



Happiness Across the Life Cycle: Exploring Age-Specific Preferences

by Orsolya Lelkes

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Aims

Existing evidence suggests that there is a U-shaped relationship between age and happiness, where happiness is the lowest in the middle age, when controlling for income and education and other personal characteristics. On the other hand, there is no clear pattern between old age and happiness without the use of controls. Thus, it is not ageing as such, which results in declining happiness, but rather the circumstances associated with ageing. Had the elderly not been confronted with these circumstances, they would live a much happier period of their lives than in their middle ages. In an ageing society the question arises: which of these circumstances could be averted in order to provide a high wellbeing for the old? In order to answer these questions, we also need to explore whether the attitudes and preferences of the elderly are similar to others. The paper aims to explore these issues, using a cross-country survey.

Age and happiness: relationship disputed Some psychologists tend to claim that life satisfaction shows little, or mostly no change at all over the life cycle¹. Recent work of Mroczek and colleagues², much cited in the psychology literature, finds a curvilinear relationship, with happiness peaking at age 65. This finding, i.e. an inverted U-shaped curve, is the reverse of the emerging consensus in the economic literature. Recent economics literature, using multivariate analysis, tends to agree on the prevalence of a U-shaped pattern, with happiness reaching the minimum in middle age, controlling for differences in income, health, and education³. This controversy seems to signal the apparent lack of interaction between these two disciplines⁴.

Data used The analysis is based on a cross-national dataset, the European Social Survey 2002/2003 (ESS), with nationally representative samples of individuals in 21 countries. The sample size falls to 29,901 in the regression sample due to missing values. The main question of interest is:

“All things considered, how satisfied are you with your life as a whole nowadays? Please answer using this card, where 0 means extremely dissatisfied and 10 means extremely satisfied”.

The average values of life satisfaction and happiness are both 7, and the means are 8, indicating that the distribution of responses is left-skewed and the majority of people tend to give relatively high scores.

In applied economics, self-reported life satisfaction and self-reported happiness are both used as measures of utility. These have long been studied by psychologists, and are regarded as two of the numerous measures of subjective wellbeing. Further, these measures have a high degree of validity, reliability and consistency⁵.

The bivariate relationship suggests that (1) the youth are the most satisfied (life satisfaction declining significantly at middle age) and (2) elderly people are not better off than those in their middle ages (there is no statistically significant difference among people over the age of 40) (Figure 1 on page 8⁶). There is thus no U-shaped pattern between age and life satisfaction.

Adjustment for income makes the U-shaped pattern pronounced It may not be ageing per se which alters the level of life satisfaction, but other factors related to age groups. In particular, health may play a role, and the deteriorating health of the elderly may contribute to their lower life satisfaction. Income may also be an explanatory factor. Lower income tends to lower life satisfaction, so the lower average income of elderly may also partly explain their lower life satisfaction. Therefore it is important to control for other factors and go beyond the simple presentation of bivariate relationships.

Adjustment for differences in income (Figure 2 on page 8) makes the U-shaped pattern more pronounced. The middle-aged group remains to be the least satisfied age group, despite their highest income levels. Income, however, is not the sole factor which influences life satisfaction, therefore the use of other controls are also essential.

Two sets of alternative regressions are estimated: one of them includes life satisfaction as an explanatory variable, and the other self-reported

Regression estimates: happiness (Table 1). The right-hand side variables are identical in order to facilitate comparison.

the age of 45 The relationship between age and life satisfaction is U-shaped. The categorical age variables suggest that the minimum is between the age of 40 and 49. With the use of the continuous age variable, the minimum value can be specified: satisfaction is lowest around the age of 45, controlling for country and individual demographic differences, including health (column 4 in Table 1).

Similar to existing evidence, the estimated life satisfaction equations show significant and positive coefficients for marriage, children, higher levels of education and churchgoing, and are increasing in income, *ceteris paribus*. Health problems, just as separation and divorce, have a negative sign. The relationship between age and subjective wellbeing is U-shaped when personal characteristics are controlled for. The coefficients of the younger and older age groups are positive and significant at the 1% level compared to the reference group of those aged 40-49. This pattern is equally valid for both measure of subjective well-being: happiness and life satisfaction.

