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Subjective Well-Being in the Southern Cone: Health, Income and Family.

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Abstract

The happiness literature provides evidence on various factors, other than money, that do seem to contribute to individual happiness. As one explores the produced "happiness economics" literature, it is direct to understand the difficulty to find proper information on developing countries reality. In our analysis we investigate the relationship between income, family composition, health and religion over subjective well-being in the Southern Cone (Argentina, Chile and Uruguay). Specifically, we analyze data from the SABE survey a study conducted among people who are 60 years old or over, in various Latin American countries. Main obtained results show a positive correlation between higher levels of income and health, being married and the frequent religion practice and higher levels of subjective well-being. On the contrary, malnutrition has a negative impact on happiness indicators. In order to add robustness to our results and to deal with endogeneity issues, this paper uses different indicators of well-being, alternative estimation models such as a semiparametric one and a propensity score approach for the treatment of marriage.

JEL classification: I31, I10, J14, J12

Keywords: well-being, happiness, elderly, health, family; Latin America

Resumen

La literatura económica sobre felicidad provee evidencia sobre diversos factores, además de dinero, que contribuyen a la felicidad individual. En nuestro análisis investigamos la relación entre los ingresos, composición familiar, la salud y la religión sobre el bienestar subjetivo en el Cono Sur (Argentina, Chile y Uruguay). En concreto, se analizan los datos de la encuesta SABE estudio realizado entre las personas que tienen 60 años o más, en varios países de América Latina. Los principales resultados obtenidos muestran una correlación positiva entre los niveles más altos de ingresos y la salud, estar casado y la práctica religiosa con mayores niveles de bienestar subjetivo. Por el contrario, la malnutrición tiene un impacto negativo en los indicadores de felicidad. Con el fin de añadir solidez a nuestros resultados y hacer frente a cuestiones de endogeneidad, en este documento se utilizan diferentes indicadores de bienestar y distintos modelos alternativos de estimación.

JEL classificación: I31, I10, J14, J12

Palabras claves: bienestar, felicidad, adulto mayor, salud, familia, Latinoamérica.

1. Introduction

The happiness literature is guided by the interest in identifying the factors that contribute to individual subjective well-being. In recent years, economists have devoted an increasing amount of effort to understand the impact of individual, social and economic factors on subjective well-being. As Clark, Frijters and Shields (2006) state "Studying the causes and correlates of human happiness has become one of the hot topics in economics over the last decade, with both the size and depth of the literature increasing at an exponential rate (Kahneman and Krueger, 2006). To illustrate, a search of ECONLIT for journal articles with either ''Happiness'', ''Life Satisfaction'' or ''Well-being'' in the title, identifies 465 published articles between 1960 and 2006. Of these 363 (78%) have been published since 1995, 285 (61%) have been published since 2000 and one-third of the literature (37%, or 173 articles) has appeared in print in just the last three years."[1]

As one explores the produced "happiness economics" literature, it is direct to understand the difficulty to find proper information on developing countries reality. This is explained by the lack of data availability on these specific issues. Our work is based in the analysis of data gathered in a survey known as SABE ("Salud, Bienestar y Envejecimiento": Health, Well-being and Aging). The survey was conducted in the years 1999-2000 by the Pan American Health Organization in seven cities of Latin America and the Caribbean: Bridgetown, Barbados; Buenos Aires, Argentina; Havana, Cuba; Mexico City, Mexico; Montevideo, Uruguay; Santiago, Chile; and São Paulo, Brazil. The SABE collected detailed information about health and well-being among individuals of age 60 or more.

In this paper, we follow a commonly adopted strategy for subjective well being measurement. Following Larsen et al. (1985) and Krueger et al. (2007), we identify subjective well-being with the concept of "satisfaction with life in general". As Krueger (2007) observes, subjective well-being is most commonly measured by asking people a single question, such as, "All things considered, how satisfied are you with your life as a whole these days?" or "Taken all together, would you say that you are very happy, pretty happy, or not too happy?".

As we use "satisfaction with life" information, we acknowledge that care must be applied when interpreting results. As Kahneman (2006) suggests: "the standard survey questions on global life satisfaction may induce a form of "focusing illusion" by drawing people's attention to their relative standing in the distribution of material well-being, exaggerating their happiness or distress. People do not know how happy or satisfied they are with their life in the way they know their height or telephone number". The answers to global life satisfaction questions are constructed only when asked, and are therefore more susceptible to the focusing of attention on different aspects of life.

