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Youth Well-Being in Twenty Countries from Both CATI and CAWI Surveys

David G. Blanchflower 

Dartmouth College, University of Glasgow,
GLO, NBER and IZA@LISER

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Youth Well-Being in Twenty Countries from Both CATI and CAWI Surveys*

Abstract

I examine wellbeing and age in twenty advanced countries. Thirteen are from Northern Europe – Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Spain, Sweden and Switzerland, plus the five other major English-speaking countries Australia, Canada, New Zealand, the UK and the USA and one from Latin America and one from Asia – Argentina and Indonesia. Two datasets are examined for the US, the Behavioral Risk Factor Surveillance System and Household Pulse Surveys along with ten international datasets - the Eurobarometers, Gallup World Poll, Come Here, the World Values Survey, International Social Survey Programme, the European Social Survey, the EU-SILC survey, the Global Flourishing Study and Global Minds surveys. There is very strong evidence since 2020 that youth wellbeing is low in all of these countries and for each of them is found no matter how the data was collected, whether by interviewer or online. The evidence is similar whether happiness or unhappiness measures are used.

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youth, CATI, CAWI

Corresponding author

David G. Blanchflower

Blanchflower@dartmouth.edu

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1. Introduction

I examine the relation between wellbeing and age around the world in twenty countries over the years before and after COVID in thirteen European countries –Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Spain, Sweden and Switzerland plus the five other major English-speaking countries Australia, Canada, New Zealand, the UK and the USA and one from Latin America - Argentina - and one from Asia - Indonesia.¹

The paper builds on a recent literature showing the decline in the well-being of the young started in the United States. Changes in this pattern were first documented for the US by Udupa et al (2023) who examined three US datasets i) Behavioral Risk Factor Surveillance Survey (BRFSS), 1993-2020, ii) the National Health Interview Survey 1997-2018 iii) the National Health and Nutrition Examination Surveys 2005-2020 and showed dramatic worsening of youth mental health *prior* to COVID. Twenge (2023) also showed dramatic changes in youth attitudes, in the decade prior to COVID and subsequently in the United States.²

There are also other published papers showing this internationally - Martinez, d'Hombres and Kovacic (2026) on loneliness in Europe, Huang Helliwell and Norton (2025), Huang and Helliwell (2026b), for Canada, Krokstad et al (2022) and Witoszek and Larsen (2026) for Norway, Leigh and Robson (2025) and Botha et al (2023) for Australia and Thorisdottir et al (2023) for Iceland, Twenge and Blanchflower (2025) and Huang and Helliwell (2026a), for English speaking countries and Blanchflower and Bryson (2025a) on Europe and Blanchflower, Bryson and Bell (2026) for the UK. Bittár el (2025) and Nilsson et al (2025) for Sweden and Ortega et al (2025) for the US all using the GFS also found that wellbeing rises in age. Blanchflower, Bryson and Xu, for the US, the UK and thirty other countries documented that this decline effectively removed the well documented U-shape in age in happiness.

Claims have been made that part of the explanation for the decline in the wellbeing of the young has been the coming of the internet and smartphones. (Haidt, 2024, Twenge and Martin, 2020 and Twenge, Martin & Campbell, 2018). In part this is because of the rapid rise in mental ill-health of the young which starts around 2013 as the use of smart phones exploded.

A growing literature in economics suggests this relationship is causal. Pugno, 2023 provides a review of the various papers using the quasi random spread of fast broadband across several countries to identify causal effects, (Churchill and Johnson (2026), Braghieri, Levy and Makarin (2022), McDool et al (2020), Golin, (2022), Donati et al (2025), Arrenas-Arroyo et al (2022) and Allcott et al, 2020). McClean, Rausch and Haidt J (2025) report similar effects

Huang and Helliwell (2026a), for English speaking countries have focused on other possible explanations for the decline in youth well-being in the English-speaking countries using Gallup World Poll data. They find little evidence of any effect from non-economic controls, covering self-reported health, social support, institutional trust, and prosocial behavior, play minor roles in

¹ Ireland is usually included as the sixth English speaking country see Twenge and Blanchflower (2025) and Huang and Helliwell (2026).

