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**CASP-12 AS A MEASURE OF QUALITY OF LIFE AT OLDER AGES:  
COMPARING EARLY AND OLDER ELDERLY**

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# I. INTRODUCTION

## 1. Aim of the study

- Determine the **key factors that influence Quality of Life (QoL) of the elderly** in the European countries.
- Identify if there are significant **differences in QoL** of the elderly **by age range: early elderly and elderly**.
- Identify if there are significant **differences in QoL** of the elderly **by regions** (Northern Europe, Southern Europe, Western Europe, Eastern Europe, Western Asia).

Using data taken from the *Survey of Health, Ageing and Retirement in Europe (SHARE) from 2017: 7th* wave of the survey, comparable at international level (ELSA- UK, HRS - USA) and with high future prospects.

- ELSA: English Logitudinal Study of Ageing.
- HRS: Health Retirement Study.

# I. INTRODUCTION

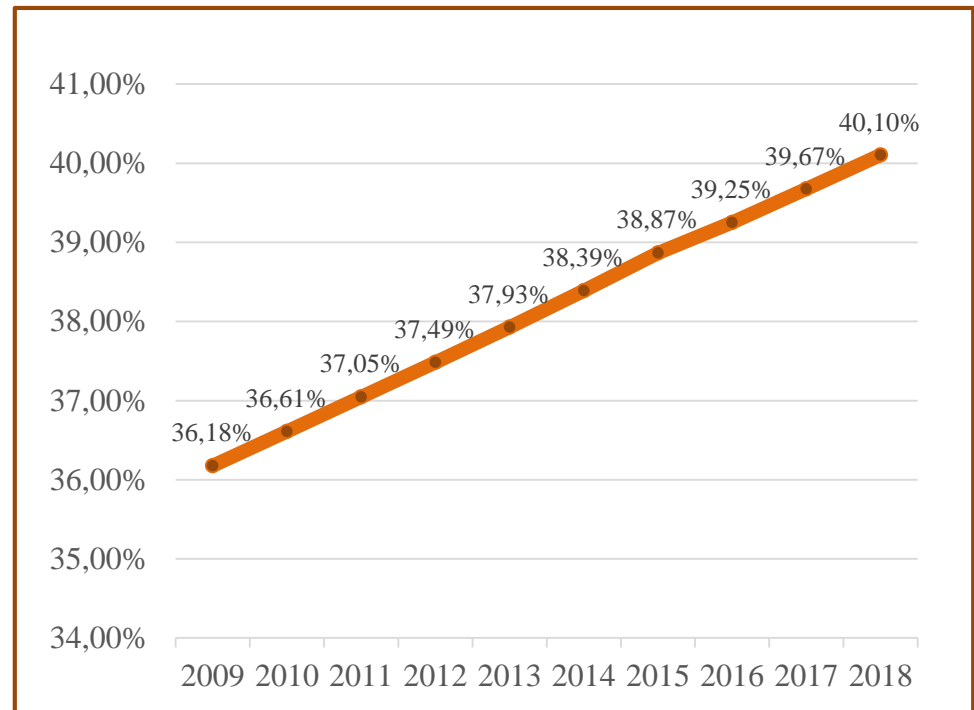
- **Ageing of population** is a main problem in developed countries, and especially in Europe (European Commission, 2018):
  - In 2018, a **40,10%** of the EU population was aged **50** or more.
  - In 2018, a **19%** of the EU population was aged **65** or more.
  - The share of people aged **80** years should reach **14,6%** by **2100**.



## **2018:**

512.379.225 millions of europeans (EU 28).  
205.487.763 millons of europeans aged  $\geq 50$ .

**Picture 1. Percentage of population over 50 in EU28. 2009-2018.**



Source: European Commision, Eurostat. 2019.

# I. INTRODUCTION



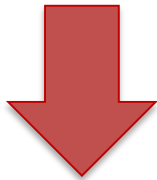
## **Why is this important?**

- **For Public Institutions:** Better QoL of the elderly implies less public expenditure (health care, retirement, etc.) . Top of the public policy agenda. (Angelini, 2012).
- **For researchers:** Many factors affects QoL:
  - Economic factors (incomes, welfare, etc.).
  - Non Economic factors (relationships, health, etc.).

