# Is Wellbeing U-Shaped over the Life Cycle?

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Abstract

Recent research suggests that psychological wellbeing is U-shaped in age. The weakness of this argument is that there are likely to be omitted cohort effects (earlier generations may have been born in, say, particularly good or bad times). Hence the apparent U may be an artefact. Using data on 500,000 Americans and Europeans, we design a test that allows for different birth-cohorts. A robust U-shape is found. Ceteris paribus, wellbeing reaches its minimum -- on both sides of the Atlantic and for both males and females -- in people's mid to late 40s.

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**Is Wellbeing U-Shaped over the Life Cycle?**

## 1. Introduction

A large social-science literature is emerging on the determinants of happiness and mental wellbeing. As would be expected, this topic has attracted the attention of medical statisticians, psychologists, economists, and other investigators (including Easterlin 2003, Frey and Stutzer 2002, Lucas et al 2004, Layard 2005, Smith et al 2005, Ubel et al 2005, Gilbert 2006, and Kahneman et al 2006). However, a fundamental research question remains poorly understood. What is the relationship between age and wellbeing?

Traditional surveys of the field, such as Myers (1992), Diener et al (1999) and Argyle (2001), argue that happiness is either flat or very slightly increasing in age. New work has shown that there is some evidence of a U-shape through the life cycle. In cross-sections, even after correcting for potentially confounding influences, there is now known to be a well-determined convex link between reported wellbeing and age. This modern literature includes Clark and Oswald (1994), Gerlach and Stephan (1996), Oswald (1997), Theodossiou (1998), Di Tella et al (2001, 2003), Frey and Stutzer (2002), Blanchflower and Oswald (2004), Graham (2005), Frijters et al (2004, 2005), Senik (2004), Van Praag and Ferrer-I-Carbonell (2004), Shields and Wheatley Price (2005), Oswald and Powdthavee (2005), Propper et al (2005), Powdthavee (2005), Bell and Blanchflower (2006), and Uppal (2006). Clark et al (1996) makes a similar argument for job satisfaction equations.

There is an important difficulty with this conclusion. A variable measuring how old someone is may simply be standing in for omitted cohort effects (earlier generations may have been born in, say, particularly good or bad times). Hence the U-shape in age, uncovered now by various authors, could be an artefact of the data.

This paper offers some of the first evidence that the curvilinear relationship is robust to cohort effects. We draw upon randomly sampled data on 500,000 Americans and Europeans. These data come from the General Social Surveys of the United States and the Eurobarometer Surveys, and, necessarily given the design of our test, cover a period of some decades. After controlling for different birth cohorts, we show that ceteris-paribus wellbeing reaches its minimum in a person's 40s. The U-shape is similar for males and females, and for each side of the Atlantic Ocean. Moreover, because of the size of our data sets, the turning point in wellbeing -- the age at which happiness begins to lift back up -- is statistically fairly precisely determined.

The paper's concern is with the ceteris paribus correlation between wellbeing and age, so we later partial out other factors, such as income and marital status, that both alter over a typical person's lifetime and have an effect upon wellbeing. This follows one particular tradition of empirical research. We read the effect of a variable's coefficient from a long regression equation in which other influences have been controlled for as effectively as possible.

Despite the commonness of this convention in modern social-science research, such a method is not inevitable. A valid and different approach is that of, for example, Mroczak and Kolanz (1998) and Easterlin (2006), who do not control for other influences upon wellbeing, and instead focus on the aggregate relationship between happiness and age. These authors focus on a reduced-form issue. They ask the descriptive question: how does observed happiness vary over the life cycle?

As common observation shows, the quality of a person's health and physical abilities depends sensitively on the point in the life cycle. Most diseases, and the probability of getting them, worsen with age. A 90 year old man cannot in general do

the same number of push-ups as a 20 year old man. Hence an important issue is whether in happiness equations it is desirable to control in some way for health and physical vitality. There is here no unambiguously correct answer, but the approach taken in the paper is not to include independent variables that measure physical health. This is partly pragmatic: our data sets have no objective measures and few subjective ones. But the decision is partly substantive: it seems interesting to ask whether people become happier as they age once only simple demographic and economic variables are held constant.