² Examples are the percent of 12th graders who have tried alcohol, have a driver's license, worked for pay, had sex or ever had a date has declined since around 2000. (Figure 6.16). In addition, the percent of 8th and 10th graders who like doing dangerous things or taking risks, has declined since around 2008 (Figure 6.2).

the decomposition because they changed little over time. In four of the six countries (Canada, the United States, Australia, and New Zealand), their five economic hardship measures (food and shelter insecurity, housing unaffordability, perception of worsening living standards, and bad job climate) account for around a half of the young-adult SWB decline. In the United Kingdom and Ireland, the same measures explain little of the recent trajectory.

There has been recent literature suggesting that the finding of poor youth mental health is impacted by how the data is collected (Blanchflower and Bryson, 2026, 2025b, Blanchflower, Bryson and Cui, 2025). The evidence is more apparent from online surveys such as Global Minds, than it is in surveys conducted by interviewers such as the Gallup World Poll. Here we focus on a sample of countries where the evidence for each of the twenty countries we select is from *both* types of survey mode. The question is why is that not the case in other countries.

2. Background and Data

18/20 selected countries are rich. In **Table 1** we report Gross National Income (GNI) per capita (2021 PPP \$) and UNDP Rank <https://hdr.undp.org/data-center/human-development-index#/indicies/HDI>. They include ten of the twenty richest countries, plus 15 of the top 20 by the Human Development Index. They are ranked by GNI. We also report mobile phone penetration rates in 2022, which are higher the richer the country. The selection rule as to who gets into our list of 18 is whether there is evidence of low wellbeing of the young in at least two of the surveys we examined, one where the data was collected by interviewer and one online.

We examine twelve datasets. Some are conducted by interviewers called CATI typically refers to Computer-Assisted Telephone Interviewing, a telephone survey technique where interviewers use computers to guide conversations, record answers, and manage survey logic in real-time. It is used in market research to improve accuracy, speed up data collection, and manage complex survey. Other surveys use CAWI (Computer-Assisted Web Interviewing) which is a data collection method where respondents complete self-administered surveys online via web browsers or mobile apps. It is a cost-effective, fast, and flexible technique used for market research and academic studies, allowing for multimedia integration and automatic data recording. The surveys are as follows.

- 1) US Behavioral Risk Factor Surveillance Survey, 1993-2025.
- 2) US Household Pulse Survey, 2020-2024.
- 3) Eurobarometers, 1973-2024.
- 4) International Social Survey Programme, 2021-2022.
- 5) World Values Survey, 2017-2024.
- 6) European Social Survey, 2023-2024.
- 7) The European Union's Statistics on Income and Living Conditions (EU SILC), 2023.
- 8) Gallup World Poll, 2005-2025.
- 9) Come Here, 2020-2026.
- 10) EU Loneliness Survey 2022.
- 11) Global Flourishing Study, 2022.
- 12) Global Minds 2020-2026.

The US Household Pulse Survey, Come Here, the EU Loneliness Surveys and Global Minds are CAWI surveys. Global Flourishing uses both CATI and CAWI but the countries we only analyze data from the GFS collected by CAWI. The remainder are CATI surveys.

For each of the eighteen countries we found evidence of low youth well-being in the years since around 2020 in at least two surveys, including at least one using CATI and at least one using CAWI.

Going forward I report weighted means by year in a number of cases and also plot them by age before and after COVID19. The main way we proceed is to estimate an equation where we regress a wellbeing measure on an age 18-24 dummy, gender and immigrant and year where appropriate. We then report the sign and significance on the age variable. **Table 2** reports where there are significant coefficients on a youth variable showing poor youth wellbeing. We include a country in our list of twenty-five countries if we find evidence of poor youth wellbeing in at least two datasets. In the case of the US, Denmark and Sweden we find evidence from seven surveys and for the Netherlands in eight.

We start with two surveys restricted to the USA. For the USA we update evidence from Udupa et al (2023) and Blanchflower, Bryson and X (2025) using the Behavioral Risk Factor Surveillance Survey, 1993-2025 which is a CATI survey along with the Household Pulse Surveys of 2020-2024 which is CAWI.