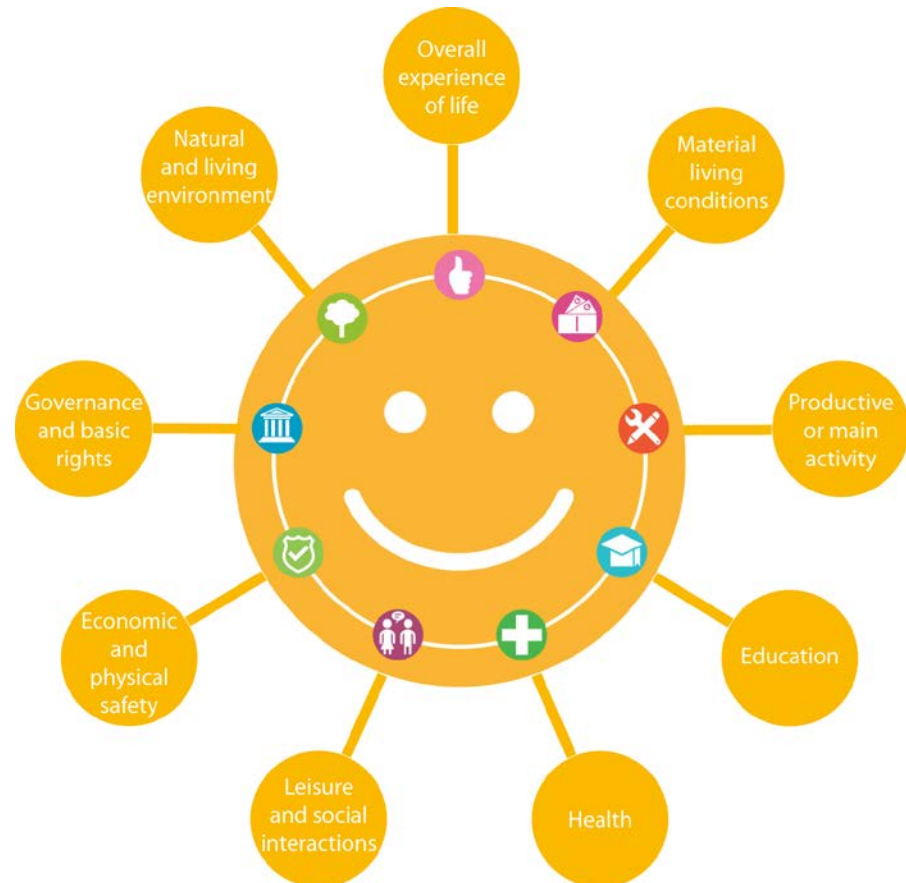
# I. INTRODUCTION

## 3. QoL in elderly

**Quality of Life (QoL)**: “an individual’s perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (WHO, 2019).



Picture 2. Dimensions of QoL for the EU



Source: European Commission, Eurostat. 2019.



# I. INTRODUCTION



But, how do we  
measure QoL  
in the elderly?



Source: Disney Pixar, Up movie, 2009.

**One choice, asking: How satisfied are you with your life? (Self-reported satisfaction)**

## II. METHODOLOGY

### 1. Other choice: indicator CASP-12


**Hyde et al. (2003):** defined a **theoretical needs satisfaction model** that measure quality of life in older ages: **CASP-19**.




four domains: **C**ontrol, **A**utonomy, **S**elf-realization and **P**leasure.

**Wiggins et al. (2008):** revised CASP-19 into a 12-item version (**CASP-12**).

**Borrat-Besson et al. (2015):** validated a **CASP-12** version for **SHARE**, included since wave 2.



12 questions evaluated on a **four-point Likert** scale:



often, sometimes, rarely and never

**Resulting score:** sum [12 - 48]. **Higher scores = better QoL.**



## II. METHODOLOGY

**Table 1. CASP-12 Variables in SHARE wave 7**

<b>Variable name</b>	<b>Question text</b>	<b>Subscale</b>
<b>AC014</b>	How often do you think your age prevents you from doing the things you would like to do?	Control
<b>AC015</b>	How often do you feel that what happens to you is out of your control?	Control
<b>AC016</b>	How often do you feel left out of things?	Control
<b>AC017</b>	How often do you think that you can do the things that you want to do?	Autonomy
<b>AC018</b>	How often do you think that family responsibilities prevent you from doing what you want to do?	Autonomy
<b>AC019</b>	How often do you think that shortage of money stops you from doing the things you want to do?	Autonomy
<b>AC020</b>	How often do you look forward to each day?	Pleasure
<b>AC021</b>	How often do you feel that your life has meaning?	Pleasure
<b>AC022</b>	How often, on balance, do you look back on your life with a sense of happiness?	Pleasure
<b>AC023</b>	How often do you feel full of energy these days?	Self-realization
<b>AC024</b>	How often do you feel that life is full of opportunities?	Self-realization
<b>AC025</b>	How often do you feel that the future looks good for you?	Self-realization