2. Background

"Happiness economics" literature developed and tested different hypotheses about the possible determinants of satisfaction with life or happiness. Economists have examined the relationship between happiness and different individual and socioeconomic variables: age; gender; income and education levels; employment status; health; marital status and family composition, for example. Additionally, various studies have focused the attention on analyzing the impact of social (or aggregate) variables on individual well-being: inequality; the quality of "institutions"; specific macroeconomic variables (GDP growth, inflation); corruption and crime perceptions, among others.

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[1] For more information on "hapiness economic", please refer to the surveys by Di Tella and MacCulloch, (2006), Frey and Stutzer (2002), Layard (2005), Ferrer-i-Carbonell (2004).

The analysis of the relationship between income levels and happiness has – particularly – attracted many people for one reason: there is vast evidence indicating that differences in income explain only a low proportion of the differences in happiness among persons. Analyzing income as a possible determinant, Kahneman (2006) states that, though most people believe that they would be happier if they were richer, survey evidence on subjective well-being is largely inconsistent with that belief. While reported life satisfaction and household income are positively correlated in a cross-section of people at a given time, surveys show that global judgments of life satisfaction or happiness have not changed, on average, much over the last four decades, in spite of large increases in real income per capita. This result has been confirmed in different countries like Japan, Belgium, the UK and the US.

Easterlin (2001) observes that over the life cycle, aspirations grow along with income, and undercut the favourable effect of income growth on happiness. People think they were less happy in the past and will be happier in the future, because they project current aspirations to be the same throughout the life cycle, while income grows. But since aspirations actually grow along with income, experienced happiness is systematically different from projected happiness.

Alesina et al. (2004) studied the effect of the level of inequality in society on individual well-being and found that individuals have a lower tendency to report themselves happy when inequality is high, even after controlling for individual income and a large set of personal characteristics.

The happiness literature provides evidence on various factors, other than money, that do seem to contribute to happiness of individuals. It is generally observed that stable family life, being married, health, having religious faith, feelings of living in a cohesive community where people can be trusted, and good governance contribute to happiness. Chronic pain, divorce, unemployment and bereavement detract from happiness. In our paper we will explore the relationship between income, family composition, health and religion over subjective well-being. In our work, we analyze the happiness relationships for the Southern Cone region of South America (Argentina, Chile and Uruguay). In our analysis we also aim to explore the potential common pattern that individuals in these three countries may show.

3. Data

We use cross-sectional microeconomic data from the SABE Survey which includes socio-economic and subjective well-being information of elderly people (60 years old or above). The SABE survey was conducted between 1999 and 2000. In the present study we focus attention on the cases of Argentina, Chile and Uruguay. The total sample size for this three countries is 3784 observations (Argentina: 1039; Chile: 1301; Uruguay: 1444).

3.1 The dependent variable

In our work we follow two different paths to define the dependent variable. On one hand, we use a binary indicator of well-being which is available since the survey includes the question: "In the most time of the past two weeks, have you been satisfied with your life?". Possible answers are only "yes" or "no". On the other hand, in order to seek for nuances or different grades of satisfaction we built an index based on answers to twelve available questions which also are related with well-being ("In the past two weeks, have you felt that your life has no sense?"; "Have you been bored frequently?"; "Have you felt happy most time?"; "Have you thought that it is marvellous to be alive?", etc.) "). Thus, this index takes the integer values from 0 to 12, where superior values indicate greater life satisfaction (we expressed this

index in percentage terms in the estimation). As can be observed in Figure 1, less than forty percent of the sample has a "complete" happiness.

[Insert Figure 1]

3.2 Regressors seeking to explain well-being

In this study we focus in four groups of explanatory variables (see Table 2).

The first group of explanatory variables is related to various indications of "Health Status": *Absolute Bad Health Index*, which is based in two questions about current health status; *Relative Bad Health Index, a variable* related to the subjective health status in comparison with people with the same age; *Ill-nourished,* a binary variable that takes value 1 if the person considers the individual has been ill-nourished (the question is related to the time when the person was below 15 years of age); *Nervous System Problems:* a binary variable that takes value 1 if the individual indicated that a specialist told him that he had nervous system or psychiatric problems.

The second group relates to "Income". In this section, we are interested in three type of income-related issues: income level; income aspirations and an indication of household economic needs. In our work we deal with a major issue related to the "Income" variables: we found a high number of no responses to personal income questions in the SABE survey. In order to solve this situation we estimated individual income using data from Encuesta Continua de Hogares (ECH, the Uruguayan National Household Survey), Encuesta Permanente de Hogares (EPH, the Argentine National Household Survey) and Encuesta Casen (the Chilean National Household Survey). Based on the on the national household surveys, we estimated income for both men and women. See appendix A for more details about per capita income estimations.

