Life satisfaction in Western Europe and the gradual vanishing of the U-shape in age

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Abstract

Using Eurobarometer data for 21 Western European countries since 1973, we show that the U-shape in life satisfaction by age, which has been present for a long time, has now vanished. In 13 Northern European countries—Belgium, Denmark, Finland, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, Turkey, and the UK—the U-shape has been replaced by life satisfaction rising with age. We confirm these findings with evidence from the European Social Surveys, the Global Flourishing Survey, and Global Minds. Evidence of change in the U-shape is mixed for Austria and France. In six Southern European countries—Cyprus, Greece, Italy, Malta, Spain, and Portugal—the U-shape was replaced by life satisfaction declining with age. In these Southern European countries, the life satisfaction of young individuals has been rising since around 2015. A contributing factor is the rapid decline in youth unemployment since its 2015 peak.

Keywords: *life satisfaction, age, Europe, mental health, young*

1. Introduction

In the decades leading up to the outbreak of the COVID-19 pandemic in 2020, there were over 600 published papers showing a global mid-life morbidity crisis. Life satisfaction and happiness were U-shaped in age [1], whilst negative affect, diversely defined, was hump-shaped in age, peaking in mid-life [2]. This hump shape was also apparent in "deaths of despair" from drug overdose, suicide, and alcohol poisoning [3].

However, increasing evidence indicates that the mental health of young people began to decline as early as about 2013. This was first reported in a series of papers by Jean Twenge [4–6] but has now been observed across 167 countries [7] and in a series of studies for separate countries (these studies include recent evidence for Australia [8, 9], Canada [10], Norway [11], Iceland [12], the Netherlands, and the United States [13, 14].) This shift has been accompanied by behavioral change among young individuals, most notably rising suicide rates in the United States [15–17] and rising unsuccessful suicide attempts [18] (recent evidence from the European Commission shows rising suicide rates of youngsters ages 15–19 in twelve EU countries between 2011 and 2022 but falls elsewhere [19]). This deterioration in the mental health of young people continued during the COVID-19 pandemic. This is apparent in the Netherlands, for example, where reported poor mental health and visits to the General Practitioner for mental health reasons among 15–24-year-olds have risen markedly since 2019 (Quarterly Youth Study – round 7. National Institute for Public Health and the Environment [20]). Similar trends are apparent elsewhere. For example, in Sweden, self-reported worry or anxiety has increased in the Swedish population, and the preva-lence is especially high among young women, i.e., those aged 16–29 years. Severe worry or anxiety was reported by 23 percent of young women in 2024. In 2011, the corresponding proportion was 9 percent. For young men, there has been a similar increase, from 5 percent in 2011 to 10 percent in 2024 [21].

Blanchflower et al. [22] were the first to point out that this deterioration in the mental health of young people changed the age pattern in subjective ill-being such that, in both the United States and the United Kingdom, the hump-shape in ill-being was replaced by a linear trend, with ill-being falling with age. The disappearance of the hump shape in ill-being is apparent elsewhere around the world as well—in Asia and the Middle East [23] and in Latin America [24].

Debate as to what lies behind these changes is ongoing. Central to the debate have been concerns regarding the role of social media [4, 14], with commentators pointing to various mechanisms at play, including social comparisons, impacts on brain function, displacement effects on other activities, information overload, and cyberbullying [25]. Although contested, there is growing evidence that interactions with social media may have a causal impact on young people's mental health. Pugno [26] reviews a set of papers that have used natural experiments, suggesting a causal connection between the arrival of fast broadband internet and the deteriorating well-being of young individuals. Evidence is provided in [27–32]. It appears that extended use of smartphones is particularly problematic. For example, Liu et al. [33] found that more time spent on social media "is associated with a higher risk

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of depression in adolescence in a linear dose–response manner, especially for teenage girls."

Few prior studies have examined the extent to which the previously well-documented life satisfaction and happiness U-shapes in age have remained intact. The studies that have been undertaken are not consistent.

Twenge and Blanchflower [34] documented changes in youth well-being, primarily life satisfaction, in six English-speaking countries—Australia, Canada, Ireland, New Zealand, the United Kingdom, and the United States. Broadly speaking, they found evidence across all of these English-speaking countries that happiness and life satisfaction have been rising with age since 2020. In several of these surveys, they also found that ill-being declines with age. The U-shape in well-being by age that used to exist in these countries is now gone and has been replaced by a crisis in well-being among the young population. However, Marquez et al. [35] came to very different conclusions analyzing Gallup World Poll data for a period since 2005. They maintained that "*globally, adolescents aged 15–24 report higher life satisfaction than adults aged 25 or above*" [35], (p. 91), although they did go on to say that "*the gap between those aged 15–24 and those 25 and older is contracting in Western Europe*".

More broadly, age patterns in positive affect since 2020 differ across surveys. Where surveys are conducted with an interviewer (either face to face or online)—as in the case of Gallup World Poll data—the young population scores more highly than when the survey is conducted online, as in the case of the Global Minds data [36]. Blanchflower and Bryson [23] examined the issue of survey mode further, confirming that young people's responses on well-being appeared to be more sensitive to the way the survey was conducted than in the case of older people. This raises important questions about one's ability to measure changes in age patterns in well-being over time, particularly because push-to-web surveys have been an important development in survey technology in recent years.

In this paper, we contribute to the literature by focusing on changes in life satisfaction in 21 Western European countries since 1973. We show that the U-shape in life satisfaction by age has now vanished, but in perhaps a surprising fashion. In 12 Northern European countries—Belgium, Denmark, Finland, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, and the UK—plus Turkey, the U-shape has been replaced by life satisfaction rising with age. Evidence of change in the U-shape is mixed for Austria and France. But in six Southern European countries—Cyprus, Greece, Italy, Malta, Spain, and Portugal—the U-shape was replaced by life satisfaction falling with age. In these Southern European countries, the life satisfaction of the young population has been rising since around 2015. We document that a contributory factor is the rapid decline in youth unemployment since its 2015 peak.

The remainder of the paper is structured as follows: Section 2 describes our data and estimation. In Section 3, we present our findings. Section 4 discusses the implications of our findings. Section 4.1 identifies both the strengths and limitations in our analyses before we conclude in Section 5.

2. Materials and methods

We describe the seven data sets we analyze in this paper, beginning with the Eurobarometer, which is our primary focus. We run simple ordinary least squares (OLS) regressions on life satisfaction, diversely defined, controlling for gender and year dummies and, in pooled regressions, for country dummies.

We restrict samples to those under the age of 70, but in the case of Global Minds, we restrict the sample to those aged under 75, as the age data are only reported in bands. We use this restriction because, as Hudomiet et al. [37] have documented in the United States using data from the Longitudinal Health and Retirement Survey, there is mortality selection bias at around age 70 as happy people live longer. They argue that "*both differential mortality and differential non-response bias the cross-sectional age profile upward: individuals with higher life satisfaction and in better health tend to live longer, and, among survivors, individuals with higher life satisfaction are more likely to remain in the survey, masking the decline in life satisfaction experienced by individuals as they age. We conclude that the optimistic view about increasing life satisfaction at older ages based on cross-sectional data is not warranted.*". A similar mortality selection bias is likely to operate in Europe.

We consider the relationship between life satisfaction and age in a variety of ways across 21 European countries:

(a) Single year of age, between ages 18 and 70.

(b) Age bands 15/18–24, 25–34, 35–44, 45–54, 55–64, and 65–69/74.

(c) Age and its square and solving for a minimum by differentiation with respect to age, dividing the age coefficient by (2 × age squared coefficient), and then multiplying by −1.

(d) An age 18–24 or 15–24 dummy.

(e) A continuous age variable.

In general, though, they tend to tell a broadly similar story.

2.1. Eurobarometer surveys, 1973–2024

Our main data source is the EU Commission's Eurobarometer Survey (EB) series, which has been conducted since 1972 by the EU Commission. The various cross-sectional micro surveys, often including several each year, can be downloaded from the German data archive GESIS [38]. A subset of these EB surveys includes questions on well-being, with the proportion that respond to them rising over time. To our knowledge, this is the longest continuous well-being survey available.

The main question we focus on is this 4-step variable, which appears in many, but not all, sweeps of the survey.

Q1: On the whole, are you very satisfied (=4), fairly satisfied (=3), not very satisfied (=2), or not at all satisfied (=1) with your daily life?