Facts on ageing

Deteriorating external circumstances Ageing often brings deteriorating external circumstances. People over the age of 60 increasingly report bad health, and suffer from social isolation or marital dissolution. One out of 7 people have no friends with whom they could discuss personal matters (or have social contacts less often than a month) among those in their 60s. This ratio increases to 1 out of 6 among those aged 70 and over. This group suffers the most from the death of a spouse, with widows making up almost one third of the age group 70+. Note, however, that they are less affected by divorce than the middle-aged groups, as the occurrence is not as high.

Elderly poverty: Contrary perhaps to popular belief, the elderly do not tend to be poor in general. As Table 2 shows, poverty among the pensioner age group between 60-69 years is lower than among the general population (smaller percentage belongs to the poorest fifth). The financial situation of those over 70 years, however, is more difficult and they tend to be poor in high numbers. Country-specific data from other sources suggests that poverty among the elderly (those aged 65 and over) varies between 4% (Czech Republic) and 52% (Cyprus)⁷. In nearly half of the countries of the European Union, the elderly seem to be less exposed to the risk of financial poverty than the working age population, largely due to the pension provisions.

Possible explanations: do preferences vary by age?

Family and friends are the most important for all

The data allows distinction between specific “aspirations”, and suggests that there is some variety in the nature of aspirations during ageing. The survey asks people about the importance of family, friends, leisure time, work and religion in their lives. People regard family and friends as the most important, and these preferences are relatively stable over the life cycle (Table 3). This finding seems to contradict the claim by some economists that people tend to misjudge what brings them pleasure and therefore tend to invest too much in earning money on the expense of personal relationships.

Leisure is also regarded to be rather important, although with declining importance with age. Religion tends to gain importance over the years. Work is regarded to be rather important (as important as friends) among those who have a paid job, and among the working age unemployed. Work is less important for those who are out of the labour force, either due to child-care, to retirement, or other reasons. The causality is not obvious here. These people may not work because they do not regard paid work an essential element of their fulfilment, or the other way round, they cannot get a job (e.g. they are “discouraged” long-term unemployed) and they reduce their frustration by believing that it is not important for them. Overall, ageing seems to change preferences only to a limited extent. Family and friends are very important for people, and remain so over the years. With ageing leisure time loses importance (maybe because it becomes abundant), just as work does, especially among those who do not work any more. This latter finding suggests lowering aspirations, or rather, a convergence between aspirations and achievements.

The divergence between aspirations and achievements may be a major source of discontent. Attitudes towards paid work may be an example of declining aspirations by age. Labour market issues, in particular individuals’ frustration about joblessness, tend to affect the working age population. A job is regarded to be an important aspect of life, and therefore the lack of it “hurts”, as shown by literature on the negative psychological impact of unemployment. The elderly, however, tend to be less affected by this problem: they are less likely to be on the labour market, and attach smaller importance to it (Table 4). On the other hand, the elderly are more affected by the loss of spouse, and the departure of children, which both influence family life, which is regarded to be extremely important by most people. Religion, on the other hand, seems to become more and more important over time including even those who are not church-goers (!)⁸, and it is also reflected in increasing religious activities (Table 5). How much do these changes in life circumstances affect their wellbeing?

Estimated preferences

Age-specific preferences were estimated with the use of the same explanatory variables as presented before (Table 1), and the introduction of an interaction term, interacting age and the specific variable of interest. The following charts (Figure 3-5 on page 9) indicate the outcome of these regression equations, showing the estimated value of life satisfaction. These results thus show the “pure” relationship between the variables of interest, controlling for a series of other factors.

Higher income groups are happier in all age groups

The relationship between age and income seems to be rather homogeneous, as shown by Figure 3 on page 9. In other words, higher income quintile groups tend to be consistently more satisfied in all age groups. The only minor exception is among the youngest age group, many of whom are still participating in full-time education, and for whom family incomes and personal incomes may greatly differ, or aspirations may greatly diverge from achievements (actual incomes).

We might define the bottom fifth as the “poor”. This leads to the conclusion that contrary to the widespread belief (Lane 2000), income does have a positive impact on well-being above the poverty level as well. On the other hand, the role of income is limited in determining the shape of the function. The young and the old are the most content groups compared to others, irrespective of their levels of incomes. The U-shaped pattern prevails for all income quintile groups.