3. Results USA

3.1. US Behavioral Risk Factor Surveillance Survey (BRFSS), 1993-2025

The BRFSS is conducted by the CDC via interviewers (CATI). We confirm the finding, that the change in the well-being of the young started prior to COVID for the US in part a) of **Table 2** as shown by Udupa et al (2023) using these data for the years 1993-2020 as well as data from the National Health Interview Surveys 1997-2018, and the National Health and Nutrition Examination Surveys, 2005-2020. The table reports a series of equations by year since 1993 where despair is the dependent variable as first defined in Blanchflower, Bryson and Xu (2025) using the BRFSS and confirming Udupa's findings through 2024/5. The question used relates to the number of bad mental health days.

Q1. *“Now thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?”*. The variable is coded 0-30.

Over the period 1993-2025 the weighted mean is 3.7 (n=10,516,969) with 64.75% reporting zero and 5.3%, reporting 30 days.

Following Blanchflower and Oswald (2022) we define despair as zero if below 30 and 1 if equal to 30. The proportion reporting being in despair has risen from 4.9% averaged across the years 1993-2014 to 6.2% averaged from 2015-2025, versus 4.2% and 6.9% respectively for those age <25. **Figure 1** plots this despair variable from the BRFSS, for the periods 1993-2019 and 2020-2025 as reported in Blanchflower, Bryson and Xu (2025).

In **Table 3** we report the results of estimating a despair regression for each year from 1993-2024/5 using OLS by year on an age 18-24 dummy, gender and state (plus US Virgin Islands, Guam and Puerto Rico). We simply report the coefficient and t-value on the youth variable, which is significantly negative in all but two years, where the coefficient is insignificant (2002 and 2006) through 2015 and then turns insignificant in 2016 and is the positive every year after that. This precedes COVID. After 2015 despair in the US declines in age.

3.2. US Household Pulse Surveys, 2020-2024 (USHPS).

In the second part of **Table 3** we report estimates on ill-being also from the US Household Pulse Surveys of 2020-2024. This is an online CAWI survey conducted by the Census Bureau.

Q2. "How often have you been feeling anxious/depressed/worried over the last seven days? 1=not at all; 2=several days 3=more than half the days 4=nearly every day?"

We report separate results for feeling anxious, worry and being down and depressed and consistent with the BRFSS results for despair. Sample size is 4.3 million. The young have significantly higher levels of ill-being, consistent with the BRFSS evidence.

The results from these two US surveys are also consistent with evidence in Udupa et al (2023) which used the BRFSS plus the National Health Interview Survey 1997-2018. and the National Health and Nutrition Examination Survey 2006-17. It is also consistent with evidence reported in Blanchflower (2025) from eight other US surveys including the National Health Interview Survey, 1997-2018, The National Survey of Drug Use and Health, 2004-2022, American National Election Studies, (ANES) 2008-2020, National Survey of Children's Health, 2016-2020, General Social Surveys, 2006-2022, Healthy Minds, 2007-2023, and the Youth Risk Behavior Surveillance System, 1999-2021.

We see supporting evidence for this finding in three of the international datasets below including both a CAWI survey (Global Minds) and CATI surveys (e.g. Gallup World Poll and the World Values Survey) as well as in two developing countries from the Global Flourishing Study.

4. Results - CATI surveys

We now examine six international CATI surveys

4.1. Eurobarometers, 1973-2024 for nine European countries

The Eurobarometer life satisfaction data has been collected by the European Commission since 1973. They are downloadable with documentation from GESIS, the Leibniz Institute for the Social Sciences (<https://www.gesis.org/en/institute>).³ The data relate to 4-step life satisfaction from the Eurobarometer surveys.

Q3: 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?

These are CATI surveys with data collected by interviewers. We report data for nine European countries including Norway and Switzerland that are not EU members.

³ <https://www.gesis.org/en/eurobarometer-data-service>

We report in [Table 4](#) four pooled estimates for three periods prior to the COVID lockdown in 2020 and one subsequently for each country for all but Norway and Switzerland who are not EU members and there are fewer surveys. In all countries except Finland, we see significant negatives in the later period. There is a significant negative for Sweden for 2015-2019 but there are no others for any other country in any other earlier period. We could find no other significant negatives in the later period.⁴

4.2 Gallup World Poll, 2005-2025

[Table 5](#) now reports data on Cantril's life evaluation 11-step variable from the Gallup World Poll which is a CATI survey (Blanchflower and Bryson, 2025a). This file has been available from 2005, so allows us to put in context what has happened by country before and after the onset of COVID19 and its associated lockdowns in 2020. It has data on all eight countries.

