What is happening with quality of life among the oldest people in Southern European countries? an empirical approach based on the SHARE data

Abstract: Population aging in developed countries has created new challenges to improve the well-being of individuals at different age cohorts. This issue is especially significant for Southern European countries, were aging societies have worse health and less socio-economic resources. The aim of this study is to contribute to this body of literature and to estimate the effect of aging on quality of life of oldest people. This paper uses the latest available data (6^{th} Wave) from the Survey on Health, Ageing and Retirement in Europe (SHARE). Specifically, robust Ordinary Least Squares and multilevel regressions are employed to analyse the effects of socioeconomic, health, and community factors on quality of life among the oldest population for Southern European countries. Our findings confirm the significance of several factors on life satisfaction among the oldest population in this group of countries. Moreover, we show that the determinants which are correlated with quality of life include predisposing, health, geographic area and social isolation factors.

Keywords: Quality of life; oldest people; Southern European countries; SHARE; multilevel regressions.

1 Introduction

Population aging is a long-term trend that began several decades ago in Europe. The changing demographic structure of European Union, which is manifested in the increase in the proportion of people aged 65 or over (old dependency ratio)[1], is creating new challenges regarding broader welfare policies and improving the well-being of individuals. In any case, to understand the causes and assess the consequences of this progression, it must also bear in mind that the aging factor goes together with the rise of longevity understood as life expectancy at birth[2] and also, life expectancy in good health status[3], has grown very significantly over the years. Thus, population aging is a problem that affects several dimensions and it is expected to have widespread direct and indirect economic impacts. Besides, there exist relevant effects of several illnesses that need long time care. These chronic diseases or disability conditions are very usual among the old people and deeply affect the quality of life from many aspects so they may require ongoing care and support (Wiles and Jayasinha, 2013).

Over the past decades, aging has a significant impact on society due to a higher use of health care services and social resources. Precisely, Europe is one continent where a significant number of countries face population ageing in the near future, as the full generations born in the Baby Boom years would joined the upper stratum of the population pyramid. Aging has a direct influence on the labour market, since improvements in life expectancy affect individual behaviour in deciding to remain in work longer.

Moreover, it is well known that health and economic status are the most significant factors of quality of life. Consequently, there is a sizeable literature on the main factors of subjective well-being (Dolan et al., 2008). Data in early studies under represent the oldest-old (Ng et al., 2017), however recent ones (Mojon-Azzi and Sousa-Poza, 2011; Niedzwiedz, et al., 2014 and 2015; Stolz, 2015; Conde-Sala et al., 2017; Gibney et al., 2017) take the advance of the availability of micro data for the elderly population which represent a great opportunity for Europe comparing with other continents (Jagodzinski, 2010).

[1] According to Eurostat (2017), the old dependency ratio rose from 23.5% to 29.3% between 2001 and 2016 for the EU-28 countries.
[2] For the EU-28 (Eurostat, 2017), life expectancy at birth in absolute terms increased from 82.8 (2010) to 83.3 years old (2015) and from 76.9 years old to 77.9 (2015) for females and males, respectively.
[3] As for healthy life years in absolute values at birth (Eurostat, 2017), an increase is observed for females from 62.6 years old (2010) to 63.5 (2015) and for males from 61.8 years old to 62.6 (2015).

The main source of data used in this study is the latest wave of the Survey on Health, Ageing and Retirement in Europe (SHARE). We contribute to the existing literature regarding the well-being of the oldest people in order to disentangle the effect of aging and health on the quality of life. Specifically, robust Ordinary Least Squares (OLS) and multilevel regressions are designed to analyse the effects of socioeconomic, health, and community factors on quality of life among the oldest population for Southern European countries.

In spite of the fact that aging population is a generalized trend, it must be taken into account that there is a huge different incidence between countries, and there are unequal repercussions due to the dynamics of fertility and migration. The knowledge gaps that we want to cover are to disentangle the principal specificities and differences of the Southern European countries in relation to other European welfare systems because the economic crisis and austerity policies have greatly increased the level of dissatisfaction with health and social care provision. For this reason, we present results for the full sample and the selected group of Southern European countries.

Our analysis confirms the significance of several factors affecting life satisfaction among the oldest in Southern European countries. Thus, we show that determinants which are correlated with quality of life are in accordance with previous literature and include predisposing, health, geographic and social isolation characteristics. Population aging is a direct result of the decrease in the fertility rate and the increase in life expectancy and it is useful to understand the growth of life satisfaction in developed countries, so more information is needed for coordinated public policies to enhance health promotion and disease prevention among the various sectors involved[4].

The structure of the paper is as follows. Next, we describe the data, based on the lastest wave of the SHARE longitudinal survey (Wave 6), and the econometric model. Empirical findings and discussion are presented in the following Section and final Section concludes.

[4] The share of people aged 80 years or above in the EU-28's population is projected to more than double between 2015 and 2080 (EUROPOP 2013).

2 Data, Measurements and Methods

Data for this study are taken from SHARE, which is a longitudinal survey from individuals aged fifty and over in a host of different European countries. It was established specifically to address multidisciplinary areas of aging and the cross-sectional analysis utilises contemporaneous data from easySHARE release 6.0.0 (Wave 6 for 2014/15).

Countries here included in the full sample represent Nordic (Sweden and Denmark), Continental (Austria, Germany, France, Switzerland, Belgium and Luxembourg), Southern (Spain, Italy, Greece, Portugal, Slovenia and Croatia), Eastern (Czech Republic, Poland and Estonia) European countries, and Israel although SHARE questionnaires gathered information on households, demography, education, labour, income, health status, and other indicators for the social network.

