Perception of Efficacy of Social Benefits: Evidence from the European Social Survey

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Abstract

The analysis of the Welfare State in modern societies has attributed increasing relevance to the issue of population aging. The reduced number of people in the youngest generation versus the increasing senior population is triggering a process of societal aging with large consequences on social policies and economy. In other words, it poses a problem concerning long-term sustainability of the welfare state. This paper discusses some of these dimensions through an analysis of the perception of old age pensions and other social benefits as key factors of life satisfaction in some of the European countries within the European Social Models. A methodology of logistic regression applied on a sample of individuals of the European Social Survey, has been used to study the contribution of social benefits for one society with less poverty and with more fairness towards well-being. It can be concluded that individuals had predominantly positive expectations concerning the effects of social benefits in terms of poverty prevention.

JEL: I3-Welfare, Well-Being, and Poverty

1. Aging and Public Policies

An aging population does not lead to an absence of economic and financial consequences on the behavior of individuals, especially in terms of individual and household consumption, on a savings levels and on enterprise's organization. In this context it is important to analyze the perception of social policies concerning life satisfaction by individuals, particularly that of workers, unemployed, retired, sick and disabled, and students.

While the discussion on the consequences of demographic changes has already taking place over a long period (see for instance by Modigliani, 1986), the specific effects of aging are a more recent topic (see for instance Miles, 1999; Martins, Gonand, Antolini and Maisonneuvre; 2005). The phenomenon of aging is changing the behavior of individuals. It is involving public policies changes (Attanasio, Orazio and Weber, 2010) and, at the same time, economic and financial stability in the medium and long term (Mendes, 2011).

When analyzing the impact of aging, there are diverse perspectives. However, this phenomenon is usually decomposed into three elements: the baby boom, the decline in fertility and the longevity increase.

The baby boom is a phenomenon associated with a large number of post-war births; its consequences in terms of evolution of the workforce were predictable and documented in numerous studies (FMI, 2004; World Bank,1994, Holzmann*et al.*, 2005, Martins *et al.*, 2005). It can be easily understood that a drop in today's fertility shapes the workforce size in the next 40 years. These two elements constrain the current and future structure of the European population. As the baby boom is evident in most Western European countries, the second element concerning the decrease in fertility has not always been translated in the same way in those countries. Finally, the increase in longevity that has occurred in the past raises the question of whether it will continue or will it slow down in the future.

Until now, dependency ratios have been widely used in the analysis of demographic consequences. The dependency ratio of the elderly population highlights the public dimension of the aging population. The population over the age 65 (or age which it is considered that an individual no longer produces) on the population of working age, usually between 15 and 64 years old, represents this ratio. In the last century this ratio has evolved strongly. In most countries this ratio has increased, but by different rates.

Another question that arises is related to how these elements interact with the evolution of the economy and economic growth. There are two natural consequences. The first is the level of population structure, it has been expected that the workforce would grow in number due to the baby boom and then it would decrease. The second type of result is the behavioral level due to the fact that individuals know that they will live longer and adjust their behavior due to this possible event, as well as in terms of public policy and the evolution of the economy in general.

Simultaneously, public policies are confronted with various difficulties to maintain public transfer social security systems provided by institutions as noted by Mendes (2011). These adjustments depend on public policies, especially old-age dependency ratios, i.e., the number of individuals who stop working and continue to receive income from systems over the number of individuals who are active in the job market, participating in the production process.

As part of a pension system reform managed by the technique of pay-as-you-go (the payroll tax on workers' wages pays the pensions of retired individuals, in a context of intergenerational solidarity) an idea currently under consideration is a lower replacement rate of pensions over the last salary received before retirement to ensure its sustainability. Such a measure could lead to an increased private saving to replace future income reduction due to public revenues declining in a scenario of ceteris paribus of other revenues.

Other reforms would increase the contribution rate. Such would mean a lower income during working life, less savings during this period and thus a lower rate of overall savings.

Finally, one of the options followed is currently extending working life. Active aging is a strategy based on the hypothesis of linking life with health as well as with the development of a coherent job and an increasing life expectancy. A priori, in this strategy plus income earned during the working life means having less time in retirement and perhaps less savings.

In the European Union, the major challenges of active aging are placed in the sphere of each country, since social policy is developed and implemented at the each state's level. Each country defines the rules of pensions or disability and unemployment benefits, health programs and other social benefits under the welfare state model adopted. The economic consequences of aging and its impact on public finances, the new structure of the labour market and social security funding, access for all to quality health care including long-term without compromising the financial viability of the systems are large challenges that arise in the different European countries. To what extent are these possible consequences understood by individuals of different countries regrouped within the European Social Models?

The paper is organized in 6 main parts. After this introduction, section 2 briefly revises some implications of aging on consumption and saving behaviour. Then, the section 3 discusses challenges of the welfare and public policies evaluation. Section 4 presents ESS data and the methodology. Finally, section 5 and 6 present the results and the respective discussion.

2. Aging and Consumption and Saving Behaviour Changes

One of the important issues on aging focuses behavior changes in individuals, especially in families. The aging impact on individuals and families behavior reflected in both consumption and savings (Attanasio, Orazio and Weber, 2008; 2010; Alves and Cardoso, 2010)).