As said, besides the income question, we account for aspirations-related issues. In particular, we constructed a dummy variable that accounts for respondents' aspiration levels ("*Enough Income for Ordinary Necessities")*. This variable is based in the following question: "Do you consider that the household income level is enough for covering the household ordinary expenses?" Additionally, respondents are asked and if the household "*Receives money, food, etc. from relatives or friends*".

The third group of independent variables refers to the family background and focuses in two variables: a dummy variable that identifies people who are married ("*Married*") and another dummy variable that indicates whether he/she has "*Bad communication with sons/daughters*".

Last, we include a "Religion" factor among the explanatory variables: "*Catholic with frequent practice*" and "*Protestant with frequent practice*".

In the conducted estimations, we also control for "Country" and "Gender". We do not include "Age" as a regressor. Various studies focus on the relationship between aging and happiness. Oswald (1997) and Cruz and Torres (2006) found that the relationship between happiness and age is U-shaped. While Oswald found that happiness indicators in Europe reach the minimum levels at age around 30; Cruz and Torres find that for the case of Colombia, the happiness curve decreases as it approaches to age 40; then it becomes a growing function. But in our analysis, our attention is restricted to those of age 60 or more and the sample is highly concentrated on individuals of age between 65 and 75. we knew, from the beginning, that we would hardly find an age effect. Our results confirmed our initial intuition. During the

estimation process we tested the statistical significance of the "age" variable, but we got no robust effects.

[Insert Figure 2]

3.3 Summary statistics

Table 1 includes the results of t-tests on the equality of means between happy and unhappy elderly people from the Southern Cone region. As mentioned in Section 3.1, we define a "happy" individual if he/she answers "Yes" to the question: "In the most time of the past two weeks, have you been satisfied with your life?"

[Insert Table 1]

In our sample, happy and unhappy people have some different features on average. Happy people have higher levels of income, are better nourished and healthier. In comparison with unhappy people, happy individuals say, in a higher rate, that religion plays an important role in theirs lives and define themselves as "Catholics with a frequent practice". Also, happy people drink more and show more practice of sports and artistic activities, have more children and better relationships with their sons/daughters, and are married in a superior proportion.

In specific aspects, happy and unhappy individuals show common patterns. On average: the live in households composed by three members; around 40 percent lived in rural areas during at least 5 years before they were 15 years old; more than 50 percent have fear to be a victim of a robbery; one out of four households receives support from sons/daughters who live in another house; three out of four define themselves as Catholics and approximately 7 percent are Protestant with a frequent practice. Also, around 7 percent of the individuals in our sample indicated to be illiterate.

4. Estimation strategy

Firstly, we estimated two linear models using the pooled survey information for Argentina, Chile and Uruguay. We conducted Ordinary Least Squares estimation using the Happy/Unhappy binary variable as the dependent variable.[2] Additionally, we conducted an alternative estimation were the dependent variable was the happiness index (ranked from 0 to 12, expressed as a percentage) to allow nuances or different grades of satisfaction.

Secondly, we estimated an OLS model with the happiness index again but using subpopulations. In particular, we divided our sample into various specific groups in order to detect uncommon patterns. In our analysis we work with the following subpopulations: women/men; those with age between 60 and 75/ those with age above 75; Rural / Urban; Enough Income/Not Enough Income; Argentina/Chile/Uruguay.

Thirdly, we used a semiparametric model known as "Symetrically Censored Least Squares Estimator" (SCLS, developed by Powell, 1986) to account for the fact that the "happiness index" is a doubly

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[2] In addition to the OLS we conducted Probit estimation. The attractiveness of OLS inference is that interpretation of obtained coefficients is more direct.

censored variable. Note that index is expressed as a percentage and takes the value of zero and one with positive probability. SCLS is based on the assumption that errors are symmetrically (and independently) distributed around zero. [3] This approach consists in symmetrically censoring the dependent variable (it is usually known as a "symmetric trimmed" method) so that symmetry can be restored, and then the regression coefficients can be estimated by least squares. Symmetric censoring of the dependent variable implies that observations with values above the censoring point are dropped, and this means that there could be a loss of efficiency due to the information dropped in those observations. However this problem is reduced in the present paper because a relative large sample is used. The SCLS estimators are consistent and asymptotically normal for a wide class of symmetric error distributions with heteroskedasticity of unknown form. We estimate this model for data for Argentina and Uruguay as a pool (leaving aside Chilean data because of the peculiarities that we show in the next section of "Results").

