = \gamma_3'X_{it} + \gamma_{3,\delta}\delta_{it} + \sum_{k=1}^{3}\gamma_{3,k,C}C_{kit} + \upsilon_i + \varepsilon_{3,it}$$

$$\text{Probit }(P(C_{1it})) = \gamma_4'X_{it} + \upsilon_i + \varepsilon_{4,it}$$

$$\text{Probit }(P(C_{2it})) = \gamma_5'X_{it} + \upsilon_i + \varepsilon_{5,it}, \tag{8}$$

where $i$ indicates the individual, $t$ the survey wave, $Q_{it}$ the satisfaction with the quality of life (in [0,1]), $C_{kit}$ the $k$th consumption profile ($C_{3it}$ being taken as the reference), P denotes probability, $\upsilon_i$ the individual-specific residual—identical in the five equations of (7), as it denotes the same individual $i$—, $X_{it}$ represents explanatory variables, and the $\varepsilon_{k,it}$, $k = 1,..,5$, are linked to one another by a variance–covariance matrix to be estimated (and which makes the estimations of the coefficients $\gamma$ inter-dependent). The three options of the categorical response variable $C$ representing a profile of consumption are mutually exclusive and cover all possibilities. $Q_{it}$ is measured by scores declared by respondents, between 0 (dissatisfaction) and 100, then divided by 100 for the analysis. We run the model for $\eta = 0.00$ and $\eta = 0.05$. There are individuals who take different values of the variables between 2008 and 2014, which makes multilevel modelling effective. Then, "conditional of the residual heterogeneity components $\varepsilon_{k,it}$, the observed outcomes are independent, and no further identifying restrictions, such as exclusion restrictions or exogenous covariates, are required" (Lillard, 1993, p. 195).

### 3.2. Data, Sample Selection, and Variables

The KLoSA was built on the same structure and questions used in the *Health and Retirement Study,* the *Survey of Health, Ageing, and Retirement in Europe*

(SHARE), and the *English Longitudinal Study of Ageing* (ELSA). Its declared purpose is to "improve understanding of Korea's population aging and to offer insights for policy-making and academic studies" (KLoSA User's guide, 2007). We use the five waves from 2006 to 2014. The resulting sample comprises follow-up data on 10,254 persons aged 45–107 years belonging to 6171 households from 2006 to 2014. They were selected through a multistage stratified probability sampling. The final dataset is representative of the civilian, non-institutionalized Korean population. Consumption and saving are informed only at the four waves 2008, 2010, 2012, and 2014. We follow Pak and Choung (2017) to exclude respondents with missing values on the questions about subjective survival, quality of life, savings, consumption, or income. The final panel comprises 14,475 spells for 6131 individuals for the period of 2008–2014.

We examine the consumption and saving behavior of people followed-up over 6 years, taking account of their anticipated survival, as informed in the KLoSA survey: *Please indicate how much you agree to the above statement using the scale below. 0 means absolutely no chance and 100 means absolutely certain. If R is aged 64 or under, I am likely to live to be 75 or more; if R is aged 65-69, I am likely to live to be 80 or more [and so on, with age class varying, up to 100 or over].* Pak and Choung (2017, p. 54) represent the age distribution of subjective expected survival, which is "bell-shaped and well-dispersed across the scale."

We base our information about consumption on questions of the type "In last year, what was the monthly average amount of $X$ (unit: 10,000 wons)," with $X =$ "living cost" (question E201), expenditure on food (E207), expenditure on dining out (E213), expenditure on public education (E219), expenditure on private education (E225), expenditure on housing (E231), medical expenditure (E237), expenditure on clothing (E243), amount of saving (including general savings, installment savings, insurance, personal pension, private savings club) (E251). We scaled consumption by household size.

The contact success rate in KLoSA was 86.9% in 2006. The retention rate was high: 86.6% in 2008 (second wave), 81.7% in 2010 (third wave), 80.1% in 2012 (fourth wave), and 79.2% in 2014 (fifth wave) (Korea Employment Information Service, 2015). The dataset was augmented with a refreshment sample of 920 respondents in 2014. The KloSA sample thus totals 10,254 respondents in 2006, 8875 in 2008, 8229 in 2010, 7813 in 2012, and 7467 + 920 = 8387 in 2014. Respondents were aged 45 or older and resided in South Korea, except Jeju Island. Missing values were imputed by the *Korea Employment Information Service,* the organizer of KLoSA.

*3.2.1. Dependent variables.* Figure 1a shows that, on average, $\beta/\alpha_1$ has a peak at 60–69 years of age for men, and slightly increases with age for women. Sex makes a difference in the preference for saving, although it is hard to tell whether who between men and women prefer saving yet: the model, controlling for other covariates, will be useful in this matter.

