Lajos BÁLINT – Zsolt SPÉDER

(Subjective) Ageing in Europe
Taking into consideration perceived old age lines in Europe

(Extended abstract)

Abstract

There are several new approaches how to draw the line between old aged and middle aged populations. One of the new approaches includes people's health status into the recalculation of old age lines and dependencies ratios. In our paper, based on the experiences of related disciplines (eg. subjective aging, subjective health status, subjective poverty lines) we would like to argue to include people's perception into considerations drawing the old age line. In our analyze we show the relation of Old Age Dependency Ratios and Subjective Old Age Dependency Ratios for two dozen European countries. The comparison will contribute to a better understanding of aging process of countries inhibiting different life expectancies and some additional specific features.

Introduction: the demographic perspective of aging

Populations worldwide are experiencing aging. Current patterns and future population projections indicate that the 21st century will see an even more rapid aging compared to the last century. In the field of demography, various metrics are employed to examine and understand the age distribution and aging process within a population. These indicators are crucial for studying demographic transitions and their societal repercussions, encompassing aspects like healthcare, social security, labor force participation, and more. Commonly used aging indicators encompass median age, dependency ratios (including old-age and youth dependency ratios), aging index (Goldstein, 1999), elderly support ratio, centenarian ratio (Teixera et al., 2017), the likelihood of reaching age 100 (Vaupel – Jeune, 1995), the effective age of retirement, and life expectancy (Wilmoth, 2000).

In spite of the growing interest and concern surrounding population aging, the methods used to analyze it have remained somewhat static (Anderson-Scherbov, 2008). One limitation of widely adopted aging indicators (such as the old-age dependency ratio and aging index) is their tendency to classify individuals aged 65 and over as part of the elderly population (Kinsella – Phillips, 2005). However, there is insufficient evidence to support the assumption that age 65 universally marks the threshold for old age, especially considering that today's 65-year-olds tend to live longer than their counterparts in the past. Sanderson and Scherbov (2008: 3) assert that, due to substantial increases in life expectancies, it is misleading to directly compare chronological age across different periods. They have introduced a novel metric of aging referred to as "prospective age," which assigns ages to individuals based on their projected remaining life expectancies in a specific reference year, rather than solely on the number of years they have already lived.

An attempt to develop an alternative measure

Moreover, there exist alternative metrics for gauging aging. The World Health Organization (WHO, 2015) conceptualizes aging in terms of an individual's functional ability, a measure not directly tied to chronological age. In their 2012 study, Skribekk et al. compare the variation in cognitive abilities (cognition-adjusted dependency ratio/CADR) among adults across developed and emerging countries, by analyzing data from standardized testing protocols. The findings suggest that despite a higher proportion of people aged 65 and above in continental European countries compared to China, their lower CADR indicates that these countries can be considered effectively younger. In the social sciences, subjective indicators are widely used alongside objective indicators. Employing subjective indicators offers a potential advantage in that it enables researchers to encompass the subjective experiences and viewpoints of individuals, reveal important aspects of social phenomenon. Perhaps the best-known subjective measure is subjective poverty. The concept of subjective poverty was initially introduced in the 1970s (Goedhart et al., 1977). Unlike income poverty, which relies on external measures, subjective poverty is determined by an individual's perceptions and evaluation of their external circumstances (Goedemé - Rottiers, 2011). Subjective poverty is a marked dissatisfaction with various life aspects like income, health, leisure, environment, and social integration (Van Praag - Ferrer-i-Carbonell, 2005). The subjective perspective is also widely accepted when assessing health status. Subjective health (SH) pertains to an individual's personal assessment of their general health condition, offering a reliable, cost-effective method for health assessment. SH finds extensive application in psychosocial, gerontological, and epidemiological surveys, offering valuable supplementary insights alongside other health metrics (Kaplan – Baron-Epel, 2003). In sum, employing subjective indicators offers a potential advantage in that it enables researchers to encompass the subjective experiences and viewpoints of individuals, and reveal important aspects of aging.

Basic considerations of including people's view into the line drawing for the aged population

Step 1

Our approach is familiar with practices of related disciplines that assign peoples view some importance in defining the social categories. Our starting point is, that people when thinking about aging, take into consideration several societal factors, but also are influenced by life experiences, when they divide the life course into different segments, and draw the life between youth and adulthood, between middle-aged and old aged.