There is surprisingly little social-science theory upon which to draw. Conventional economics is in principle capable of making predictions about the life cycle structure of happiness if conceptualized as utility in the normal economist's framework. However, in practice the theory does not appear to generate a U-shape in any straightforward way. Instead, perhaps the most natural conclusion is that wellbeing might be predicted to be independent of age. To see why, let the individual agent be concerned to maximize lifetime utility V by choosing a consumption path c(a) where a is the individual's age. Assume lifespan runs deterministically from time point t to time point T. Assume away discounting for simplicity (it is straightforward to show here that it makes no substantive difference, given an efficient capital market where people both discount utility at rate r and can lend or borrow at interest rate r). Let income y be fixed and given by the agent's talent endowment, and for simplicity set this to unity. Then the agent chooses consumption c at each age a to maximize lifetime happiness

$$V = \int_{t}^{T} u(c,a)da \quad (1)$$

subject to an inter-temporal borrowing constraint

$$1 = \int_{t}^{T} c(a)da \quad (2)$$

in which the endowment of income to be allocated across all the periods has been normalized to one. Assume that u, utility or wellbeing, is an increasing and concave function of consumption, c. Spending, by assumption, then makes people happier.

This is the simplest kind of isoperimetric problem. The first-order condition for a maximum is the usual one: it requires the marginal utility of consumption to be the same at each level of age, a. Therefore, solving a Lagrangean L constructed from (1) and (2):

$$\frac{\partial L}{\partial c} = \frac{\partial u(c,a)}{\partial c} - \lambda = 0 \quad (3)$$

where, from the underlying mathematical structure, the multiplier lambda is necessarily constant across all the different ages from t to T. Individuals thus allocate their discretionary spending to the points in time when they enjoy it most.

If the utility function u(c,a) is additively separable in consumption c and age a, then equation (3) has a simple implication. It is one that is implicit, though perhaps not often articulated, in much of standard economic theory. Consumption will be flat through time (because under separability u = u(c)) + v(a)) and, therefore, utility will also be flat through the lifespan if the non-consumption part of utility, v(.), is independent of age. In plainer language, happiness will not alter over a person's life course.

It is reasonable to suggest that to go from the utility function u = u(c,a) to the presumption that u(..) is additively separable in its two arguments is a large, and potentially unwarranted, step. There is no clear reason why the marginal utility of consumption would be independent of a person's age. For example, one might believe that young people wish to signal their status more, and therefore might have a

greater return from units of consumption than the old (so the cross-partial derivative of u(c,a) would then be negative). Alternatively, one might argue that older people have more need of health and medical spending, and therefore that the marginal utility of c is greatest at high levels of a. Then, of course, the cross-partial of u(c,a) is positive. While it would be possible to assume that early in life the first effect dominates and then in later life the second one dominates, and in this way get eventually to a model where wellbeing was U-shaped through the lifespan, to do so seems too ad hoc (or perhaps one would say post-hoc) to be persuasive theoretically. What this means is that textbook economics, at least as based on normal assumptions of lifetime maximization and the concavity of utility, is -- without making assumptions about v(a) that could mechanically lead to any desired shape -- not capable of producing clear predictions about the nonlinear pattern of wellbeing through an individual's life.

2. Empirical Results

To explore this issue empirically, therefore, we draw upon two data sets, which pool data on approximately half a million randomly selected individuals, and implement a test that controls for the possible existence of cohort effects. The data do not follow the same individuals through time. They provide repeated statistically representative snapshots year after year. The key evidence is summarized in four tables.

