Subjective longevity in Latin America: the cases of Chile and Mexico

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Abstract

Introduction: Assessments on subjective expectations have been extensively used in the economic literature that, since the mid-fifties, has been mainly interested in predicting consumption and saving choices. How to measure these subjective expectations has changed over time. Since the early 1990's economists have shown an increased interest in bringing out probabilistic expectations on relevant personal events directly from survey respondents instead of inferring subjective probability distributions that express expectations from choice data. Probabilistic expectations are attractive because of their potential for allowing inter- and intra-individual responses, for testing internal consistency and external accuracy, and for predicting future outcomes. O**bjective:** The body of research on subjective survival expectations in developing countries is scant and to the best of our knowledge in Latin America is virtually non-existent. For this reason, the main objective of this study is to investigate and compare the determinants of subjective survival expectations as they are stated by individuals aged 50 and over in Mexico and Chile. **Data:** Data for this study was drawn from the 2005 Mexican Family Life Survey and the 2004 Chilean Social Protection Survey. Questions on subjective survival allow eliciting subjective (conditional) probabilities of surviving to a given age in both studies. **Methods:** The determinants of subjective survival probabilities are studied by means of linear regression analysis. Life expectancies are estimated by means of non-linear regression methods. **Preliminary Results:** Preliminary results show that the determinants of subjective survival expectations are consistent for both, Chile and Mexico, with those reported by the literature for the US and Europe. However, there are important differences between survival probabilities and life expectancies, elicited from respondents of the Chilean and Mexican studies. These differences are mainly based on the more pessimistic view of their future survival that Mexican older adults show compared with Chileans.

Introduction

Subjective Expectations

Assessments on subjective expectations have been extensively used in the economic literature that, since the mid-fifties, has been mainly interested in predicting consumption and saving choices (Bassett and Lumsdaine, 2001; Dominitz and Manski, 1997). How to measure these subjective expectations has changed over time. Since the early 1990's economists have shown an increased interest in bringing out probabilistic expectations on relevant personal events directly from survey respondents instead of inferring subjective probability distributions that express expectations from choice data (Manski, 2004). Probabilistic expectations are attractive because of their potential for allowing inter- and intra-individual responses, for testing internal consistency and external accuracy, and for predicting future outcomes (Dominitz and Manski, 1999). The body of research on subjective survival expectations in developing countries is scant and to the best of our knowledge in Latin America is virtually non-existent. For this reason, the main objective of this study is to investigate and compare the determinants of subjective survival expectations as they are stated by older adults in Chile and Mexico.

What does the Literature Say on the Determinants of Subjective Survival Expectations?

Tolor and Murphy stated that "the assessment of one's own life duration is probably a composite, based on at least such factors as one's estimate of normative (actuarial) data, defensiveness against death anxiety, experiences with death in family members or in close friends, the attitudes of family towards death and dying, age, and relative position in the family" (Tolor and Murphy, 1967, p.21). Nelson and Honnold (1980), in accordance with Tolor and Murphy, hypothesized that subjective life expectancy would vary by type of death exposure (death among near relatives) and family size and structure; they also considered in their model the effect of desired

longevity. Notably, neither Tolor and Murphy nor Nelson and Honnold mentioned the effect of health on subjective survival expectations, probably because they were working with young individuals. Different health conditions as well as perceived health seem to have a substantial impact on subjective life expectancy (Hurd and McGarry, 1995; Ross & Mirowsky, 2002). Suffering from some diseases, like cancer or a malignant tumor, largely reduces the subjective survival probabilities of individuals. The literature shows that there are four basic dimensions to be considered when analyzing subjective survival assessments:

Sociodemographic Dimension

Different sociodemographic factors have been studied as possible determinants of the subjective probability of surviving to a target age. Among them, individual's chronological age was consistently found to be associated with subjective survival estimations showing an increasing relationship with the subjective probability of surviving to age 75 (Hurd and McGarry, 1995; Liu et al., 2007) and with subjective life expectancy (Mirowsky, 1997; Ross and Mirowsky, 2002). Results regarding the influence of income and wealth (Benitez-Silva and Ni, 2008; Hurd and McGarry, 1995), education (Hurd and McGarry, 1995; Liu et al., 2007; Mirowsky and Ross, 2000), and marital status (Benitez-Silva and Ni, 2008; Hurd and McGarry, 1995; Liu et al., 2007; Ross and Mirowsky, 2002) on self-reported probabilities of surviving to a target age are somehow less consistent than they are for chronological age. Popham and Michell (2007) found that subjective life expectancy was associated with life-course socio-economic status (SES) after adjusting for self-rated health and smoking status. Those experiencing childhood disadvantages and poor educational attainment had the highest odds of being pessimistic regarding their own survival probabilities. Regarding differences in subjective survival expectations by gender some studies found that men expect a longer life than women do, contrary to actuarial survival

expectations (Finkelstein et al., 2008; Liu et al., 2007; Ross & Mirowsky, 2002). There are several hypothesis trying to explain this "anomaly," as Mirowsky (1999) called it: First, as mortality rates are higher among men than among women, men may think there is more room for decreasing mortality rates among them than among women. Second, they may sense they have higher life expectancy than women do, because in general men show to be in better health than women are (Read and Gorman, 2005). In the same way, their higher SES may suggest to them they have higher life expectancy than actuarial estimates indicate because of the inverse relationship between SES and mortality (Adler et al., 1994; Lynch et al, 2000; Marmot et al., 1984, 1991).