There is some consensus towards expected changes in the structure of household consumption. Older individuals tend, firstly, to consume less manufactured products and, secondly, to use more services. This consumer behavior is accentuated in situations of dependency in old age. We can therefore expect a distortion of industrial goods consumption in favor of services that are non-tradable, such as home care, as highlighted by Martins, et al.(2005).

However, local services are not importable or exportable and should be produced locally. Due to aging, it is therefore expected that domestic production includes more non-tradable services and proportionately fewer manufactured products.

This situation implies structural effects beyond the demographic sphere. Considering service offers, such as local services, productivity gains are lower than in other industrial sectors. Therefore, a slowing trend in productivity can be expected.

Moreover, the price of goods or services that are produced with lower productivity growth, tends to increase more rapidly than those commodity prices that are obtained with more efficiency gains. As older people buy more services where there is a smaller gain in productivity, the prices of their baskets of goods rise faster than the baskets of other consumers, or the average prices. In this sense, if the pension is indexed to the Consumer Price Index, individuals are more conscious about whether they should save more for their future.

Aging also implies changing savings behaviour of individuals and families. Typically, the output combines a certain amount of work and a certain amount of capital. The amount of work is obviously heavily influenced by demographic changes in the population, namely the working age group between the ages of 15 and 64. The amount of work is also scaled by the unemployment rate, the rate of female labour participation and the age of entry into the labour market. These social and economic factors outweigh the strictly demographic changes. Nevertheless, the amount of work remains predictable. However, other issues remain open as for instance whether the amount of capital per unit of labour will remain at the same level in the future or to what extent will aging affect the rate of household savings.

Assuming on one hand that the Portuguese economy was a closed economy without trading with the rest of the world, and on the other hand, that Portuguese families were putting money aside to invest in the national economy. According to the theory of life-cycle in which individuals save during their working life, ceasing to save when they stop working during the reform period. Based on this theory, it is interesting how aging is discussed. Through the perspective of generations (cohorts), there should be greater savings when the boomers are in the labour market. Then the baby boomers stop working and in retirement start using their savings, selling assets that have been accumulated during their working life. The phenomenon of longevity or of a longer life is accompanied even after the recent reforms of the social security for an elongated period in retirement, which does necessarily mean more savings put aside by individuals, considering that retirement is the period of excellence to use the accumulated capital during their professional life. Theoretically, when considering the longevity in a simple version of the life-cycle model, savings should increase when retirement is endogenous (Bloom, et al, 2002).

The challenging question is about which effect is stronger between the use of savings (increased consumption) or the increase in savings due to life longevity. Initially, savings increase until the baby boomers retire and afterwards the period of use of the savings period starts. Increased longevity may involve the strengthening of savings. Overall, the question is to what extent does the use of savings outweigh it strengthening. There is a relative consensus that in the medium term, the effect of using savings will earn (Disney, 1996; Attanasio, Orazio and Weber, 2010). It is a source of concern for the financial markets which fear that many people seek to sell their accumulated assets at the same time. In that hypothesis, it is likely that the demand will not be sufficient to meet the supply of assets of retirees who will wish to use their savings to finance consumption. As a result, a fall in the prices of financial assets can occur.

3. Public Policies, Aging and Life Satisfaction

The welfare state is a set of programs through which governments pursue the goal of social protection of the economic and social well-being.

Esping-Andersen (1990) identified three subtypes of welfare state models: Social Democracy ((encompassing Nordic countries), Christian Democracy (conservatism, (encompassing continental and Mediterranean countries)); and Liberalism (encompassing Anglo-Saxon countries), which has been a fundamental tool for analyse of welfare states.

The Social-Democratic Welfare State model is based on the principle of Universalism, high degree of citizen autonomy translating in access to benefits and services based on citizenship, limiting reliance on family and markets since social policies are perceived as required for imperfect markets. From 18 OCDE countries, the Social Democratics were Denmark, Finland, the Netherlands, Norway and Sweden.

The Christian-Democratic Welfare State model is based on the principle of subsidiarity and the dominance of social insurance schemes, a medium level of decommodification and a high degree of social stratification. Christian Democratics were Austria, Belgium, France, Germany, Spain and Italy.

The Liberal model is based on market dominance and private provision; the state only interferes to ameliorate poverty and provide for basic needs, largely on a means-tested basis, low decommodification and high social stratification. The Liberals were Australia, Canada, Japan, Switzerland and the US.

Upon this classification welfare states, other authors have drawn clusters of member states as Ferrera(1996), Leibfried (2000) and Sapir (2006), Aiginger(2009).

Aiginger(2009) classify the "old 15" Member State of the EU into clusters of Scandinavian universalistic (Denmark, Finland and Sweden), continental corporatist (Germany, Belgium, France and Austria, Netherlands), Anglo-Saxon liberal (United Kingdom and Ireland), and Mediterranean welfare regimes (Spain, Portugal, Italy and Greece). While the Scandinavian model has a high degree of emphasis on redistribution, social inclusion and universality, a strong social dialogue and close cooperation of the social partners with the government, with trade unions prominently involved in economic life at large, the Continental model emphasises employment as the basis of social transfers, benefits are at a more moderate level and they are linked to income. The Anglo-Saxon model is based on the responsibility of individuals for themselves; small social transfers which are means-tested. In turn, the Mediterranean model has also a low level of social transfers but it is partly counterbalanced by the strong supportive role of family networks.