The preference distributions $\frac{\alpha_j}{\alpha_1} = \frac{1+c_j(b)}{1+c_1(b)}$ (without medical expenditures and insurance), where $\alpha_1$ is the preference for food consumption, are summarized in
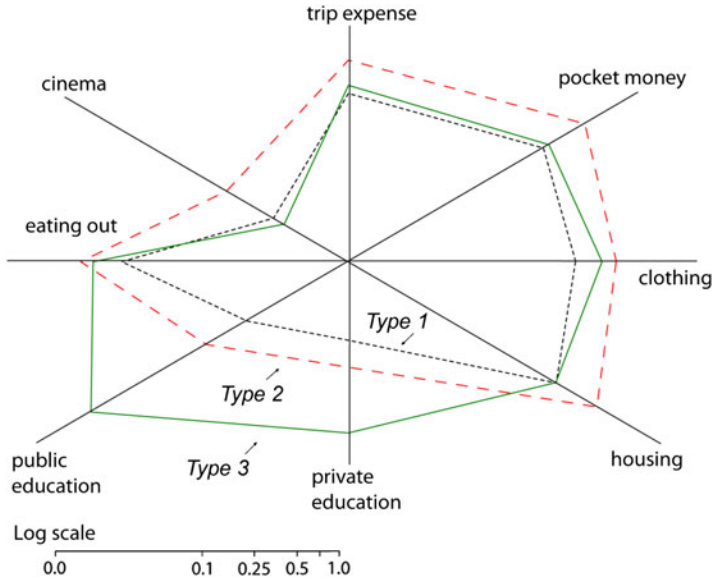
**FIGURE 2.** Profiles of consumption preferences $\frac{\alpha_j}{\alpha_1} = \frac{1+c_j(a)}{1+c_1(a)}$, $j = 2, ..., I$ with respect to preference for food $\alpha_1$. The groups are obtained by cluster analysis (cross-sectional weights, Ward method).

Figure 2 through three clusters obtained by cluster analysis. The reference is food, for the reason that it is unlikely to be nonpositive. The clustering method is Ward, which produces the most balanced grouping. We comment the clusters below.

*3.2.2. Independent variables.* The explanatory variables $X$ are presented in Table 1. Annual earned income includes wages, financial and real-estate income, and financial transfers to and from family (we regrouped parents and children for the sake of having sufficient numbers). We distinguish asset income from financial assets, which are included in savings.

The Shinhan Bank's 2018 report on the financial conditions experienced by 20,000 representative South Korean users of financial services shows that people aged from 50 to 64 years had spent 2.72 million wons ($2530) a month for the year 2017, distributed as 18.4% for food, 10.3% for education, 9.2% for transport expenses, 8.1% in utility and house maintenance, 7.4% for leisure, 6.3% in communication, 5.9% in medicine, 5.9% in pocket money, 5.1% in clothing, and 2.2% in housing. Households however are not homogenous with respect to consumption. Figure 2 presents three consumption profiles obtained by cluster analysis. We limited ourselves to three clusters because four clusters correspond to an unbalanced distribution of the respondents: 69.8%, 12.0%, 14.3%, and 3.9%. Type 1 comprises 67.0% of the sample, Type 2 19.6%, and Type 3 13.4%. The proportion of women is similar between Types: 72.9%, 72.9%, and 69.7%. Type 2 has the older people (mean age 70.8, SD = 9.8), then Type 1 (66.6 years, SD = 9.5), and Type 3 (58.4, SD = 9.9).