Finally, because of the possible existence of endogeneity in the marriage-happiness relationship we formulated a treatment evaluation process on marital status. The typical dilemma in treatment evaluation involves the inference of a causal association between the treatment and the outcome. Thus, we observe (y_i, x_i, D_i), i=1,...,N, where y_i is the happiness index, x_i represents the regressors, and D_i is the treatment variable and takes the value 1 if the treatment is applied (got married) and is 0 otherwise. The impact of a hypothetical change in D on y, holding x constant, is of interest. But no individual is simultaneously observed in both states. Moreover, the sample does not come from a randomized social experiment: it comes from observational data and the assignment of individuals to the treatment and control groups is not random. Hence, we estimate the treatment effects based on propensity score: this approach is a way to reduce the bias performing comparisons of outcomes using treated and control individuals who are as similar as possible (Becker and Ichino 2002). The propensity score is defined as the conditional probability of receiving a treatment given pre-treatment characteristics:

$$p(X) \equiv Pr\{D=1|X\} = E\{D|X\}$$

where D={0,1} is the indicator of exposure to treatment and X is the vector of pre-treatment characteristics.

The propensity score was estimated in this application using a Logit model. Due to the probability of observing two units with exactly the same value of the propensity score is in principle zero since p(X) is a continuous variable, various methods have been developed in previous literature (for a summary, see Cameron et al. 2005) to match comparison units sufficiently close to the treated units. In the present paper, after estimating p(X) we employed the Kernel Matching method.[4]

5. Empirical results

Table 2 presents the results of the OLS estimation using, on one side, the binary happiness indicator and, on the other side, the happiness index.

[Insert Table 2]

The first group of regressors –which refers to "Health"- seems to be robust and the variables have the expected sign: those who are healthier (both in absolute and relative terms) and those who have no

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[3] SCLS allows us to stay away from assuming the homoskedasticity and normality of the error term.
[4] This matching method was applied using the Stata ado file "psmatch2" developed by Leuven and Sianesi (2003).

nervous system problems report a higher tendency to have higher subjective well-being. This result is consistent with Gerdtham and Johanesson (1997), who analyzed the impact of health status on happiness for the case of Sweden. Additionally, as we analyze the relationship between health issues and subjective well-being, we identify that those who declared to have experienced malnutrition show a clear negative impact on subjective well being.

Obtained results also show a positive relationship between income levels and happiness. This result is similar to the findings of Cruz and Torres (2006) for the case of Colombia. Additionally, note that having "Enough Income for Ordinary Necessities" is associated with higher levels of happiness. This conclusion may not be aligned with the often found result that "subjective well-being varies directly with income and inversely with material aspirations" (see Easterlin (2001), for example). When interpreting our income aspiration result we have to consider that according to Easterlin, aspirations vary with age. In our work, we are dealing with a very specific age group. For example, it could be the case that as people get over 60 (or retire for example), aspirations become more realistic and the negative income aspirations – happiness relationship does not hold.

On the other side, "*Receiving money, food, etc. from relatives or friends*" seems to diminish the happiness levels (perhaps showing that the household - to some extent - requires additional aid to afford the ordinary expenses).

The fact of being married seems to be highly correlated with happiness. This result is consistent with Stack and Eshleman (1998) who analyzed the relationship between marriage and happiness in a multi-country study. In particular, they observed that the positive relationship between being married and happiness indicators held for 16 of the 17 cases analyzed. Also, frequent religion practice appears to have a statistically significant positive relationship with happiness.

Table 3 presents the results of the OLS inference on subpopulations, using the index of happiness as the dependent variable (which ranks from 0 to 12 expressed as a percentage).

[Insert Table 3]

We go now to the subpopulations analysis. Broadly speaking, men in Uruguay and Argentina seem to report greater happiness levels than women. In our analysis, we observe that there are a few significant determinants of men's happiness that are not robust in the case of women. For example, note that religion appears to play a more fundamental role when explaining higher levels of happiness in the case of men than in the case of women. Also, among those that do not have enough money for ordinary expenses, women see their happiness levels to decrease more.

We also analyzed age-related subpopulations. We divided the sample in two groups we took 75 years as the cut-off. We note that various explanatory variables are robust for the younger group but seem not to be significant to the older one. This is the case of "*Receiving money, food, etc. from relatives or friends*"; "*Enough income for ordinary necessities*", and "*Bad Communication with sons/daughters*". Moreover Argentinean and Uruguayan individuals of the younger group show superior happiness, while the female individuals of this group report inferior happiness.