The first three columns report the coefficient on an aged 18-24 dummy, along with gender and year dummies, along with t-value and sample size for all eight countries for 2005-2019. The exercise is then repeated for the subsequent period, 2020-2025.

Q7. *"Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. Suppose we say that 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. If the top step is 10 and the bottom step is 0, on which step of the ladder do you feel you personally stand at the present time?"*

We see from the 2005-2019 results that the coefficient on the youth variable is significantly negative in only Canada, New Zealand, Norway and Sweden. But that changes in the second period where that is the case in 10/13 countries – minus Iceland, Ireland, Switzerland and the UK. Of note here is that we also ran separate regressions in the second period for the remaining 137 countries and only found significant negatives in Laos, Mongolia, Oman, Saudi Arabia, Singapore, with the vast majority of the coefficients being significantly positive. We repeated the exercise using a 1,0 'worry' variable and the results were similar with significant positives (lower youth unhappiness) in only 13/150.⁵

Helliwell et al (2026) in the World Happiness Report who used these Cantril data for the period 2023-2025 and argued that *"subjective well-being of the young has fallen dramatically since 2011 in the USA, Canada, Australia and New Zealand, with very limited evidence of corresponding changes elsewhere"*. (p.41). We confirm that in [Table 5](#) for these four countries but also find it was the case in Denmark, Finland, the Netherlands, Norway, and Sweden.

So, in the GWP, CATI survey there is once again confirming evidence that wellbeing declines in age in the US and Sweden along with several other English-speaking countries – Australia,

⁴ There were no significant negatives in life satisfaction in 33 other countries Albania, Austria, Belgium, Bosnia/Herzegovina, Bulgaria, Croatia, Cyprus, Czechia, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Kosovo, Latvia, Lithuania, Lux, Malta, Moldova, Montenegro, North Macedonia, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Turkey, Turkish Cyprus and UK.

⁵ We repeated the exercise using a 1,0, worry variable and there were only significant youth positives for 13/137 countries including 9/13 from our list – Australia, Canada, Czechia, Denmark, Finland, Japan, Laos, New Zealand, Norway, South Korea, Sweden, UK and USA.

Canada, New Zealand as noted by Twenge and Blanchflower, (2025) and in Western European countries (Blanchflower and Bryson, 2025a).

4.3. International Social Survey Programme, 2021/2022 (ISSP)⁶

<https://issp.org/data-download/by-year/>

This is a CATI survey that has been fielded since 1985. It includes a variety of modules over time. The 2022 survey module was 'Family and Changing Gender Roles' and the 2021 one was 'Health and Health Care'. We pool the 2021 and 2022 surveys. Both surveys included a 7-step happiness variable.

Q7 *"If you were to consider your life in general these days, how happy or unhappy would you say you are, on the whole? PLEASE TICK ONE BOX ONLY Completely happy (8) Very happy (6) Fairly happy (5) Neither happy nor unhappy (4) Fairly unhappy (3) Very unhappy (2) Completely unhappy (1).*

In **Table 6a**) we report on 10/13 of our list of countries. We find significant negatives again in Australia, Denmark, Finland, Iceland, Netherlands, New Zealand, Switzerland and the USA but not Sweden or Norway but also for Greece that we add to our list. We did not find a significant negative in 24 countries including thirteen from Europe.⁷

4.4. World Values Survey sweep 7 2017-2022, (WVS)

<https://www.worldvaluessurvey.org/WVSDocumentationWV7.jsp>

This dataset includes a 10-step life satisfaction question.

Q8. *"All things considered, how satisfied are you with your life as a whole these days? 10.- Completely satisfied ... 1= Completely dissatisfied*

In **Table 6b** I report the results of estimating life satisfaction equations and report that there are negative and significant youth coefficients for 6/13 countries - Australia, Canada, Netherlands, New Zealand, UK and USA

4.5. European Social Survey round 11, 2023-2024 (ESS)

<https://www.europeansocialsurvey.org/news/article/final-release-round-11-data>

Table 6c reports two sets of results on the youth coefficient, first by 10-step happiness

Q9 *"Taking all things together, how happy would you say you are?" 0 Extremely unhappy,10 Extremely happy*

⁶ Of note is that since 2017 the International Journal of Sociology publishes an annual special issue on the latest ISSP data across many of these countries. See for example Hennig and Laier (2022) on life satisfaction.