Objective Health and Self-Assessed Health Dimension

As mentioned earlier, health status as well as different health conditions has constantly shown to be predictors of self-reported probabilities of surviving to a target age. For example, Hamermesh & Hamermesh (1983) found that having been diagnosed with a life-threatening illness significantly decreased expected longevity by around four to seven years. It was also observed that individuals revise downwards their perceived survival probabilities upon acquiring adverse health information (Benitez-Silva and Ni, 2008; Liu et al., 2007; Smith et al., 2001a). Much like self-rated health (Idler and Benyamini, 1997), subjective survival was also found to be a significant mortality predictor even controlling for sociodemographic factors and health-related conditions (Elder, 2007; Hurd et al., 1999; Hurd and McGarry, 2002; Smith et al., 2001a). Popham and Michell stated that self-rated life expectancy "may capture something other than simply current health conditions" (Popham and Michell, 2007, p. 62). However, subjective survival expectations seem not to capture future health information that is present in subjective health expectations. Younger cohorts seem to be more pessimistic on their future health than

what may be expected from constructed health tables (Jung, 2008). It was suggested that self-predicted probability of survival and self-rated health may be conceptually related but they are not the same and they seem to have independent effects on mortality predictions (Hurd and McGarry, 1995; Siegel et al., 2003).

Health-related Behaviors Dimension

Individuals seem to be aware also of the relationship between their health-related behaviors and their future survival expectations. For example, smoking is consistently found to be negatively associated with subjective survival estimations (Hamermesh and Hamermesh, 1983; Hurd and McGarry, 1995; Ross and Mirowsky, 2002). Interestingly enough, Balia (2007) identified two groups of smokers. One of them seemed to attribute less damaging effects of smoking on health and mortality, the group being composed of "hard-core smokers." The second group, that was less frail and less addicted than the first one, on the contrary, seemed to be more rational assessing health status and survival probabilities regarding the consequences of smoking. The author concluded that the heavy smokers, who were in general older than the others, might have believed that they did not have time left for smoking to affect their mortality risk. For alcohol drinking, Hurd and McGarry (1995) found that moderate drinking was associated with higher survival probabilities to ages 75 and 85 than the survival probabilities for complete abstinence. The opposite was true for heavy drinking (five or more glasses per day) relative to complete abstinence. However, heavy drinkers as smokers seem to be optimistic regarding their survival chances relative to observed mortality outcomes (Hurd, 2009). Regarding physical activity, it does not show a clear relationship with mortality expectations (Hamermesh and Hamermesh, 1983; Hurd and McGarry, 1995; Ross and Mirowsky, 2002).

Death Experience Dimension

As Tolor and Murphy (1967) hypothesized, longevity of parents has been shown to have an important influence on individuals' survival expectations (Liu et al., 2007; Hurd and McGarry, 1995; Ross and Mirowsky, 2002). Hamermesh (1985) suggested that individuals base their subjective life expectancies in an unreasonable manner on their relatives' longevity, especially their parents' and grandparents' longevity. Hurd and McGarry (1995) stated that, as genetic factors help to determine subjective longevity, parental age and parental age at death are used as genetic predisposition markers. Ross and Mirowsky (2002) pointed out that when making longevity estimations people may look to their family history to determine their genetic stock. They added that for this purpose individuals mostly take into account same-sex parent's survival history.

Data, Measures, and Methods

Data

Data for this project was drawn from the Chilean 2004 Social Protection Survey[3] (SPS) and the 2005 Mexican Family Life Survey[4] (MxFLS). The SPS is a longitudinal survey with nationally representative and a stratified sampling, and cluster. The 2004 SPS is the follow-up study of the original 2002 SPS study for individuals 15 years old and over who were affiliated to the Chilean pension system. The 2004 SPS only includes individuals aged 18 and over were they affiliated or not to the pension system. The 2004 SPS sample is composed of 17,000 individuals, 940 of whom were new participants, 2,860 unaffiliated and 13,200 affiliated to the national pension system.