We pool the 176 surveys containing the life satisfaction question for the 1973–2024 period, excluding 1974, which has no data available (the earliest Eurobarometer with life satisfaction data is called the European Communities Study from September to October 1973 and is sometimes called Eurobarometer 0 [39]) (The surveys we use are as follows: 0; 30; 40; 50; 60; 70; 80; 90; 10.0; 10.1; 11.0; 12.0; 13.0; 14.0; 15.0; 16.0; 17.0; 18.0; 19.0; 20.0; 21.0; 22.0; 23.0; 24.0; 25.0; 26.0; 27.0; 28.0; 28.1; 29.0; 30.0; 31.0; 31.1; 32.0; 33.0; 34.0; 34.2; 35.1; 36.0; 37.0; 37.1; 37.2; 38.0; 38.1; 39.0; 39.1; 40.0; 41.0; 41.1; 42.0; 43.0; 43.1; 43.2; 44.0; 44.1; 44.3; 44.4; 45.1; 46.0; 46.1; 47.0; 47.1; 47.2; 48.0; 49.0; 50.0; 50.1; 51.0; 51.1; 52.0; 52.1; 53.0; 54.0; 54.1; 54.2; 55.0; 55.1; 55.2; 56.0; 56.1; 56.2; 56.3; 57.0; 57.1; 57.2; 58.1; 60.1; 61.0; 62.0; 62.2; 63.4; 64.2; 65.2; 66.1; 66.3; 67.2; 68.1; 69.2; 70.1; 71.1; 71.2; 71.3; 72.4; 73.4; 73.5; 74.2; 75.3; 75.4; 76.3; 77.3; 77.4; 78.1; 79.3; 79.4; 80.1; 80.2; 81.1; 81.2; 81.4; 81.5; 82.1; 82.2; 82.3; 82.4; 83.1; 83.2; 83.3; 83.4; 84.2; 84.3; 84.4; 85.1; 85.2; 85.3; 86.1; 86.2; 86.3; 87.1; 87.2; 87.3; 87.4; 88.1; 88.2; 88.3; 88.4; 89.1; 89.2; 89.3; 90.1; 90.2; 90.3; 90.4; 91.2; 91.3; 91.4; 91.5; 92.1; 92.2; 92.3; 92.4; 93.1; 93.2; 94.1; 94.3; 95.1; 95.2; 95.3; 96.1; 96.3; 97.3; 97.5; 98.2; 99.4; 100.2; 101.3; and 101.4.) In total, we have 2,421,597 observations. The panel of countries is unbalanced across the 51 years of data. Details by year and by country are reported in the Supplementary Materials. The survey started with nine participating countries—Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, and the United Kingdom—which have collected responses throughout all these years. As countries join the EU, they participate in the Eurobarometers and sometimes prior to their joining (some other countries participate even though they continue to be outside the EU, including Turkey, Norway, and Switzerland). The years available by country are as follows: Greece (1981–2024), Spain (1985–2024), Portugal and Finland (+1992), Sweden and Austria (1995–2024), and Cyprus and Malta (2005–2024). There are also surveys on Turkey (2004–2025) with 7 years of observations, plus Iceland and Switzerland, during 2021–2023. After Brexit, the UK left the survey. Sample sizes are over 100,000 for fifteen countries (France = 148,403; Belgium = 148,768; Netherlands = 147,360; Germany = 225,666; Italy = 151,508; Luxembourg = 68,382; Denmark = 146,616; Ireland = 146,269; UK = 178,946; Greece = 134,724; Spain = 127,211; Portugal = 128,242; Finland = 104,169; Sweden = 104,837; Austria = 102,482; Norway = 11,001; Cyprus = 43,984; Malta = 43,507; Turkey = 42,130; Iceland =6217; and Switzerland = 6284.).

The EB surveys prior to 2020 used Computer-Assisted Personal Interviewing (CAPI), an in-person or face-to-face research method in which interviewers use software on a computer or tablet to record interview responses. CAPI is an interviewer-administered mode, meaning that interviewers can clarify questions that may be unclear to respondents and ask follow-up questions. In the years 2020–2023, both CAPI and online survey collection methods were used, known as Computer-Assisted Web Interviewing (CAWI), which are surveys administered through a web browser or mobile application. Links for CAWI surveys can be sent through multiple methods, including email, mobile application notifications, online advertisements, and SMS messages. CAWI surveys are useful for gathering quick insights from large sample sizes as they do not require interviewers to be trained and can be distributed very widely, but they are limited to populations who have internet access and are comfortable using computers or have internet-enabled phones or tablets.

Rickwood and Coleman-Rose [40] noted that there is evidence that people completing interviewer-administered questionnaires are more likely to provide socially desirable responses than if they are self-administered. In the literature, this is called the social desirability response bias, which is the tendency to under-report socially undesirable attitudes and behaviors and to over-report more desirable attributes. (By exploiting the random assignment to survey mode, Reisinger [41] shows that the under-reporting of depression and over-reporting of happiness in surveys that do not permit anonymous reporting is causally linked to the survey mode.)

We explore the survey mode effects below, but we find that responses are not as sensitive to the method used compared with other surveys [23, 24].

In addition to descriptive trends in mean life satisfaction by age, we run ordinary least squares (OLS) estimates, focusing on differences across six age bands, where under-25 is the reference category. Pooled country equations incorporate gender and year dummies, as well as country dummies. We also run estimates for separate countries by grouped years and, in sensitivity analyses, replace the age dummies with alternative parameters capturing age.

2.2. The remaining surveys

The remaining analyses were undertaken with six different surveys.

We analyze responses in the Gallup World Poll (GWP) for the 2018–2025 period to the following question:

Q2: Please imagine a ladder, with steps numbered from 0 at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?

This is known as Cantril's Ladder. We run 21 separate country OLS estimates for individuals aged 18 to 70, focusing on responses in six age categories, with the age group under-25 as the reference category, controlling for gender and year dummies.

For the European Social Survey (ESS), we run separate life satisfaction equations for 17 countries, namely Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. Models are run for sweeps 7 to 10 pooled (for the 2014–2020 period) and separately for sweep 11 conducted in 2023/24. We present coefficients for age and age squared in models that also contain a gender dummy. The dependent variable, which is estimated with an OLS, is an 11-step life satisfaction variable as follows:

Q3: 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.

We run OLS estimates using the Global Flourishing Study (GFS), 2023/24, which contains data on Germany, Spain, Sweden, Turkey, and the United Kingdom. The dependent variable is an 11-step life satisfaction question:

Q4: How satisfied are you with life as a whole these days? Coded 0–10.

We run separate country regressions controlling for gender. Age is captured with six categorical variables, with the age group under-

25 as the reference category. In a second specification, we capture age with age and age squared.

Using the web-based survey Global Minds 2020–2024 (GM), we run OLS equations for a 9-step life satisfaction question for six separate countries—Belgium, France, Ireland, Spain, Switzerland, and the United Kingdom. In a recent subset of surveys, a 9-step life satisfaction question (Q6) was asked in a subset of six European countries—Belgium, France, Ireland, Spain, Switzerland, and the UK. We only have age in bands, and no continuous age variable is provided. There are only 407 observations in Switzerland, but there are over 23,000 for the UK. The question is as follows:

Q5: How satisfied are you with your life in general? 1 = not at all satisfied… 9 = extremely satisfied.

Our estimates control for gender and year dummies.

To establish change in well-being among school-age children, we rely on two surveys. The first is the OECD's Programme for International Student Assessment (PISA) conducted in 2015, 2018, and 2022 for high school students aged 15/16. In each of those three years, young people were asked the following:

Q6: The following question asks how satisfied you feel about your life, on a scale from "0" to "10". Zero means you feel 'not at all satisfied' and "10" means 'completely satisfied'. Overall, how satisfied are you with your life as a whole these days?

We report the mean scores each year for 13 European countries—Austria, Finland, France, Germany, Greece, Iceland, Ireland, the Netherlands, Portugal, Spain, Switzerland, and the UK.

The second is the Health Behaviour in School-aged Children (HBSC) Survey conducted in 2017/2018 and 2020/21 among 15-year-olds. They are asked the following:

Q7: Here is a picture of a ladder. The top of the ladder '10' is the best possible life for you, and the bottom '0' is the worst possible life for you. In general, where on the ladder do you feel you stand at the moment? Tick the box next to the number that best describes where you stand.

We report mean scores for each of the 15 countries for each year.

Both the PISA and HBSC surveys are conducted in collaboration with the WHO Regional Office for Europe. Data are collected in the HBSC surveys from pupils in mainstream schools using a self-report questionnaire. Pupils complete the questionnaire in school as a whole class throughout the entire school, using either pencil and paper or an electronic survey mode. The PISA surveys also use self-completion surveys.

The mean scores from PISA and HBSC correspond to those in Marquez et al. [35]. We confirmed their findings from the microdata.

Of note is that the GWP, ESS, and GFS surveys are collected using interviewers and/or telephones. By contrast, the PISA, HBSC, and GM surveys are collected via the internet.

3. Results

3.1. Eurobarometer surveys, 1973–2024

Figure S1 plots the relationship between a single year of age and life satisfaction for 2020–2024 for each of the 21 countries in Western Europe in the data. We obtain these estimates by regressing life satisfaction on single year of age dummies, as well as gender and year, setting age 18 to zero. We extract the coefficients, add them to the constant, and plot them. We also report a best-fit linear trend line to the scatter plots.