These calculations are based on household income adjusted for household size, so the incomes “enjoyed” by individuals depend on the incomes of other household members. Studies, which compared alternative income concepts, including personal income, with respect to wellbeing, found that there is no significant difference between these⁹.

Unemployment affects most those between 40 and 49

Unemployment might be a key factor beyond the relative dissatisfaction of the middle-aged groups. Unemployment affects most those between 40-49, in the sense that they suffer the biggest drop in their life satisfaction (Figure 4 on page 9). Unemployment has a negative impact on well-being, but (not surprisingly) only during working age. The elderly thus may enjoy the relative benefit of not having to worry about employment. Interestingly, there is only a small difference between the wellbeing of those in paid work and the inactive. Among the young, the latter group, mostly composed of students, seems to be better off.

Married people are the most satisfied within all age groups Married people tend to be the most satisfied within all age groups. Marriage seems to be a source of joy for many and may cushion against the impact of negative life events. In addition, there is a selection effect, people with happy personality traits are more likely to get married¹⁰. The difference in SWB is not attributable to differences in incomes (married people may have more incomes), because we are using household income here, adjusted for household size, and we adjust for differences in incomes.

Younger widows (between the age of 40 and 59) suffer more, as shown by Figure 5¹¹ on page 10. It may have two reasons: widowhood hurts less when the partner dies at an older age, or that older widows are widows for longer and had time to accustom to it.

Reverse causality: happy people live longer Although age may appear to be a favoured variable to economists, as it is exogenous (people cannot choose their age), the direction of causality is not as obvious as it may seem at first. As the previous theories suggested, age causes differences in SWB. On the other hand, SWB also influences longevity, in other words, those who are happy are more likely to have a longer life, as shown by Figure 6¹² on page 10.

In order to measure the direct causal impact of life satisfaction on the hazard of death, Frijters et al. 2005 developed a special method called “Increasing Mixed Proportional Hazard Model”. This model takes into account a series of socio-economic characteristics, and allows for unobserved heterogeneity that increases over time due to unobserved persistent health-related shocks. Accounting for other personal characteristics, the authors find that more satisfied individuals live longer. The size of the effect is that one point increase in initial life satisfaction reduces the death hazard by 3.1%. This effect, however, is attributable to the fact that more satisfied individuals typically also have a better initial health status. When health satisfaction is included in the model, the parameter estimate on life satisfaction is not statistically significant.



Conclusions

In sum, it seems that there is some heterogeneity in preferences across age groups. Thus, the varying level of life satisfaction during the life cycle may be explained partly by changing preferences (for example by the decreasing importance of work, the increasing importance of religion, and the declining disutility of being single), and partly by changing circumstances. While changing preferences seem to increase wellbeing, changing circumstances seem to decrease it. Exceptions are the few positive changes in circumstances, which are likely to contribute to higher wellbeing, including increasing religiosity and relatively low pensioners' poverty across the 21 European countries examined here. Old days thus are happy above all due to changing priorities in life. This issue calls for more attention and more research, especially in societies becoming increasingly old.



Figure 1:
Average life satisfaction
in specific age groups
(mean and confidence
interval)

Source:
Own calculations, based on
European Social Survey 2002/03 (ESS)