Table 1 takes all the males in the U.S. General Social Survey from 1974-2004. It estimates a happiness regression equation for this sub-sample, and shows in its early columns that wellbeing is U-shaped in age. Then cohort variables are introduced. These take the form of a set of dummy variables – one dummy for each decade of birth. Although the introduction of the cohort dummies affects the turning point of the quadratic function in age, it does not do so in a way that changes the

thrust of the idea that wellbeing follows a U-shaped path. The same statistical procedure is followed for the analysis of three further sub-samples, namely, the females in the GSS data set, the males in the Eurobarometer survey, and finally the females in the same European sample.

We test for a U-shape by examining whether the data take a quadratic form in age. All the coefficients on age-squared variables in the paper are statistically significant at the 0.0001 level.

In the first column of Table 1, a GSS happiness ordered logit equation is estimated on the pooled sample of 19,027 American males with age entered as an independent variable. It has, as further independent regressors, a separate dummy variable for each year in the data set and for each region of the United States. This is to mop up year-by-year variation in national wellbeing and unchanging spatial characteristics such as regions' climatic conditions.

The age regressor in the first column of Table 1 has a positive coefficient of 0.0096 and a t-statistic of approximately 11. Hence reported happiness rises as people get older. In column 2 of Table 1, a set of further regressors are included into the equation, and the coefficient on age falls somewhat, to 0.0066, with a t-statistic that indicates it continues to be statistically significantly different from zero at usual confidence levels. These extra regressors are a variable for the years of education of the person, two dummies for racial type, 8 dummies for the number of dependent children of the individual, a collection of different dummy variables to capture the working status (employed, unemployed, …) of the person, a dummy variable that takes the value one if the individual reported that his or her parents had divorced by the time the individual respondent was aged 16, and 4 dummy variables to capture the person's marital status. Table 1 goes on to check for a turning point in age. It does so

in the simplest way, by fitting a level and a squared term. Table 1 finds in column 3 that a quadratic form seems to approximate the data well: the equation traces out a happiness function that reaches a minimum at 36.8 years of age[1]. This is effectively the U-shaped result in the literature to date.

However, Table 1 then explores the possibility that the U-shape in age is a product merely of omitted cohort effects. Column 4 of Table 1 extends the specification by introducing a separate dummy variable for each decade of birth (it cannot enter a full set of individual birth-year dummies because the result would be complete collinearity). The outcome is a U-shape in age, but one where the turning point is now much later in the typical individual's life. According to the evidence in column 4 of Table 1, subjective wellbeing among randomly selected American males bottoms out at an estimated 55.9 years. This is to be thought of, of course, as the minimum-happiness age after controlling for other influences such as education and marital status.

Finally, column 5 of Table 1 introduces an income measure into the equation explaining wellbeing. For simplicity, and following much of the literature, it is entered as the natural logarithm of the person's family income. Its coefficient is positive (with a t-statistic of 6.83), so richer people report higher levels of happiness with their lives. The U-shape in age now bottoms out at age 49.5. The sample size is somewhat reduced, because of missing income observations, to 11,404 people.

The remainder of the paper's evidence is similar. Table 2 moves to a sub-sample of females from the US General Social Survey. Compared to Table 1, the sample size is a little larger (because women live longer than men) at 24,148 individuals. Once again, each reports a wellbeing answer on a three-point scale from

[1] This has, because of the large sample, a 95% confidence interval of 36.7 – 36.9. For that reason,

very happy down to not at all happy, and Table 2 estimates an ordered logit equation with the same structure as for the males in Table 1.

Perhaps surprisingly, the analytical structure for American women is almost the same as for the men. In Table 2, wellbeing is at first increasing in age. But once a squared term in age is introduced, in the third column, it is clear that the data favour the quadratic form, so once again happiness is strongly U-shaped in age. When the same set of cohort dummies are incorporated into the equation, in column 4 of Table 2, the turning point of the happiness function is at age 44.9 years. This is noticeably less than the 55.9 years estimated for the male sub-sample. However, allowing for the separate effect of income upon wellbeing in column 5 makes women look more like the men. The minimum in column 5 of Table 2 is reached at age 45.1. Whatever is going on, in some sense that may not be immediately understandable, these data are apparently working in roughly but not exactly the same way for American males and females.