We find that the function slopes upwards in age in twelve countries—Belgium, Denmark, Finland, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, Turkey, and the United Kingdom—indicating that life satisfaction rises with age. We show this in further detail with different specifications and data sets below.

However, there are downward slopes in the remaining nine countries—Austria, Cyprus, France, Germany, Greece, Italy, Malta, Portugal, and Spain. An obvious question here is what distinguishes the group of countries where life satisfaction is rising with age from those where it declines with age. We return to this below.

Table 1 and **Table 2** report the relationship between life satisfaction and age using the full time-series from 1973, split into three time periods: 1973–2009; 2010–2019; and 2020–2024. In every case, we report five age bands (with under-25s as an additional age band used as the reference category) and then, separately, a continuous age variable from a separate equation with gender and year controls.

Table 1 starts with data from 1973 (excluding 1974 for which we have no data) through 2009 using six ten-year age bands, using method (b) above with the excluded category of ages 15–24. As noted in Table S1, we have data on all these years for Belgium, Denmark, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, and the UK; Greece joined in 1981, Spain and Portugal in 1985, Finland, Sweden, and Austria in 1995, and Cyprus and Malta in 2004. Sample sizes vary from around 100,000 to 9000, with ten countries with over 50,000.

There is evidence of a U-shaped relationship between age and life satisfaction in every country except Luxembourg, with a minimum mostly in the age category of 45–54. Four have minima in the 55–64 grouping (Greece, Spain, Norway, and Portugal), with Turkey in the 35–44 group.

Table 2 runs the same analyses, but for the 2010–2019 period. Here, there are age minima in every country except Greece, which showed a linear decline, with ten in the age 45–54 category. Both **Table 1** and **Table 2** are consistent with the findings of widespread U-shapes with minima around age 50 [1]. In every country, in both tables, the function minimizes in middle-aged populations.

But in **Table 3**, the U-shape disappears. It uses data on individuals whose responses were obtained via CAPI for 2020–2024. Sample sizes range between 3000 and 12,000. Overall, there are 231,608 observations for these 21 countries, of which 150,714 or 65.1% are CAPI. (By country, the proportions for CAPI are Austria at 77%; Belgium at 58%; France at 77%; Germany at 79%; Greece at 75%; Ireland at 77%; Italy at 77%; Luxembourg at 77%; Netherlands at 68%; Portugal at 58%; Spain at 82%; Sweden at 58%; UK at 67%; and Norway, Switzerland, and Iceland at 0%.). Focusing on the single age variable specification for simplicity, there are upward slopes in seven countries: Denmark, Finland, Ireland, Luxembourg, the Netherlands, Sweden, and the UK. There are downward slopes in eleven countries—Austria, Belgium, Cyprus, France, Germany, Greece, Italy, Malta, Portugal, Spain, and Turkey.

Table 1 • Life satisfaction data from Eurobarometers, 1973–2009 (excluding 1974).

Age range	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark
25–34	−0.1194 (14.02)	−0.0724 (8.49)	−0.0367 (4.66)	−0.0447 (6.27)	−0.0856 (10.00)	0.0212 (1.70)	−0.0162 (2.19)
35–44	−0.1787 (20.18)	−0.1034 (11.97)	−0.0819 (10.40)	−0.0424 (6.02)	−0.0922 (10.81)	0.0300 (2.52)	−0.0338 (4.49)
45–54	−0.2278 (24.37)	−0.1313 (14.87)	−0.1378 (16.37)	−0.0789 (10.95)	−0.1312 (14.81)	−0.0057 (0.46)	−0.0485 (6.19)
55–64	−0.1378 (14.15)	−0.1183 (12.93)	−0.1120 (12.93)	−0.0410 (5.58)	−0.1268 (13.96)	0.0445 (3.40)	−0.0298 (3.73)
65–69	−0.0420 (3.45)	−0.0887 (7.44)	−0.0399 (3.50)	0.0338 (3.69)	−0.1613 (13.62)	0.0709 (4.06)	−0.0100 (0.99)
constant	2.9643	3.2088	3.4113	2.9848	2.9006	3.2801	3.5677
Adj R²	0.0230	0.0276	0.0177	0.0211	0.0345	0.0097	0.0116
N	67,541	66,501	66,626	101,627	71,605	28,581	64,640

Age range	Ireland	UK	Greece	Spain	Finland	Sweden	Austria
25–34	−0.0435 (5.06)	−0.0301 (3.95)	−0.1436 (12.94)	−0.1084 (11.11)	−0.0419 (3.28)	0.0078 (0.59)	−0.0663 (4.89)
35–44	−0.0384 (4.32)	−0.0478 (6.19)	−0.1889 (16.74)	−0.1513 (14.66)	−0.1203 (9.61)	−0.0365 (2.79)	−0.0696 (5.20)
45–54	−0.0386 (4.21)	−0.0639 (7.88)	−0.2782 (24.28)	−0.1877 (17.19)	−0.1911 (15.37)	−0.0835 (6.38)	−0.1050 (7.49)
55–64	−0.0056 (0.59)	−0.0026 (0.32)	−0.3394 (28.42)	−0.2036 (18.82)	−0.1640 (13.28)	−0.0322 (2.46)	−0.1014 (6.88)
65–69	0.0775 (6.19)	0.0737 (7.13)	−0.3307 (22.35)	−0.1543 (11.44)	−0.1359 (8.95)	0.0133 (0.85)	−0.1294 (7.10)
constant	3.1520	3.1544	2.8436	3.0890	3.2791	3.3904	3.1675
Adj R²	0.0204	0.0078	0.0392	0.0269	0.0393	0.0132	0.0183
N	67,097	84,694	55,384	47,614	26,509	26,391	26,856

Age range	Cyprus	Malta	Turkey	Norway	Portugal	All	
25–34	−0.1219 (3.82)	−0.0335 (0.91)	−0.1593 (6.72)	−0.0410 (1.98)	−0.1249 (12.30)	−0.0689 (29.02)	
35–44	−0.2315 (7.49)	−0.1141 (3.25)	−0.2576 (10.14)	−0.0455 (2.09)	−0.2181 (21.35)	−0.0984 (41.03)	
45–54	−0.2982 (9.89)	−0.2101 (6.15)	−0.2089 (7.28)	−0.0710 (3.06)	−0.2749 (26.51)	−0.1346 (54.15)	
55–64	−0.3171 (10.61)	−0.1752 (5.27)	−0.1808 (5.50)	−0.0891 (3.46)	−0.3192 (30.58)	−0.1134 (44.54)	
65–69	−0.2574 (7.07)	−0.1434 (3.42)	−0.0906 (1.86)	−0.1141 (3.56)	−0.3115 (24.04)	−0.0698 (21.58)	
constant	3.3700	3.1893	2.8377	3.4276	2.8566	3.1431	
Adj R²	0.0252	0.0161	0.0355	0.0029	0.0532	0.1267	
N	6572	5892	12,399	8192	46,853	881,574	

Notes: All equations include gender and year dummies, and the "all" equation includes country dummies.

Table 2 • Life satisfaction data from Eurobarometers, 2010–2019.

Age range	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark
25–34	−0.1626 (13.90)	−0.1119 (10.28)	−0.0639 (5.17)	−0.0534 (5.65)	−0.1190 (9.78)	−0.1073 (7.13)	−0.0254 (2.25)
35–44	−0.2487 (21.47)	−0.1287 (12.22)	−0.0765 (6.79)	−0.0500 (5.21)	−0.1124 (9.94)	−0.1111 (8.00)	−0.0302 (2.88)
45–54	−0.3523 (30.52)	−0.1395 (13.68)	−0.1601 (14.80)	−0.1175 (12.93)	−0.1524 (13.55)	−0.1352 (9.78)	−0.0451 (4.39)
55–64	−0.3335 (30.02)	−0.1056 (10.49)	−0.1293 (12.37)	−0.1235 (13.91)	−0.1901 (16.35)	−0.0604 (4.31)	−0.0119 (1.18)
65–69	−0.2636 (21.20)	−0.0455 (3.99)	−0.0571 (5.15)	−0.0057 (0.59)	−0.2333 (18.40)	−0.0316 (1.96)	0.0471 (4.44)
constant	3.2486	3.2610	3.5152	3.0641	2.8763	3.4232	3.6647
Adj R²	0.0280	0.0090	0.0087	0.0136	0.0152	0.0066	0.0080
N	48,281	49,806	50,429	70,921	51,901	25,041	44,659