[3] Encuesta de Protección Social (EPS). For more information, see: http://www.previsionsocial.gob.cl/subprev/?page_id=7185

[4] Encuesta Nacional sobre Niveles de Vida de los Hogares (ENNViH). For more information, see: http://www.ennvih-mxfls.org/en/mxfls.php?seccion=1&subseccion=1&session=

The MxFLS is a longitudinal survey, multidimensional and multi-thematic with a probabilistic design, stratified, multistage and cluster with national, urban, rural and regional representation of the Mexican population. The 2005 MxFLS is composed 39,000 individuals based on the original 2002 MxFLS sample of 8,440 households with 35,000 individuals from 150 communities in Mexico.

Measures

Subjective Survival Expectations in the SPS and the MxFLS studies

Self-Reported Probability of Surviving to a Target Age

In the 2004 SPS, the question on subjective survival probabilities changes the target age as follows: “Using a 0 to 100 scale where "0" means there is absolutely no chance, and "100" means that it is absolutely certain:

- What are your chances to live to age 65” (individuals aged 50-65)
- What are your chances to live to age 75” (individuals aged 65-74)
- What are your chances to live to age 85” (individuals aged 75-84)
- What are your chances to live to age 100” (individuals aged 85+)

The MxFLS asks the survival probability question only to individuals aged 50-74 and it takes the following form: “To make it easier, we will use a scale from 0 to 100, where 0 is ‘impossible’ and 100 is ‘completely sure’ that it can happen,

- How probable is that you will live until 75 years of age?”

Determinants of Subjective Survival Probabilities

In order to study the determinants of the subjective survival probability of reaching a given age, we considered the aforementioned four dimensions (Sociodemographic, Health Status, Health-

related Behaviors, and Death Experience). The set of variables included in each dimension are described below:

1. Sociodemographic Dimension

Individuals' age, sex, education, and marital status are the sociodemographic factors shown by the literature as influencing subjective probabilities of surviving to a target age that are included in this dimension. Sex is included in the analysis as the dichotomous variable Female. Marital Status takes into account four categories: Married/Cohabiting, Separated/Divorced, Widowed, and Single. Regarding education, four educational categories were considered: No Formal Education, Incomplete Primary School, Complete Primary School, and More than Primary Education. Age is defined as a continue variable.

2. Health Dimension

In order to assess the relationship between health status and subjective survival expectations the health dimension includes measures of subjective physical health status, diagnosed diseases, physical functioning. Self-assessed physical health status was defined as a four-category variable: Excellent/Very Good/Good (or Very Good/Good),[5] Fair, and Poor/Very Poor. Besides the self-assessed physical health, this dimension includes an Index of Self-Reported Chronic Conditions (diabetes, cancer, heart disease, and hypertension).[6] This dimension also includes an Index of Physical Functioning.[7] The Index of Physical Functioning

[5] The Chilean study asks respondents to define their health as Excellent, Very Good, Good, Fair, Poor, or Very Poor while the Mexican study asks respondents to define their health as Very Good, Good, Fair, Poor, or Very Poor.

[6] This is weighted index defined following Charlson et al. (1987).

[7] The instruments used to measure physical functioning differ between studies. The Chilean study asks respondents about difficulties walking long distances, climbing stairs, dressing, exercising, eating, bathing, and getting into and out bed. While the Mexican study asks respondents about difficulties walking long distances, climbing stairs, dressing, lifting heavy objects, bending, getting to the standing position if sitting on a chair, going to the toilet, and getting to a standing position while lifting an object from the floor. Therefore we used different variable definitions for testing models that include the health dimension.

is a dichotomous variable indicating whether or not the respondent can perform without difficulties at least 85% of the functions described in each of the studies respectively.[8]

3. Health-related Behaviors Dimension

The health-related behaviors included in this dimension are smoking and practicing physical activities. It also includes and indicator on body weight status.[9] Smoking and practicing physical activities are taken into account by means of two dichotomous variables indicating whether the respondent is currently a smoker and whether he or she practices physical activities on regular bases.[10]

4. Death Experience Dimension

Both studies provide parental mortality data. Respondents were asked whether their parents were still alive. Only MxFLS respondents were also asked about the current age of their parents, both father and mother's age, if they were still alive and, the age at death if they were not.

Methods

The determinants of subjective survival probabilities are studied by means of linear regression analysis where the dependent variable is Self-Reported Probability of Surviving to a Target Age. Due to differences in the wording of the questions according to the age of respondents, we only consider individuals aged 65 to 74. In this age range both studies share the same target age: 75

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[8] The index was constructed rescaling the total amount of positive answers (no difficulties) from 0 to 100.

[9] Body weight status is defined according the WHO cut-off points for BMI (Body Mass Index= $weight\ (in\ kg)/(height\ (in\ m))^2$): Underweight (BMI<18.5), Normal Weight (18.5≤BMI<25), Overweight (25≤BMI<30), Obese Class I (30≤BMI<35), Obese Class II (35≤BMI<40), Obese Class II (BMI ≥40).