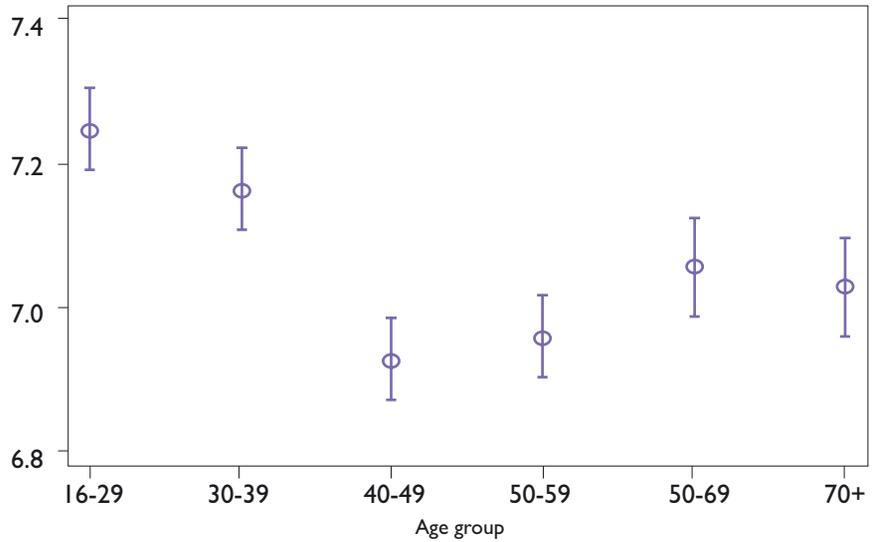


Figure 2:
Average life satisfaction
by age, adjusted for
differences in income

Source:
Own calculations, based on ESS

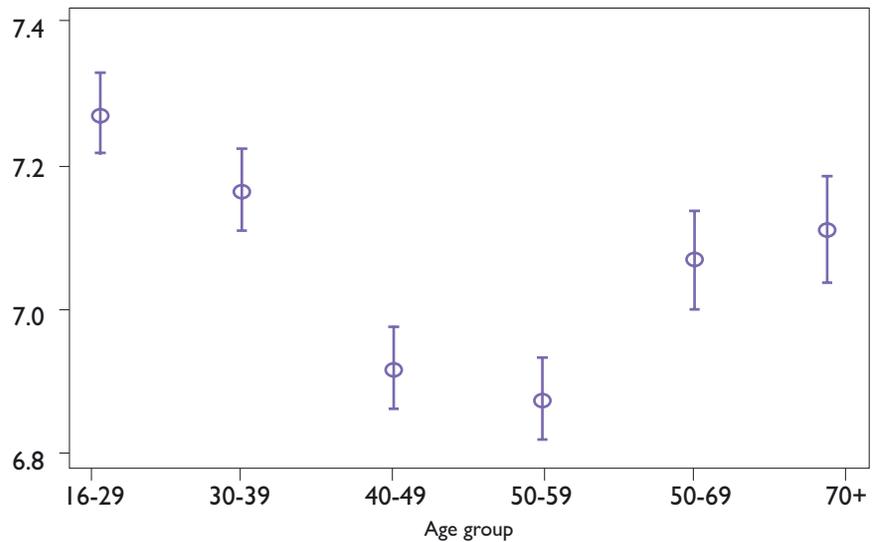
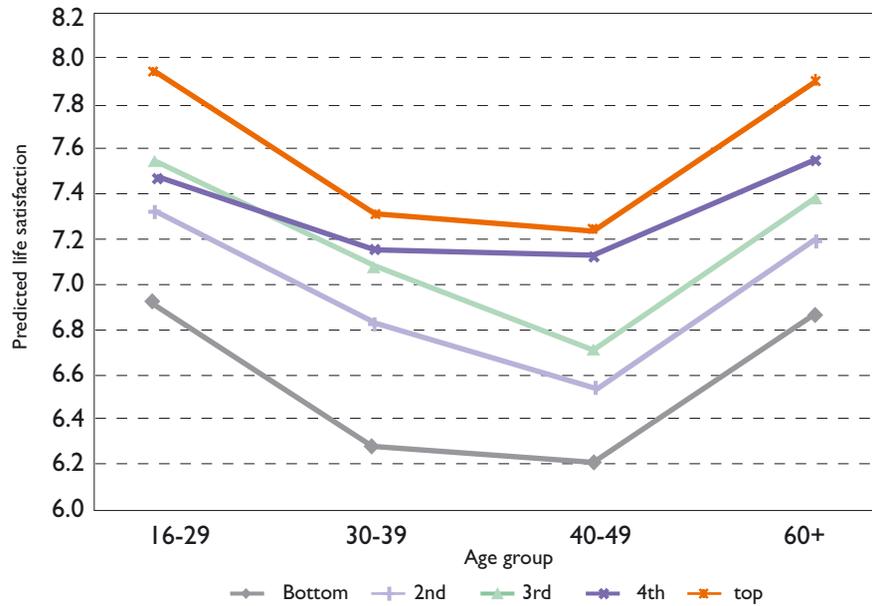