**TABLE 1.** Descriptive statistics in 2012 (currency: 10,000 *wons* 2015, financial amounts are monthly).

| | Age | | | | Age | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| | 45–54 | 55–64 | 65+ | | 45–54 | 55–64 | 65+ |
| Variable | Mean (SD) | Mean (SD) | Mean (SD) | Variable | Mean (SD) | Mean (SD) | Mean (SD) |
| Age | 53.0 (1.4) | 60.1 (2.9) | 74.4 (6.4) | Annual transfers to children | 158.5 (693.5) | 107.9 (908.6) | 11.9 (200.2) |
| Nb of living siblings | 3.2 (1.1) | 3.1 (1.3) | 2.1 (1.6) | Annual transfers from children | 18.8 (133.5) | 83.0 (281.1) | 237.0 (598.0) |
| Total nb of children | 2.0 (0.7) | 2.3 (0.9) | 3.1 (1.0) | Monthly medical expenditures | 82.0 (201.7) | 111.1 (161.1) | 110.1 (164.3) |
| Annual income | 2373 (2267) | 1609 (1669) | 831 (1076) | Monthly expend. in food | 53.6 (24.1) | 44.3 (20.9) | 32.7 (19.9) |
| Household liabilities $\times 10^{-3}$ | 5.6 (26.3) | 5.9 (30.6) | 4.2 (26.4) | in pocket money | 24.4 (18.7) | 20.4 (17.6) | 11.2 (10.8) |
| Financial assets $\times 10^{-3}$ | 2.1 (8.1) | 1.8 (4.8) | 1.0 (3.4) | in public education | 27.8 (43.9) | 4.1 (17.1) | 1.9 (10.1) |
| Asset income | 64.5 (256.9) | 56.7 (254.9) | 40.0 (199.9) | in private education | 6.5 (18.6) | 1.0 (6.4) | 2.4 (11.8) |
| Savings | 46.1 (71.5) | 29.9 (48.0) | 9.5 (26.2) | in housing | 20.4 (9.5) | 18.6 (8.5) | 15.4 (7.6) |
| Real-estate income $\times 10^{-3}$ | 14.0 (23.3) | 14.0 (24.5) | 10.8 (18.8) | in clothing | 11.8 (9.1) | 9.0 (7.0) | 5.3 (5.1) |
| Yearly transfers to parents | 43.9 (132.4) | 18.5 (70.7) | 1.1 (13.0) | in trips | 42.5 (107.1) | 34.0 (93.3) | 10.9 (42.2) |
| Yearly transfers from parents | 5.3 (38.1) | 5.9 (41.6) | 0.1 (2.9) | in cinema | 1.8 (12.5) | 0.8 (7.4) | 0.2 (1.8) |
| | | | | eating out | 10.3 (12.1) | 6.3 (8.1) | 3.7 (6.3) |

**TABLE 1.** Continued

| Variable | Age | | | Variable | Age | | |
|---|---|---|---|---|---|---|---|
| | 45–54 | 55–64 | 65+ | | 45–54 | 55–64 | 65+ |
| | Percent | Percent | Percent | | Percent | Percent | Percent |
| Categorical variables (in percent: the sum of polytomous variables over each age class is 100%) | | | | | | | |
| Man | 47.2 | 45.4 | 36.9 | Owns residence | 51.0 | 53.3 | 53.5 |
| Lives with spouse | 86.7 | 78.7 | 52.0 | Lives in house | 52.4 | 61.3 | 67.3 |
| Drinks Alcohol | 59.9 | 55.4 | 41.5 | Lives in a flat | 47.6 | 38.7 | 32.7 |
| Smokes | 36.6 | 36.7 | 27.9 | Lives in a metropolis | 47.4 | 47.4 | 40.7 |
| Wage-earner | 41.1 | 28.3 | 6.1 | in a city | 38.1 | 34.3 | 28.8 |
| Self-employed | 27.0 | 22.8 | 11.7 | in rural areas | 14.5 | 18.3 | 30.5 |
| Non-paid Family aid | 4.6 | 4.3 | 3.0 | Illiterate & elem. school | 24.4 | 49.5 | 80.4 |
| Unemployed | 1.0 | 0.6 | 0.1 | Middle & high school | 52.1 | 39.0 | 13.9 |
| Out of the labor market | 26.5 | 43.9 | 79.2 | College and post college | 23.5 | 11.5 | 5.8 |
| Good subj. health | 70.7 | 55.1 | 28.1 | Retired | 2.5 | 4.0 | 3.0 |

*Note*: Standard deviations in parentheses for continuous variables, percentages for categorical variables. Cross-sectional weights.

**TABLE 2.** Simultaneous regressions of preference ratio, deviation of expected survival, and quality of life (coefficients multiplied by 10)

| Variable | Preference ratio $\frac{\beta}{\sum_{j=1}^{J} \alpha_j}$ | | Subjective deviation to national sex- and age-specific mortality | | Satisfaction with the quality of life | |
|---|---|---|---|---|---|---|
| | Coeff. | Std | Coeff. | Std | Coeff. | Std |
| Constant | 5.03** | 0.78 | 6.73** | 0.36 | 2.01 | 1.35 |
| Man | −0.08 | 0.40 | −1.26** | 0.18 | 0.09 | 0.60 |
| Age | 0.27 | 0.95 | −7.73** | 0.47 | 1.15 | 1.52 |
| Total nb of children | −0.08 | 0.50 | 0.41 | 0.27 | 0.41 | 0.83 |
| Difficulties IADL | −0.19 | 0.32 | −0.27** | 0.13 | −0.89 | 0.58 |
| Difficulties ADL | 0.05 | 0.80 | 0.11 | 0.26 | −0.75 | 1.44 |
| Subjective health | 0.23 | 0.13 | −0.29** | 0.05 | 1.09** | 0.25 |
| Lives with spouse | −0.01 | 0.30 | 0.02 | 0.20 | 0.02 | 0.21 |
| Can read & elementary school | −0.01 | 0.45 | −0.17 | 0.23 | 0.17 | 0.72 |
| Middle and high school | −0.06 | 0.40 | −0.50** | 0.21 | 0.25 | 0.67 |
| College and post college | Ref = 0 | | Ref = 0 | | Ref = 0 | |
| Metropolis | 0.01 | 0.30 | 0.30* | 0.15 | −0.26 | 0.49 |
| City | −0.04 | 0.30 | 0.16 | 0.16 | −0.18 | 0.53 |
| Town and rural | Ref. = 0 | | Ref. = 0 | | Ref. = 0 | |
| Lives in a house | −0.01 | 0.20 | 0.11 | 0.07 | −0.14 | 0.35 |
| Owns residence | 0.02 | 0.10 | −0.04 | 0.10 | 0.09 | 0.30 |
| Wave 2008 | −0.07 | 0.30 | −0.73** | 0.10 | 0.15 | 0.62 |
| Wave 2010 | 0.04 | 0.30 | −0.62** | 0.08 | 0.44 | 0.58 |
| Wave 2012 | 0.02 | 0.30 | −0.61** | 0.07 | 0.41 | 0.64 |
| Wave 2014 | Ref. = 0 | | Ref. = 0 | | Ref. = 0 | |