Sapir (2006) uses also a variant of clustering based on earlier work by Esping-Anderson (1990) and he characterizes the four models as follows:

 Nordic countries (Denmark, Finland and Sweden, plus the Netherlands):

o with the highest levels of social protection expenditures and universal welfare provision.
o extensive fiscal intervention in labor markets based on a variety of 'active' policy instruments.
o Strong labor unions ensure highly compressed wage structures.

 Anglo-Saxon countries (Ireland and the United Kingdom):

orelatively large last resort social assistance.
o cash transfers are primarily oriented for people in working age.
o activation measures are important as well as schemes conditioning access to benefits to regular employment.
oon the labor market side, this model is characterized by a mixture of weak unions, comparatively wide and increasing wage dispersion and relatively high incidence of low-pay employment.

 Continental countries (Austria, Belgium, France, Germany and Luxembourg):

oextensively on insurance-based, non-employment benefits and old-age pensions.
oalthough their membership is on the decline, unions remain strong as regulations extend the coverage of collective bargaining to non-union situations.

 Mediterranean countries (Greece, Italy, Portugal and Spain):

o concentrate their social spending on old-age pensions and allow for a high segmentation of entitlements and status.
o social welfare systems typically draw on employment protection and early retirement provisions to exempt segments of the working age population from participation in the labor market.
o the wage structure is, at least in the formal sector, covered by collective bargaining and strongly compressed.

In the Nordic and Continental models a majority of transfers are public. The pension costs have increased significantly in recent decades. If we consider health costs of the population over 65, the pressure on public finances grows even more. However, in Portugal, there is on the one hand, no universal system that completely covers the elderly dependency, on the other hand, public spending is not worse in terms of health than the pension system.

In general, while the basis of the amount of work is slowing down, the base of capital income is uncertain. The amount of public capital and savings that will accrue in the coming years is unknown as well as the return of capital (return on public investments in sustainability funds or reserve funds) due to uncertainty in the financial markets.

For a long time, in systems based on pay-as-you-go, implications of demographic trends were ignored. The phenomenon of female participation increase in the labour market, which enabled the allocation growth of social benefits and pensions, was also ignored, but it is not sustainable indefinitely.

Organizations such as the OECD point out that social protection has proven to be an "effective mechanism for increasing equity and supporting resilience to shocks and protection against individual and covariate risk, making it a key element in poverty prevention and reduction and for inclusive growth", however simultaneously a greater flexibility of the labour market when discussing the sustainability of social security is also recommended by other institutions such as IMF.

Apparently, nowadays, the first solution for guaranteeing sustainability of the pay-as-you-go schemes is to ignore the commitments: to reduce social benefits and saying who will hold a pension lower than originally expected, or increase the contribution (a social tax) to obtain the amount of initial pension, or even increase the contribution period, which is probably the least unpleasant option.

Another even less ethical option is to defer the charge, borrowing today, without implementing any previous options, for only in the future repaying the debt or finding a way not to pay. This path is almost synonymous to the financial crises. In these circumstances an increase in inflation would reduce the real value of accumulated debt. In turn, funded schemes are not problems free. The valuation of liabilities and benefits may be based on mistakes of productivity gains, and gains on financial markets have led to significant difficulties in some countries with more liberal social models.

In funded schemes, the solution is to improve the investors' protection against the default of financing instruments such as of pension funds. The implementation of a set of prudential rules on how the funds are managed is important (OCDE, 2009), building a protective pad through public funds or reserves to guarantee investments made by individuals and the amount of pensions entitled.

The accumulation of individual savings is another alternative in order to ensure the same standard of living in retirement in the case of living for a greater number of years. Public policy can encourage this action that falls within the individual behaviour field.

First, the distortions of private savings structure should be reduced. It is not certain that the policies implemented in the past to promote this kind of savings have favoured the most appropriate financial products for retirement. Some plans set up with the aim to increase saving for retirement, for instance, in Portugal the PPR also meets other purposes, such as high rates of return and tax benefits in the short term. Second, systems based on annuities can satisfy the need to save for retirement. The question is whether it is the most appropriate form of savings for families who need to prepare for retirement. Existing products, such as annuities, have not been widely explored due to transaction costs. The establishment of public retirement certificates, similar to private PPR products, assumed the development of the annuities market.

In the long term, public policies have to be coordinated in order to ensure the path of economic growth and simultaneously guarantee well-being. Life satisfaction is the headline indicator to measure the subjective well-being according to OCDE(2013). It gives the level of satisfaction of life in general. Indirectly, it can summarize the real impact of public policies, among other aspects of life in contrast to replacement rates and contribution rates that are indicators of potential quality of life (Veenhoven, 2009 in OCDE, 2013). This indicator will be used to evaluate the perception of social benefits in the Welfare States.