[10] Here again due to difference in the instruments used by the studies according to the information offered by each one we constructed dichotomous variables stating whether respondents practice any type of physical exercise on regular bases.

years. Different models were constructed in a nested fashion following the dimensions listed earlier, one for each dimension. However, instead of the four expected models we only evaluated three models for both studies. This decision is due to the huge amount of missing data that the Chilean study has for the survival of the parents' question.[11] The Mexican study allowed not only the inclusion of the fourth dimension but also a greater variety of variables, compared with the Chilean one, in the health dimension. For example, the Mexican study includes an instrument for measuring the severity of depression symptoms[12] while the Chilean study only asks whether the respondent was ever diagnosed with a mental disease. Therefore for the Mexican study we constructed two additional models. One, including another set of variables in the health dimension and other, including the aforementioned death experience dimension. Life expectancies are estimated by means of non-linear regression methods.

Preliminary Results

Graph 1 shows that although the conditional subjective survival probabilities for both males and females, Chileans and Mexicans, increase with age, subjective survival expectations for Chileans are much higher than for Mexicans. It also shows that Chilean females unlike Mexican females, report, as expected, subjective probabilities of surviving to age 75 that are significantly greater than those reported by males.

Tables 1 and 2 describe the analytical sample composition for males and females of both surveys, the Chilean SPS and the Mexican MxFLS respectively. In relation to the Health Dimension, differences between males and females in the Chilean sample are mainly regarding

[11] 87.9% for males and 70.3% for females in the age range 65-74 (87.5% and 66.1% for males and females respectively in the age range 50-64).

[12] The Mexican study uses a questionnaire aimed to simplify the diagnosis of depression (Calderón, 1997). Depressed individuals may manifest a greater pessimism than non-depressed ones. It was shown that depressed individual are less likely than non-depressed ones to predict that their own future outcomes would be more positive than future outcomes of similar others (Alloy and Ahrens, 1987).

the prevalence of hypertension, difficulties walking long distances and dressing themselves. These prevalence that are higher for females than for males are reflected in the Index of Chronic Conditions, where the prevalence of having zero chronic conditions is lower for females than for males. The Index of Physical Functioning shows that the percentage of individuals with less functioning limitations is lower for females than for males. Regarding the Mexican sample, the percentage of those who report not having hypertension, diabetes, and heart disease is lower for males than for females. Results for males compared to females with respect to the Index of Chronic Conditions, difficulties walking and climbing stairs, as well as for the Index of Physical Functioning are similar to those obtained for Chilean sample. Table 2 shows that for males and females the prevalence of self-reported hypertension and heart disease is higher in the Chilean sample than in the Mexican one. No statistical significant differences were found regarding diabetes. Consistently, for both males and females the percentage of individuals with no chronic conditions is higher among individuals in the Mexican study. On the contrary, the percentage of males and females reporting difficulties walking long distances and climbing stairs is higher among those in the Mexican sample. Another important difference between samples is found in the Sociodemographic Dimension where individuals with no formal education is more prevalent among those in the Mexican sample.

Tables 3 and 4 show Models A, B, and C including the Sociodemographic, Health, and Health-Related Behaviors dimensions in a nested way for Chile and Mexico, respectively. In general, all variables included in each dimension have the expected sign for both samples. However, there are differences between samples. In accordance with Figure 1, the coefficient associated with sex, although in the expected direction is not statically significant for the Mexican sample, and only at the 10% level for the Chilean one. Age is highly significant in both

cases, although its contribution explaining the dependent variable seems to be greater for the Chilean case. The coefficients related to education are also as expected, however only for the Mexican case having no formal education, compared with having completed primary school, significantly decreases subjective survival expectations. Regarding marital status, only among individuals in the Chilean sample the coefficients associated with being separated/divorced, widowed or single, as compared with being married/cohabiting, have the expected negative sing although they are not statistically significant. On the contrary, among individuals in the Mexican sample only the coefficient associated with being widowed has the expected sing although it is not statistically significant. More surprising is the coefficient associated with being separated/divorced, which not only has a sign that is in the opposite expected direction but it also is statistically significant at the 5% level. This last result needs more insight.

Regarding the Health dimension, self-rated regular and bad/very bad health, compared with excellent/very food/good health, as expected, significantly decrease subjective survival probabilities among individuals in both samples, although their contribution explaining the dependent variable seems to be greater for the Chilean sample. The coefficients associated with indexes of Chronic Conditions and Physical Functioning have the expected sign for both samples. However, only among individuals in the Mexican sample they are statistically significant (at the 10% and 0.1% level, respectively).