*Note*: ** significant at the 5% level, * significant at the 10% level.

People of Type 1 spend comparatively more on food than those of Type 2, who spend comparatively more in eating out, cinema, trips, pocket money, clothing, and housing, and those of Type 3, who are more committed in education, be it private or public. Type 1 represents a group that we can label "survivors," Type 2 "hedonists" centered on the self and on entertainment, and Type 3 family-oriented or "altruistic" people (comparatively giving preference to education), who have the responsibility for at least one parent and for children, who are likely to be still in school or college or not yet employed, as reported for example in the Korean medias (Kim, 2013; Cho, 2018).

*3.2.3. Results of the econometric model.* Tables 2 and 3 present the results of the first three continuous regressions of (7) for a discount rate $\eta$ at 5%, and Table 4 the

**TABLE 3.** continues Table 2. Simultaneous regressions of preference ratio, deviation of expected survival, and satisfaction with the quality of life

| Variable | Preference ratio $\frac{\beta}{\sum_{j=1}^{I} \alpha_j}$ | | Subjective deviation to national sex- and age-specific mortality | | Satisfaction with the quality of life | |
|---|---|---|---|---|---|---|
| | Coeff. | Std | Coeff. | Std | Coeff. | Std |
| Wage-earner | −0.08 | 0.20 | −0.60** | 0.10 | −0.05 | 0.40 |
| Self-employed | −0.03 | 0.20 | −0.38** | 0.11 | 0.05 | 0.40 |
| Non paid family aid | −0.01 | 0.36 | −0.49** | 0.17 | 0.24 | 0.65 |
| Unemployed | −0.27 | 0.78 | −0.69** | 0.31 | −1.15 | 1.55 |
| Out of the labor market | Ref = 0 | | Ref = 0 | | Ref = 0 | |
| Retired | 0.05 | 0.40 | 0.14 | 0.16 | 0.03 | 0.80 |
| Income | −0.14 | 1.87 | 0.18 | 0.92 | 1.57 | 3.30 |
| Transfer to children | 0.36 | 3.82 | −1.45 | 1.36 | 1.66 | 7.49 |
| Transfer from children | 0.99 | 1.95 | 1.51* | 0.79 | 3.11 | 3.55 |
| Has a dependent relative | −0.08 | 0.30 | −0.10 | 0.11 | −0.47 | 0.52 |
| Time spent in caregiving | 0.35 | 1.94 | −0.10 | 0.93 | 0.18 | 3.66 |
| Cost of living without medical expenditures | −0.21 | 0.91 | −6.28** | 0.38 | 6.15** | 1.72 |
| Medical expenditures | 0.48 | 1.38 | 0.58 | 0.56 | 1.06 | 2.65 |
| Asset income | 0.55 | 2.16 | −0.30 | 1.00 | 3.03 | 4.06 |
| Financial assets | 1.88 | 4.10 | −0.61 | 3.31 | 5.38 | 7.74 |
| Household liabilities | −0.17 | 1.18 | 0.31 | 0.52 | −0.57 | 2.28 |
| Household size | −0.34 | 0.51 | −1.35** | 0.24 | 0.14 | 0.90 |
| 1st profile of consumption | −0.76** | 0.21 | −2.42** | 0.08 | 0.79 | 0.42 |
| 2nd profile of consumption | −0.81** | 0.24 | −2.62** | 0.09 | 0.83 | 0.47 |
| preference ratio $\beta / \sum_{j=1}^{I} \alpha_j$ | − | | −0.30** | 0.03 | 0.23** | 0.06 |
| Deviation $\delta$ to expected survival | −0.14** | 0.03 | − | | −0.04 | 0.03 |
| Satisfaction with the quality of life | 0.59** | 0.12 | 1.36** | 0.06 | − | |