. Our analytical sample is restricted to those aged more than 50 (n = 62,715 individuals). This is mainly due to the analysis of the Quality of life (QoL) measure (CASP-12) in SHARE data. That is, the CASP-12v Quality of life and well-being index which ranges between 12 and 48. It is interpreted as follows: scores QoL below 35= low QoL; 35-37= moderate QoL; 37-39= high QoL; >= 39 very high QoL. Additionally, the QoL is a frequently used measure for well-being and it is usually stable across countries and time.

Using SHARE database, Figure 1 presents QoL distinguishing between the full sample and Southern European countries. It is observed similar findings regarding moderate and high responses, but the inverse one regarding low and very high perceptions. Therefore, worse results are obtained for the Southern European countries sample being Slovenia, Spain and Croatia the countries with lower perceptions scores. Italy, Portugal and Greece have the highest levels of low perceptions

[Insert Figure 1]

Additionally, Figure 2 shows huge differences by age cohort among the full sample and the subsample of Southern European Countries. Better outcomes in terms of QoL are obtained for the full sample, where also percentages are almost stables by age cohort. The worst consequences are for the oldest-old in Southern European countries and the proportion of individuals with good perceptions with their life falls after 70 and 79 years because for people between 50-59 and 60-69 years is quite similar. Moreover, Figure 3 shows the differences in QoL for the Southern European countries by age cohort.

Precisely, Spain, Italy and Croatia obtain the most similar results with our findings obtained in Figure 2 whereas Slovenia and Greece show more discrepancies. Indeed, the 50-59 and 60-69 age cohorts display very high levels in terms of QoL for Slovenia. Far from these levels, we can point out the case of an ageing society as Spain where the QoL is focused again on the youngest cohorts.

[Insert Figure 2]

[Insert Figure 3]

Summing up all these findings and in order to investigate the relationship between aging and health on the QoL, we have taken into account four sets of socio-economic determinants as exogenous variables following the results of previous studies which have shown that they all affect the QoL (Clark et al., 2011; Angelini et al., 2012; Niedzwiedz et al., 2014 and 2015; Bourassa et al., 2015; Wahrendorf and Blane, 2015; Tomini et al., 2016; Ng et al., 2017) and their availability in the SHARE database. Firstly, we have included as Predisposing factors (*P*) a group of variables related with individual characteristics like sex, age, education, marital and labour status. Secondly, Health factors (*H*) are considered attending several determinants like Body Mass Index, suffering any chronic condition, having limitations in daily activities and depression, hospital utilization, and lifestyles. Thirdly, with Geographic characteristics (*G*) we have measured if the person lives in a rural area or not, and if the country that we consider is a Southern European one or not. Finally, we show with Social Isolation factors (*SI*) if the person lives alone or not because we have hypotesized that is related with QoL.

The list of variables and description are presented in Table 1. It covers the whole relevant aspects, such as sex (1 if female), age (years)[5], educational level (middle and high), current marital status (married or with a registered partner), employment status (Retired, Employed, or Permanent Sick or Disabled), Body Mass Index (overweight, obesity), limited (if respondent reports any difficulties), chronic (if respondent declares any chronic disease), depression (if respondent has depression), hospital admission (if respondent has stayed overnight in hospital during the last 12 months), ever smoke (whether respondent has ever smoked daily), if the person lives in a rural area or not (1 if rural), macro region (defined as 1 if it is a Southern European country; 0 otherwise) and alone (if the respondent live alone or

[5] Hence, aging is perceived to decrease QoL (Figures 1-3) although when it is controlled for other factors, the impact of age may be lower (Netuveli et al., 2006). Measures of subjective wellbeing have been shown to be associated with financial status and health although factors like social networks and participation also can enhance the QoL in older ages.

with more people in the household). Thus, the choice of these particular variables is made so that they are correlated with the QoL (dependent variable). Besides, Table 2 contains the descriptive statistics for QoL variables. It shows that the mean score of QoL was 37.06 for the full sample and 35.09 for Southern European Countries. These levels are moderate because ranges are between 12 and 48 and it shows a division between these two groups of countries.

[Insert Table 1]

[Insert Table 2]

Our dependent variable is QoL and robust OLS and multilevel regressions are used to study the impact of socioeconomic, health, and community factors on QoL and health outcomes among the oldest people for Southern European countries. Precisely, two models are used: one for the available countries in the last wave of SHARE data as a whole (full sample = 18 countries) and other based on the Southern European countries (6 countries: Spain, Italy, Greece, Portugal, Slovenia and Croatia). The statistical analysis was performed using Stata14 (Rabe-Hesketh and Skrondal, 2008). We have tested combination series of all the interest variables and have only presented here those ones satisfying statistical tests in order to check the empirical robustness of our findings.

3 Results

In this section we present the empirical results for the model described above based on demographics, education, marital status, employment status, health, lifestyles, geographical area and social isolation factors. To fully understand these effects, Tables 3-4 report the main estimates of our two models: OLS regression estimates and multilevel regression. Thus, Column 1 presents the variables and Column 2 describes the detailed findings for the full sample, whereas the following one does it for each of the Southern European countries. As we can see, coefficients are statistically significant and have the expected signs according to the a priori economic criteria. Besides, the robustness of our estimates is checked as findings are consistent between the methods here applied (robust OLS and multilevel regressions, respectively).