With only minor differences, Tables 3 and 4 tell the same story, but use Eurobarometer data pooled from 1975 to 1998. Here, of course, the continent is different and the sample sizes far larger. A slightly different form of wellbeing question (on life satisfaction) has to be employed, but as these estimation methods effectively use only the ordering of wellbeing answers, the exact wording is unlikely to matter significantly, and so empirically it seems to prove.

In Table 3, an ordered logit is estimated for 200,848 males from France, Belgium, Netherlands, West Germany, Italy, Luxembourg, Ireland, Great Britain, Greece, Spain, and Portugal. To allow comparisons, the aim is to achieve an econometric specification as close as possible, despite some differences in the data

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confidence intervals are not reported again in the paper.

sets on topics such as the level of detail in the measure of income, to that for the United States in Tables 1 and 2.

Before the cohort dummies are introduced, the turning point in the male wellbeing equation is at a minimum point where age is equal to 43.4 years (see column 3 of Table 3). It is not easy to say why this number might be higher than in the USA (see column 3 of Table 1), but one possibility is that the Second World War may have exacted a toll in various ways on this generation of European males. Whatever the reason, the difference with the United States continues by the time column 4 is estimated. Now the age at which wellbeing reaches a minimum is 47.1 years, which is below the American number. After the role of income is entered into the specification, the minimum is 44.1 years. Table 4 produces similar figures, and equations, for the female sub-sample of 214,857 randomly sampled European women.

Although the birth-cohort coefficients (on Born<1900, Born 1900-1910, etc) are not always individually well-defined, there are signs from the Tables that the United States and Europe differ in the time structure of the cohort effects upon happiness. In Tables 1 and 2, there is evidence that successive American birth cohorts have become progressively less happy between 1900 and today. This finding is reminiscent of one of Easterlin's (2006), although he uses a different statistical method.

In Europe, by contrast, Tables 3 and 4 suggest that wellbeing has been rising through recent generations. This is particularly clear for males. The coefficient of 0.3206 (t = 2.36) for the final cohort, in the fifth column of Table 3, implies that the most recent generation of European men is ceteris paribus the happiest of the 20th century.

## 3. Conclusions

This paper studies data on 500,000 Americans and Europeans. It suggests that psychological wellbeing depends in a curvilinear way upon age. The paper's results, which draw upon regression equations, and use data sets long enough to distinguish age effects from cohort effects, seem of interest. They suggest that reported wellbeing is U-shaped in age and that the convex structure of the curve is similar across different parts of the Western world. Because the paper's equations control for many other influences upon happiness and life satisfaction -- including income, education and marriage -- the findings should be read as describing ceteris-paribus wellbeing.

Happiness among American males and females reaches a minimum at ages 49.5 and 45.1 respectively. Life satisfaction levels among European men minimize at age 44.1 and among European women at age 42.6. Our correction for birth-cohort influences makes some difference to the results claimed by the earlier literature, especially in American wellbeing equations, but the general spirit of a U-shape is unaffected by cohort effects. It might be objected that our method has had to rely on decadal proxies for cohorts of Americans and Europeans. How to do better than this, nevertheless, is not clear if the aim is to maintain also age and year effects within the equations. Moreover, if subtler cohort effects were of major importance, we would expect to see more evidence of equation instability when they are imperfectly introduced in the form of the decade-long dummy variables.

What truly causes the U-shaped curve in human wellbeing, and the noticeable regularity of its mathematical shape in different parts of the industrialized world, is currently unknown.

- One possibility is that individuals learn to adapt to their strengths and weaknesses, so in mid-life quell their infeasible aspirations.
- Another is that cheerful people live systematically longer than the miserable, in ways and for reasons not currently appreciated, and that the wellbeing U-shape in age traces out in part a selection effect.
- A third is that a kind of comparison process is at work: I have seen school-friends die and come eventually to value my blessings during my remaining years.