With respect to the variables included in the health-related behaviors dimension, the coefficients associated with BMI are in the expected direction only among individuals in the Chilean sample. However, only being obese, as compared with having normal weight, significantly decreases subjective survival probabilities of reaching age 75. Among individuals in the Mexican sample, these coefficients do not have the expected sign (negative). Moreover, the

coefficient associated with being obese (where the category obese is composed of the categories obese classes I, II, and III) is statistically significant at the 10% level. The coefficients associated with being a current smoker and practicing physical exercises on regular bases have the expected sign for the variables in the Mexican sample although they are not statically significant. However, among individuals in the Chilean sample, although these coefficients also lack statistical significance, they are in the opposite direction. That is to say, the coefficient associated with being a current smoker is positive (increasing subjective survival expectations) and the one associated with practicing exercises is negative (decreasing subjective survival expectations).

We estimated subjective life expectancy at birth(se_0) by means of non-linear regression analysis fitting a logistic survival function. Results show that $e_0 = 77.2$ and $e_0 = 79.1$ for Chilean males and females respectively and $se_0 = 74.9$ and $se_0 = 75.0$ for Mexican males and females respectively.

Discussion

The main objective of this study is to investigate and compare the determinants of subjective survival expectations as they are stated by older adults in Chile and Mexico. Preliminary results show that the determinants of subjective survival expectations are consistent for both, Chile and Mexico, with those reported by the literature for the US and Europe. However, there are differences between survival probabilities and life expectancies elicited from respondents of the Chilean and Mexican studies.

As mentioned earlier, there are several differences in how questions were asked in both studies. To be sure that the definition used for the index of physical functioning was not affecting the results for Chile, we run the models with different definitions for this index. There were no significant changes in the results. Moreover, we run the models not using an index but with a set

of dummy variables, one for each of the questions asked in the study that were part of the index. Except for having difficulties walking and climbing stairs none of the other dummies were statistically significant. However, the coefficients related with these variables were in opposite directions, positive the one associated with walking long distances and negative the one associated with climbing stairs (both significant at the 5% level). These two results could be affecting the lack of significance of the coefficient related to the physical functioning index. Regarding the unexpected result for climbing stairs it may be due to way the question was asked.

Also for the Chilean sample and regarding the index of chronic conditions, testing separately the four conditions that comprised the index we found that although the coefficients associated with each of them were in the expected direction (except for cancer, but this result may be due to the very small prevalence of the condition in the sample) none of them were statistically significant. The unexpected opposite signs for the coefficients associated smoking and exercising may be related to the age of respondents, particularly for being a current smoker. It is possible that respondents who survived to age 65 and more and are smokers think that they are already too old for them to be affected by smoking. Changing the age range to 50 to 64 years and testing the determinants of subjecting survival to age 65 results were somehow different, although still not significant the coefficient related to being a current smoker is in the expected negative direction. Running Model C using, instead of the dichotomous variable for being or not a current smoker, a variable of intensity of smoking gave a more startling result. Individuals smoking two to four packs of cigarettes per week significantly increased their subjective survival expectations (at a 0.1% level) as compared with those currently smoking zero to one pack per week. The coefficients for the other categories (smoking one to two and more than four packs

per week) although not statistically significant were in the same direction. These last two results gives us more confidence on the interpretation given to sign of the smoker coefficient.

An important property of self-reported probabilities of any kind is the high frequency of what Hurd and McGarry (1995) called "focal-point responses." A focal-point response is found when the answer given to the question regarding the respondents' beliefs on the probability of occurrence of any given future event corresponds to a probability of zero, one half, or one. Focal point responses are not rare; on the contrary, surveys usually show a fair amount of them in response to questions on subjective expectations that allow numerical scale answers.[13] One of the problems with the fifty percent chance responses is the difficulty, or impossibility, of distinguishing if they are the respondents' expression of the belief that their chances are fifty percent (Gärdenfors and Sahlin, 1982) or of the inability to express their beliefs in a probabilistic manner (Fischhoff and Bruine de Bruin, 1999). A fifty percent response may allow uncertain respondents to answer a question numerically instead of giving a "don't know" answer (Bruine de Bruin et al., 2000). Balia (2007) states that, under the rationality assumption, an individual who is uncertain would consider his or her chances to live until a target age or die before it to be equal and therefore give the fifty percent answer. For testing the sensitivity of the results to focal-point answers we run different models, particularly omitting answers that represented 0.5 probabilities of surviving to age 75. Results did not differ in any quantitative or qualitative way.

Results obtained for life expectancy at birth are pretty accurate compared with 2000-2005 UNPD published estimates.[14] The UNPD World Population Prospective estimated life

[13] Among individuals in the Chilean study the distribution of focal-point responses is as follows: 0% chance of surviving to age 75, 1.69% and 1.34%, 50% chance, 16.49% and 13.28%, and 100% chance, 51.17% and 49.70%, for males and females respectively. Among individuals in the Mexican study the distribution is: 0% chance 5.08% and 4.82%, 50% chance, 36.30% and 33.49%, and 100% chance, 8.89% and 8.97% for males and females respectively.