4. The Perception of Efficacy on the Welfare State

Data and Methods

Data

Data is from the Round 4 of the European Social Survey (ESS), 2008-2009. The ESS is a valuable source of data for comparative analyses of attitudes across countries. Round 4 contains the first inclusion of *Welfare State Attitudes in a Changing Europe* rotating module. All results reported are based on weighted data. The countries under analysis were selected from the European Social Welfare regimes, in particular, those included in the survey belonging to the traditional models named as Mediterranean (Med), Continental (Continentals), Nordics (Nordics) and Anglo-Saxon (Anglo) models as table A.1 in appendix. As mentioned above, this classification originally made by Esping-Andersen, G. (1990) and reformulated by Ferrera (1996), Leibfried (2000) and Sapir (2006) allows us to compare four sets of social models, with geographic points in common and similar characteristics of social benefits within each group.

The data analysis pays attention to differences between models, but does not consider in detail differences within models or countries for reasons of brevity.

Methodology

Keeping in mind the broad issues that concern the relation between the attitudes towards the welfare state and life satisfaction as well as the profile of individuals, it is important to analyze some of those main responses of the European Social Survey (ESS) to evaluate the perception of efficacy of social benefits towards life satisfaction.
This section describes the methodology used, starting with the description of the hypotheses, the relevant variables and the econometric model in order to evaluate the perception of the efficacy of social benefits on life satisfaction.

The main hypothesis is about the impact of old age pensions and other benefits towards life satisfaction. Are the old age pensions and other social benefits key-factors of life satisfaction in the Mediterranean Social Model? Is it expected that the better the social programmes are, the higher is life satisfaction? Evaluating the perception of social benefits is performed in terms of the increase probability on life satisfaction due to changes of social programmes concerning pensioners and active individuals, its level of benefits and forms of funding such as taxes.

Another hypothesis is about the efficacy of social benefits/services in preventing widespread poverty, for prevailing a fair society, differences in standard of living are small and the level of old age pension affordable 10 years from now is guaranteed towards an increase of life satisfaction, regardless of the European social model in mind and profile of individuals (active, unemployed, retired, disabled, student).

In the survey module, several questions were about the effects of benefits and social services in different areas of individuals' lives, particularly in social prevention on disease, health care, pensions and other social security coverage. The relevant questions were about the positive or negative assessment of social benefits which are split into multiple revealing aspects of perceptions and citizens' representation on the welfare state.

These multiple aspects are reflected in the survey through various questions which originate from different variables. Life satisfaction is a core variable in surveys about quality of life, and has been used in numerous countries for the last four decades (Veenhoven, 2009 *in* OCDE, 2013).

Here, the dependent variable in the regression models is the perception of life satisfaction[1], which measures how an individual is satisfied with life as a whole. It is a categorical variable, which ordered categories are 11, where 0 means extremely dissatisfied with life and 10 means extremely satisfied with life as a whole.

The regressors are independent variables that encompass the characteristics linked with both social aspects and financial aspects of welfare state policies. Table 1 presents the description of the independent variables used in the regression models.

Those variables related with welfare state perception derived from questions such as : " Tell us how you agree or disagree with the benefits and services in your country ... preventing the spread of poverty , lead to more equity in society , entails high costs on businesses due to taxes and associated fees ?

[1] The dependent variable is stflife, directly collected in the ESS survey.

Table 1: Description of Independent Variables

Variable	Description
Smdfslv_	Agree strongly - for fair society, differences in standard of living should be small (1)
Slvpens_	Extremely good - standard of living of pensioners (1)
Cldcrsv_	Extremely good - provision of affordable child care services for working parents (1)
Sbprvpv_	Agree strongly - social benefits/services prevent widespread poverty (1)
Sbbsntx_	Agree strongly - social benefits/services cost businesses too much in taxes/charges (1)
Hlthcef_	Extremely efficient - provision of health care, how efficient
Ditxssp_	government increase taxes and social spending (1 – 0)
Insfben_	Agree strongly - insufficient benefits in country to help people in real need (1 – 0)
Lvoapen_	level of old age pension affordable 10 years from now will not be able to afford (1 – 0)
Eduyrs	years of full-time education completed (0 – 50)
Pdwrk	doing last 7 days: paid work (1 – 0)
Edctn	doing last 7 days: education (1 – 0)
Uempla	doing last 7 days: unemployed, actively looking for job (1 – 0)
Dsbld	doing last 7 days: permanently sick or disabled (1 – 0)
Rtrd	doing last 7 days: retired (1 – 0)
Continentals	Continental Social Countries (1 – 0)
Nordics	Nordic Social Social Countries (1 – 0)
Anglo	Anglo-Saxon Social countries (1 – 0)
Med	Mediterranean Social Countries (1 – 0)

Note: The variables of European Social Models were created as binary. Other variables have the original name used in the ESS, but when transformed to binary variables a symbol underscore "_" have been added.

All the independent variables are binary variables, except *Eduyrs*, which accounts for the number of years of full time education completed.

The individual profile corresponds to the activity of the individual in the last 7 days, that is, whether it is a worker (Pdwrk), an unemployed (Uempla), a pensioner (Rtrd), a disabled person (Dsbld) or a student(Edctn).