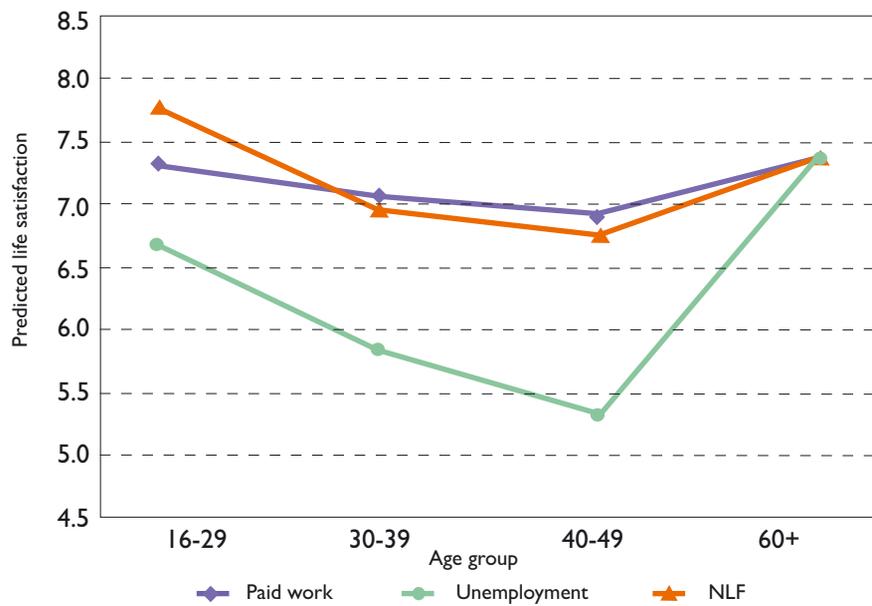


Figure 3:
Predicted values of
life satisfaction by
age and income quintile



Source:
Own calculations, based on ESS

Figure 4:
Average life satisfaction
by age, adjusted for
differences in income



Source:
Own calculations, based on ESS



Figure 5:
Predicted values of
life satisfaction by
age and marital status

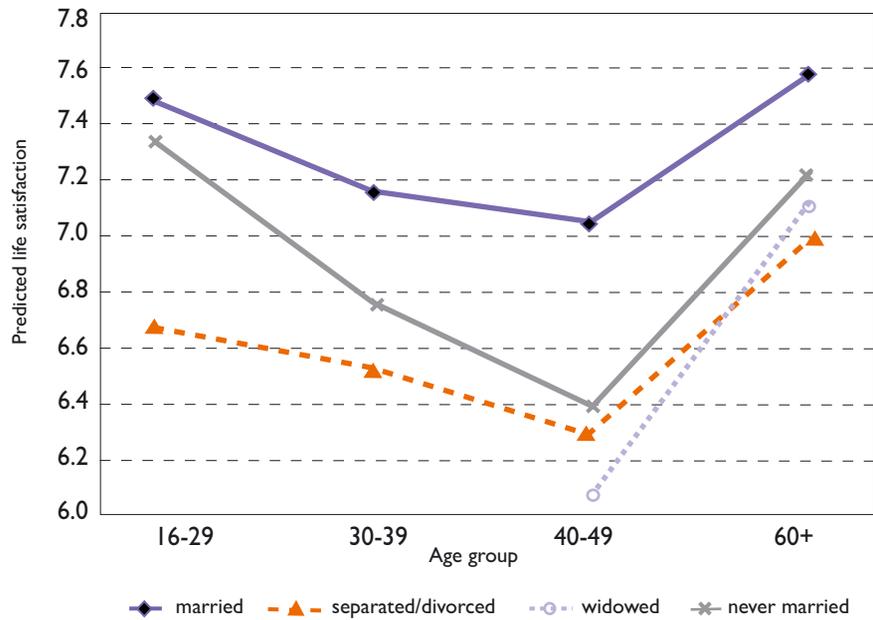


Figure 6:
Death hazard by
age and initial life satisfaction
(smoothed 3-year moving
average)