Understanding the roots of the pattern seems an important task for future work.

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**Table 1. Happiness Equations for Men in the USA: Pooled Data 1974-2004**

| | | | | | |
|---|---|---|---|---|---|
| Age | .0096 | .0066 | -.02536 | -.02852 | -.05515 |
| | (11.36) | (4.83) | (4.24) | (3.34) | (4.03) |
| $Age^2$ | | | .000345 | .000255 | .000557 |
| | | | (5.48) | (4.68) | (4.00) |
| Born <1900 | | | | .6851 | 2.3501 |
| | | | | (2.05) | (1.96) |
| Born 1900-1909 | | | | .8175 | .6585 |
| | | | | (3.09) | (1.45) |
| Born 1910-1919 | | | | .5418 | .7133 |
| | | | | (2.58) | (2.41) |
| Born 1920-1929 | | | | .4122 | .3769 |
| | | | | (2.57) | (1.75) |
| Born 1930-1939 | | | | .2416 | .2324 |
| | | | | (2.14) | (1.57) |
| Born 1940-1949 | | | | .0441 | .0685 |
| | | | | (0.66) | (0.81) |
| Born 1960-1969 | | | | .0087 | -.0222 |
| | | | | (0.12) | (0.26) |
| Born 1970-1979 | | | | -.0709 | -.2038 |
| | | | | (0.58) | (1.34) |
| Born 1980 + | | | | -.1983 | -.3137 |
| | | | | (0.89) | (1.08) |
| Log of income | | | | | .1727 |
| | | | | | (6.83) |
| Personal controls | No | Yes | Yes | Yes | Yes |
| Cut1 | -1.5040 | -.9830 | -1.5561 | -1.5089 | -1.2807 |
| Cut2 | 1.3120 | 2.0188 | 1.4489 | 1.4995 | 1.9392 |
| Sample size | 19,027 | 18,914 | 18,914 | 18,914 | 11,404 |
| Pseudo $R^2$ | .0066 | .0476 | .0476 | .0484 | .0490 |
| Log likelihood ratio | -17725 | -16891 | -16891 | -16878 | -9823 |
| ***Age at the happiness minimum*** | | | ***36.8*** | ***55.9*** | ***49.5*** |

The dependent variable, here and in later tables, is a measure of subjective wellbeing. The numbers in parentheses are t-statistics; they test the null hypothesis of a coefficient of zero. All five regression equations are to be read vertically. They are ordered logits and include 24 year-dummies and 9 region-dummies. 'Personal controls' are the number of years of education, two race-dummies, 8 number-of-children dummies, 7 workforce-status dummies, a dummy for parents divorced when respondent was 16, and 4 marital-status dummies. 'Yes' means these variables are included in the equation. The 'base' excluded cohort is that for people born 1950-1959. The data set excludes 1979, 1981, 1992, 1995, 1997, 1999, 2001, 2003. The exact wording of the wellbeing question is: "Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?"
Source: General Social Survey, 1974-2004