Also, we are interested in analyzing potential specific effects for the subpopulations that declared to have enough income for ordinary necessities compared to those that shall short of money for their regular expenses. We divided the elderly between those with "Enough Income" from those with "Not Enough Income". See that there is a clear subjective component that makes people identify themselves into one of this two groups. We find interesting features: the frequent practice of a religion improves the happiness

only of those with "Enough Income". Predictably, "*Ill-nourished*" is not a problem for those with enough income for ordinary necessities. In addition, it is possible to observe that Argentineans and Uruguayans with "Enough Income" report greater happiness.

From a country-specific point of view, the most remarkable result is that, Chileans appear to have a quite different happiness-related pattern than Argentineans and Uruguayans. For Chile, for example, we have been pretty much unable to obtain statistically significant relationships between subjective well-being and the tested variables. In fact, only health related issues seem to have a clear positive impact on happiness among the elderly in Chile.

[Insert Table 4]

Table 4 shows the result of the semiparametric inference (for its peculiarities, in this section we leave aside the Chilean data). As can be observed, the most significant regressors seem to be those related with health, marriage and income: bad health (both in absolute and relative terms), bad nourishment and nervous system problems decrease happiness levels of the Argentinean and Uruguayan. On the other hand, having enough income for ordinary necessities and marriage increases the happiness indicator.

[Insert Table 5]

We take a look now at the treatment evaluation. The point estimates indicate that marriage (the "treatment") increases happiness. The ATT is significantly different from zero at a 1 percent level. Thus, using the propensity score and the Kernel matching method, there's some evidence to support the positive influence of marriage on adults' happiness. In order to evaluate the goodness of the matching, we should bear in mind that the matching method intends to make comparisons between treated and control individuals who are as similar as possible. This similarity between the treated and control individuals can be seen in the mean comparison test (t-test) shown on the Table 6: there's no statistically significant difference in the characteristics of the treated and control matched individuals. This fact denotes that the matching is fine.

[Insert Table 6]

6. Conclusions

In our work we analyze data from the SABE Survey to explore the determinants of subjective well-being among people who are 60 years old or over, in the Southern Cone (Argentina, Chile and Uruguay). The happiness literature provides evidence on various factors, other than money, that do seem to contribute to individual happiness. In our paper we explore the relationship between income, family composition, health and religion over subjective well-being.

In a way, the present work is an extension of a previous work (Cid et al (2007)), where we tested various happiness hypotheses for the case of Uruguay. In the current analysis, we have been able to incorporate data for Argentina and Chile. Therefore, we have worked with a much larger database that allowed us for

a richer analysis. For example, in the present work we explored different relationships across subpopulations.

As said, we conducted empirical analysis for the entire dataset but also we specifically focused on particular subpopulations of interest. In this line, we analyzed results disaggregated per country, age group and gender. Also, we explored the "happiness" relationships for those who consider that have enough income for ordinary necessities and those who do not. We followed this strategy in order to incorporate indications of income aspirations to our analysis.

Main obtained results indicate a positive correlation between higher levels of income and health, being married and the frequent religion practice and higher levels of subjective well-being. On the contrary, malnutrition has a negative impact on happiness indicators. Our work has specific limitations basically related to the dataset. For example, due to the fact that there are very few unemployed individuals in the sample, we could not analyze the typical unemployment-happiness relationship. Also, we tried to evaluate the relationship between education levels and happiness but we obtained no significant results. Exploring this relationship for this specifically analyzed age group ("the old"), would have been very interesting. Our intuition is that as we included the "income" variable as an explanatory variable, it is possibly true that that variable may also capture part of the "education" effect. But, in any case, nothing can be concluded from our analysis about the relationship between higher education levels and happiness.

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Appendix A

In this appendix we refer to the income estimation conducted in order to

We regressed (the logarithm of) per capita income against a set of individual and socioeconomic variables using the Official Household Survey data of each country. Our major challenge consisted in selecting those independent variables that we could identify both in the Official Household Survey and in the SABE survey. In particular independent variables included indications of age, gender, family composition, educational level, employment status, sources of income and the ownership of different kinds of durable goods. Our regressions had an R^2 of about 0.60 in each country.