Age range	Ireland	UK	Greece	Spain	Finland	Sweden	Austria
25–34	−0.0679 (6.27)	−0.0684 (6.96)	−0.2875 (20.97)	−0.1611 (13.69)	−0.0512 (4.52)	−0.0062 (0.44)	−0.0300 (2.69)
35–44	−0.0505 (4.89)	−0.0946 (9.59)	−0.4222 (32.25)	−0.2010 (17.96)	−0.0379 (3.47)	−0.0103 (0.75)	−0.0486 (4.49)
45–54	−0.1081 (10.11)	−0.1387 (14.13)	−0.5469 (41.93)	−0.2970 (26.39)	−0.1078 (10.07)	−0.0358 (2.63)	−0.1036 (9.60)
55–64	−0.0736 (6.71)	−0.0649 (6.67)	−0.6335 (47.24)	−0.2739 (23.72)	−0.1092 (10.78)	−0.0109 (0.83)	−0.1282 (11.41)
65–69	0.0056 (0.46)	0.0522 (5.05)	−0.6424 (41.67)	−0.1575 (11.99)	−0.0719 (6.86)	0.0839 (6.35)	−0.1212 (9.59)
constant	3.2510	3.3178	2.7417	3.1191	3.3410	3.4108	3.1333
Adj R²	0.0276	0.0158	0.0726	0.0373	0.0094	0.0077	0.0225
N	51,292	56,888	50,304	48,955	44,628	43,462	51,927

Age range	Cyprus	Malta	Turkey	Iceland	Portugal	All	
25–34	−0.1965 (11.38)	−0.1005 (5.98)	−0.0026 (0.15)	−0.0133 (0.49)	−0.1665 (14.86)	−0.1038 (36.16)	
35–44	−0.2202 (12.81)	−0.1573 (9.66)	−0.0991 (5.11)	−0.0820 (3.13)	−0.2316 (22.02)	−0.1321 (47.58)	
45–54	−0.3517 (20.83)	−0.2200 (13.88)	−0.1179 (5.25)	−0.1346 (5.14)	−0.3304 (31.86)	−0.1964 (71.42)	
55–64	−0.3392 (20.36)	−0.2281 (15.37)	−0.1721 (6.26)	−0.1086 (3.92)	−0.3779 (35.98)	−0.1889 (68.99)	
65–69	−0.2904 (15.56)	−0.2164 (13.70)	−0.1578 (3.74)	−0.1401 (4.24)	−0.4254 (35.57)	−0.1308 (43.73)	
constant	3.3665	3.1712	2.7914	3.6709	2.6255	3.0710	
Adj R²	0.0328	0.0408	0.0004	0.0088	0.0373	0.2122	
N	25,066	23,052	19,779	4588	50,258	811,237	

Notes: All equations include gender and year dummies, and the "all" equation includes country dummies.

Table 3 • Life satisfaction data from Eurobarometers, 2020−2024—Computer-Assisted Personal Interviewing (CAPI).

Age range	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark
25−34	−0.1105 (3.81)	−0.2134 (8.71)	0.0120 (0.34)	−0.0039 (0.18)	−0.1000 (3.85)	−0.0228 (0.61)	0.0173 (0.48)
35−44	−0.2074 (7.34)	−0.2553 (10.04)	+0.0643 (1.93)	0.0045 (0.21)	−0.1225 (5.15)	−0.0809 (2.29)	+0.0666 (1.91)
45−54	−0.3291 (11.91)	−0.1962 (7.90)	+0.0335 (1.04)	−0.0834 (3.84)	−0.1660 (7.22)	−0.0709 (1.99)	+0.0396 (1.18)
55−64	−0.3564 (13.17)	−0.1686 (7.06)	+0.0566 (1.80)	−0.0754 (3.71)	−0.1871 (8.11)	0.0190 (0.54)	+0.0618 (1.82)
65−69	−0.3263 (10.59)	−0.0376 (1.31)	+0.0882 (2.66)	+0.0394 (1.69)	−0.2182 (8.27)	0.0480 (1.14)	+0.1658 (4.53)
constant	3.2559	3.1490	3.1776	2.8920	2.8926	3.2081	3.2741
Adj R²	0.0317	0.0263	0.0072	0.0220	0.0145	0.0313	0.0462
N	7955	6628	7776	12,297	8527	4560	4594
Age	−0.0076 (15.26)	−0.0011 (2.36)	+0.0015 (3.11)	−0.0011 (2.88)	−0.0042 (9.61)	+0.0014 (2.23)	+0.0024 (4.33)

Age range	Ireland	UK	Greece	Spain	Finland	Sweden	Austria
25−34	0.0234 (0.84)	−0.0182 (0.53)	−0.1700 (5.31)	−0.1717 (7.10)	−0.0396 (0.97)	+0.0816 (2.00)	0.0172 (0.54)
35−44	0.0174 (0.69)	0.0064 (0.19)	−0.2587 (8.55)	−0.1993 (8.58)	−0.0310 (0.78)	+0.1359 (3.39)	−0.0059 (0.20)
45−54	0.0248 (0.98)	−0.0484 (1.39)	−0.3739 (12.64)	−0.2446 (10.85)	−0.0439 (1.12)	+0.1285 (3.21)	−0.0330 (1.10)
55−64	+0.0735 (2.86)	0.0325 (0.97)	−0.4607 (15.50)	−0.2592 (11.17)	−0.0329 (0.87)	+0.1887 (4.82)	−0.0864 (2.85)
65−70	+0.1344 (4.65)	+0.0698 (1.75)	−0.4460 (11.99)	−0.1505 (5.28)	+0.0815 (2.06)	+0.2716 (6.65)	−0.0361 (1.00)
constant	3.1269	3.1702	2.7630	3.2619	3.1172	3.0734	
Adj R²	0.0319	0.0030	0.0400	0.0175	0.0271	0.0297	0.0027
N	8584	4911	8558	9052	5384	5081	8800
Age	+0.0024 (5.12)	+0.0010 (1.65)	−0.0102 (18.02)	−0.0041 (9.31)	+0.0015 (2.60)	+0.0046 (7.75)	−0.0022 (3.95)

Age range	Cyprus	Malta	Turkey	Portugal
25−34	−0.2359 (4.97)	−0.0730 (1.62)	−0.0389 (1.09)	−0.1931 (8.03)
35−44	−0.3000 (6.62)	−0.2064 (4.72)	−0.0663 (1.80)	−0.2157 (9.82)
45−54	−0.3426 (7.31)	−0.3014 (7.08)	−0.1637 (3.99)	−0.2531 (11.69)
55−64	−0.4410 (9.84)	−0.2782 (6.77)	−0.0659 (1.16)	−0.3378 (15.79)
65−70	−0.3992 (8.03)	−0.2912 (6.63)	0.0397 (0.32)	−0.3525 (14.53)
constant	3.4402	3.1836	2.6479	3.1157
Adj R²	0.0284	0.0584	0.0076	0.0494
N	3994	3061	6251	6078
Age	−0.0071 (9.41)	−0.0062 (8.88)	−0.0038 (3.64)	−0.0068 (17.28)

All equations include gender and year dummies.

Table 4 reports life satisfaction data from Eurobarometer, also for 2020–2024, but this time for the online CAWI surveys. We see the following:

(1) All of the seven countries with upward slopes using CAPI (Denmark, Finland, Ireland, Luxembourg, the Netherlands, Sweden, and the UK) also have them with CAWI.

(2) Out of the eleven in CAPI with downward slopes, six also had downward slopes with CAWI. These are Cyprus, France, Greece, Italy, Portugal, and Spain.

(3) Belgium, Germany, Norway, Switzerland, and Iceland also had upward slopes.

(4) The coefficients on age are insignificant in Austria, Malta, and Turkey.

Table 5a explores other ways of examining the age pattern in life satisfaction during 2020–2024 using methods (a)–(e) described at the start of Section 2. It turns out that the results are highly consistent with whichever method is used, including the single year of age plots in **Figure 1**.
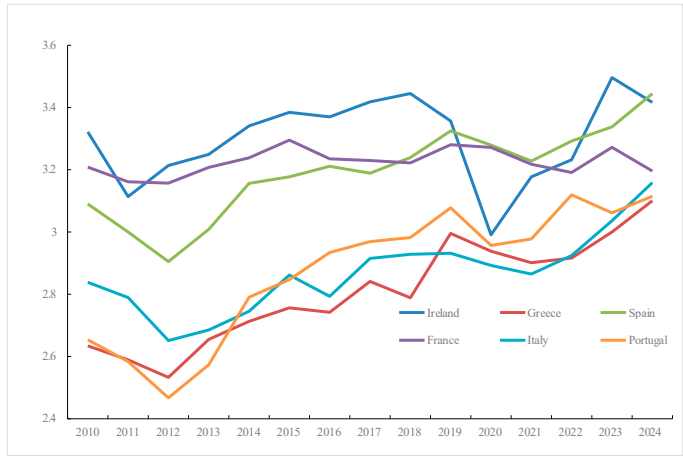

Figure 1 · Life satisfaction data for ages < 25, Eurobarometer.

The first column reports results from regressions where age is specified as a continuous variable rather than the age bands. In Belgium, Denmark, Finland, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Sweden, and Switzerland, but not Turkey, their coefficients are significantly positive.

Column 2 presents results from regressions, where the continuous age variable is replaced by an age dummy where individuals aged 18–24 score "1". It is significantly negative (lower happiness for the young population) for Denmark, Iceland, Ireland, the Netherlands, Norway, Sweden, and the UK.