[Insert Table 3]

[Insert Table 4]

Overall, and in line with other papers (Angelini et al., 2012), our study shows that older age, disabled, poorer health status (overweight, obesity, limitations in daily activities, chronic diseases, depression, hospital admisions and smooking) are associated with lower QoL. Surprisely, the proxy for social isolation does not report negative effects probably due to the special consideration of these variables in countries like the Southern European ones. Gender effect is no significant for Southern European countries. Moreover, middle and high education, being retired or employed, and living in rural areas are vinculated with better QoL. The analysis also indicates that Southern European countries are related with lower QoL. Besides, the unique diference regarding the effects is concentrated on the gender variable that is not significant when it is considered the subsample of the Southern European countries, but it is for the full sample of the European countries in the SHARE database where it is appreciated that being a male is associated with worse QoL.

We also have run a sensitivity analysis including the same specification than in the models that we estimate but using other econometric approaches. Again, our empirical results seem to be suitable in terms of statistical significance and signs of the relationship between the variables of interest. All results for additional sensitivity analyses are available from the authors based on request.

Moreover, different tests have been run in order to determine possible multicollinearity. Precisely, the Appendix contains the Variance Inflation Factors for our OLS estimates (see Tables A.1 and A.2). Furthermore, correlation matrix has been observed. So, it its verified the inclusion of all these factors in our model.

4 Discussion

This study has reaffirmed the relevance of the impact of aging and health on the QoL of the oldest-old who lived in the Southern European Countries. Precisely, this is the area inside the Europe Union with the highest proportion of people aged 65 or over and where the proportion of oldest people is rising (OECD Health, 2017).

In this regard, for example, our findings show that QoL among the oldest people is significantly influenced by health status. Thus, despite of major exposure to important health problems like strokes, diabetes, arthritis or other diseases, QoL among the oldest old does not always depend on their objective

health level (Gwozdz et al., 2010; Singh et al., 2017). Hence, our findings suggest again that age-related decline in functional level of the individual and it can be mitigated by QoL (Palgi et al., 2015).

In any case, it might not be forgotten that the Southern European Countries are usually characterised by National Health Services and decentralized tax-funded models. Then, in spite of guaranteeing minimum levels of health care everywhere, our results mean that these decentralized tax-funded systems do not reduce the quality and quantity of health services.

Indeed, one important role of applying research on the well-being of the oldest-people is to disentangle their perceived QoL (Angelini et al., 2012). Not surprisingly, results can change inside Europe and these effects are more accused for all the variables with no relevant differences by gender (Stolz, 2015).

In order to overcome this issue, we have used data from the SHARE, that it is one of the best multidisciplinary dataset containing a huge amount of information on both the economic and non-economic characteristics of oldest people (individuals aged 50 and over). Nevertheless, possible biases in self-evaluation of QoL are partly explained by controlling several predisposing, health, geographic and social isolation factors. For example, the main problem in other studies focused on the validity of the individual response is that, in the case of smoking behaviour, individuals misreport their current status due to social restrictions (Bago d'Uva et al., 2011).

Besides, despite modeling an OLS and multilevel model of QoL, the special relationship between aging and health and QoL can be two faces of the same coin. Thus, while older adults with chronic limitations can have low levels of QoL, the opposite is also a possible scenario: higher QoL may also enhance their health status (Steptoe, 2015) although the elderly people's dissatisfaction will be vanished along with the growth by age of this population group (Jin et al., 2017). This conclusion is also supported by our results but according to the multilevel regression estimates, Southern European countries should be also more considered as possible recipients of new social funds in order to mitigate the economic effect of aging populations.

It is generally understood that demographic changes (fertility, mortality, aging, migration, and social mobility) are closely linked to welfare policies, both as a cause and as a result. For this reason, social demography and welfare policies share a compelling way to know how these factors are reshaping the main characteristics of aging populations. Hence, some demographic trends that influence welfare policies will be highlighted as changes in the size and ages of the population that demands social

protection and trends pertaining to household structure and income distribution that demand a better financial sustainability and more equal access to public services of Welfare States.

5 Conclusions

The aging process that has been taking place for decades will have to face a policy priority in the next years. Precisely, in this study the attention is put on the needs of the elderly population in order to enhance well-being because Europe is the area with the highest percentage of people aged 65 or over and the percentage of older individuals is heavily rising (Eurostat, 2017). Hence, different factors have been analysed: predisposing, health, geographic and social isolation.

Our main results can be summarized as follows. Southern European countries, traditionally characterized by poorer socioeconomic conditions, highlighted lower QoL coefficients that the full sample (all the European countries included in the SHARE database). However, the rest of factors almost behave similarly to the full sample but gender is not statistically significant for the Southern European countries subsample.

Therefore, population aging issues should be considered as an irreversible global trend in our developed societies due to fertility declines and rising life expectancy. Moreover, the ability of each country to assimilate demographic changes and their enormous capacity to take better advantage of opportunities that come with the newest demographic structure, would determine the success of the European Welfare States. Besides, we really think that the needs and capabilities of future older generations which speed of aging is projected to be different to those of elders now. For example, the way in which welfare policies are organized in developed countries can have a deep effect on their cost effectiveness and resource constraints. Thus, the problem in this group of countries is to sustain existing health resources and social services but not to include older people into social policies. As a result, a shift in the priorities of meeting the needs of elders will also be required in order to play an important role as a solution for old people with health problems or disabilities.

All in all, limitations and extensions of this study should be indicated. The most important one is that we are working with self-reported data in most of the socio economic variables that we use. That is, despite SHARE information allows incorporating individual-specific characteristics, data drawback is the lack of objectivity. Besides, here we present the empirical results considering only one wave of the SHARE (the latest available, Wave 6). Further studies require to explore the evolution on individual data and to consider more plausible differences by countries in order to gain a better understanding for coordinated social policies.

References

Angelini, V., Cavapozzi, D., Corazzini, L., Paccagnella, O. (2012). Age, health and life satisfaction among older Europeans. *Social Indicators Research*, 105(2), 293-308.