[14] http://data.un.org/Data.aspx?d=GenderStat&f=inID%3A37

expectancy at birth (e_0) of 75 and 81 for Chilean males and females respectively. While $e_0 = 75$ and $e_0 = 81$ for Mexican males and females respectively. In both cases, males overestimate their future life expectancy (around two and three years Chilean and Mexican males respectively) while females underestimate it (around two years both Chilean and Mexican females). Excluding focal-point answers do not yield significant different results.

Conclusions

Survival expectations are responses to questions about probabilities of surviving age that could be attained in the future by respondents. Work on survival expectations is relatively new and part of a larger literature on individual expectations (Manski, 2004). Its importance has been growing rapidly as researchers uncover patterns, determinants and remarkable consistency with individual health status and changes thereof (Liu et al., 2007), past and current health-related behaviors (Falba & Busch, 2005; Khwaja et al., 2006 and 2007, Scott-Sheldon et al. 2010), experiences of health shocks and individual self-reported health (Smith, Taylor, & Sloan, 2001).

The topic of subjective survival expectations has seldom been addressed for Latin American countries. Results obtained in the present study highlight the need of a better understanding of how individuals estimates their survival expectations.

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Figures and Tables

Figure 1 Subjective Survival Expectations – Linear Predictions (95% CI)

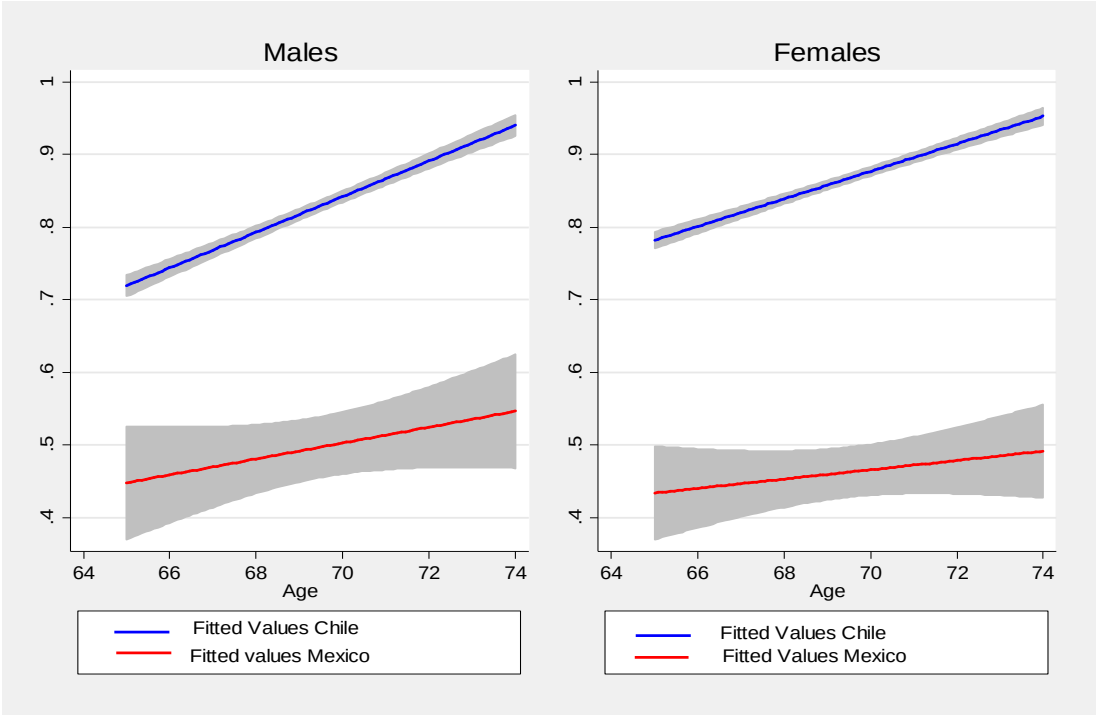

Table 1 Chile: Social Protection Survey (SPS) 2004 - Descriptive Statistics

	Males	N	Females	N	a
Age Group (%)					
65-70	55.53	296	56.04	246	
70-75	44.47	237	43.96	193	
Education (%)					
Primary Incomplete	45.78	244	48.06	211	
Primary Complete	24.20	129	20.27	89	
More than Primary	19.70	105	18.00	79	
No Formal Education	10.32	55	13.67	60	
Marital Status (%)					
Married/Cohabiting	73.73	393	43.51	191	***
Separated/Divorced	6.00	32	6.61	29	
Widowed	11.82	63	33.26	146	*
Single	8.44	45	16.63	73	
Self/Rated Health (%)					
Excellent/Very good/ Good	41.46	221	31.21	137	†
Regular	43.53	232	46.67	204	
Bad/Very bad	15.01	80	22.32	98	
Diabetes (%)					
Yes	12.38	66	14.58	64	
No	87.62	467	85.42	375	
Hypertension (%)					
Yes	35.27	188	56.04	246	***
No	64.73	345	43.96	193	***
Heart Disease (%)					
Yes	13.32	71	10.71	47	
No	86.68	462	89.29	392	
Cancer (%)					
Yes	2.81	15	2.96	13	
No	97.19	518	97.04	426	