Columns 3 and 4 present estimates from a third model specification, which contains both age (column 3) and age squared (column 4) terms as per the specification used in the prior literature. A significant U-shape is apparent where the age term is significantly positive, and the age squared term is statistically negative (T > 1.5). There were no significant U-shapes in ten of the twelve countries that had upward lines in **Figure 1**. In the case of Ireland, the minimum was at age 24, while in Turkey, the minimum was at age 43.

Table 5b explores the time-series changes by year since 2010. For simplicity, we include the continuous age variable as in method (e). We estimate separate equations by country for 2010–2017 pooled data and then every year from 2018. It is apparent that 2020 is the point at which the age coefficients start to change from negative to positive, and especially so in the twelve countries referred to above, which had positive trends in **Figure 1**. Sweden is notable for having positives in every case.

Table 6 displays changes in life satisfaction by country for the young population aged 18–24 for the 18 countries for which we have the full time-series available (we only have data for 2021–2023 for Norway and Switzerland and 2021 and 2022 for Iceland.) It shows declines over the 2015–2024 period in the majority of countries, but it increases in Italy, Ireland, Greece, Spain, Portugal, and Austria. As documented in **Figure 2**, those countries with increases in young people's life satisfaction experienced large reductions in youth unemployment rates over the same period (see Table S2 for unemployment rates for all 21 countries in the EB from 1983 onwards).
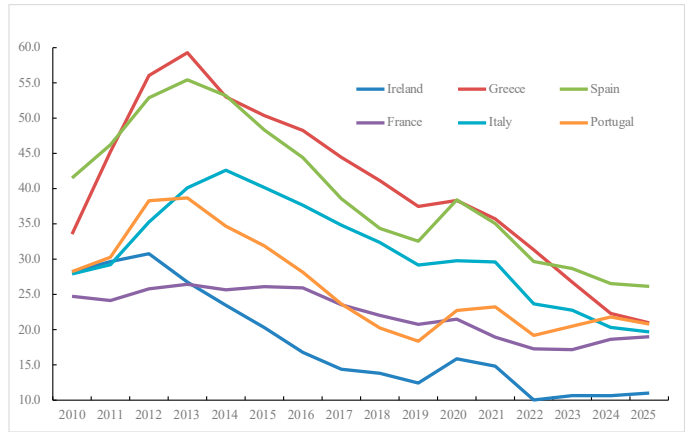

Figure 2 · Annual youth unemployment rates.

One possibility, of course, as a referee has noted, is that the age and period effects are mixed up with cohort effects. It is impossible to separate out these effects in the most recent period. Table S3 shows that the age effects for the 1973–2014 period and then again for 2015–2023 are broadly similar once cohort effects, by birth decade, are included.

3.2. Evidence from other surveys

In Table S4, we shift away from Eurobarometer to report changes in life satisfaction for high school students aged 15 as reported by Marquez et al. [35]. Both show declines in life satisfaction over the last decade, starting prior to the COVID-19 pandemic. This is true in all countries, including Italy and Spain in PISA (Table S5a) and Greece, Italy, Portugal, and Spain in the HBSC survey (Table S5b). A major question to be explored further is why we observed declining life satisfaction among those aged fifteen in these two surveys across similar years, but do not observe it using life satisfaction from the EB above, where we saw rising happiness. Below, we argue that this is driven by what has happened in the youth labor market in the years since 2015.

Table 4 • Life satisfaction data from Eurobarometers, 2020–2024—Computer-Assisted Web Interviewing (CAWI).

Age range	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark
25–34	−0.1801 (3.43)	−0.0551 (1.34)	−0.0478 (0.87)	−0.0140 (0.34)	−0.1150 (2.26)	0.0383 (0.53)	−0.1199 (3.37)
35–44	−0.2656 (5.10)	−0.0294 (0.76)	0.0806 (1.68)	−0.0255 (0.61)	−0.1605 (3.32)	0.1091 (1.57)	−0.0629 (1.81)
45–54	−0.3546 (6.94)	−0.0482 (1.31)	0.0157 (0.36)	0.0023 (0.06)	−0.2083 (4.52)	0.0904 (1.31)	−0.0094 (0.29)
55–64	−0.3482 (6.94)	0.0408 (1.13)	0.0634 (1.53)	−0.0004 (0.01)	−0.2379 (5.21)	+0.1645 (2.41)	+0.0658 (2.06)
65–69	−0.3125 (5.34)	+0.1322 (3.32)	+0.1346 (3.11)	0.0491 (1.12)	−0.3043 (5.83)	+0.2164 (2.62)	+0.1190 (3.23)
constant	3.2508	3.1900	3.4072	3.2109	2.9154	3.0198	
Adj R²	0.0241	0.0119	0.0252	−0.0005	0.0168	0.0050	0.0440
N	2436	4746	3464	3357	2569	1437	5099
Age	−0.0068 (7.31)	+0.0033 (5.31)	+0.0025 (3.47)	+0.0011 (1.61)	−0.0058 (6.74)	+0.0043 (3.64)	+0.0041 (6.99)
Age range	**Ireland**	**UK**	**Greece**	**Spain**	**Finland**	**Sweden**	**Austria**
25–34	0.0981 (1.34)	0.1619 (3.73)	−0.1794 (3.17)	−0.1221 (2.24)	−0.0342 (0.80)	−0.0210 (0.64)	−0.1050 (1.94)
35–44	+0.2551 (3.70)	0.1891 (4.25)	−0.2905 (5.51)	−0.1374 (2.69)	−0.0299 (0.71)	0.0143 (0.44)	−0.0736 (1.39)
45–54	+0.2789 (4.17)	0.1364 (3.07)	−0.4522 (8.76)	−0.2493 (5.06)	0.0023 (0.06)	−0.0021 (0.07)	−0.0950 (1.82)
55–64	+0.4056 (6.06)	+0.3203 (7.35)	−0.5021 (9.39)	−0.2883 (5.79)	0.0532 (1.29)	+0.1098 (3.36)	−0.0656 (1.23)
65–70	+0.4841 (6.86)	+0.4912 (9.29)	−0.4921 (7.68)	−0.1425 (2.30)	+0.1214 (2.79)	+0.1406 (3.64)	−0.1389 (2.11)
constant	2.8304	2.9215	2.8626	3.2735	3.0482	3.3019	3.2059
Adj R²	0.0383	0.0387	0.0474	0.0188	0.0108	0.0168	−0.0002
N	2589	2721	2944	1973	4598	4873	2636
Age	+0.0041 (6.99)	+0.0072 (8.94)	−0.0113 (11.42)	−0.0052 (5.37)	+0.0033 (5.37)	+0.0037 (5.33)	−0.0008 (0.87)
Age range	**Cyprus**	**Malta**	**Turkey**	**Norway**	**Switzerland**	**Iceland**	**Portugal**
25–34	−0.1400 (1.76)	0.0077 (0.13)	0.0894 (1.53)	−0.0413 (1.07)	−0.1016 (2.80)	−0.0179 (0.35)	−0.1311 (4.00)
35–44	−0.0774 (1.00)	0.0590 (1.04)	0.0007 (0.01)	−0.0642 (1.76)	−0.0342 (0.98)	0.0092 (0.17)	−0.0564 (1.84)
45–54	−0.2852 (3.55)	−0.0288 (0.50)	−0.1064 (1.42)	0.0428 (1.22)	+0.0484 (1.45)	+0.0898 (1.68)	−0.1645 (5.34)
55–64	−0.2805 (3.69)	0.0104 (0.19)	+0.2183 (2.68)	+0.1261 (3.50)	+0.1199 (3.49)	+0.1458 (2.76)	−0.2112 (6.59)
65–70	−0.2488 (2.95)	0.0385 (0.61)	+0.4077 (2.25)	+0.2253 (5.42)	+0.2044 (5.32)	0.0404 (0.64)	−0.1913 (4.86)
constant	3.3108	3.1105	2.6479	3.1443	3.2949	3.2733	2.9002
Adj R²	0.0224	−0.0003	0.0076	0.0230	0.0266	0.0055	0.0167
N	1190	2102	1710	5137	5204	1751	4864
Age	−0.0056 (4.20)	−0.0003 (0.34)	0.0024 (1.40)	+0.0056 (8.75)	+0.0059 (9.95)	+0.0033 (3.36)	−0.0043 (7.19)

All equations include gender and year dummies.

Table 5 • Life satisfaction data from Eurobarometers, 2020–2024.