Step 2

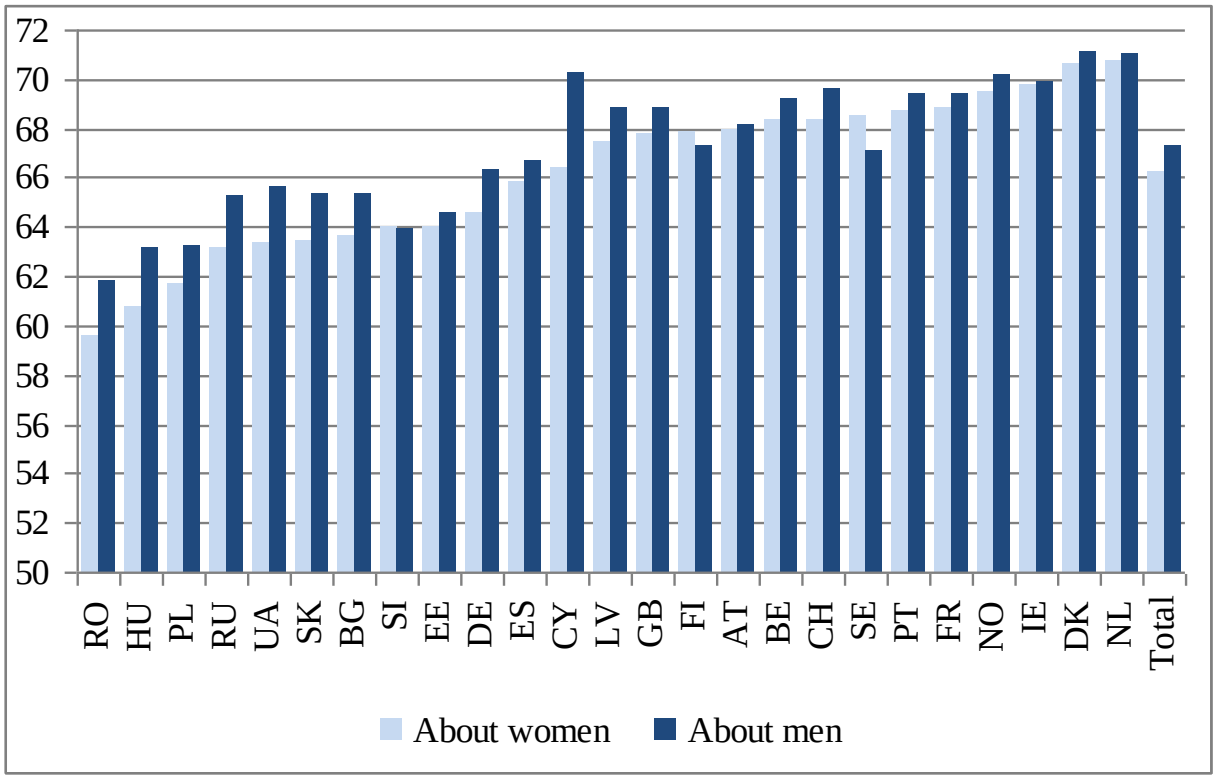
Using round 3 (2006) of the European Social Survey, which included a so-called LIFETIMING module, we investigated if there are country-specific differences between perceptions of age dead lines, and what kind of societal and individual factors influence people's perceptions.
Indeed we found significant country differences (Figure 1), and we could identify several societal and individual factors that shape people's line-drawing (Table 1). Of course life expectancy, as the major factor from macro-level ones, play the crucial role, however, other macro social factors also contribute to understanding country-specific differences. There are also micro-level factors (eg. education, life course experiences) that modify country level selections (see model in Table 1).

Step 3
Based on these analyze, we suggest subjective old age lines (SOAL) and calculate Subjective Age Dependency Ratio (SOADR) for around 25 European countries. Comparing the Old Age dependency Ratio (OADR) and SOADR we will reveal, that there are clear differences between the two ratios, and some countries having less aged population according to 65+ could be much more aged according to the subjective dead line (Figure 2 and Figure 3).

Step 4
Since view on age lines were measured second times in ESS (2018), we will be able to repeat calculations of ageing according to subjective age lines.

Step 5
Based on the significant association of life expectancy and subjective old age lines and taking into considerations life expectancy development we will examine how the subjective age line develops, and if and how far the relation of the Subjective Old Age Dependency Ratio and the Old Age Dependency Ratio change.