Bago d´Uva, T., Van Doorslaer, E., Lindeboom, M., O´Donnell, O. (2011). Slipping anchor? Testing the vignettes approach to identification and correction of reporting heterogeneity. *Journal of Human Resources*, 46(4), 875-906.

Börsch-Supan, A., S. Gruber, C. Hunkler, S. Stuck, J. Neumann (2017): *easy*SHARE. Release version: 6.0.0. SHARE-ERIC. Dataset. doi: 10.6103/SHARE.easy.600

Bourassa, K. J., Memel, M., Woolverton, C., & Sbarra, D. A. (2015). A dyadic approach to health, cognition, and quality of life in aging adults. *Psychology and Aging*, *30*(2), 449.

Clark, A. E. (2011). Income and happiness: getting the debate straight. *Applied Research in Quality of Life*, 6(3), 253–263.

Conde-Sala, J. L., Portellano-Ortiz, C., Calvó-Perxas, L., Garre-Olmo, J. (2017). Quality of life in people aged 65+ in Europe: associated factors and models of social welfare—analysis of data from the SHARE project (Wave 5). *Quality of Life Research*, 26(4), 1059-1070.

Diener, E., Inglehart, R., Tay, L. (2013). Theory and validity of life satisfaction scales. *Social Indicators Research*, 112(3), 497-527.

Dolan, P., Peasgood, T., White, M. (2008). Do we really know what makes us happy? A review of the economic literature on the factor associated with subjective well-being. *Journal of Economic Psychology*, 29(1), 94-122.

Eurostat (2017): Eurostat Statistics explained. European Commission.

EUROPOP (2013). Population projections at national level. European Commission.

Gibney, S., Delaney, L., Codd, M., Fahey, T. (2017). Lifetime childlessness, depressive mood and quality of life among older Europeans. *Social Indicators Research*, 130(1), 305-323.

Gruber, S., Hunkler, C., Stuck, S. (2014). Generating EasySHARE: guidelines, structure, content and programming. *SHARE Working paper Series*, 17-2014, Munich Center for the Economics of Aging (MEA).

Gwozdz, W., & Sousa-Poza, A. (2010). Ageing, health and life satisfaction of the oldest old: An analysis for Germany. *Social Indicators Research*, 97(3), 397-417.

Jagodzinski, W. (2010). Economic, social, and cultural determinants of life satisfaction: Are there differences between Asia and Europe? *Social Indicators Research*, 97(1), 85-104.

Jin, Q., Pearce, P., Hu, H. (2017). The Study on the Satisfaction of the Elderly People Living with Their Children. *Social Indicators Research*, in press.

Layte, R., Sexton, E., Savva, G. (2013). Quality of life in older age: evidence from and Irish cohort study. *Journal of the American Geriatrics Society*, 61(52, 99-305.

Lou, V.W. (2010). Life satisfaction of older adults in Hong-Kong: the role of social support from grandchildren. *Social Indicators Research*, 95(3), 377-391.

Mojon-Azzi, S., Sousa-Poza, A. (2011). Hypertension and life satisfaction: an analysis using data from the Survey of Health, Ageing and Retirement in Europe. *Applied Economics Letters*, 18(2), 183–187.

Netuveli, G., Wiggins, R.D., Hildon, Z., Montgomery, S.M., Blane, D. (2006). Quality of life at older ages: evidence from the English longitudinal study of aging (wave 1). *Journal of Epidemiology Community Health*, 60(4), 357-363.

Nicholson, N.R. (2012). A review of social isolation: an important but underassessed condition in older adults. *Journal of Primary Prevention*, 33(2-3), 137-152.

Niedzwiedz, C., Katikireddi, S.V., Pell, J., Mitchell, R. (2014). The association between life course socioeconomic position and life satisfaction in different welfare states: European comparative study of individuals in early old age. *Age and Ageing*, 43(3), 431-436.

Niedzwiedz, C., Katikireddi, S.V., Pell, J., Mitchell, R. (2015). Socioeconomic inequalities in the quality of life of older Europeans in different welfare regimes. *European Journal of Public Health*, 24(3), 364-370.

Ng, S. T., Tey, N. P., Asadullah, M. N. (2017). What matters for life satisfaction among the oldest-old? Evidence from China. *PloS one*, 12(2), e0171799.

OECD (2017): OECD Health Statistics 2017. OECD, Paris.

Palgi, Y., Shrira, A., & Zaslavsky, O. (2015). Quality of life attenuates age-related decline in functional status of older adults. *Quality of Life Research*, 24(8), 1835-1843.

Rabe-Hesketh, S., Skrondal, A. (2008). Multilevel and longitudinal modeling using Stata. 2nd ed, STATA Press.

Singh, P., Govil, D., Kumar, V., Kumar, J. (2017). Cognitive Impairment and Quality of Life among Elderly in India. *Applied Research in Quality of Life*, 12(4), 963-979.

Steptoe, A., Deaton, A., Stone, A.A. (2015). Subjective wellbeing, health and ageing. *Lancet*, Feb 14, 385(9968), 640-648.

Stolz, E. (2015). Cross-national variation in quality of life of care-dependent elders in Europe: a two-step approach combining multilevel regression and fuzzy-set QCA. *International Journal of Sociology*, 45(4), 286-308.

Tavares, L.P., Zanto Mio (2017). Inequality in health care use among older people after 2008: the case of Southern European Countries. *Health Policy*, 121(10), 1063-1071.

Tomini, F., Tomini, S.M., Groot, W. (2016). Understanding the value of social networks in life satisfaction of elderly people: a comparative study of 16 European countries using SHARE data. *BMC Geriatrics*, Dec 1, 16(1), 203.