**Table 2. Happiness Equations for Women in the USA: Pooled Data 1974-2004**

| | | | | | |
|---|---|---|---|---|---|
| Age | .0006 | .0076 | -.0188 | -.0584 | -.06865 |
| | (0.90) | (7.23) | (3.83) | (4.54) | (4.89) |
| $Age^2$ | | | .00028 | .00065 | .000761 |
| | | | (5.50) | (4.97) | (5.25) |
| Born <1900 | | | | .1693 | 1.9574 |
| | | | | (0.67) | (1.41)) |
| Born 1900-1909 | | | | .2183 | .8228 |
| | | | | (0.96) | (1.65) |
| Born 1910-1919 | | | | .2060 | .4297 |
| | | | | (1.13) | (1.40) |
| Born 1920-1929 | | | | .0803 | .3420 |
| | | | | (0.57) | (1.55) |
| Born 1930-1939 | | | | .1092 | .2802 |
| | | | | (1.10) | (1.87) |
| Born 1940-1949 | | | | .0748 | .1592 |
| | | | | (1.27) | (1.88) |
| Born 1960-1969 | | | | .1958 | .1068 |
| | | | | (3.18) | (1.26) |
| Born 1970-1979 | | | | .2235 | -.0183 |
| | | | | (2.09) | (0.12) |
| Born 1980 + | | | | .2032 | -.2582 |
| | | | | (0.98) | (0.86) |
| Log of income | | | | | .1138 |
| | | | | | (5.10) |
| Personal controls | No | Yes | Yes | Yes | Yes |
| Cut1 | -1.9197 | -1.7992 | -1.1957 | -.9068 | -1.5689 |
| Cut2 | .7897 | 1.3041 | 1.7067 | 1.9982 | 1.5769 |
| Sample size | 24,148 | 24,017 | 24,017 | 24,017 | 11,158 |
| Pseudo $R^2$ | .0032 | .0472 | .0474 | .0481 | .0469 |
| Log likelihood ratio | -22884 | -10844 | -21751 | -21737 | -9727 |
| ***Age at the happiness minimum*** | | | ***33.6*** | ***44.9*** | ***45.1*** |

The numbers in parentheses are t-statistics. All equations are ordered logits and include 24 year-dummies and 9 region-dummies. 'Personal controls' are the number of years of education, two race-dummies, 8 number-of-children dummies, 7 workforce-status dummies, a dummy for parents divorced when respondent was 16, and 4 marital-status dummies. The 'base' excluded cohort is that for people born 1950-1959. The data set excludes 1979, 1981, 1992, 1995, 1997, 1999, 2001, 2003. The exact wording of the wellbeing question is: "Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?"

Source: General Social Survey, 1974-2004

**Table 3. Life Satisfaction Equations for Men in Europe: Pooled Data 1975-1998**

| | | | | | |
|---|---|---|---|---|---|
| Age | .0007 | .0020 | -.04872 | -.04556 | -.04022 |
| | (3.06) | (4.44) | (26.15) | (15.12) | (11.50) |
| $Age^2$ | | | .000561 | .000484 | .000456 |
| | | | (28.02) | (17.05) | (13.86 |
| Born <1900 | | | | .2129 | .2163 |
| | | | | (1.76) | (1.57 |
| Born 1900-1909 | | | | .3012 | .2924 |
| | | | | (3.51) | (2.99) |
| Born 1910-1919 | | | | .2842 | .2710 |
| | | | | (4.20) | (3.50) |
| Born 1920-1929 | | | | .2488 | .2012 |
| | | | | (4.89) | (3.45) |
| Born 1930-1939 | | | | .1695 | .1058 |
| | | | | (4.70) | (2.56) |
| Born 1940-1949 | | | | .1073 | .0618 |
| | | | | (4.82) | (2.44) |
| Born 1960-1969 | | | | .0994 | .1244 |
| | | | | (4.48) | (4.86) |
| Born 1970-1979 | | | | .2391 | .2806 |
| | | | | (6.43) | (6.34) |
| Born 1980 + | | | | .3671 | .3206 |
| | | | | (3.99) | (2.36) |
| Log of income | | | | | .4090 |
| | | | | | (44.03) |
| Personal controls | No | Yes | Yes | Yes | Yes |
| Cut1 | -2.5090 | -2.5090 | -3.1872 | -3.250 | .2291 |
| Cut2 | -.9548 | -.9548 | -1.5046 | -1.6566 | 1.8564 |
| Cut3 | 1.8061 | 1.8060 | 1.2503 | 1.1907 | 4.7525 |
| Sample size | 200,848 | 188,321 | 188,321 | 188,321 | 142,738 |
| Pseudo $R^2$ | .0403 | .0572 | .0591 | .0596 | .0680 |
| Log likelihood ratio | -211799 | -195182 | -194788 | -194685 | -146279 |
| ***Age at the life-satisfaction minimum*** | | | ***43.4*** | ***47.1*** | ***44.1*** |