Source: SHARE Scales and Multi-Item Indicators (p. 6)

## II. METHODOLOGY

### 2. Survey of Health, Ageing and Retirement in Europe (SHARE)

- Multidisciplinary and **cross-national** panel database.
- Biannually, since 2004.
- Waves 1-7.
- **Variables:** health, socioeconomic status, social and family network.
- **Target population:** individuals aged 50 or older.
- **Data collection:** computer-assisted personal interviewing system (CAPI).
- **Questionnaires:** baseline (1st participation – refreshing sample) and longitudinal.

## II. METHODOLOGY

### 2. Data and variables definition

**Table 2. SHARE (Wave 7): Country distribution by regions**

<b>Region</b>	<b>27 Countries</b>
Northern Europe	Finland, Sweden, Denmark, Estonia, Latvia, Lithuania
Southern Europe	Portugal, Spain, Italy, Greece, Slovenia, Malta
Western Europe	France, Belgium, Luxembourg, Switzerland, Germany, Austria
Eastern Europe	Croatia, Czech Republic, Slovakia, Hungary, Poland, Romania, Bulgaria
Western Asia	Cyprus, Israel

Source: Geographical area guidelines for statistical use, United Nations, 1999.

**Table 3. SHARE (Wave 7): individuals distribution by age**

<b>Age</b>	<b>Individuals</b>
Early elderly (Third age)	Individuals from 50 to 68 years.
Elderly (Four age)	Individuals over 68 years.

Source: Netuveli et al. (2006), Jivraj et al., (2013).

## II. METHODOLOGY

DATA	VARIABLES	
<b>Cross-sectional</b>	<b>Dependent variable (LDV)</b>	
Baseline questionnaire + Longitudinal questionnaire = <b>76.520 obs. valid.</b>	<b>AC012: How satisfied are you with your life? (0-10).</b>	
Finally selected: <b>75.674</b> obs.(39.647 aged 50-68 and 36.027 over 68).	<b>Independent variables</b> Qualitative: Most of them. Gender, Marital status, Nationality, Level of studies, Region, Health self-reported, Long-term illness, Disability, Household composition, Etc.	Quantitative <ul style="list-style-type: none"> <li>• <i>Discrete</i> Age Number of children Number of grandchildren</li> <li>• <i>Continuous</i> Household income level</li> </ul>

## II. METHODOLOGY

### 3. Econometric Model

#### ECONOMETRIC MODEL

##### Self-reported satisfaction equation:

$$\textit{Self-reported Satisfaction}_i = \alpha + \beta_1 \times X_{1i} + \beta_2 \times X_2 + \dots + \beta_n \times X_{ni} + \varepsilon_i$$

Where:

*Self-reported Satisfaction*<sub>i</sub> = Dependent variable of the QoL status.

$X_{1i}, X_{2i}, \dots, X_{ni}$  = Vector of socioeconomic, health and relational independent variables.

$\alpha$  = Independent parameter not associated with independent variables.

$\beta_1, \beta_2, \dots, \beta_n$  = Coefficients associated with independent variables.

$\varepsilon_i$  = Random error term, such that  $\varepsilon_i \approx N(0, \sigma)$ .

This equation is estimated using *ordered probit model*.



# III. RESEARCH

## 1. Descriptive Statistics

Variables/Data	Mean		
	Overall sample	Early Elderly	Elderly
<i>N° observations</i>	76.520	39.647	36.027
<i>QoL scores</i>			
CASP-12 [12-48]	36,74	37,49	35,50
Self-reported Satisfaction [0-10]	7,30	7,50	6,99
<i>Demographic</i>			
Age	68	61	77
Male	42,89%	42,99%	43,52%
National	94,90%	95,82%	93,57%
<i>Marital status</i>			
Single	4,03%	5,08%	2,44%
Partnered	66,80%	74,74%	53,74%
Separated/Divorced	8,16%	10,25%	5,19%
Widowed	21,03%	9,86%	38,57%
<i>Education</i>			
Low	15,40%	8,52%	28,69%
Medium	53,78%	55,73%	49,05%
High	29,74%	34,58%	21,29%