*Note*: ** significant at the 5% level, * significant at the 10% level.

associated two polytomous probit regressions in (7). The results for $\eta = 0$ show the same significant coefficients with the same signs. These six equations, which involve endogenous variables, are also linked to each other through the correlation matrix presented in Table 5. The joint estimation of the three continuous-time equations and the two probit should improve the estimates in the continuous-time equations. If we removed the probit equations, this would mean that cluster membership would be exogenous to arbitrage, satisfaction with the quality of life, and deviation to national mortality. This is unlikely the case. That is why the probit of the probability to be member of a cluster and its linking through the correlation matrix to the three first continuous regressions is necessary to finding the determinants of consumption. Tables 2–5 show that our hypothesis that consumption

**TABLE 4.** Probit on Types of consumption represented on Figure 2 (Type 3 as the reference 0)

| Variable | Type 1 Coefficient | SD | Type 2 Coefficient | SD | Variable | Type 1 Coefficient | SD | Type 2 Coefficient | SD |
|---|---|---|---|---|---|---|---|---|---|
| Intercept | 1.30** | 0.10 | 1.37** | 0.13 | Wave 2008 | −0.29** | 0.05 | −0.04 | 0.06 |
| Man | −0.11** | 0.03 | −0.13** | 0.04 | Wave 2010 | −0.15** | 0.04 | −0.01 | 0.05 |
| Age | 0.69** | 0.10 | 1.35** | 0.13 | Wave 2012 | −0.24** | 0.04 | −0.31** | 0.05 |
| Subjective health | −0.01 | 0.03 | 0.03 | 0.04 | Wave 2014 | Ref = 0 | | Ref = 0 | |
| Lives with spouse | 0.30 | 0.19 | −0.38** | 0.19 | Has a dependent relative | 0.11* | 0.06 | 0.08 | 0.08 |
| Total nb of children | −0.14** | 0.05 | −0.30** | 0.07 | Time spent in caregiving | 0.42 | 0.82 | −0.43 | 0.86 |
| Owns residence | −0.01 | 0.03 | 0.01 | 0.05 | Difficulties in IADL | 0.20 | 0.17 | −0.11 | 0.10 |
| Lives in house | 0.05 | 0.03 | 0.01 | 0.05 | Difficulties in ADL | 0.29 | 0.16 | 0.07 | 0.21 |
| Lives in a metropolis | 0.25** | 0.03 | −0.39** | 0.04 | Retired | −0.04 | 0.08 | 0.03 | 0.09 |
| Lives in a city | 0.15** | 0.04 | −0.23** | 0.05 | Income | −0.15 | 0.32 | 2.60** | 0.36 |
| Can read & elementary school | 0.02 | 0.04 | −0.20** | 0.05 | Household liabilities | 0.05 | 0.24 | 0.63** | 0.28 |
| College and post college | 0.01 | 0.03 | 0.06 | 0.04 | Asset income | −0.47 | 0.37 | 0.21 | 0.41 |
| Wage-earner | −0.15** | 0.03 | −0.10** | 0.05 | Financial assets | −1.61 | 1.55 | 3.67** | 0.68 |
| Self-employed | −0.09** | 0.04 | −0.01 | 0.05 | Household size | −0.91** | 0.08 | −3.39** | 0.12 |
| Non-paid family aid | −0.22** | 0.06 | 0.08 | 0.08 | Cost of living (without medical expend.) | −4.41** | 0.15 | −5.24** | 0.17 |
| Unemployed | 0.02 | 0.18 | 0.08 | 0.23 | Transfers from children | 1.75** | 0.37 | 0.13 | 0.18 |
| Out of the labor market | | Ref = 0 | Ref = 0 | | | | | | |

*Note*: ** significant at the 5% level, * significant at the 10% level.

**TABLE 5.** Variance–covariance matrix linking the equations of equation (6)

|  | Preference ratio | Subjective deviation | Satisfaction with the quality of life | Probit Type 1 | Probit Type 2 | |
|---|---|---|---|---|---|---|
| Preference ratio | 0.24** (0.01) | | | | | |
| Subjective deviation | 0.08** (0.02) | 0.22** (0.02) | | | | |
| Satisfaction with the quality of life | 0.67** (0.01) | 0.03** (0.01) | 0.50** (0.01) | | | |
| Probit Type 1 | 0.14** (0.02) | 0.62** (0.01) | 0.03** (0.01) | 0.85** (0.02) | | |
| Probit Type 2 | −0.12** (0.02) | 0.46** (0.01) | −0.01 (0.01) | 0.09** (0.02) | 1.15** (0.02) | 10.6 (0.2) |

*Note*: ** significant at the 5% level, * significant at the 10% level.

results from an endogenous system involving subjective variables is verified: most of the coefficients associated with endogenous variables are significant, as are most correlations relating the equations between one another.