Figure 1. Old age dead lines in different European countries based on people's subjective perceptions (2006)



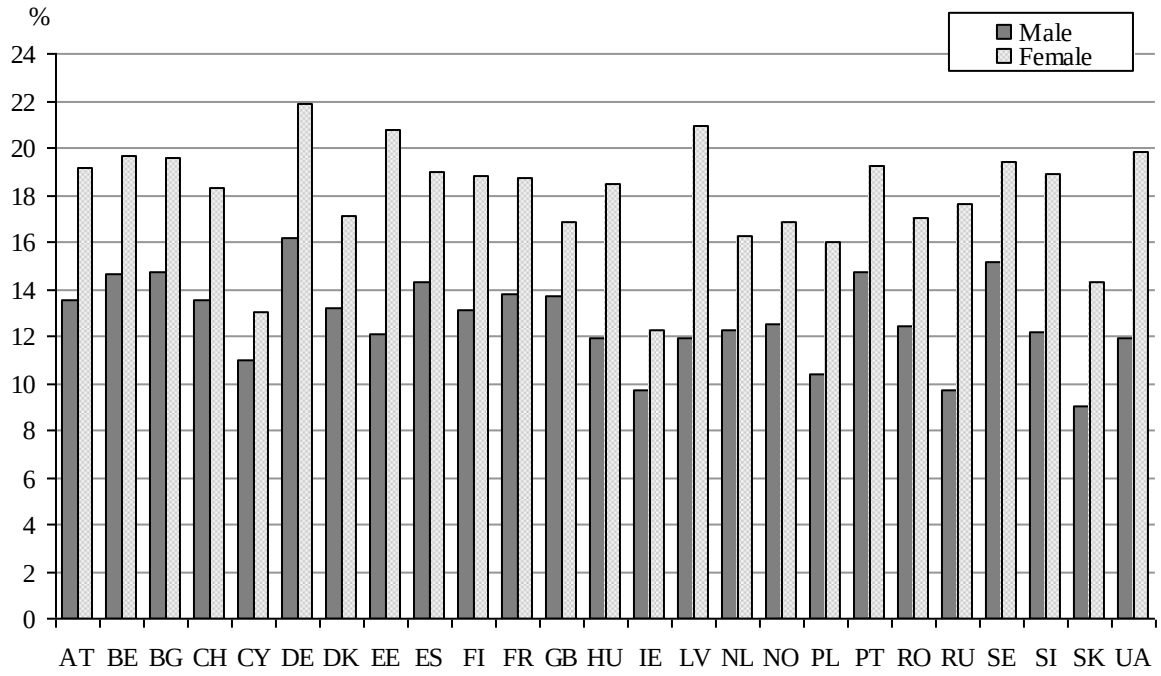
Source: own calculations based on ESS 3rd round

Table 1. Factors determining people's view of old age dead line (multilevel regression model)

	About women		About men	
	b	(p)	b	(p)
Individual-level				
Female (ref.: male)	2.314	***	0.741	***
Age (in years)	0.109	***	0.109	***
Age^2	-0.001	***	-0.001	***
Primary or lower education (ref.: sec.)	-0.335	**	-0.382	**
Tertiary education	0.216		0.193	
Urban	-0.282	**	-0.552	***
Lives with partner	0.012		0.502	***
Has children, no grandchildren (ref.: chless)	0.187		-0.213	
Has grandchildren	-0.147		-0.654	**
Lives with parent(s) as adult child	0.289		0.418	*
Retired (ref.: works)	0.166		0.334	*
Other inactive	0.224		0.104	
Self-perceived health problems	-0.175	**	-0.437	***
Life satisfaction	0.149	***	0.115	***
Loneliness	-0.444	***	-0.198	**
Age of becoming middle aged	0.332	***	0.322	***
Country-level and cross-country interactions				
Life expectancy at birth	0.483	***	0.199	**
Life expectancy * age	0.007	**	0.001	
Constant	64.884	***	66.812	***
Cross-country variance	3.330		3.167	
Within-country variance	54.827		48.023	