### III. RESEARCH

Variables/Data	Mean		
	Overall sample	Early Elderly	Elderly
<i>Incomes</i>			
average month income	1967, 60	2210, 12	1714,33
<i>Economic activity</i>			
Retired	61,70%	39,31%	88,17%
Employed	23,52%	41,88%	1,90%
Unemployed	2,18%	3,93%	0,09%
Other Inactivity	12,53%	14,82%	9,77%
<i>Health</i>			
Self- reported health [0-5]	3,25	3,05	3,51
Limiting long-standing illness	52,99%	46,91%	60,24%
Limitations in ADL	47,72%	39,13%	57,71%
Number Chronic conditions	1,88 (78,78%)	1,48 (71,04%)	2,35 (88,14%)
<i>Social support</i>			
Household size	2,12 (22,61% =1)	2,32 (15,20%=1)	1,88 (31,27%=1)
Number of children	2,13	2,05	2,17
Number of grandchildren	3,27	2,55	3,64
Look after grandchildren	41,38%	65,76%	31,33%
Help activities	44,87%	31,35%	50,05%

### III. RESEARCH

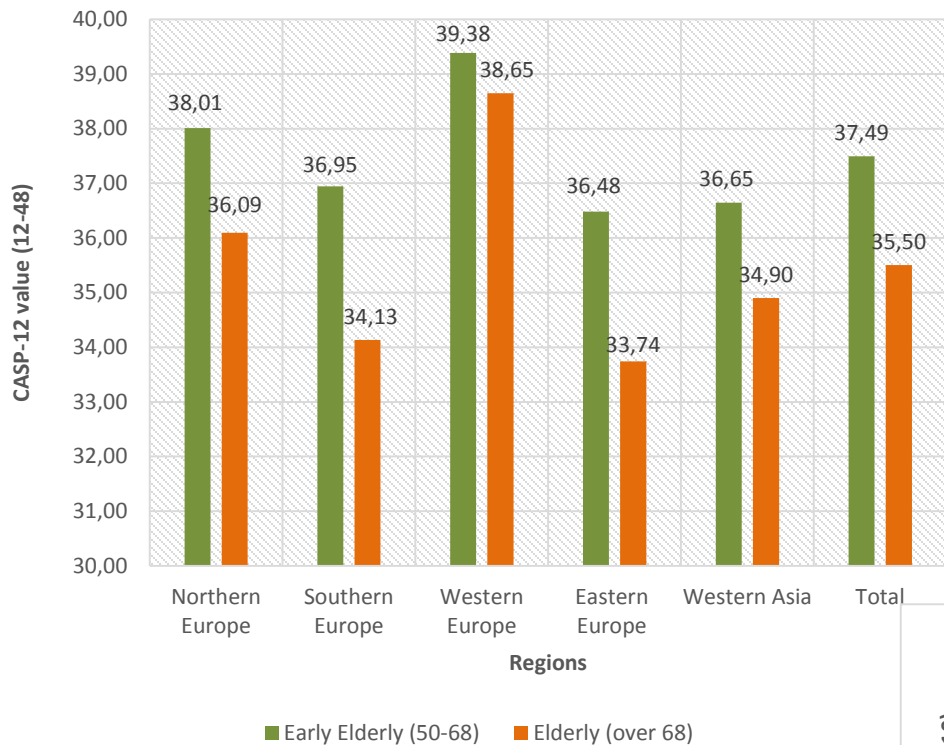
Variables/Data	Mean		
	Overall sample	Early Elderly	Elderly
<i>CASP-12</i>	36,74	37,49	35,50
AC014_AgePrev	2,42	2,71	2,09
AC015_OutofContr	2,66	2,82	2,5
AC016_LeftOut	3,01	3,15	2,85
AC017_DoWant	1,74	1,68	1,8
AC018_FamRespPrev	2,98	2,94	3,05
AC019_ShortMon	2,51	2,46	2,57
AC020_EachDay	1,45	1,43	1,46
AC021_LifeMean	1,45	1,43	1,47
AC022_BackHapp	1,56	1,57	1,54
AC023_FullEnerg	1,87	1,74	2,01
AC024_FullOpport	1,87	1,78	1,97
AC025_FutuGoog	1,91	1,82	2,01