We now present the determinants of the preference for saving for bequest and their endogenous interactions. For the sake of conciseness, we comment upon the socioeconomic determinants of the endogenous variables (satisfaction with the quality of life, subjective deviation to current national sex-specific mortality, and consumption profiles) in the Appendix, at a reviewer's request.

*3.2.4. Determinants of the preference for saving for bequest.* Figure 1a shows that the peak of men's preference for saving for bequest is at 60–69, a decade when men can save for their income in the labor market before retiring, while women save proportionally less, but they also earn less. Men and women save equally after 70 years of age. In contrast to the theory of the life cycle, according to which people with higher anticipated survival save more, age does not change preference for saving. None of the socioeconomic determinants is significant, except endogenous ones. This justifies *a posteriori* our choice of endogenous variables, including consumption profiles. Table 3 shows that "altruists" (Type 3), consistently, have a higher preference for saving than "survivors" (Type 1, $-0.076$, SD = 0.021) and "hedonists" (Type 2, $-0.081$, SD = 0.024). So, socioeconomic determinants such as age, sex, residence, employment, subjective health, or cost of living do affect the preference for saving, but as shown in the Appendix, only through consumption profiles and the anticipated deviation to national mortality.

Table 3 shows that higher satisfaction with the quality of life leads to a higher subjective mortality risk (0.136, SD = 0.006), which reduces the preference for saving ($-0.014$, SD = 0.003), in contrast to its direct positive effect (0.059, SD = 0.012): satisfaction with the quality of life then plays the role of a (subjective) source with both a positive effect (people satisfied with life are more "altruistic" in saving for bequest) and a negative counter-effect mediated by the subjective deviation to current mortality (people satisfied with life are more aware of the finiteness of life, which leads them to a self-centered response in consuming rather than saving for bequest, in accordance with the economic theory of the life cycle). The increase in preference for saving leads to greater satisfaction with the quality of life (0.023, SD = 0.006) (saving for one's kin brings satisfaction), resulting in a self-sustained cycle between saving and satisfaction; this increase also leads to an underestimation of mortality ($-0.030$, SD = 0.003) that leads people to save more ($-0.014$, SD = 0.003). Thus, the subjective deviation to national mortality (which summarizes feelings about the future) and subjective satisfaction with the quality of life (which summarizes feelings about the present) are consistent when they describe the agent as saving more when he or she feels better, controlling for other variables, notably lifestyles.

The correlation matrix in Table 5 is not directly interpretable because innovations are between linear combinations of endogenous variables. The message

from Table 5 is that the five equations are correlated significantly and, there-fore, the subjective variables (satisfaction with the quality of life and deviation to national mortality) and the attitude variables (consumption profiles) form a system determining preference for saving for bequest; that is, the significant cor-relations in Table 5 *a posteriori* demonstrate that the preference for saving for bequest is mainly influenced by subjectivity and lifestyles.

## 4. DISCUSSION

In contrast to Huang et al. (2012) and Post and Hanewald (2013) that we men-tioned in the literature review, we have shown that the anticipated time to live, through the deviation to the sex-specific current national mortality (and not through mere survival which is collinear with age), does influence saving behav-ior: those anticipating a higher mortality than the national level have a lower preference for saving, which is consistent with the economic theory of the life cycle. We have taken the understanding of the determinants of the preference for saving a step further, in showing that not only anticipated mortality, but also (sub-jective) satisfaction with the quality of life and consumption profiles motivate the preference for saving, and that socioeconometric variables have influence on this preference only through subjective variables. This is consistent with the fact that the choice for saving is subjective. The inclusion of subjective variables in mod-ern surveys such as KLoSA has allowed us to clarify the subjective motivation in the economic theory of the life cycle.

We have shown that the preference for saving also responds to consump-tion profiles, which condition the relevance of the theory of the life cycle, with household heads having more children or younger people showing a statistically significantly higher preference for saving for bequest. Among those showing poor preference for saving for bequest, we managed to distinguish "hedonist" and "sur-vivor" profiles, which differ by wealth but are similar by some self-centering, in comparison to the "altruist" group. The overall portrayal of the socioeco-nomic determinants of preference for saving for bequest then coincides with the possibilities left by age, wealth, and family responsibilities.

Tables 2–5 show that socioeconomic variables have effects only through the fil-ter of consumption profiles as well as through the subjective deviation to national mortality. Namely, Table 4 shows that men, through consumption profiles, are more likely to behave altruistically (Type 3), because adult eldest sons are des-ignated to be in charge of the family in the Confucian tradition. Because male household heads are more altruistic than female ones (Table 4), they anticipate mortality closer to national mortality than "hedonists" and "survivors" (Table 3), which is visible on Figure 1b until 80 years of age. After that age, fewer peo-ple spend their income into education and "altruists" disappear, leaving the direct effect of men (Table 2), which is to anticipate mortality lower than women do, as it is visible on Figure 1b.