Once we obtained the income estimations from Official Household Survey we predicted individual income for the SABE respondents. In our prediction, we utilized those coefficients obtained in our initial estimation in order to express the relationship between individual variables and income levels. This data is used in the estimation per country (see Table 3).
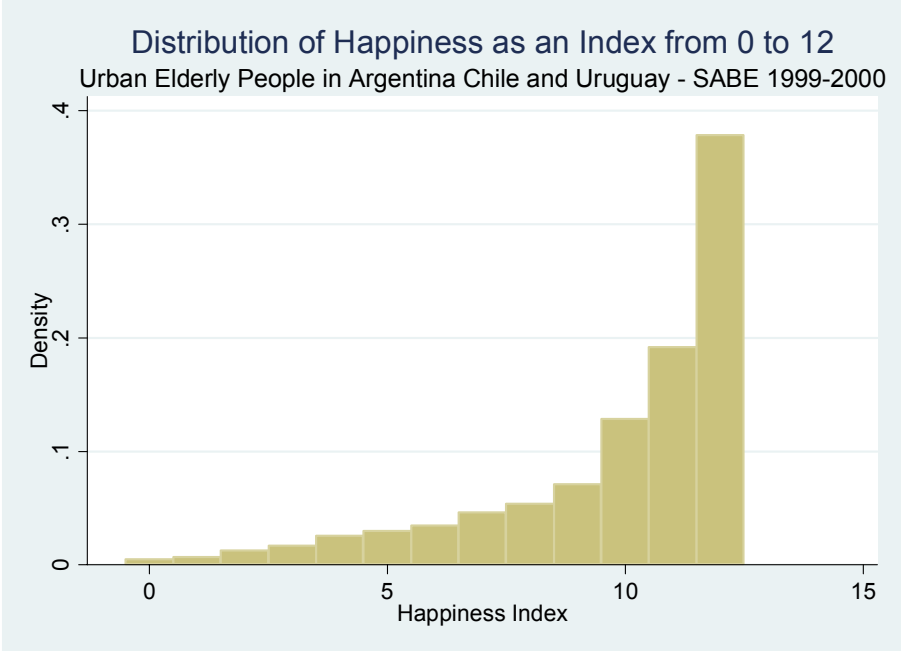
Figure 1

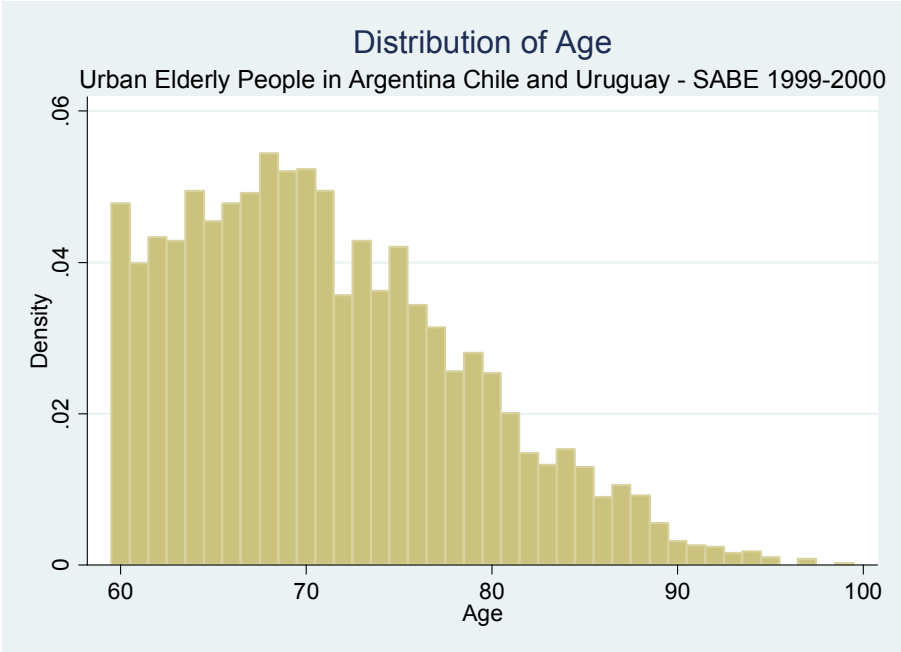Distribution of Happiness as an Index from 0 to 12
Urban Elderly People in Argentina Chile and Uruguay - SABE 1999-2000

Figure 2

Distribution of Age
Urban Elderly People in Argentina Chile and Uruguay - SABE 1999-2000

Table 1 – Descriptive Statistics: Means – Happy and Unhappy
Urban Elderly People in Argentina, Chile and Uruguay – 1999 – 2000 SABE Survey