1. Often
2. Sometimes
3. Rarely
4. Never

### III. RESEARCH

Variables/Data	Mean					
	Overall sample	Northern EU	Southern EU	Western EU	Eastern EU	West. Asia
<i>How satisfied with life?</i>	7,30	7,30	7,14	7,66	7,12	7,01
<i>CASP-12</i>	36,74	37,10	35,56	39,10	35,43	35,75
AC014_AgePrev	2,42	2,51	2,32	2,58	2,35	2,15
AC015_OutofContr	2,66	2,63	2,59	2,83	2,68	2,28
AC016_LeftOut	3,01	2,98	2,91	3,24	2,98	2,5
AC017_DoWant	1,74	1,61	1,87	1,56	1,94	1,6
AC018_FamRespPrev	2,98	3,14	2,76	3,07	3,05	2,41
AC019_ShortMon	2,51	2,54	2,27	2,9	2,37	2,19
AC020_EachDay	1,45	1,48	1,5	1,29	1,54	1,42
AC021_LifeMean	1,45	1,41	1,44	1,3	1,67	1,29
AC022_BackHapp	1,56	1,54	1,56	1,46	1,68	1,38
AC023_FullEnerg	1,87	1,89	1,9	1,74	1,98	1,64
AC024_FullOpport	1,87	1,87	1,99	1,62	2,05	1,68
AC025_FutuGoog	1,91	1,87	1,99	1,62	2,05	1,68

# III. RESEARCH



Picture 3. CASP-12 values, by age range and regions

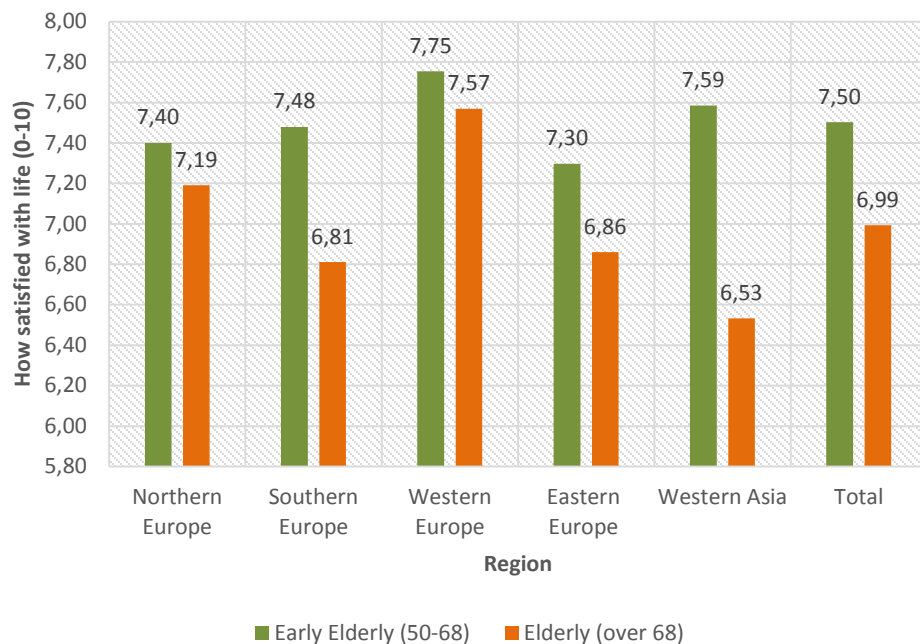
	1°	2°	3°	4°	5°
<b>Early Elderly</b>	West. EU	North. Eu	South. EU	West. Asia	East. EU
<b>Elderly</b>	West. EU	North. Eu	West. Asia	South. EU	East. EU

Source: Own elaboration with data from SHARE Wave 7.

## 1. Descriptive Statistics

	1°	2°	3°	4°	5°
<b>Early Elderly</b>	West. EU	West. Asia	South. EU	North. Eu	East. EU
<b>Elderly</b>	West. EU	North. Eu	East. EU	South. EU	West. Asia

Picture 4. Self-satisfaction reported, by age range and regions





## IV. PRELIMINARY CONCLUSIONS

- It seems that:
- We can appreciate differences in QoL between early elderly and elderly (Netuveli et. Al, 2006).
- We can appreciate differences in QoL between regions.

## V. LIMITACIONES OF THE STUDY

1. LIMITATIONS OF THE CASP-12: SELF-REPORTED / SUBJECTIVE. Scale biases. Sol. Vignnetes.
2. LIMITATIONS OF VARIABLES AND ESTIMATION METHODS:
  - Limited and qualitative dependent variables (LDV).
  - *Probit model* is asymptotic (consistent, asymptotically normal and asymptotically efficient).
  - Importance of the initial value distribution of the variables.

## VI. FUTURE RESEARCH LINES

- **Ordered Probit** with different equations (overall, by age range, by regions).
- Analyse subjective well-being, as extension of QoL.
- Compare the results of SHARE with other similar surveys (ELSA, HRS).



**THANK YOU VERY MUCH  
FOR YOUR ATTENTION!**