	Males	N	Females	N	a
Index of Chronic Conditions (%)					
0	50.66	270	38.50	169	*
1	37.15	198	42.37	186	
2	9.94	53	15.49	68	
3	2.25	12	3.64	16	
Difficulties Walking (%)					
Yes	8.63	46	16.40	72	
No	91.37	487	83.60	367	**
Difficulties Climbing Stairs (%)					
Yes	6.38	34	12.98	57	
No	93.62	449	87.02	382	
Difficulties Dressing (%)					
Yes	2.44	13	3.87	17	
No	97.56	520	96.13	422	**
Index of Physical Functioning (%)					
Yes	12.20	65	21.41	94	
No	87.80	468	78.59	345	**
Exercise (%)					
Yes	16.89	90	11.62	51	
No	83.11	443	88.38	388	*
Body Mass Index (%)					
Normal	36.21	193	36.45	160	
Underweight	1.69	9	1.14	5	
Overweight	46.53	248	35.54	156	*
Obesity class I	11.44	61	17.08	75	
Obesity class II/III	4.13	22	9.79	43	
Current Smoker (%)					
Yes	14.26	76	5.92	26	
No	85.74	457	94.08	413	*

a: Difference in proportions between males and females. Statistical significance : †: p<0.1; *: p<0.05; **: p<0.01; ***: p<.001

Table 2 Mexico: Mexican Family Life Survey (MxFLS) 2005 - Descriptive Statistics

	Males	N	b	Females	N	a	b
Age Group (%)							
65-70	56.73	276		59.19	322		
70-75	43.32	211		40.81	222		
Education (%)							
Primary Incomplete	48.46	236		43.01	234		
Primary Complete	10.06	49	*	13.24	72		
More than Primary	9.03	44		5.51	30		†
No Formal Education	32.44	158	*	38.24	208		*
Marital Status (%)							
Married/Cohabiting	77.21	376	*	54.60	297	***	*
Separated/Divorced	5.54	27		5.88	32		
Widowed	12.53	61	**	33.64	183	**	
Single	4.72	23	†	5.88	32		
Self/Rated Health (%)							
Very good/ Good[1]	34.70	169		31.62	172		
Regular	56.26	274	**	58.64	319		*
Bad/Very bad	9.03	44		9.74	53		†
Diabetes (%)							
Yes	13.76	67		21.36	116		
No	86.24	420		78.64	427	**	
Hypertension (%)							
Yes	14.17	69	**	25.37	138	†	***
No	85.53	418	***	74.63	406	**	***
Heart Disease (%)							
Yes	4.52	22		7.90	43	*	*
No	95.48	465	***	92.10	501	**	***
Cancer (%)							
Yes	0.41	2		1.65	9		
No	99.59	485	*	98.35	535	†	

	Males	N	b	Females	N	a	b
Index Chronic Conditions (%)							
0	73.31	357	***	57.17	311	***	**
1	21.36	104	*	32.17	175	†	*
2	4.52	22		7.90	43		
3	0.82	4		2.76	15		
Difficulties Walking (%)							
Yes	28.61	307	†	55.66	747	***	***
No	71.39	766	***	44.34	595	***	***
Difficulties Climbing Stairs (%)							
Yes	17.61	189		31.74	426	**	*
No	82.39	884	***	68.26	916	***	***
Difficulties Dressing (%)							
Yes	6.80	73		8.79	118		
No	93.20	1000	*	91.21	1224	†	*
Index of Physical Functioning (%)							
Yes	22.27	239	†	48.21	647	***	***
No	77.23	834	***	51.79	695	***	***
Exercise (%)							
Yes	9.97	107		8.49	114		
No	90.03	966	**	91.51	1228		†
Body Mass Index (%)							
Normal	27.40	294	*	20.64	277	†	**
Underweight	1.49	16		1.04	14		
Overweight	44.45	477		36.96	496	*	
Obesity class I	22.09	237	†	26.01	349		
Obesity class II/III	4.59	49		15.35	206	*	
Current Smoker (%)							
Yes	18.08	194		4.10	55		†
No	81.92	879		95.90	1287	***	

a: Difference in proportions between males and females. b: Difference in proportions between Chile and Mexico. Statistical significance : †: p<0.1; *: p<0.05; **: p<0.01 ***: p<.001