(a) Age pattern

Country	Age	Age 18–24	Age	Age²	Age minimum
Austria	−	+	−0.0043 (2.28)	0.0000 (1.49)	NS
Belgium	+	+	−0.0181 (12.87)	0.0002 (13.50) *	48
Cyprus	−	+	−0.0228 (8.73)	0.0002 (7.11) *	57
Denmark	+	−	+0.0031 (2.16)	0.0000 (0.09)	NS
Finland	+	o	−0.0010 (0.56)	0.0003 (1.92)	NS
France	−	+	−0.0216 (13.81)	0.0002 (10.95) *	63
Germany	−	+	−0.0095 (10.40)	0.0001 (9.00) *	59
Greece	−	+	−0.0272 (14.74)	0.0002 (10.47) *	71
Iceland	+	−	+0.0048 (1.13)	−0.0000 (0.27)	NS
Ireland	+	−	−0.0028 (1.74)	0.0001 (3.98) *	24
Italy	−	+	−0.0063 (4.33)	0.0000 (1.15)	NS
Luxembourg	+	o	−0.0074 (3.28)	0.0001 (4.54) *	37
Malta	−	+	−0.0134 (6.17)	0.0001 (5.14) *	61
Netherlands	+	−	+0.0018 (0.94)	0.0000 (0.37)	NS
Norway	+	−	−0.0031 (1.11)	0.0001 (3.21)	NS
Portugal	−	+	−0.0071 (5.79)	0.0000 (0.87)	NS
Spain	−	+	−0.0149 (10.55)	0.0001 (8.18) *	68
Sweden	+	−	+0.0061 (3.88)	−0.00002 (1.58)	NS
Switzerland	+	−	−0.0011 (0.43)	0.0001 (2.99)	NS
Turkey	−	+	−0.0191 (4.78)	0.0002 (4.57) *	43
UK	+	−	+0.0014 (0.74)	0.00002 (0.89)	NS

(b) Sign on the age variable

Country	2010–2017	2018	2019	2020	2021	2022	2023	2024
Austria	−	−	−	o	o	o	−	o
Belgium	−	+	o	+	+	+	−	−
Cyprus	−	−	−	−	−	o	−	−
Denmark	+	o	o	+	+	+	+	o
Finland	−	−	−	+	+	+	o	+
France	−	−	o	−	−	−	−	−
Germany	−	o	−	o	o	−	o	−
Greece	−	−	−	−	−	−	−	−
Iceland	−				+	+		
Ireland	−	−	o	+	+	+	−	o
Italy	−	−	−	−	−	−	−	−
Luxembourg	o	o	−	+	+	+	o	+
Malta	−	−	−	−	−	−	o	o
Netherlands	−	−	−	+	+	+	o	+
Norway					+	+	+	
Portugal	−	−	−	−	−	−	−	−
Spain	−	−	−	−	−	−	−	−

Table 5 · *Cont.*

(b) Sign on the age variable								
Country	**2010–2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
Sweden	+	+	+	+	+	+	+	+
Switzerland					+	+	+	
Turkey	−	−	−	o	o	−	o	o
UK	o	o	−	+	+	+	o	o

Negative/positive means that the coefficient has an absolute value of t ≥ 1.5. Column 2 reports results from the inclusion, a 15–24 dummy. Column 3 reports results from including age and its square as controls. If one or both are insignificant, we report Not Significant (NS), and if age is significantly negative and age squared is significantly positive, we solve for a minimum, which is reported in column 3. * = U-shape.

Table 6 · Life satisfaction data for youth ages 15–24, 2015–2023, Eurobarometer.

Year	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark	Ireland	UK
2015	3.30	3.29	3.58	3.21	2.86	3.48	3.74	3.38	3.38
2016	3.24	3.28	3.59	3.17	2.79	3.47	3.69	3.37	3.43
2017	3.23	3.20	3.57	3.20	2.92	3.42	3.71	3.42	3.39
2018	3.22	3.09	3.60	3.18	2.93	3.43	3.75	3.44	3.37
2019	3.28	3.18	3.58	3.28	2.93	3.45	3.76	3.36	3.45
2020	3.25	3.09	3.45	3.21	2.90	3.12	3.55	2.99	3.10
2021	3.20	3.08	3.36	3.19	2.83	3.17	3.42	3.18	2.92
2022	3.19	3.16	3.32	3.20	2.93	3.32	3.51	3.23	3.05
2023	3.19	3.10	3.51	3.00	3.05	3.24	3.64	3.64	3.18
2024	3.20	3.26	3.33	3.11	3.16	3.34	3.63	3.42	3.29
2015–2023	−0.10	−0.03	−0.25	−0.10	+0.33	−0.14	−0.11	+0.04	−0.09
Year	Greece	Spain	Portugal	Finland	Sweden	Austria	Cyprus	Malta	Turkey
2015	2.76	3.18	2.85	3.44	3.46	3.27	3.29	3.44	2.62
2016	2.74	3.21	2.93	3.35	3.43	3.28	3.30	3.41	2.71
2017	2.84	3.19	2.97	3.41	3.44	3.28	3.30	3.33	2.85
2018	2.79	3.24	2.98	3.37	3.43	3.29	3.30	3.42	2.87
2019	3.00	3.32	3.08	3.45	3.33	3.32	3.48	3.34	2.91
2020	2.95	3.23	3.00	3.07	3.20	3.22	3.34	3.22	2.78
2021	2.75	3.14	2.96	2.99	3.20	3.11	3.26	3.28	2.67
2022	2.90	3.33	3.12	3.26	3.23	3.13	3.32	3.40	2.58
2023	2.93	3.29	3.06	3.44	3.24	3.12	3.65	3.53	2.53
2024	3.10	3.44	3.11	3.27	3.34	3.34	3.35	3.36	2.53
2015–2023	+0.34	+0.26	+0.26	−0.17	−0.12	+0.07	+0.06	−0.08	−0.09

Table 7 presents the estimates of life satisfaction from the GWP 2018–2025. We include the age bands and, in each case, also report the results from the single year of age variable. For simplicity, again, we discuss the continuous age variable results. We find evidence of upward slopes, once again measured by the significance of the coefficient on the age variable and being positive (T > 1.5) for eight of the twelve countries in **Figure 1**—Denmark, Finland, Luxembourg, the Netherlands, Norway, Sweden, and Turkey. The GWP results are broadly consistent with those from

Eurobarometer, indicating negative slopes in Greece, Italy, Spain, and Portugal.

In **Table 8**, we turn to the ESS. There is broad confirmation here that life satisfaction rises with age. In the first two columns, we find significant U-shapes in Austria, Belgium, France, Germany, Greece, Ireland, Portugal, Spain, and the UK for the 2014–2020

period. In the most recent sweep (2023/24), we see evidence of positive and significant age effects for eight countries—Finland, Germany, Ireland, the Netherlands, Norway, Sweden, Switzerland, and the UK. There are negative slopes again for France, Greece, Italy, and Portugal. We have no data for Denmark, Iceland, or Turkey.

Table 7 · Cantril life satisfaction data from Gallup World Poll, 2018–2025.

Age range	France	Belgium	Netherlands	Germany	Italy	Luxembourg	Denmark
25–34	0.0610 (0.30)	0.3418 (0.96)	0.1475 (0.91)	0.1252 (0.56)	−0.1584 (1.46)	0.0206 (0.07)	−0.1294 (0.67)
35–44	−0.1167 (0.56)	0.0428 (0.12)	+0.2531 (1.56)	0.0794 (0.37)	−0.2328 (2.23)	−0.0762 (0.26)	0.0690 (0.35)
45–54	−0.3338 (1.66)	0.3425 (0.98)	0.1624 (1.06)	0.1397 (0.67)	−0.3888 (3.84)	0.1226 (0.43)	0.1069 (0.57)
55–64	−0.1581 (0.78)	−0.3767 (1.10)	+0.3648 (2.49)	0.0042 (0.02)	−0.4441 (4.41)	0.2660 (0.88)	+0.4737 (2.45)
65–70	−0.0322 (0.14)	−0.1021 (0.25)	+0.3544 (2.11)	0.0437 (0.19)	−0.4919 (4.44)	0.6727 (1.79)	+0.7027 (2.94)
constant	6.6072	6.4146	7.0310	6.9026	6.6560	7.3150	7.3111
Adj R²	0.0005	0.0043	0.0033	0.0063	0.0213	0.0056	0.0026
N	4630	3984	3009	3924	4515	2495	3838
Age	−0.0042 (1.20)	−0.0090 (1.40)	+0.0066 (2.45)	−0.0003 (0.09)	−0.0100 (5.72)	+0.0112 (1.95)	+0.0141 (3.81)