Older people rather belong to the "hedonist" Type 2 (Table 4), in agreement to the economic theory of the life cycle, with the consequence shown on Table 2

of preferring to consume rather than save and overestimating their time left to live (as Figure 1b confirms). After controlling for other effects, Table 4 shows that not living with one's spouse is the most likely among "hedonists" (which is consistent with the fact that this group is the oldest), with the consequence, through the membership of this group, that those not living with a spouse have a lower preference for saving. In contrast, people with more children mostly belong to the "altruistic" group, as expected, and consequently from Table 2 have a higher preference for saving for bequest. City- and metropolis-dwellers mostly, those having a dependent, or those receiving transfers from children mostly belong to the "survivors" group, while people with higher income, more liabilities, or more financial assets are mostly "hedonists" (Table 4). As membership of one of these groups leads to a lower preference for saving compared to "altruists," so do the associated mentioned variables.

Meanwhile, we have shown that the theory of the life cycle, in the case of South Korea, is gendered (through consumption profiles): women, who as household heads are more often in economic precariousness, are more likely "survivors" and save less than men, who more than women are in charge of a family, and consequently are more likely "altruists". We have then validated our hypothesis that the structure of consumption influences the arbitrage between consumption and saving. Projecting oneself onto future generations, which is reflected by investment in education (Type 3), leads to more saving for bequest. The attitude to others and to the life cycle adds then a sociological component to the theory of the life cycle.

## 4.1. Study Limitations

The strength of our proposal was to include subjective variables into the arbitrage consumption versus saving for bequest. This arbitrage responds to sociological variables, but being a choice, it also responds to subjectivity. It is its limitation as well, because we capture subjectivity only through anticipated survival and satisfaction with the quality of life, in addition to subjective health. We attempted to establish a bridge between economic rationality and some subjectivity, which is formalized in equation (6), but psychological economics has taught us that agents may behave strangely (Kahneman, 1996).

## 5. CONCLUSION

We have shown that, in addition to life-cycle economics, the Confucian tradition is still present by imposing family responsibilities on older sons. Living in a city or a metropolis weakens family ties, resulting in people becoming more self-centered and saving less for bequest, in addition to the fact that they often are just surviving rather than enjoying modern life. Delineating consumption profiles thus adds a sociological dimension to the economic theory of the life cycle.

We have shown that, in a consumer society such as South Korea, satisfaction with the quality of life appears to be the primary variable that determines both the anticipation of the time remaining to live, which is a subjective variable, and

the arbitrage between consumption and saving, which is translated into concrete economic decisions. Subjectivity is reinforced by the endogenous relationship with the anticipated deviation to national mortality and by consumption profiles, which reflect lifestyles. We thus give a key role to subjectivity with respect to the present and to the future in the economic theory of the life cycle, revealing that socioeconomic variables influence the preference for saving only through them. In this aging society where mortality has decreased and is expected to continue to decrease, the anticipation of survival modifies the arbitrage between consumption and saving.

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# APPENDIX A: SOCIOECONOMIC DETERMINANTS OF VARIABLES ENDOGENOUS TO THE PREFERENCE FOR SAVING

## APPENDIX A.1: ANTICIPATED DEVIATION TO CURRENT SEX-SPECIFIC NATIONAL MORTALITY

In anticipating survival, men are more optimistic than women (men anticipate a lower deviation to the national age-specific life table mortality (coefficient −0.126, SD = 0.018)). As shown in Figure 1b, men anticipate closer to current sex-specific mortality up to age class 70–79, while women underestimate their longevity (controlling for other covariates, notably age and income). After 80 years of age, Figure 1b shows that women are still more pessimistic than men, but both underestimate (or refuse to admit) the risk of mortality, and even more so at 90+ than at 80–89. Table 2 confirms that as people age, they anticipate lower mortality than national mortality (−0.773, SD = 0.047). More children do not change anticipated survival (non-significant 0.041, SD = 0.027), nor does living with a spouse (non-significant −0.242, SD = 0.215). Educated people anticipate higher mortality than those with middle- or high-school education (coefficient −0.050, SD = 0.021). People living in small towns or in rural areas (reference) view them as living longer than those living in a metropolis (0.030, SD = 0.015); city dwellers are in-between (0.016, SD = 0.016): the anonymity of life in metropolis puts one's own survival into a more unattached perspective. People consuming more, apart from medical expenses, anticipate a lower mortality (−0.628, SD = 0.038): *bon vivants*, as the term indicates, divert their thoughts from death. People reporting good health consistently anticipate lower mortality (−0.029, SD = 0.005), as do people living in larger households, which is consistent with the fact that social ties foster optimism. Those out of the labor market are more pessimistic (all other categories significantly negative), as are retirees compared to others.