Wahrendorf, M., & Blane, D. (2015). Does labour market disadvantage help to explain why childhood circumstances are related to quality of life at older ages? Results from SHARE. *Aging & Mental health*, 19(7), 584-594.

Wiles, J.L. and Jayasinha, R. (2013). Care for place: The contributions older people make to their communities. *Journal of Aging Studies*, 27(2), 93-101.

TABLES AND FIGURES

Table 1 List of variables and description

Variable	Description	Coding
CASP	Quality of life (QoL)	The CASP-12v Quality of life and well-being index. Each of its 12 items is answered using a four-point Likert-type scale, and the total score, which ranges between 12 and 48, is interpreted as follows: low QoL, <35; moderate, 35–37; high, 37–39; and very high, >= 39.
	Predisposing factors	
Female	Gender of respondent	1: female; 0: male
Age	Age of respondent	Years
Mideduc	ISCED-97 coding of education	1: middle education; 0: otherwise
Higheduc	ISCED-97 coding of education	1: high education; 0: otherwise
Partnership	Current marital status	1: married or with a registered partner; 0: otherwise
Retired	Current job situation	1: respondent is retired; 0: otherwise
Employed	Current job situation	1: respondent is employed or self-employed; 0: otherwise
Disabled	Current job situation	1: respondent is permanently sick or disabled; 0: otherwise
	Health factors	
Overweight	BMI: 25-29.9 kg/m^2	1: respondent is overweight; 0: otherwise
Obesity	BMI: 30 and above kg/m^2	1: respondent is obese; 0: otherwise
Limited	Activities of daily living	1: respondent reporting any difficulties; 0: otherwise
Chronic	Chronic diseases	1: respondent reporting any chronic disease; 0: otherwise
Depression	Depression	1: respondent has depression; 0: otherwise
Hospitalm	Hospital admission	1: respondent has stayed overnight in hospital during the last 12 months; 0: otherwise
Eversmoked	Whether respondent has ever smoked daily	1: respondent has ever smoked daily; 0: otherwise
	Geographic factors	
Rural	Area of location(place of residence)	1: respondent lives in a small town, a rural area or village; 0: otherwise
Southern European countries	Whether the country is	1: respondent lives in Spain, Italy, Greece, Portugal, Slovenia, Croatia; 0: otherwise
	Social Isolation factors	
Alone	Number of people living in the respondents' household	1: respondent live alone; 0: otherwise

Source: Authors' elaboration.

Table 2 Summary statistics of selected variables used in estimations

Variable	Full sample (n = 62,715)		Southern European countries (n = 22,224)	
	Mean	**S.D.**	**Mean**	**S.D.**
CASP	37.06	6.34	35.09	6.49
Female	0.56	0.5	0.55	0.5
Age	67.51	9.73	67.39	9.69
Mideduc	0.37	0.48	0.25	0.44
Higheduc	0.22	0.42	0.14	0.34
Partnership	0.69	0.46	0.76	0.43
Retired	0.59	0.49	0.55	0.5
Employed	0.25	0.43	0.2	0.4
Disabled	0.03	0.16	0.02	0.13
Overweight	0.41	0.49	0.44	0.5
Obesity	0.22	0.41	0.21	0.4
Limited	0.1	0.3	0.09	0.29
Chronic	0.64	0.48	0.65	0.48
Depression	0.4	0.49	0.38	0.49
Hospitalm	0.15	0.35	0.11	0.31
Eversmoked	0.44	0.5	0.41	0.49
Rural	0.56	0.5	0.54	0.5
Alone	0.21	0.41	0.16	0.37

Source: Authors' calculations based on easySHARE release 6.0.0 (Wave 6).
Notes: CASP (Quality of Life indicator) ranges between 12 and 48. Besides, age ranges between 50 and 105.4 for the full sample and from 50 to 102.3 regarding Southern European countries.

Table 3 Parameter estimates. QoL and factors. OLS regression estimates

Variable	Full sample (n = 62,715)						Southern European countries (n = 22,224)					
	Coef.	Robust Std. Err.	t	p-value	[95% Conf. Interval]		Coef.	Robust Std. Err.	t	p-value	[95% Conf. Interval]	
PREDISPOSING FACTORS												
Female	0.088 *	0.048	1.840	0.066	-0.006	0.181	0.090	0.087	1.040	0.300	-0.080	0.260
Age	-0.059 ***	0.003	-18.460	0.000	-0.065	-0.053	-0.089 ***	0.005	-17.100	0.000	-0.099	-0.079
Mideduc	1.338 ***	0.054	24.650	0.000	1.232	1.444	1.752 ***	0.093	18.820	0.000	1.570	1.935
Higheduc	2.100 ***	0.061	34.330	0.000	1.981	2.220	2.339 ***	0.114	20.500	0.000	2.115	2.563
Partnership	0.878 ***	0.072	12.240	0.000	0.737	1.018	0.632 ***	0.136	4.660	0.000	0.366	0.897
Retired	1.366 ***	0.074	18.480	0.000	1.221	1.511	1.862 ***	0.105	17.780	0.000	1.657	2.067
Employed	1.219 ***	0.082	14.860	0.000	1.058	1.380	1.137 ***	0.126	10.870	0.000	1.125	1.621
Disabled	-1.978 ***	0.164	-12.060	0.000	-2.300	-1.657	-1.508 ***	0.314	-4.810	0.000	-2.123	-0.893
HEALTH FACTORS												
Overweight	-0.179 ***	0.050	-3.590	0.000	-0.277	-0.081	-0.177 **	-2.060	0.040	-0.346	-0.008	-2.060
Obesity	-0.654 ***	0.061	-10.660	0.000	-0.774	-0.534	-0.371 ***	-3.430	0.001	-0.583	-0.159	-3.430
Limited	-3.498 ***	0.082	-42.890	0.000	-3.658	-3.338	-3.064 ***	-21.350	0.000	-3.345	-2.783	-21.350
Chronic	-1.067 ***	0.048	-22.380	0.000	-1.161	-0.974	-1.078 ***	-12.750	0.000	-1.244	-0.913	-12.750
Depression	-3.259 ***	0.047	-69.530	0.000	-3.351	-3.167	-3.735 ***	-44.760	0.000	-3.898	-3.571	-44.760
Hospitalm	-0.578 ***	0.065	-8.870	0.000	-0.705	-0.450	-0.492 ***	-3.850	0.000	-0.743	-0.242	-3.850
Eversmoked	-0.133 ***	0.045	-2.930	0.003	-0.222	-0.044	-0.305 ***	-3.730	0.000	-0.465	-0.144	-3.730
GEOGRAPHIC AREA												
Rural	0.870 ***	0.045	19.530	0.000	0.783	0.957	1.500 ***					
Southern European countries	-2.597 ***	0.051	-51.370	0.000	-2.696	-2.498						
SOCIAL ISOLATION FACTORS												
Alone	0.136 *	0.082	1.660	0.098	-0.025	0.297	-0.091	0.156	-0.580	0.561	-0.397	0.215
R-squared	0.266						0.254					