Age range	Ireland	UK	Greece	Spain	Finland	Sweden	Austria
25–34	−0.1763 (1.01)	−0.0988 (0.67)	−0.3032 (1.81)	−0.2462 (1.68)	0.2321 (1.31)	−0.3839 (1.38)	−0.0697 (0.39)
35–44	−0.2719 (1.61)	0.0053 (0.04)	−0.3329 (2.12)	−0.3149 (2.16)	+0.4614 (2.64)	−0.0988 (0.38)	−0.1465 (0.89)
45–54	−0.3552 (2.04)	0.0743 (0.51)	−0.3590 (2.29)	−0.3444 (2.45)	+0.4957 (2.93)	0.1164 (0.46)	−0.0821 (0.50)
55–64	−0.0651 (0.38)	−0.0094 (0.07)	−0.8355 (5.18)	−0.3252 (2.24)	+0.6678 (4.09)	+0.4756 (1.84)	−0.1040 (0.65)
65–70	+0.3100 (1.52)	0.0204 (0.13)	−0.8622 (4.59)	−0.4301 (2.56)	+0.9238 (5.35)	+0.7729 (2.65)	+0.3025 (1.71)
constant	6.9412	6.9704	5.7329	6.6402	7.0770	7.1233	7.1982
Adj R²	0.0120	0.0121	0.0135	0.0013	0.0253	0.0067	0.0226
N	4586	4260	5217	5034	3341	3501	4214
Age	0.0042 (1.33)	0.0008 (0.34)	−0.0171 (5.88)	−0.0062 (2.45)	+0.0166 (6.01)	+0.1094 (4.08)	0.0039 (1.34)

Age range	Cyprus	Malta	Turkey	Norway	Switzerland	Iceland	Portugal
25–34	−0.7689 (2.26)	−0.3116 (1.59)	0.2756 (1.03)	−0.3125 (2.00)	0.0140 (0.10)	−0.5481 (1.37)	−0.4301 (1.75)
35–44	−0.5795 (1.72)	−0.4638 (2.42)	0.4624 (1.65)	−0.1543 (1.01)	−0.0897 (0.68)	0.2530 (0.67)	−0.4494 (1.94)
45–54	−0.5037 (1.48)	−0.2014 (1.02)	0.3546 (1.14)	−0.1728 (1.18)	0.0143 (0.11)	0.2470 (0.64)	−0.7306 (3.15)
55–64	−0.9007 (2.62)	−0.5472 (2.83)	0.0207 (0.05)	0.2191 (1.49)	−0.0076 (0.06)	0.0348 (0.09)	−0.7213 (2.98)
65–70	−0.2434 (0.59)	0.1112 (0.49)	+3.2176 (5.98)	+0.4570 (2.70)	+0.1272 (0.88)	0.2394 (0.54)	−0.1684 (0.55)
constant	6.9380	6.7836	4.5021	7.2549	7.3854	7.8882	6.6563
Adj R²	00024	0.0081	0.0083	0.0121	0.0454	−0.0008	0.0016
N	4955	4724	7179	3792	4014	1564	5053
Age	−0.0054 (0.86)	−0.0023 (0.64)	+0.0222 (3.23)	+0.0121 (4.54)	0.0020 (0.88)	0.0092 (1.29)	−0.0118 (2.53)

All equations include gender and year dummies. The age row refers to a regression that replaces the age dummies with continuous age.

Table 8 · Sign on age variable in life satisfaction equations—European Social Surveys 7–11.

Country	2014–2020 (sweeps 7–10)			Age and age²	2023/4 (sweep 11)	
	Age	**Age²**	**N**		**Age**	**N**
Austria	−0.0487 (6.55)	0.0005 (6.28) *	6270	NS	−0.0002 (0.12)	2346
Belgium	−0.0276 (4.56)	0.0003 (4.42) *	5295	NS	0.0019 (0.09)	1588
Cyprus	−0.0109 (0.46)	0.0001 (0.40)	766	NS	−0.0006 (0.12)	662
Denmark	−0.0081 (1.08)	0.0001 (1.67)	3065			
Finland	−0.0008 (0.15)	0.0000 (0.73)	7336	NS	+0.0069 (3.33)	1562
France	−0.0854 (12.08)	0.0007 (10.67) *	7941		−0.0106 (3.69)	1735
Germany	−0.0379 (6.26)	0.0004 (6.26) *	8220	NS	+0.0053 (2.62)	2413
Greece	−0.0418 (3.84)	0.0003 (2.65) *	2729	NS	−0.0152 (7.28)	2745
Ireland	−0.0412 (5.78)	0.0005 (6.83) *	7237		+0.0066 (2.99)	1981
Italy	−0.0051 (0.83)	0.0001 (1.22)	7770	NS	−0.0166 (9.03)	2782
Netherlands	−0.0068 (1.35)	0.0001 (1.41)	6707	NS	+0.0033 (1.80)	1670
Norway	−0.0015 (0.25)	0.0001 (1.70)	5751	NS	+0.0089 (3.72)	1331
Portugal	−0.0472 (5.14)	0.0002 (2.55) *	5394	NS	−0.0158 (5.16)	1372
Spain	−0.0357 (4.90)	0.0003 (4.34) *	5534	NS	−0.0011 (0.49)	1826
Sweden	+0.0178 (2.67)	−0.0001 (1.92)	4862	NS	+0.0067 (2.63)	1226
Switzerland	−0.0029 (0.51)	0.0001 (1.67)	6082	NS	+0.0099 (4.33)	1369
UK	−0.0310 (3.98)	0.0004 (4.87) *	6350	NS	+0.0079 (2.80)	1643

Note: * = U-shape, T—statistics in parentheses, NS—not significant.

In Table S5, we present life satisfaction estimates from GFS 2022. It is apparent again that life satisfaction rises with age in Germany, Sweden, Turkey, and the UK, but not in Spain.

In **Table 9**, we show evidence from Global Minds that life satisfaction rises with age in each of the six countries where the question was asked. This is the first piece of evidence for France where we have found an upward slope in life satisfaction with age.

Table 10 shows changes in youth unemployment rates for those aged 15–24 between 2015 and 2024 and calculates the ratio between the rate in 2024 and the rate in 2015. We simply average monthly rates to obtain annual rates. In the case of Greece, rates fell from 50.4% to 22.3%, giving a ratio of 0.44. This can be compared to a ratio of 0.92 for Denmark, 0.90 for Switzerland, and 1.22 for Sweden. Peak youth unemployment rates in earlier years were well below those in 2015. This improvement in labor market prospects for the young in these Southern European countries is also apparent from Table S6, which shows sharp falls in the proportion of young people who are neither in employment, education, nor training (NEET).

In **Table 11**, we report six life satisfaction equations for Eurobarometer respondents aged 15–24. Columns 1 and 2 are for all countries. Columns 3 and 4 are for the group of thirteen countries with upward-sloping age–life satisfaction profiles (Group 1), and columns 5 and 6 are for the group of eight countries without them. On each occasion, we run estimates for the period before 2012 and the period from 2012 onwards. We include the youth ratio as defined above, with gender, year, and country dummies. We cluster the standard errors at the country × year level.

In the first two columns for all 21 countries, this youth unemployment ratio variable is negative and statistically significant in both the early and late periods. The implication is that the lower the ratio between the current youth rate and the high point in 2015, the higher the young person's life satisfaction.

For Group 1 countries, the youth ratio is insignificantly different from zero in both periods. By contrast, for Group 2 countries in Southern Europe, it is significantly negative in both periods. The youth in these countries saw a rise in life satisfaction as the youth unemployment rate dropped rapidly over the years from 2015.

4. Discussion

The evidence above is suggestive that, across Western Europe, the U-shaped association between age and life satisfaction disappeared. On the surface, this is no surprise since a similar development has been apparent elsewhere in the world. However, there are some important surprises in the evidence we provide in this paper.

First, the timing of the change comes a little later than evidence from other studies, with much of the change taking place around the time of the COVID-19 pandemic.

Second, in most other studies, the U-shape has been replaced by a roughly monotonic increase in well-being with age, due to a collapse in young people's well-being relative to older people. Here, by contrast, there is evidence for a subset of countries that the well-being of the young has been rising. This is the case for Eurobarometer data for Italy, Greece, Spain, Portugal, Cyprus, and Austria (**Table 6**).

Table 9 • Nine-step life satisfaction data from Global Minds, 2020–2024.

Age range	Belgium	France	Ireland
25–34	0.5268 (2.21)	0.7605 (4.32)	0.4190 (3.43)
35–44	0.8877 (4.11)	1.1653 (7.74)	0.7359 (6.84)
45–54	1.0318 (5.32)	1.2583 (10.99)	1.0962 (11.49)
55–64	1.3968 (7.64)	1.4882 (14.88)	1.6697 (17.99)
65–74	1.6262 (8.87)	1.6601 (16.85)	2.4679 (22.88)
constant	5.9206	5.3588	4.7952
Adj R²	0.0581	0.0993	0.1483
N	1886	2903	3859
Age range	Spain	Switzerland	UK
25–34	0.8468 (8.52)	0.1347 (0.32)	0.3142 (2.21)
35–44	1.2287 (15.82)	1.0109 (2.69)	0.5896 (4.11)
45–54	1.5402 (22.64)	1.4083 (4.07)	0.7517 (5.32)
55–64	1.6817 (26.77)	1.5362 (4.55)	1.2326 (7.64)
65–74	2.1350 (29.85)	1.6226 (4.67)	1.9920 (8.87)
constant	5.6694	5.5164	4.1755
Adj R²	0.1257	0.0743	0.0949
N	7943	407	23,532

Table 10 • Youth unemployment rates for those aged < 25 [42].