⁷ The following countries were in the dataset but did not have significant negative youth coefficients Austria; Bulgaria; China; Croatia; Czechia; France; Germany; Hungary; India; Israel; Italy; Japan; Lithuania; Mexico; Norway; Philippines; Russia; Slovakia; Slovenia; South Africa; Spain; Suriname; Taiwan and Thailand.

There is also a life satisfaction question

Q10. *"How satisfied are you with your life as a whole?" 0 Extremely dissatisfied,10 Extremely satisfied.*

We find broadly consistent evidence across the two measures⁸ Significant negatives are found in 9/13 European countries - Denmark, Finland, Iceland, Ireland, Netherlands, Norway, Sweden, Switzerland and UK

3.6. The European Union's Statistics on Income and Living Conditions (EU-SILC), 2023.

The EU-SILC asked respondents to rate their satisfaction with life on a scale from 0 (very dissatisfied) to 10 (very satisfied). The survey reported life satisfaction means by three age groups 1-24; 25-64 and 65+. Out of 32 countries life satisfaction of age 18-24 was lower than 25-64 in five - Finland, Denmark, Netherlands, Sweden and Switzerland ([Appendix Table 1](#)).

5. Results - CAWI and CAWI/CATI surveys

We now examine three CAWI surveys. And one with both CAWI and CATI

5.1 The COVID-19, Mental Health, Resilience and Self-regulation (Come Here), 2020-2025

We now turn to five European countries – France, Germany, Italy Spain and Sweden. [Table 7](#) makes use of data from the online CAWI survey the Come-Here (COVID-19, Mental Health, Resilience and Self-regulation) survey – henceforth Come Here - conducted by the University of Luxembourg consists of representative samples (on the basis of age, gender and region of residence) of adults from France, Germany, Italy, Spain and Sweden.

Come Here is a longitudinal survey and includes information on individuals' living conditions, life events, and health during the pandemic, alongside standard socio-demographic characteristics such as age, gender, education, number of children in the household, labor-force status, and country of residence. The dataset has been used in other studies including Clark and Lepinteur (2022) Jabakhanji et al. (2022), Kornadt, Bowen et al (2025), Lepinteur, Vögele, et al (2026) and Rebechi, Lepinteur et al (2024).

The data file includes a number of well-being variables including life satisfaction and worthwhile defined below

Q5. Life satisfaction *"Past week, degree of satisfaction with your life 0=Not at all ..10=completely"*.

Q6. Worthwhile *"Past week extent that the things you are doing in your life are worthwhile 0=Not at all ..10=completely"*.

Come Here also includes seven GAD variables, nine PHQ score variables and nine loneliness variables as well as total variables for GAD showing anxiety, a total PHQ score relating to depression. We include gender and wave dummies. In the table we report the sign and significance of the youth variable which in every case shows lower youth wellbeing and variable details are

⁸ There are no significant negative youth effects in Austria, Belgium, Bulgaria, Croatia, Cyprus, Estonia, France, Germany, Greece, Israel, Italy, Latvia, Lithuania, Montenegro, Portugal, Serbia, Slovakia, Slovenia, Spain and Ukraine.

reported. Wellbeing rises in age in each of the five countries in COME Here and the responses are the same for all the different questions.

5.2. EU Loneliness Survey⁹

The EU Loneliness Survey, was conducted in November and December 2022, is the first EU-wide survey measuring loneliness through established multi-items scales. We examined the EU27 sample which was collected through a non-probabilistic online CAWI survey targeting the general population aged 16 and above in all 27 EU Member States. The EU Loneliness Survey of 2024 as used by D'Hombres et al (2024) is a CAWI survey across EU member countries. It also contains a 6-step loneliness question –

Q4. *"What is the frequency of feeling lonely past week 1=none of the time; 2= a little of the time; 3=some of the time, 4=most of the time and 5=all of the time?"*.

It also contains a 6-step happiness question.