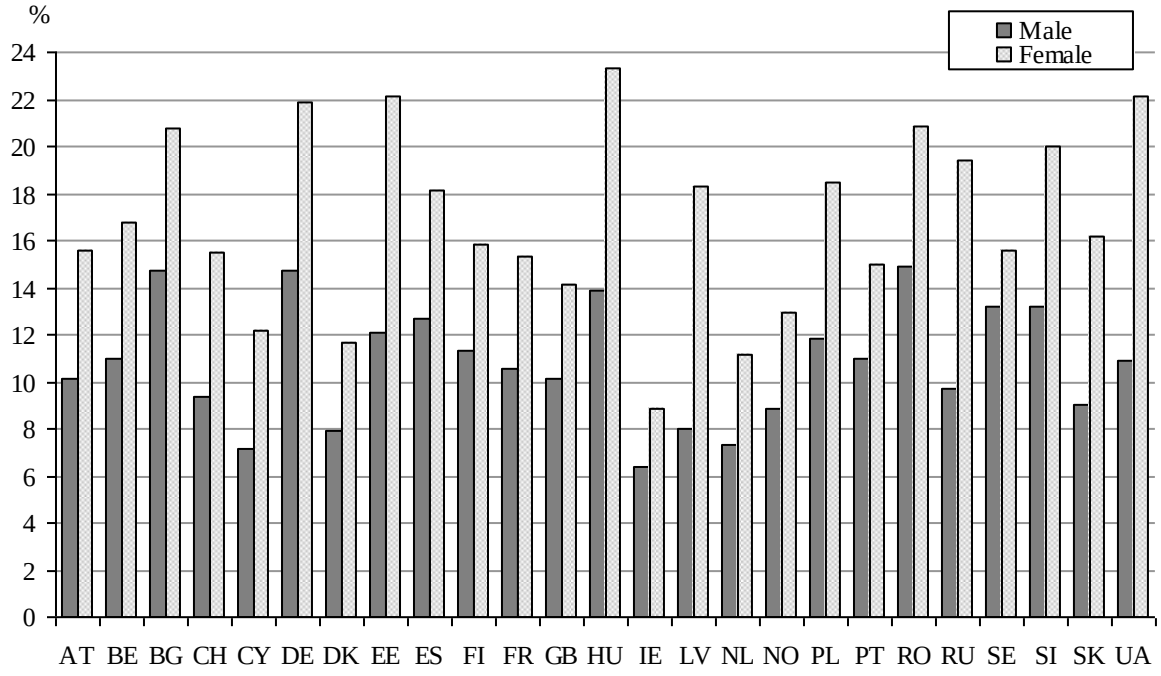
Source: own calculations based on ESS 3rd round

Figure 2. Ratio of old aged in European countries using the year 65 as the age line (male, female) in 2006



Source: Eurostat

Figure 3. Ratio of old aged according to people's old age dead line in Europe, (male, female, 2006)



Source: own calculations, ESS 3rd round and vital statistics

Literature

Goedemé, T. - Rottiers, S. (2011). *Poverty in the Enlarged European Union. A Discussion about Definitions and Reference Groups*. In: Sociology Compass 5(1): 77-91.

Goedhart, Th. - Halberstadt, V. - Kapteyn, A. - van Praag, B.M.S. (1977). *The Poverty Line: Concept and Measurement*. In: The Journal of Human Resources (12): 503-520.

Goldstein, J. (2009): *How Populations Age*, pp. 7-18. In: Peter Uhlenberg (ed): International Handbook of Population Aging. Springer.

Kaplan, G. - Baron-Epel, O. (2003): *What lies behind the subjective evaluation of health status?* Social Science & Medicine 56: 1669–1676.

Skirbekk, V. – Loichinger, E. –Weber, D. (2011): *Variation in cognitive functioning as a refined approach to comparing aging across countries*. PNAS, 109(3): 70-74.

Teixeira, L. - Araújo L. – Jopp, D. – Ribeiro, O. (2017): *Centenarians in Europe*. Maturitas, 95: 104:109.

Van Praag, B.M.S. - Goedhart, Th. - Kapteyn, A. (1980). *The Poverty Line – A Pilot Survey in Europe*. In: The Review of Economics and Statistics 62(2): 461-465.

Vaupel, J. W. - Bernard J. (1995): The Emergence and Proliferation of Centenarians. In: Exceptional Longevity: From Prehistory to the Present, ed. B. Jeune and J.W. Vaupel (Odense, Denmark: Odense University Press, 1995).

Wilmoth, J. R. (2000): *Demography of longevity: past, present, and future trends*. Experimental Gerontology 35: 1111-1129.

WHO World Report of Ageing and Health (WHO 2015).