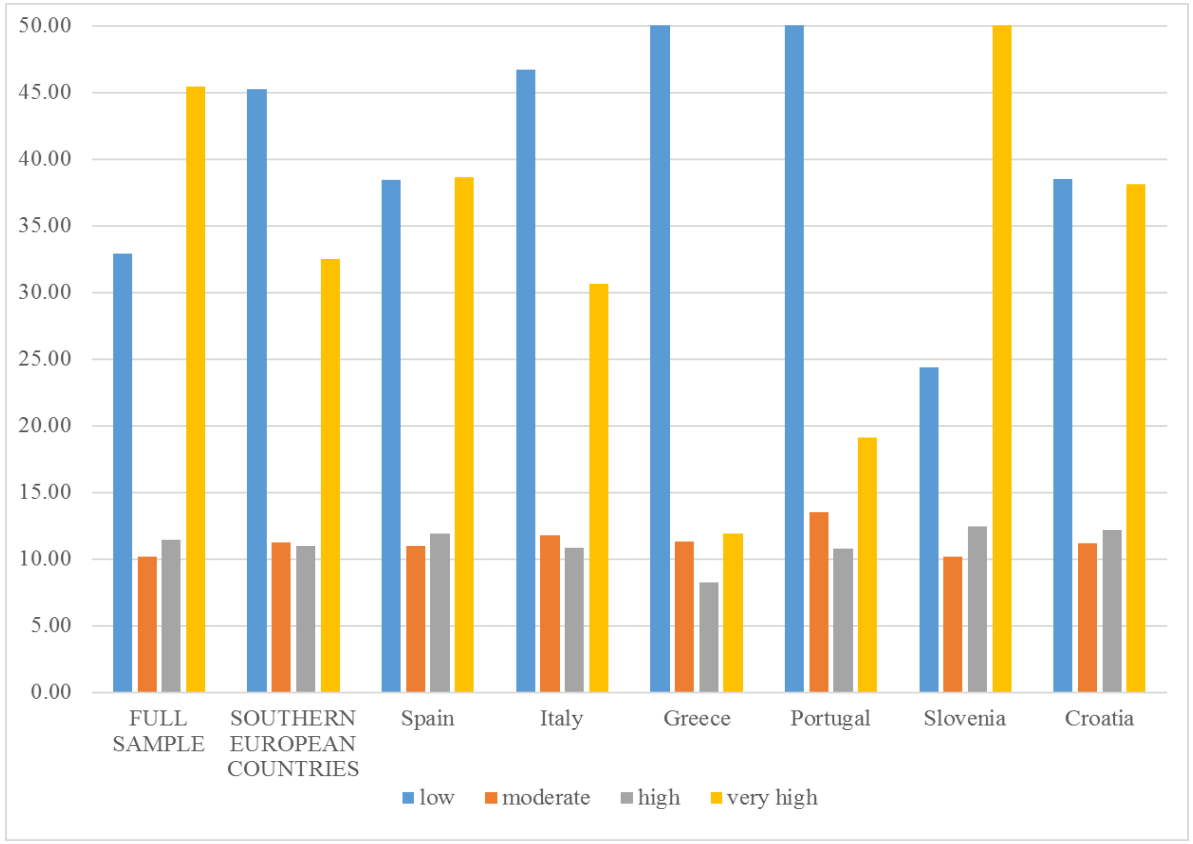
Notes: ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Table 4 Parameter estimates. QoL and factors. Multilevel regression estimates