"Survivors" (people whose preferences are dominated by food) (coefficient −0.242, SD = 0.008, for Type 1) and "hedonists" (−0.262, SD = 0.009, for Type 2) (then two rather individualistic Types) anticipate a longer survival than those favoring education (Type 3) (who invest more in future generations).

## APPENDIX A.2: SATISFACTION WITH THE QUALITY OF LIFE

Satisfaction with the quality of life as a determinant of the preference for saving in (7) is also a dependent variable. Figure 1c shows that, on average and not controlling for other covariates, the satisfaction with the quality of life decreases slowly with age and is lower for women on average after age 60. However, after controlling for other determinants, neither age nor sex is significant (Table 2). The only significant determinants at 5%, apart

from endogenous deviation to mortality and preference for saving, are subjective health and cost of living without medical expenditures: the more healthy people feel (0.109, SD = 0.025) or the more they consume (0.615, SD = 0.172), the more satisfied they are with the quality of life. There is rationality that satisfaction with the quality of life depends only on consumption and subjective health, as if other variables were only circumstances: one can be old, disabled, or isolated, what matters is to feel healthy and afford satisfying one's desires for consumption,

## APPENDIX A.3:  CONSUMPTION PROFILES

Table 4 shows that younger people prefer to spend more on education (Type 3) than on food (Type 1, coefficient 0.68, SD = 0.10, Average Marginal Effect (AME) of age = −0.19 (every additional year reduces the probability that the consumption distribution is of Type 1 of 0.19/(107–45) = 0.3% —45 and 107 are the two extreme recorded ages in KLoSA)) or on eating out, cinema, trips, pocket money, clothing, and housing (Type 2, coefficient 1.35, SD = 0.13, AME of age = −0.13 (every additional year reduces the probability that the consumption distribution is of Type 2 of 0.13/(107–45) = 0.2%)). This is consistent with the descriptive statistic that people in Type 3 are younger (58.4 years old against 66.6 for Type 1 and 70.8 for Type 2), then of the age of still having schooled children. Table 4 also shows that men have a higher preference than women for spending in education (coefficients −0.11 for Type 1 and −0.13 for Type 2, SD = 0.03 and 0.04, AME = −0.02 and −0.01 (then AME = 0.03 for Type 3)), controlling for other covariates. This is also the case of those with a high living cost (−4.41 and −5.24, SD = 0.15 and 0.17, AME = −1.27 and −0.52). The Type-2 hedonistic profile follows the money, as it is the profile of people with higher income (2.60, SD = 0.36, AME = 0.41), with higher household liabilities (0.63, SD = 0.28; AME = 0.07), with more financial assets (3.67, SD = 0.68, AME = 0.33), those not living with a spouse (−0.38, SD = 0.19, AME = −0.02 for those living with a spouse), or owners of their residence (0.92, SD = 0.03; AME = 0.03). Consistently, people with children (−0.14 and −0.30 for Types 1 and 2, SD = 0.05 and 0.97, AME = 0.04 for Type 3) or head of large households (−0.91 and −3.39 for Types 1 and 2, SD = 0.08 and 0.12, AME = 0.26 for Type 3) are found in the Type 3 (altruistic) profile. Transfers from children occur significantly for "survivors" (Type 1) (1.75, SD = 0.37, AME = 1.24), who may benefit from familial help in a situation of economic precariousness. In March 2017, South Korean households whose head was retired counted on family financial transfers for one third of their living costs. In total, 30.4 % of households relied on public benefits, 27.9% on the income of a family member and on family transfer; 27.3% on public pension; 4.2% on private pension or personal savings (Statistics Korea, 2016).

   "Survivors" (Type 1) are more likely to be found in cities and metropolises (0.25 and 0.15, SD = 0.03 and 0.04, AME = 0.05 and 0.02), then "altruists" (Type 3 put to 0 for reference, AME = −0.07), and in third position "hedonists" (Type 2) (−0.39 and −0.23, SD = 0.04 and 0.05, AME = −0.02 and −0.02). The unemployed and those out the labor market are mostly "survivors" (coefficients of all other occupations significant and negative), and wage-earners mostly "altruists" (−0.15 and −0.10 for Types 1 and 2, SD = 0.03 and 0.05; AME = −0.07 and −0.05). Another noteworthy result is that the choice of consumption profiles has no significant association with subjective health, which is consistent with the fact that consumption profiles are definite attitudes toward living rather than moods influenced by current circumstances. Consumption profiles are then determined by socioeconomic variables in a consistent way.