To introduce the social models in the regressions, four dummies are considered. The Mediterranean Model (med) is the reference variable and the other social models are represented by dummy variables introduced in the regressions (i.e. continentals, nordics, anglo). Therefore, the results concern mainly the Mediterranean model.
Appendix presents detail information about the data. Table A.2 shows some statistics of variables, such as the number of observations, mean, standard deviation, minimum and maximum of values assumed. It summarizes national life satisfaction frequencies for each category of answers as well as for those welfare state variables related with fairness, poverty and level of benefits held by individuals.
When the dependent variable is ordered and discrete, the appropriate method of estimation is the method of maximum likelihood applied on ordered logistic regressions.

Considering the linear relation between the continued latent variable Y_i^* and the vector of regressors $\bar{x}_i$ (kx1):

$$Y_i^* = \beta^T \bar{x}_i + \epsilon_i$$

Where β is a vector of parameters (kx1), ϵ_i is the error terms *and* i=1,..N.

While Y_i^* is an unobservable magnitude, the following categories are estimated from the answers:

$$y = \begin{cases} 1 & se\ y^* \leq e_1 \\ 2 & se\ e_1 \leq y^* \leq e_2 \\ 3 & se\ e_2 \leq y^* \leq e_3 \\ 4 & se\ e_3 \leq y^* \leq e_4 \\ & \dots \\ J & se\ e_{5j-1} \leq y^* \end{cases}$$

Where ej (j=0,..., J-1) are unknown limits of the intervals which are estimated jointly with the vector β.

Two regressions models are considered for the ordinal outcomes to test each of above hypothesis, applying ordered logistic method.

The first regression model includes a larger set of variables that can be used to evaluate the impact of efficacy of social benefits such as pension, health and other social benefits on life satisfaction independently of the individuals' profile.

Regression I:

stflife = f(smdfslv_, slvpens_, cldcrsv_, sbprvpv_, sbbsntx_, hlthcef_, ditxssp_, insfben_, lvoapen_, eduyrs, continentals, nordics, anglo, med)

The first regression model includes independent variables such as those that gathered the opinion if:

- individuals answered that they agree strongly to differences in standard of living being small for a fair society (smdfslv_), if the standard of living of pensioners (slvpens_) or the provision of affordable child care services for working parents (cldcrsv_) and the provision of health care (hlthcef_) in terms of efficiency are graded as extremely good within a scale of 1 and 0.

- individuals answered that they agree strongly to whether social benefits/services preventing widespread poverty (sbprvpv_), whether benefits/services costing businesses too much in taxes/charges(sbbsntx_), whether there are insufficient benefits in the country to help people in real need (Insfben_), if the government's increasing taxes and social spending (ditxssp_), if the level of old age pension 10 years from now will not be able to afford (lvoapen_). Those variables are graded within a scale of 2 options (1,0).

- individuals have full-time education completed from 0 to 50 years (eduyrs).
- individuals belong to a continental model (continentals), nordic model (nordic), anglo-saxon model (anglo) or mediterranean model (med).

To analyse fairness, prevention of widespread poverty and sustainability towards life satisfaction, a second regression model has been created, which is more restricted, since it includes only the variables related with those dimensions and with individuals' profile.

Regression II:

stflife = f(smdfslv_, sbprvpv_, lvoapen_, pdwrk, edctn, uempla, dsbld, rtrd, continentals, nordics, anglo, med)
This last regression tests whether fairness, prevention of widespread poverty and sustainability are equally perceived by individuals who are working, studying, retired or with some disability when inquired and belonging to different social European Welfare models.

For both estimated models discrete changes are computed. Discrete change is relevant for models with binary variables, being the change in the predicted probabilities for a change from 0 to 1 value of independent variable.

Instead, for no binary variables usually applies marginal effects, which is the partial derivate of y with respect to regressors.

5. Results

Table 2 shows the regression model I for the perception of social benefits for the Mediterranean Model and for other models included, through dummy variables, which represent the other European Social Welfare regimes. The dependent variable in the regression I, as well as in the regression II, is perception of life satisfaction.

The estimation of regression I gives a log likelihood of -38336.416 that is the value of log likelihood at convergence. To test the null hypothesis that all coefficients of the independent variables are simultaneously equal to zero, the use of Wald chi2(13) is adequate, since the regression is for categorical outcome, including 13 variables. Since the p-value associated with the statistics (1158.89) is 0.000, the null hypothesis is rejected. The Pseudo R^2 is 0.0309, which is the measure of fit known as McFadden's R^2 that compares a regression with just the intercept to a regression with all variables.

The coefficients of the set of variables can be interpreted only throughout the signs and its statistical significance. Observing the main coefficient of the independent variables, excluding *sbbsntx* - social benefits/services cost businesses too much in taxes/charges, all of them are statistically significant being different from zero (p-value <0,10). The majority of coefficients have positive signs, except *smdfslv*, the variable for small differences in standard of living for fair society, for *insfben*, the variable for the insufficient benefits in country to help people in real need and for *lvoapen*, the variable for level of old age pension affordable 10 years from now not able to afford, which hold negative signs.

Since the majority of the regressors related with social and financial aspects of the social models are positive and significant, it means that those variables influence in a positive manner the perception of life satisfaction as expected. Only fairness, level of old age pension and insufficient benefits are factors that negatively influence life satisfaction.