The numbers in parentheses are t-statistics. All equations are ordered logits and include 10 country-dummies and 19 year-dummies. 'Personal controls' are 9 educational-qualification dummies, 6 workforce-status dummies, and 5 marital-status dummies. The 'base' excluded cohort is that for people born 1950-1959. The data set excludes 1981, and columns 2-4 also exclude 1995 and 1996 because there are no income variables for those years. The exact wording of the wellbeing question is: "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?" The countries are France, Belgium, Netherlands, West Germany, Italy, Luxembourg, Ireland, Great Britain, Greece, Spain and Portugal.
Source: Eurotrends file ( Eurobarometer ICPSR #3384)

**Table 4. Life Satisfaction Equations for Women in Europe: Pooled Data 1975-1998**

| | | | | | |
|---|---|---|---|---|---|
| Age | -.0052 | .0020 | -.039955 | -.037482 | -.037796 |
| | (22.06) | (5.44) | (23.72) | (13.39) | (11.53) |
| $Age^2$ | | | .000449 | .000405 | .0004437 |
| | | | (25.50) | (16.02) | (14.98) |
| Born <1900 | | | | .1313 | .0171 |
| | | | | (1.16) | (0.13)) |
| Born 1900-1909 | | | | .1253 | .0846 |
| | | | | (1.53) | (0.89) |
| Born 1910-1919 | | | | .1443 | .1006 |
| | | | | (2.22) | (1.33) |
| Born 1920-1929 | | | | .1079 | .0530 |
| | | | | (2.20) | (0.93) |
| Born 1930-1939 | | | | .0534 | -.0101 |
| | | | | (1.54) | (0.25) |
| Born 1940-1949 | | | | .0587 | -.0028 |
| | | | | (2.74) | (0.11) |
| Born 1960-1969 | | | | .0321 | .0729 |
| | | | | (1.50) | (2.93) |
| Born 1970-1979 | | | | .1696 | .2030 |
| | | | | (4.66) | (4.64) |
| Born 1980 + | | | | .1542 | .0851 |
| | | | | (1.61) | (0.59) |
| Log of income | | | | | .3931 |
| | | | | | (44.24) |
| Personal controls | No | Yes | Yes | Yes | Yes |
| Cut1 | -2.7348 | -2.2078 | -2.9784 | -2.8848 | .1411 |
| Cut2 | -1.1069 | -.5541 | -1.3217 | -1.2277 | 1.8301 |
| Cut3 | 1.6583 | 2.2672 | 1.5066 | 1.6015 | 4.6949 |
| Sample size | 214,857 | 201,431 | 201,431 | 201,431 | 148,249 |
| Pseudo $R^2$ | .0553 | .0678 | .0692 | .0694 | .0770 |
| Log likelihood ratio | -224,535 | -207,685 | -207,360 | -207,320 | -152,110 |
| ***Age at the life-satisfaction minimum*** | | | ***44.5*** | ***46.3*** | ***42.6*** |

The numbers in parentheses are t-statistics. All equations are ordered logits and include 10 country-dummies and 19 year-dummies. 'Personal controls' are 9 educational-qualification dummies, 6 workforce-status dummies, and 5 marital-status dummies. The 'base' excluded cohort is that for people born 1950-1959. The data set excludes 1981, and columns 2-4 also exclude 1995 and 1996 because there are no income variables for those years. The exact wording of the wellbeing question is: "On the whole, are you very satisfied, fairly satisfied, not very satisfied, or not at all satisfied with the life you lead?" The countries are France, Belgium, Netherlands, West Germany, Italy, Luxembourg, Ireland, Great Britain, Greece, Spain and Portugal.
Source: Eurotrends file (Eurobarometer ICPSR #3384)