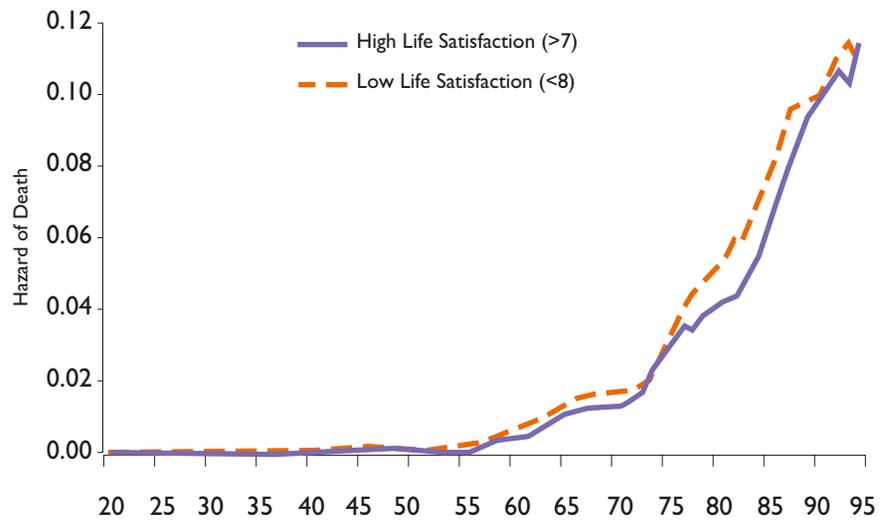


Table I: Subjective well-being and age in European countries: OLS regressions

Dependent variable: Life satisfaction	(1)	(2)	(3)	(4)
Age: 16-29	0.490** (0.040)	0.810** (0.047)	0.709** (0.047)	
Age: 30-39	0.187** (0.040)	0.247** (0.039)	0.199** (0.039)	
Age: 50-59	0.005 (0.041)	0.002 (0.041)	0.085* (0.041)	
Age: 60-69	0.256** (0.045)	0.414** (0.049)	0.546** (0.049)	
Age: 70+	0.297** (0.050)	0.665** (0.057)	0.870** (0.057)	
Age				-0.115** (0.005)
Age-squared/1000				1.227** (0.052)
Health Hampers a Lot			-1.251** (0.056)	-1.245** (0.056)
Health Hampers a Little			-0.623** (0.034)	-0.616** (0.034)
Constant	6.760** (0.038)	5.404** (0.071)	5.686** (0.071)	8.314** (0.112)
R-squared	0.080	0.135	0.155	0.157

Dependent variable: Happiness	(1)	(2)	(3)
Age: 16-29	0.354** (0.035)	0.715** (0.040)	0.637** (0.040)
Age: 30-39	0.226** (0.034)	0.283** (0.034)	0.246** (0.033)
Age: 50-59	-0.020 (0.035)	-0.007 (0.036)	0.057 (0.035)
Age: 60-69	0.130** (0.038)	0.301** (0.042)	0.404** (0.042)
Age: 70+	0.062 (0.043)	0.454** (0.049)	0.613** (0.049)
Health Hampers a Lot			-0.956** (0.048)
Health Hampers a Little			-0.488** (0.029)
Constant	7.120** (0.033)	5.904** (0.061)	6.123** (0.061)
R-squared	0.076	0.131	0.148

Notes: + significant at 10%;
 * significant at 5%; ** significant at 1%;
 Standard errors in parentheses;
 Dependent variable = self-reported life satisfaction/happiness on an eleven-point scale.
 Reference categories are bottom income quintile, employee, health hampers=no.
 All regressions include country dummies and personal controls (education, marital status, male, religion). N=29.901
 Source: European Social Survey (ESS), 2002/3

Table 2
Occurrence of negative life situations within a particular age group, %

¹²Income quintile groups have been defined per country, based on equivalised household income. In the original dataset, income is a categorical variable, therefore at times many households have the same amount of income at the quintile cut-off point. As a result, the number of people in the quintiles will be unequal, and the total value differs from 20% (the definition of quintile as such).

Source:
ESS 2002/3

Age	Ill health	Social isolation		Marital dissolution			Low income	
	Self-reported "bad health"	Infrequent social contacts	Has no friend	Separated	Divorced	Widowed	Bottom quintile group	Second quintile group
16-29	2,2	3,4	4,6	0,5	0,8	0,1	21,5	17,2
30-39	2,9	6,0	5,3	1,9	5,7	0,6	18,6	19,2
40-49	6,0	8,8	7,6	2,1	9,4	1,4	17,9	17,6
50-59	11,4	10,9	8,7	1,6	10,2	4,7	13,8	14,3
60-69	14,1	13,9	12,6	1,3	7,5	14,1	15,5	21,9
70+	20,3	17,4	16,1	0,7	3,7	31,3	20,3	27,7
Total	8,0	9,1	8,2	1,4	6,4	6,0	17,9 ¹²	18,9

Table 3
"Aspirations":
Importance of specific things in respondents' lives

Note:
"How important are each of these things in your life?" Answers on an eleven-point scale: 1=extremely unimportant, and 10=extremely important.