Table 2: Regression I for the Perception of Social Benefits on Life Satisfaction

Variable	Coef.	P-value
smdfslv	-.146	0.001
slvpens	.729	0.000
eldcrsv	.422	0.000
sbprvpv	.167	0.000
sbbsntx	.085	0.141
hlthcef	.566	0.000
ditxssp	.236	0.002
insfben	-.282	0.000
lvoapen	-.167	0.000
eduyrs	.034	0.001
continentals	.304	0.019
nordics	1.308	0.000
anglo	.479	0.000
L	-38336.416	
Obs.	19621	
Wald chi2(13)	1158.89	
Prob > chi2	0.0000	
Pseudo R2	0.0309	

Table 2 shows the discrete changes between independent variables and the probability of holding life satisfaction. These values must be read as if the independent variable changes from 0 to 1, the predicted probability of outcome changes by an amount holding all other variables at their mean. Discrete changes are considered at the mean x, which implies an increase in independent variables from 0 to 1 would change the probability of being not at all satisfied with life by the values shown in the column of outcome 0, the probability of being both yes and no satisfied by the values indicated in the column of outcome 5, and the probability of being extremely satisfied with life by the values of the column with outcome 10.

By analysing these results, the probability of being not at all satisfied to the probability of being extremely satisfied, only has a negative discrete change (considering other variables in their mean):

- of -.0100102 for Smdfslv, the variable for the opinions of differences in standard of living should be small for a fair society;
- of -.0185215 for Insfben, the variable for the view of insufficient benefits in country to help people in real need and
- of -.0118758 for Lvoapen, level of old age pension not affordable in 10 years.

For the probability of being fully satisfied, the discrete change turns out to be positive for:

- The extremely good of standard of living of pensioners (Slvpens),
- For the extremely good of the provision of affordable child care services (Cldcrsv),
- By the social benefits/services prevent widespread poverty (Sbprvpv),
- By the efficiency of the provision of health care (Hlthcef), and - by the idea of benefits/services cost businesses too much in taxes/charges (Sbbsntx_),
- Bythe believe of rise in taxes and social spending (Ditxssp).

These results show that the old age pension (Slvpens) and other social benefits (Cldcrsv; Sbprvpv; hlthcef; ditxssp) are positive key-factors of life satisfaction in the Mediterranean Social Model, but the perception of level of old age pension not affordable in 10 years diminish the probability of life satisfaction (lvoapen) as well as the idea of insufficient benefits in country to help people in real need (Insfben).

Table 3: Discrete Changes, dy/dx

Variable	Outcome 0	Outcome 5	Outcome 10
Smdfslv	.0015165	.0092535	-.0100102
Slvpens	-.0051893	-.0384881	.0704297
Cldcrsv	-.0034515	-.0241465	.0358194
Sbprvpv	-.0015535	-.0101951	.0127503
Sbbsntx	-.0008144	-.0052528	.0063126
Hlthcef	-.0044071	-.0314982	.0504499
Ditxssp	-.0020948	-.0140751	.0186166
Insfben	.0030985	.0181777	-.0185215
Lvoapen	.0016717	.0104605	-.0118758
Eduyrs*	-.0003392	-.0021414	.002463
Continentals	-.0028329	-.0184808	.0230558
Nordics	-.0108578	-.0720073	.1185767
Anglo	-.0040967	-.0279301	.0392623

* foreduyrs is marginal effect. For other variables dy/dx is for discrete change of dummy variable from 0 to 1

In the case of dummies for the groups of countries with specific social models (Continentals, Nordics and Anglo) life satisfaction rose in Nordics, Anglo-saxon, Continentals Models for maximum outcomes (10), contrary to outcome 0 to 5 where the discrete changes are negative according to table 3. This can mean that characteristics of social models have different influences on life satisfaction depending of the degree of life satisfaction. However, in Nordic model the probability of individuals of being fully satisfied with life is affected by a positive and higher shift than in the others. This captures the expectation of individuals that the better the social programmes are, the higher life satisfaction is.

Turning now to regression II, the estimation allows to study whether fairness, prevention of widespread poverty and sustainability are equally perceived by individuals continuing to consider Mediterranean Model as a reference of analysis.

Table 4 shows the estimation of the regression model II where the probability of life satisfaction is explained only by three main factors concerning social benefits that are fairness, prevention of poverty and sustainability. This estimation considers the profile of individuals in terms of activity during the last days when inquired. Those individuals were working, unemployed, studying, retired or with some disability.

Table 4 – Regression II for the Perception of Social Benefits on Life Satisfaction by profile of individuals

	Coef.	P-Values
smdfslv	-.224	0.000
sbprvpv	.236	0.000
lvoapen	-.179	0.000
pdwrk	.207	0.000
edctn	.386	0.000
uempla	-.910	0.000
dsbld	-1.043	0.000
rtrd	.158	0.039
continentals	.378	0.002
nordics	1.365	0.000
anglo	.630	0.000
L	-45259.494	
Numero de Obs.	23071	
Wald chi2(11)	1348.35	
Prob > chi2	0.0000	
Pseudi R2	0.0321	

This regression has a Pseudi R^2 of 0.0321, slightly higher than the first regression. Wald chi2 also reject the null hypothesis that all coefficients of the independent variable are equal to zero.