	Unhappy	Happy	Difference	p-value
Age	70.39	70.74	-0.35	0.2808
Lived in rural before 15 years old	0.42	0.43	-0.01	0.6140
Fear from robbery	0.52	0.52	0.00	0.9328
Number of people at home	3.02	3.07	-0.05	0.5268
Receiving support from sons/daughters who live in another house	0.26	0.27	-0.01	0.6370
Religion plays an important role in theirs lives	0.60	0.67	-0.07***	0.0008
Catholic	0.76	0.76	0.00	0.9159
Catholic with frequent practice	0.50	0.56	-0.06**	0.0136
Protestant with frequent practice	0.07	0.08	-0.01	0.2110
Alcoholic drinks 4 or more days a week	0.12	0.17	-0.05***	0.0085
Illiterate	0.06	0.07	-0.01	0.5064
Number of children	2.82	3.18	-0.36***	0.0019
Using Artistic Skills	0.24	0.32	-0.08***	0.0001
Enough Income for Ordinary Necessities	0.26	0.40	-0.14***	0.000
Sports practice	0.11	0.19	-0.08***	0.0000
Ill-nourished	0.12	0.05	0.07***	0.0000
One meal a day	0.10	0.08	0.02**	0.0395
Hunger before 15 years old	0.18	0.14	0.04**	0.0101
Married	0.32	0.43	-0.11***	0.0000
Bad communication with sons/daughters	0.15	0.11	0.04***	0.0011
Voluntary work	0.10	0.15	-0.05***	0.0027
Widow / Widower	0.43	0.35	0.08***	0.0004
Nervous Problems	0.25	0.16	0.09***	0.0000
Health[5]	5.84	5.33	0.51***	0.0000
Compared Health[6]	1.70	1.48	0.22***	0.0000
Happiness Index[7]	6.21	10.63	-4.42***	0.0000

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[5] Health takes the rank of values from 2 to 8, where superior values indicate worse health.
[6] Compared Health takes the values 1, 2 and 3, where superior values indicates worse health subjectively compared with other people of similar age.
[7] As is stated in Section 3.1, this index takes the integer values from 0 to 12, where superior values mean greater life satisfaction

Table 2 – Linear Regression Model – Happy and Unhappy
Urban Elderly People in Argentina, Chile and Uruguay – 1999 – 2000 SABE Survey

	Happiness (Binary Index)		Happiness (Index from 0 to 12, in percentage)	
	Coef.	Robust Std. Err.	Coef.	Robust Std. Err.
AB Health Index	-.030	.0059143***	-.021	.0034745***
RB Health Index	-.037	.0116106***	-.040	.0067886***
Ill-nourished	-.103	.0316397***	-.096	.0208375***
Nervous System Problems	-.066	.0188161***	-.063	.0111227***
Enough Income for Ordinary Necessities	.048	.0131211***	.020	.007459***
Receiving money, food, etc. from relatives or friends	-.084	.043334*	-.077	.0236583***
Married	.040	.0136389***	.036	.007838***
Bad communication with sons/daughters	-.031	.0219154	-.040	.0135396***
Catholic with frequent practice	.056	.0145076***	.020	.0082244**
Protestant with frequent practice	.096	.0245216***	.064	.0146399***
URUGUAY	-.037	.0166828**	.028	.0105361***
ARGENTINA	-.083	.0182467***	.028	.0105393***
Women	-.025	.0144213*	-.015	.0080968*
Constant	1.042	.0398507***	.963	.0236742***
R-squared	= 0.0689			= 0.1388
Number of obs	3347			3329

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3 – Testing Happiness across subpopulations – Argentina, Chile and Uruguay – SABE 1999-2000