Source:
ESS 2002/3

Age	Family	Friends	Leisure time	Work	Religion
16-29	9,3	8,7	8,1	7,7	4,1
30-39	9,4	8,5	8,0	8,0	4,2
40-49	9,4	8,4	7,9	8,1	4,4
50-59	9,4	8,4	7,9	7,8	4,8
60-69	9,5	8,3	7,7	6,5	5,4
70+	9,5	8,3	7,4	5,7	6,1

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16-29	2,2	3,4	4,6	0,5	0,8	0,1	21,5	17,2
30-39	2,9	6,0	5,3	1,9	5,7	0,6	18,6	19,2
40-49	6,0	8,8	7,6	2,1	9,4	1,4	17,9	17,6
50-59	11,4	10,9	8,7	1,6	10,2	4,7	13,8	14,3
60-69	14,1	13,9	12,6	1,3	7,5	14,1	15,5	21,9
70+	20,3	17,4	16,1	0,7	3,7	31,3	20,3	27,7
Total	8,0	9,1	8,2	1,4	6,4	6,0	17,9 ¹²	18,9

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Source:
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Age	Family	Friends	Leisure time	Work	Religion
16-29	9,3	8,7	8,1	7,7	4,1
30-39	9,4	8,5	8,0	8,0	4,2
40-49	9,4	8,4	7,9	8,1	4,4
50-59	9,4	8,4	7,9	7,8	4,8
60-69	9,5	8,3	7,7	6,5	5,4
70+	9,5	8,3	7,4	5,7	6,1

Table 4
Importance of work by
employment status and
employment status by age

Note:
NLF= Not in labour force
Source:
ESS 2002/3

Age	Importance of work by employment status			Employment status		
	Paid work	Unem- ployed	NLF	% with paid work	% unem- ployed	% NLF
16-29	8,0	8,1	7,3	48,9	9,9	41,2
30-39	8,1	8,4	7,3	71,7	7,1	21,2
40-49	8,3	8,3	7,4	74,5	6,8	18,8
50-59	8,3	8,0	6,9	62,0	5,5	32,5
60-69	8,3	7,3	6,1	15,8	1,2	83,1
70+	8,2		5,6	1,6		98,3

Table 5
Importance of family and
religion, and related life
circumstances

Source:
ESS 2002/3

Age	Family			Religion		
	Importance of fam- ily by marital status		% Married	Importance of religion by churchgoing		% church- goers
	Married	Wid- owed		Church- goer	Not church- goer	
16-29	9,7		19,2	7,4	3,2	23,4
30-39	9,6	9,6	65,2	7,5	3,3	24,0
40-49	9,6	9,6	74,2	7,5	3,5	26,5
50-59	9,6	9,5	77,3	7,9	3,7	27,4
60-69	9,6	9,5	73,4	8,1	4,0	35,4
70+	9,6	9,5	59,1	8,3	4,4	39,3

Further reading

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Notes:

1 E.g. Lucas and Gohm 2000, pp. 296-7

2 Mroczek and Spiro 2005

3 e.g. Oswald 1997; Blanchflower and Oswald 2004; Clark, Etilé et al. 2005; Lelkes 2006.

4 Clark and Oswald 2006

5 See, e.g. the review of Diener, Suh et al. 1999

6 Figure 1 presents not only the mean values (indicated by circles), but also the 95% confidence intervals. For example, average life satisfaction for those between 17 and 29 is estimated to be 7,24, and with a 95% probability this mean value is between 7,19 and 7,30 in the original population.

7 Zaidi, Makovec et al. 2006.

8 People, including both religious and atheists, tend to be happier if more religious people live in their neighbourhood. (Clark, Lelkes 2008)

9 e.g. Lelkes 2006.

10 Stutzer and Frey 2006

11 There were only very few cases of widowhood at an earlier age within the sample, so these could not be analysed.

12 Frijters, Haisken-DeNew and Shields 2005.



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