Now, all the coefficients are significant at 5%. The results point out that the probability of life satisfaction is negatively influenced by the small differences in standard of living for a fair society (smdfslv) and by the level of old age pension in 10 years from now not affordable (lvoapen). As expected, the situation of unemployment (uempla) and disability (dsbld) diminish the probability of life satisfaction.

The social benefits/services prevent widespread poverty (sbprvpv) is a positive factor towards a rise in the probability of life satisfaction, as well as the profile of studying (edctn), working(pdwrk) or being retired (rtrd). Therefore, in what concerns the second hypothesis, the results only validate that the probability of life satisfaction increases when social benefits/services prevent widespread poverty in the Mediterranean Model.

In this estimation, continentals, Nordic and Anglo variables that account for the European Social Models, continue to reveal a positive impact on the probability of life satisfaction.

Table 5 presents the discrete changes according to the profile of the individual in terms of activity in the different social models.

Table 5: Discrete Change in the Probability of Life Satisfaction According to the Profile and Social Models

	Med	Continentals	Nordics	Anglo
pdwrk=1				
Smdfslv	-.0096118	-.013467	-.0294118	-.0167025
Sbprvpv	.0118801	.0165239	.0348788	.0203639
Lvoapen	-.0081555	-.0113974	-.0245943	-.0141043
edctn=1				
Smdfslv	-.0121561	-.0168387	-.0348806	-.0206783
Sbprvpv	.0149531	.0205244	.0407966	.0250064
Lvoapen	-.0102971	-.0142179	-.0290236	-.0174116
uempla=1				
Smdfslv	-.003867	-.0055544	-.0137012	-.0070422
Sbprvpv	.0048295	.0069162	.0168036	.0087452
Lvoapen	-.003293	-.004725	-.0115938	-.005985
dsbld=1				
Smdfslv	-.0033857	-.004873	-.0121455	-.0061895
Sbprvpv	.004232	.0060751	.0149404	.0076982
Lvoapen	-.002884	-.0041471	-.0102882	-.0052632
rtrd=1				
Smdfslv	-.0098631	-.0138036	-.0299891	-.0171033
Sbprvpv	.012185	.0169259	.0355139	.0208357
Lvoapen	-.0083673	-.0116796	-.0250646	-.0144386

Moving from the minimum fairness to the maximum fairness opinion changes the predicted probabilities of strongly agreeing with life satisfaction by -.009, holding all other variables at their means for the Mediterranean Model. This value it is the less negative comparing to other models. The results confirm that Nordics models account for the highest shift on the impact of life satisfaction as far as preventing poverty is concerned. However, the perception of individuals for small differences in the standard of living for a fair society and the level of old age pension in 10 years from now not being affordable has a negative impact on the probability of life satisfaction in all social models.

Regardless of the profile, the discrete changes are higher in the Nordic and Anglo-Saxon Models, which can mean that characteristics of those models related to preventing poverty make life satisfaction increase.

The fact of social benefits/services preventing widespread poverty is a positive factor that makes individuals more satisfied in life in the Continentals, Mediterranean, Nordics and Anglo-saxon social models.

6. Discussion

The evaluation of the perception of social benefits was performed in terms of the increased probability of life satisfaction due to opinions of social programmes concerning pensioners and active individuals, levels of benefits and forms of funding such as taxes.

On the one hand, considering the first hypothesis patent on the first ordered logistic regression estimated on the impact of old age pension and other benefits towards life satisfaction, the results show that old age pension and other social benefits are key-factors in the opinion of life satisfaction in the Mediterranean Social Model.

However, the results point out that perception of level of old age pension not affordable in 10 years diminish the probability of life satisfaction as well as the idea of insufficient benefits in Mediterranean countries to help people in real need.

Nevertheless, it is confirmed that the higher expectations concerning social programmes are, the higher life satisfaction is. In the Nordic model the probability of individuals of being fully satisfied with life is affected by a positive and higher shift than in the others.

On the other hand, concerning the other hypothesis and second regression model about the efficacy of social benefits/services preventing widespread poverty, for a fair society to prevail differences in standard of living being small and the level of old age pension affordable 10 years from now is not simultaneously guaranteed towards an increase of life satisfaction. Regardless of the European social model in mind, the efficacy of social benefits/services in preventing widespread poverty has a positive effect on the probability of life satisfaction; while a fair society prevails, small differences in standard of living, and the level of old age pension affordable 10 years has a negative impact on the probability of life satisfaction.

By observing the different profiles of individuals in terms of whether they are active, retired, disabled, or students, different sensibilities prevail but a common pattern can be found within European social models that coincide with the general results.

The analysis executed by computing discrete changes allows to conclude that fitting into the profile of unemployment and disability makes individuals less satisfied with life in the four European social models. That negative marginal effect is softer in the Continentals and Mediterranean social models than in the other social models. The social benefits/services prevention of widespread poverty (sbprvpv) is a factor that made individuals more satisfied in life in the Nordics and Anglo-saxon social models than in the Continentals and Mediterranean social models since the discrete changes are high. Finally, the level of old age pension affordable 10 years from now had a negative impact on the probability of life satisfaction in all social models regardless of the individuals' situations.