Country	2015	2024	2024/2015
Austria	11.3	10.2	0.90
Belgium	22.6	17.3	0.77
Cyprus	37.0	13.0	0.40
Denmark	12.1	14.6	0.92
Finland	22.4	18.7	0.83
France	26.1	18.6	0.71
Germany	7.6	6.5	0.86
Greece	50.4	22.3	0.44
Ireland	20.3	10.6	0.52
Italy	40.2	20.3	0.50
Luxembourg	17.6	21.7	1.23
Malta	8.8	9.0	0.78
Netherlands	12.6	8.7	0.69
Norway	12.2	15.1	0.89
Portugal	31.9	21.8	0.68
Spain	48.3	26.5	0.55
Sweden	19.6	24.0	1.22
Switzerland	8.8	7.9	0.90
Turkey	18.5	16.2	0.88

Furthermore, in the period since COVID-19, regression analyses of Eurobarometer data indicate that life satisfaction has been highest among young people. If one examines **Table 3** and **Table 4** using Eurobarometer, this is the case in France, Italy, Greece, Spain, Cyprus, and Portugal (for both CAWI and CATI data).

Table 11 • Life satisfaction data from Eurobarometer for those aged <25, with peak/current youth unemployment rate, 1983–2024.

Variables	All		Group 1		Group 2	
	<2012	**2012−24**	**<2012**	**2012−24**	**<2012**	**2012−24**
Youth ratio	−0.0874 (3.04)	−0.2214 (5.15)	−0.0394 (1.27)	+.0076 (0.17)	−0.3260 (5.61)	−0.4917 (9.83)
Female	0.0177 (3.20)	−0.0049 (1.22)	0.0391 (8.73)	−0.0022 (2.06)	−0.0142 (2.52)	−0.0104 (1.39)
constant	3.0663	3.4355	3.2087	3.2122	3.2545	3.5953
Adj R²	0.0890	0.1205	0.0734	0.1112	0.0359	0.0986
N	149,333	106,948	89,760	58,589	59,573	48,359

Equations include year dummies. Columns 1, 2, 5, and 6 excluded France. Columns 3 and 4 excluded Belgium. Standard errors clustered by country × year. T-statistics in parentheses. Group 1 is Belgium, Germany, Ireland, Luxembourg, Finland, the Netherlands, Norway, Sweden, Switzerland, Turkey, and the UK. Group 2 is Austria, Cyprus, France, Greece, Italy, Malta, Portugal, and Spain. Source: Eurobarometers.

The evidence on the age pattern in life satisfaction is less clear in some countries because life satisfaction is highest among young individuals in the CAPI surveys, but not with CATI (these countries are Belgium, Germany, Austria, Malta, and Turkey). In the other seven countries (the Netherlands, Luxembourg, Denmark, Ireland, the UK, Finland, and Sweden), life satisfaction rises with age in both the CAPI and CATI surveys.

Across other surveys, evidence on the age pattern in life satisfaction is mixed. Life satisfaction clearly rises with age in all six countries in Global Minds, which is a web-based survey (**Table 9**). Although results from the Gallup World Poll for 2018–2025 are mixed, life satisfaction—measured with Cantril's Ladder—is the highest among young individuals in the Southern European countries (Italy, Greece, Spain, Portugal, and Cyprus) and France, supporting the Eurobarometer results (**Table 7**).

We can discount access to the internet as being an important discriminator in terms of what has happened to young people's life satisfaction across Western European countries because there is little variance in access to the internet across these countries in the period we studied. By 2010, according to United Nations data, access was high in all countries, and it was over 95% in Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Luxembourg, Malta, the Netherlands, Norway, Spain, Switzerland, and the UK. The rates were lower in Cyprus (92%), Greece (88%), Ireland (90%), and Portugal (91%), but they were the lowest in Italy (85%) and Turkey (66%). By 2020, all countries had rates close to 100%.

One alternative explanation might relate to changes in the labor market fortunes of young people. Life satisfaction seems to have risen recently among young people relative to older individuals in Italy, Cyprus, France, Greece, Spain, and Portugal. In these countries, youth unemployment rates rose dramatically in the years after the Great Recession but have fallen rapidly in recent times.

Figure 2 illustrates this for six countries—France, Greece, Ireland, Italy, Spain, and Portugal—where unemployment rates around 2015 peaked at over 30%, and in the case of Greece and Spain, it peaked at over 50%. But notably in the years after that, rates declined rapidly.

A major part of the story seems to be the improving labor markets in these Southern European countries in the years since 2015 or so. These countries were hit especially hard by the financial market shock in the years from 2008, as can be seen from Table

S7, which shows GDP growth for the periods before and after the Great Recession. We know that marginal workers perform worse in slumps and better in recessions, and that seems to also be true of (peripheral) countries. The big story here is that the life satisfaction of the young population rose between 2015 and 2024, as the youth unemployment rate fell from the peak it reached in 2015.

4.1. Strengths and limitations

A strength of this paper is that we present recent unique life satisfaction data across European countries and confirm that the U-shape in age is gone. The fact that life satisfaction rises with age in 12 Northern European countries plus Turkey but declines with age in six Southern European countries is especially notable because across many parts of the world, the reason for the disappearance of the U-shape in age is the decline in young people's well-being. The fact that it is actually rising in Southern Europe is a new and surprising finding. A further strength of the paper is that we identify a potential reason for our finding, which lies in improvements in the labor market prospects of young people in Southern Europe since around 2015, albeit from a very low base. The study also suffers from some important limitations. One major limitation is that we have no data available to allow us to test them against other competing explanations for changes in well-being by age in Europe, such as changing social norms, expensive housing, climate change, and individuals' use of smartphone technologies. In addition, we lack the longitudinal data at the individual level to track changes in individuals' well-being over time. This could shed further light on why we see these changes in cross-sectional data.

5. Conclusion

Using Eurobarometer data for 21 Western European countries since 1973, we show that the U-shape in life satisfaction by age, which has been present for a long time, has now vanished. In 12 Northern European countries—Belgium, Denmark, Finland, Germany, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Sweden, Switzerland, and the UK—plus Turkey, the U-shape has been replaced by life satisfaction rising with age. We confirm these findings with evidence from the European Social Surveys, the Global Flourishing Survey, and Global Minds. Evidence of change in the U-shape is mixed for Austria and France.

However, in six Southern European countries—Cyprus, Greece, Italy, Malta, Spain, and Portugal—the U-shape was replaced by life satisfaction declining with age. In these Southern European countries, the life satisfaction of young individuals has been rising since around 2015. This finding is somewhat surprising, but our evidence suggests that a contributing factor is the rapid decline in youth unemployment in these countries since its 2015 peak.

In our study, we were unable to carefully decipher whether the changes we observed are really age-related, cohort-related, or period-related. This would be possible with analyses of panel data tracking individuals over time. The cohort of young people born since 2000 has seen a worsening of their mental health compared to young people in the past and relative to older age groups. The data suggest that the well-being of young people started declining around 2015; this was not seen in older age groups, and the change was global. The timing fits with the increasing use of smartphones and the internet. Others have provided alternative explanations about difficulties in moving away from parents due to a lack of apartments, along with concerns about climate change in a world that, for the first time in human history, could be perceived as too small to house all inhabitants on Earth. A referee suggested that a further possibility is increasing war risks. Such possibilities are difficult to test.

Another issue pointed out by a referee is that there are increasing global problems with non-response rates to surveys. We have shown here that responses tend to be more supportive of the declining well-being of young individuals from self-reported internet-based surveys than when interviewers are used, either via telephone or face to face. It is well-known that non-responses in longitudinal surveys are a function of well-being—the least happy are more likely to contribute to attrition (Blanchflower and Bryson [23]). If that is the case, then the estimates reported here would be downward-biased.

Young people are the last in and the first out, and their unemployment rate is more cyclically volatile than adult rates. As Freeman and Wise [43] noted, *"youth employment is highly sensitive to cyclical movements in the economy"* (p. 8). It seems that the rise in life satisfaction of young individuals may reflect the absolute and relative improvement in these economies and labor markets in the most recent period.

The worsening of youth well-being seen here in 12 Northern European countries plus Turkey will be a major issue going forward. The concern is that this will lead to poor labor market consequences and potentially even to increases in suicide rates and drug overdoses.

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Author contributions

Conceptualization, D.G.B. and A.B.; methodology, D.G.B. and A.B.; software, D.G.B.; validation and formal analysis, D.G.B. and A.B.; investigation, D.G.B. and A.B.; data curation, D.G.B.; writing, D.G.B. and A.B.; editing, D.G.B. and A.B.; project administration, D.G.B. All authors have read and agreed to the published version of the manuscript.

Conflict of interest

The authors declare that they have no competing interests.

Data availability statement

All data supporting the findings of this publication are available within this article.

Supplementary materials

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