	Women		Men		Age<75		Age>=75		Fine Income		Not Fine Income		Argentina		Chile		Uruguay	
	Coef.	Robust Std. Err.	Coef.	Robust Std. Err.	Coef	Robust Std. Err.	Coef	Robust Std. Err.	Coef.	Robust Std. Err.	Coef.	Robust Std. Err	Coef.	Robust Std. Err.	Coef.	Robust Std. Err.	Coef.	Robust Std. Err
Receiving money, food, etc. from relatives or friends	-.079	.028***	-.062	.037*	-.105	.031***	-.040	.035	-.125	.044***	-.064	.026**	-.104	.034***	-.015	.038	-.062	.044
Ill-nourished	-.107	.026***	-.075	.031**	-.085	.024***	-.123	.038***	.006	.030	-.132	.024***	-.139	.047***	-.083	.034**	-.104	.030***
Uruguay	.012	.013	.058	.016***	.032	.012**	.023	.019	.090	.016***	-.004	.013						
Argentina	.014	.013	.055	.016***	.036	.012***	.011	.020	.104	.018***	-.007	.012						
Catholic with frequent practice	.014	.011	.032	.011***	.016	.009*	.031	.015**	.001	.010	.033	.011***	.059	.014***	-.004	.021	.010	.010
Protestant with frequent practice	.051	.018***	.091	.021***	.058	.017***	.087	.027***	.005	.025	.089	.017***	.085	.024***	.040	.029	.062	.028**
AB Health Index	-.027	.004***	-.010	.005**	-.020	.004***	-.023	.006***	-.019	.005***	-.022	.004***	-.035	.006***	.006	.007	-.035	.004***
RB Health Index	-.040	.008***	-.042	.010***	-.039	.008***	-.046	.012***	-.042	.010***	-.038	.008***	-.048	.012***	-.023	.014*	-.052	.010***
Married	.030	.010***	.046	.012***	.032	.009***	.050	.016***	.042	.011***	.031	.010***	.040	.012***	.009	.018	.061	.010***
Enough Income for Ordinary Necessities	.022	.009**	.018	.011*	.028	.008***	.003	.013					.041	.012***	-.032	.018*	.030	.010***
Nervous Problems	-.062	.013***	-.065	.021***	-.067	.012***	-.050	.023**	-.056	.016***	-.067	.014***	-.091	.023***	.002	.018	-.131	.018***
Bad communication with sons/daughters	-.028	.017*	-.063	.022***	-.044	.016***	-.034	.024	-.050	.024**	-.039	.016**	-.062	.028**	-.028	.023	-.038	.020*
Log income													.018	.010*	.001	.006	.008	.010
Constant	.993	.030***	.879	.036***	.960	.028***	.965	.043***	.922	.036***	.990	.030***	.948	.076***	.798	.095***	.994	.091***
Women					-.023	.009**	.006	.015	-.003	.011	-.023	.010**	-.022	.012*	-.026	.019	-.001	.011
R-squared	0.135		0.140		0.145		0.135		0.166		0.133		0.248		0.028		0.286	
Number of obs	2125		1204		2361		968		1239		2090		894		922		1335	

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 – Symmetrically Censored Least Squares Model – Happy and Unhappy Urban Elderly People in Argentina and Uruguay – 1999 – 2000 SABE Survey

	Happiness (Index from 0 to 12, in percentage)	
	Coef.	Robust Std. Err.
Health	-.076	.019***
Compared Health	-.089	.023***
Ill-nourished	-.169	.038***
Nervous Problems	-.171	.028***
Enough Income for Ordinary Necessities	.079	.037***
Receiving money, food, etc. from relatives or friends	-.134	.057***
Married	.127	.037***
Bad communication with sons/daughters	-.055	.051
Catholic with frequent practice	.023	.028
Protestant with frequent practice	.220	.213*
ARGENTINA	.0007	.027
Women	-.028	.028
Constant	1.424	.099***

Initial sample size = 2342
Final sample size = 1154

*** 90% normal, percentile and bias-corrected confidence interval do not include 0;
* only 90% percentile and bias-corrected confidence interval do not include 0

Table 5 - Average Effect of Treatment (married) on the Treated - estimation with the Kernel matching method – Urban Elderly People Argentina and Uruguay – 1999-2000 SABE Survey

	Effect on Happiness
Number Treated	965
Number Control	1273
ATT	.0316
Std. Error	.0119
T-stat	2.65

Table 6 - Descriptive Statistics for the treated (married), not treated and matched groups – Urban Elderly People Argentina and Uruguay – 1999-2000 SABE Survey

Variable	Sample	Mean		t-test	
		Treated	Control	t	p>t
Women	Unmatched	.45511	.75884	-15.50	0.000
	Matched	.45699	.44975	0.32	0.749
Relative Wealth Index	Unmatched	.47367	.33078	10.78	0.000
	Matched	.472	.46984	0.15	0.883
(Relative Wealth Index)^2	Unmatched	.33076	.1986	9.62	0.000
	Matched	.32888	.32203	0.43	0.667
Number of Dead Sons/Daughters	Unmatched	.1259	.24902	-3.02	0.003
	Matched	.12642	.14757	-0.94	0.349
Number of Sons/Daughters	Unmatched	2.677	2.6434	0.33	0.738
	Matched	2.6611	2.6876	-0.29	0.772
(Number of Sons/Daughters)^2	Unmatched	11.112	13.793	-2.05	0.041
	Matched	10.978	11.397	-0.41	0.680
Illiterate	Unmatched	.01032	.02435	-2.46	0.014
	Matched	.01036	.0084	0.45	0.655
At most, Only Primary School	Unmatched	.59649	.7227	-6.34	0.000
	Matched	.59896	.61155	-0.57	0.572
Number of Divorces and Separations	Unmatched	.08462	.30322	-10.79	0.000
	Matched	.08497	.10042	-1.03	0.303
Likes the present people at home	Unmatched	.98968	.91673	7.83	0.000
	Matched	.98964	.98662	0.61	0.541