Variable	Full sample (n = 62,715)						Southern European countries (n = 22,224)					
	Coef.	Std. Err.	t	p-value	[95% Conf. Interval]		Coef.	Std. Err.	t	p-value	[95% Conf. Interval]	
PREDISPOSING FACTORS												
Female	0.088 *	0.048	1.830	0.067	-0.006	0.182	0.090	0.087	1.030	0.303	-0.081	0.261
Age	-0.059 ***	0.003	-19.180	0.000	-0.065	-0.053	-0.089 ***	0.005	-17.400	0.000	-0.099	-0.079
Mideduc	1.338 ***	0.053	25.310	0.000	1.234	1.442	1.752 ***	0.093	18.930	0.000	1.571	1.933
Higheduc	2.100 ***	0.062	33.700	0.000	1.978	2.223	2.339 ***	0.119	19.690	0.000	2.106	2.572
Partnership	0.878 ***	0.069	12.690	0.000	0.742	1.013	0.632 ***	0.128	4.930	0.000	0.381	0.883
Retired	1.366 ***	0.070	19.490	0.000	1.228	1.503	1.862 ***	0.103	18.060	0.000	1.660	2.064
Employed	1.219 ***	0.080	15.180	0.000	1.062	1.376	1.373 ***	0.128	10.770	0.000	1.123	1.623
Disabled	-1.978 ***	0.148	-13.360	0.000	-2.269	-1.688	-1.508 ***	0.292	-5.160	0.000	-2.081	-0.935
HEALTH FACTORS												
Overweight	-0.179 ***	0.050	-3.580	0.000	-0.278	-0.081	-0.177 **	0.087	-2.050	0.041	-0.347	-0.007
Obesity	-0.654 ***	0.060	-10.840	0.000	-0.772	-0.536	-0.371 ***	0.107	-3.470	0.001	-0.580	-0.161
Limited	-3.498 ***	0.076	-46.270	0.000	-3.646	-3.350	-3.064 ***	0.138	-22.150	0.000	-3.335	-2.793
Chronic	-1.067 ***	0.049	-21.970	0.000	-1.163	-0.972	-1.079 ***	0.085	-12.640	0.000	-1.246	-0.911
Depression	-3.259 ***	0.046	-71.000	0.000	-3.349	-3.169	-3.735 ***	0.081	-46.030	0.000	-3.894	-3.576
Hospitalm	-0.578 ***	0.063	-9.160	0.000	-0.701	-0.454	-0.492 ***	0.123	-4.010	0.000	-0.733	-0.251
Eversmoked	-0.133 ***	0.046	-2.910	0.004	-0.223	-0.043	-0.305 ***	0.082	-3.710	0.000	-0.465	-0.144
GEOGRAPHIC AREA												
Rural	0.870 ***	0.044	19.610	0.000	0.783	0.957	1.500 ***	0.077	19.580	0.000	1.351	1.651
Southern European countries	-2.597 ***	0.049	-52.760	0.000	-2.693	-2.500						
SOCIAL ISOLATION FACTORS												
Alone	0.136 *	0.078	1.730	0.083	-0.018	0.290	-0.091	0.148	-0.610	0.541	-0.382	0.200
var(Residual)	29.561	0.167			29.236	29.890	31.441	0.928			30.863	30.032

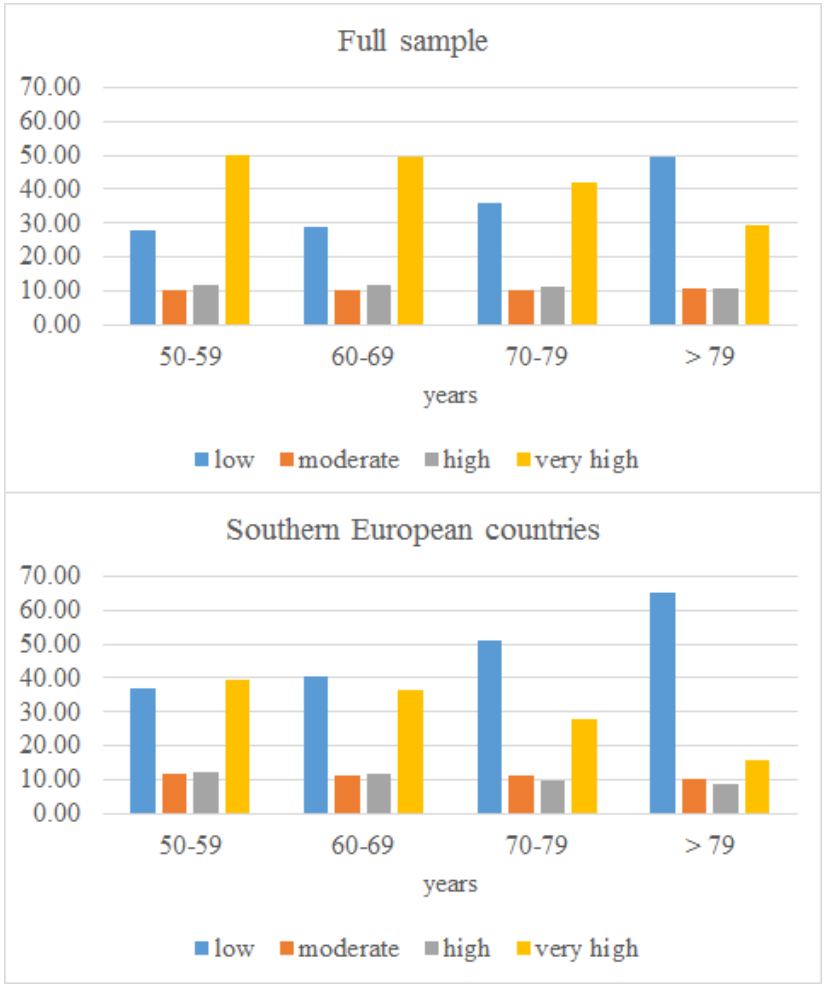
Notes: ***, ** and * indicate significance at 1%, 5% and 10%, respectively.

Figure 1 Quality of life (CASP-12) according to the samples considered (full sample and Southern European countries)



Source: Authors' elaboration based on easySHARE release 6.0.0 (Wave 6).