7. References

Aiginger, K. &Leoni, T. (2009). Typologies of Social Models in Europe, Institute of Economic Research WIFO.

Alves, Nuno, & Cardoso, Fátima (2010). A poupança das famíliasem Portugal: evidência micro e macroeconómica", BoletimEconómico do Banco de Portugal, Inverno.

Attanasio, Orazio P., & Weber, Guglielmo (2008) - "Consumer expenditure (new developments and the state of research)", The New Palgrave Dictionary of Economics, 2nd Edition.

Attanasio, Orazio P., & Weber, Guglielmo (2010). Consumption and Saving: Models of Intertemporal Allocation and Their Implications for Public Policy. Journal of Economic Literature, American Economic Association, vol. 48(3), pages 693-751, September.

Bloom, D., D. Canning & B. Graham. (2002). Life Expectancy and National Saving Rates. Paper of the Harvard School of Public Health, Boston, MA.

Disney, R. (1996). Ageing and Saving. Fiscal Studies, Institute for Fiscal Studies, vol.17- nº 2 (83-101).

Esping-Andersen, G. (1990). The Three Worlds of Welfare Capitalism. Princeton University Press: New Jersey.

ESS Round 4: European Social Survey Round 4 Data (2008). Data file edition 4.1. Norwegian Social Science Data Services, Norway – Data Archive and distributor of ESS data.

Ferrera, M. (1996). The 'Southern Model' of Welfare in Social Europe. Journal of European Social Policy, 6(1), pp. 17-37.

FMI (2004). Can Europe Afford to Grow Old? Finance & Development, June 2004.

Holzmann, Robert (2005). Old-Age Income Support in the 21st Century: An International Perspective on Pension Systems and Reform (Trade and Development).Edited by World Bank.

Leibfried, S. (2000). Towards a European Welfare State? In: Pierson, C., Castels, F.G. (eds.), The Welfare State Reader, Polity Press, Cambridge, UK, 2000, pp. 190-206.

Martins, J., F. Gonand, P. Antolin, C. Maisonneuve& K. Yoo (2005). The Impact of Ageing on Demand, Factor Markets and Growth. OECD Economics Department Working Papers, No. 420, OECD Publishing. doi:10.1787/545827207132

Mendes, F. Ribeiro (2011). Segurança Social. O FuturoHipotecado. Fundação Francisco Martins dos Santos.

Miles, D. (1999). Modelling the impact of Demographic Change upon the Economy. The Economic Journal, 109 January (1-36), Royal Economic Society, Published by Blackwell Publishers.

Modigliani, F. (1986). Life Cycle, Individual Thrift, and the Wealth of Nations. American Economic Review, American Economic Association, vol. 76(3) June (297-313).

OCDE (2009). Pensions at a Glance, OECD.

OECD (2013), How's Life? 2013: Measuring Well-being, OECD Publishing.doi: 10.1787/9789264201392-en

Sapir, A. (2006). Globalization and the Reform of European Social Models. JCMS, 2006, Volume 44, Number 2, pp. 369–90.

World Bank (1994). Averting the Old-Age Crisis: Policies to Protect the Old and Promote Growth, New York: Oxford University Press.

Vala, J., Torres, A., Ramos, A. &Lavado, S. (2010). Inquérito Social Europeu – ResultadosGlobaisComparativos, Lisboa: Instituto de CiênciasSociais.

Appendix

Table A.1 - European Social Models(ESM):12 Countries from ESS

Code	Country	European Social Model
GB	United kingdom	Anglo-saxons
IE	Ireland	Anglo-saxons
NL	Netherlands	Nordics
SE	Sweden	Nordics
FI	Finland	Nordics
DK	Denmark	Nordics
DE	Germany	Continentals
FR	France	Continentals
BE	Belgium	Continentals
GR	Greece	Med
ES	Spain	Med
PT	Portugal	Med

Table A.2 - Statistics of Variables

Variable	Obs.	Mean	Std. Dev.	Min	Max
Stflife_	56283	6.557699	2.440629	0	1
Smdfslv_	55545	2.291511	.9701902	0	1
Slvpens_	55919	4.084157	2.431441	0	1
Cldcrsv_	50556	4.749664	2.364666	0	1
Sbprvpv_	54540	2.638045	1.035231	0	1
Sbbsntx_	51146	2.880206	1.055828	0	1
Hlthcef_	55389	5.254834	2.408325	0	1
Ditxssp_	50927	5.098631	2.176407	0	1
Insfben_	54431	2.361412	1.024702	0	1
Lvoapen_	50829	1.824411	.7238512	0	1
Eduyrs	56238	11.93741	4.176988	0	50
Pdwrk_	56752	.5081231	.4999384	0	1
Edctn_	56752	.089477	.2854336	0	1
Uempla_	56752	.0443156	.2057972	0	1
Dsbld_	56752	.0313469	.174255	0	1
Rtrd_	56752	.2537179	.4351419	0	1
continentals	56752	.1160135	.320244	0	1
nordics	56752	.1306209	.3369883	0	1
anglo	56752	.0725261	.2593593	0	1
med	56752	.123608	.3291367	0	1