Table 3 OLS Models: Chile - Determinants Subjective Survival to Age 75

	Model A			Model B			Model C			Model C Standardized
	Coef.		**SE**	**Coef.**		**SE**	**Coef.**		**SE**	**Coef.**
Female (Ref. Male)	0.0145		0.0174	0.0340	*	0.0170	0.0296	†	0.0173	0.0571
Age (Years)	0.0155	***	0.0028	0.0176	***	0.0027	0.0182	***	0.0028	0.2092
Education (Ref. Complete Primary)										
Primary Incomplete	-0.0113		0.0210	-0.0142		0.0203	-0.0142		0.0203	-0.0230
More than Primary	0.0389	†	0.0223	0.0048		0.0220	0.0130		0.0223	.01972
No formal Education	-0.0303		0.0267	-0.0211		0.0259	-0.0223		0.0261	-0.0279
Marital Status (Ref. Married/Cohabiting)										
Divorced/Separated	-0.0077		0.0341	-0.0106		0.0334	-0.0108		0.0333	-0.0102
Widowed	-0.0051		0.0216	-0.0152		0.0209	-0.0170		0.0209	-0.0271
Single	-0.0095		0.0262	-0.0151		0.0253	-0.0095		0.0255	-0.0121
Self-Rated Health (Ref. Excellent/Very Good/Good)										
Regular				-0.0816	***	0.0184	-0.0821	***	0.0185	-0.1584
Bad/Very Bad				-0.1930	***	0.0251	-0.1917	***	0.0253	-0.2874
Index Chronic Conditions (Range 0-3)				-0.0054		0.0109	-0.0083		0.0110	-0.0254
Index Physical Functioning (Ref. More than 85%)				-0.0077		0.0227	-0.0101		0.0227	-0.0146
BMI (Ref. Normal Weight)										
Underweight							-0.0043		0.0674	-0.0199
Overweight							-0.0030		0.0181	0.0058
Obese							-0.0490	*	0.0224	0.0769
Smoker (Ref. No)							0.0171		0.0265	0.0204
Exercises (Ref. No)							-0.0209		0.0230	-0.0287
Constant	-0.2808		0.1942	-0.3679	†	0.1898	-0.4181	*	0.1925	-
N	972			972			972			
R^2	0.0358			0.1055			0.1123			
Prob>F	0.0000			0.0000			0.0000			
Log-likelihood	-44.919			-8.454			-4.736			
AIC	107.838			42.908			45.472			
BIC	151.752			106.340			133.301			

***: p<0.001; **: p<0.01; *: p<0.05; ł: p<0.1

Table 4 OLS Models: Mexico - Determinants Subjective Survival to Age 75

	Model A			Model B			Model C			Model C Standardized
	Coef.		**SE**	**Coef.**		**SE**	**Coef.**		**SE**	**Coef.**
Female (Ref. Male)	-0.0208		0.0182	0.0047		0.0188	0.0011		0.0194	0.2185
Age (Years)	0.0091	**	0.0031	0.0110	***	0.0031	0.0109	***	0.0031	0.1084
Education (Ref. Complete Primary)										
Primary Incomplete	0.0544	†	0.0287	0.0477	†	0.0282	0.0396		0.0284	0.0451
More than Primary	0.0566		0.0351	0.0352		0.0347	0.0277		0.0354	0.0252
No formal Education	-0.0492	*	0.0196	-0.0421	*	0.0195	-0.0390	*	0.0196	-0.0660
Marital Status (Ref. Married/Cohabiting)										
Divorced/Separated	0.0846	*	0.0270	0.0775	*	0.0374	0.0771	*	0.0374	0.0633
Widowed	-0.0270		0.0218	-0.0275		0.0215	-0.0287		0.0215	-0.0430
Single	0.0170		0.2190	0.0093		0.0389	0.0046		0.0389	0.0037
Self-Rated Health (Ref. Excellent/Very Good/Good)										
Regular				-0.0315	†	0.0191	-0.0318	†	0.0191	-0.0556
Bad/Very Bad				-0.1317	***	0.0327	-0.1334	***	0.0327	-0.1376
Index Chronic Conditions (Range 0-3)				-0.0206		0.0129	-0.0247	†	0.0131	-0.0607
Index Physical Functioning (Ref. More than 85%)				-0.0693	***	0.0192	-0.0683	***	0.0192	-0.1166
BMI (Ref. Normal Weight)										
Underweight							0.0847		0.0593	0.0442
Overweight							0.0089		0.0208	0.0152
Obese							0.0435	†	0.0229	0.0681
Smoker (Ref. No)							-0.0122		0.0320	-0.0119
Exercises (Ref. No)							0.0604		0.0388	0.0492
Constant	-0.1261		0.2175	-0.2016		0.2175	-0.2092		0.2185	-
N	1,031			1,031			1,031			
R^2	0.0338			0.0717			0.0790			
Prob>F	0.0000			0.0000			0.0000			
Log-likelihood	-143.555			-122.944			-118.851			
AIC	305.110			271.888			273.702			
BIC	349.554			336.086			362.591			

***: p<0.001; **p<0.01; *p<0.05; ŧp<0.1