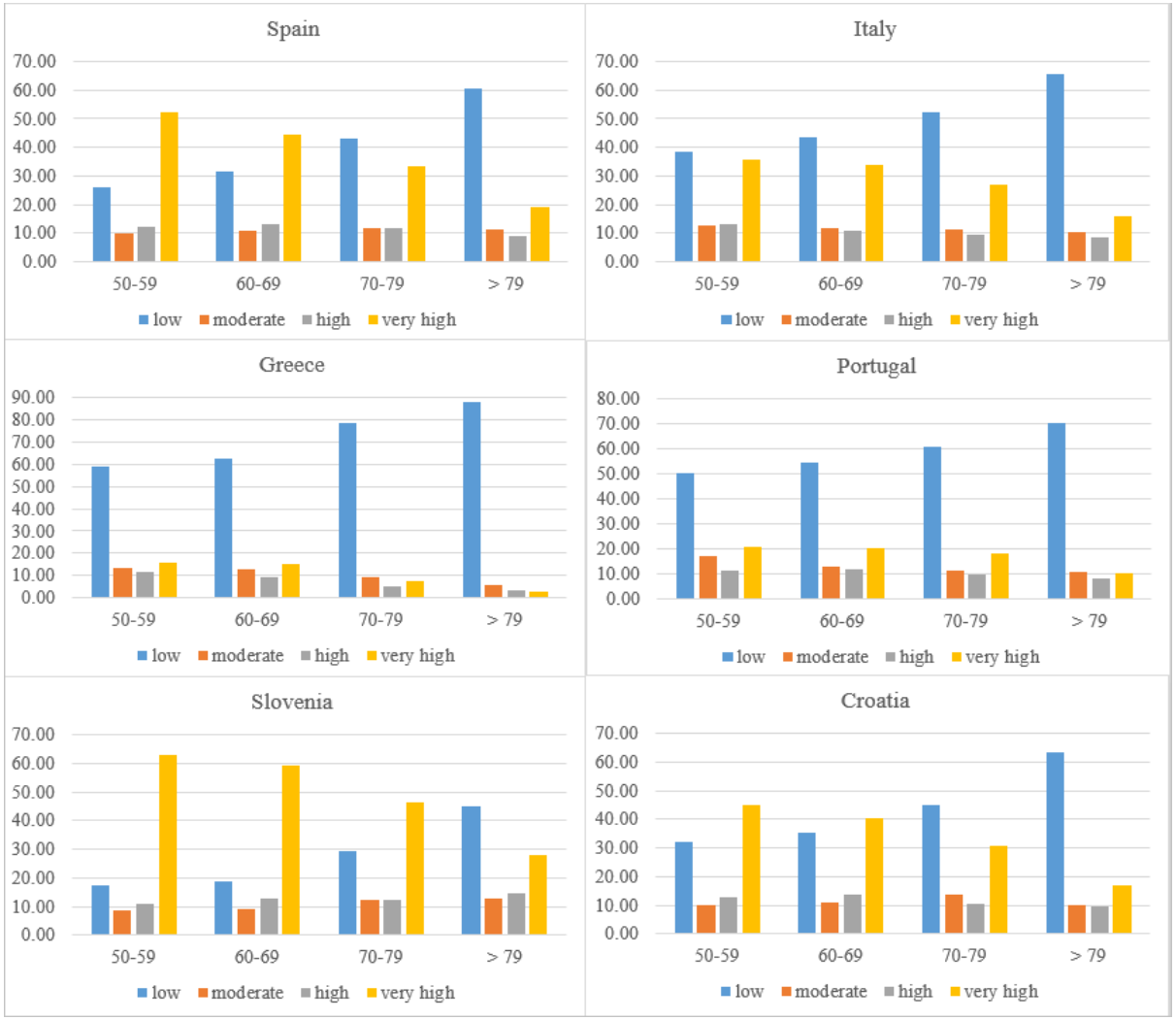
Figure 2 Quality of life (CASP-12) according to the samples considered by age cohort-years (full sample and Southern European countries)



Source: Authors' elaboration based on easySHARE release 6.0.0 (Wave 6).

.

Figure 3. Quality of life (CASP-12) in Southern European countries by age cohort (years)



Source: Authors' elaboration based on easySHARE release 6.0.0 (Wave 6).

SUPPLEMENTARY MATERIAL: APPENDIX

Table A.1 VIF-Variance Inflation Factors for the full sample regression

Variable	VIF	1/VIF
Employed	2.54	0.394
Retired	2.53	0.395
Alone	2.19	0.456
Partneship	2.17	0.461
Age	1.89	0.530
Higheduc	1.42	0.704
Mideduc	1.38	0.724
Obesity	1.32	0.755
Overweight	1.29	0.775
Disabled	1.23	0.814
Female	1.20	0.831
Southern European countries	1.18	0.850
Chronic	1.16	0.862
Limited	1.12	0.895
Eversmoked	1.10	0.910
Depression	1.07	0.933
Hospitalm	1.06	0.943
Rural	1.03	0.971
Mean VIF	*1.49*	

Table A.2 VIF-Variance Inflation Factors for the Southern European countries regression

Variable	VIF	1/VIF
Partneship	2.14	0.467
Alone	2.11	0.474
Retired	1.86	0.537
Employed	1.82	0.550
Age	1.74	0.575
Female	1.33	0.751
Obesity	1.32	0.756
Overweight	1.31	0.763
Higheduc	1.17	0.854
Chronic	1.16	0.859
Mideduc	1.15	0.870
Eversmoked	1.15	0.871
Limited	1.12	0.893
Depression	1.10	0.909
Disabled	1.09	0.920
Hospitalm	1.06	0.948
Rural	1.03	0.969
Mean VIF	1.39	