Q4. *"What is the frequency of feeling happy last week 1=never; 2= very rarely; 3=rarely, 4=occasionally; 5=very frequently and 6=always?"*

We regressed both on age 18-24 dummy and gender. Results are reported in **Table 8** on loneliness and happiness. The coefficient on the youth variable was significantly positive in 26/27 EU member countries with the exception being Luxembourg which had a small sample size (n=344). However, when we did the same with the happiness variable there were only significant negatives for Austria, Malta, Denmark, Ireland and Netherlands. So, question matters.¹⁰

5.3. Global Flourishing Survey, 2022-2024, <https://globalflourishingstudy.com/>

This survey includes 23 countries and we examine 7. It is a panel and we use data from sweep #1 (2022-2024). The GFS does use both survey modes, but we restrict our analysis to those individuals who responded online via CAWI. Six countries in the GFS only have CAWI samples, Australia, Germany, Spain, Sweden, UK and USA and we have strong results for them. We also have data for Argentina and Indonesia, who we add to our list as they were sampled by both CATI and CAWI and we found youth effects for these two countries by the two survey modes.

We first look at '*not-flourishing*' and then to '*flourishing*' as defined in Blanchflower and Bryson (2025b).

Not flourishing is the sum of four variables.

Q11. *"Been bothered in last two weeks by: feeling anxious, worried, depressed and not showing any interest, which are coded 1 =not at all 2=several days 3=more than half the days and 4=nearly every day.*

⁹ https://joint-research-centre.ec.europa.eu/projects-and-activities/survey-methods-and-analysis-centre/loneliness/eu-loneliness-survey_en

¹⁰ We should note that there are also significant positives in the loneliness equations and insignificant ones in happiness equations for Slovenia, Slovakia, Romania, Portugal, Poland, Malta, Lithuania, Latvia, Hungary, Estonia, Czechia, Cyprus, Croatia and Belgium.

The variable varies between 4 and 16 with a mean across the fourteen countries of 7.53. A simple way to present the data is in [Figure 2](#) which plots the single year of age coefficients that are added to the constant in a not-flourishing equation with gender and country controls for the fourteen CAWI countries in the GFS. The function clearly slopes down. The young have poor mental health. We then turn to an aggregate well-being measure of 'flourishing' that varies between one and ten.

In part a) of [Table 9](#) we report estimates for eight countries all of which have significant positives for not flourishing and significant negatives for flourishing.¹¹ We find the same for Argentina and Indonesia in both the CATI and CAWI subsamples. The young, in these eight countries have especially low wellbeing. We now add Argentina and Indonesia to our list of what is now nineteen countries.

5.4. Global Minds surveys of 2020-2026 (GM), (www.sapienlabs.com)

GM is an online survey that contains over 50 well-being measures.¹² The data file we use was downloaded on April 30th, 2026, noting that data file is being added to in continuous time. The sample size on these 20 countries is 552,133 and there is, an additional 1,707,071 observations on a further 190 countries.

We first examine a wellbeing score, the Mental Health Quotient (MHQ) which is an aggregate mind health or mental health score that integrates ratings across 27 mental capacities and 20 problem items. The score is on a negative-positive scale, where negative scores indicate a likely clinical diagnosis and typically 5 or more symptoms, while overall scores across the scale relate linearly to productive days. The MHQ algorithm is not a simple summation or averaging across its components but rather involves a nonlinear algorithm that is described in Newson, Sukhoi and Thiagarajan (2024).

In [Table 10](#) I report MHQ scores which vary from -100 to +200. We also report a 9-step, 'fear and anxiety' scores. Sample sizes vary by country, with large samples of over 100,000 for Argentina, Mexico, and the USA, and below 1000 for Denmark, Greece, Iceland, Indonesia, Netherlands, Norway and Sweden. No matter how small the sample size though, there are significant, and negative coefficients on the youth variable. We also model fear and anxiety.

Q11. Fear and anxiety Being scared or worried and experiencing feelings and sensations of nervousness or panic in your mind or body 1 = Never causes me any problems, 5 = Sometimes causes me difficulties or distress but I can manage, 9 = Has a constant and severe impact on my ability to function

¹¹ Brazil and Turkey also have significant positives for not flourishing in the CATI samples.

¹² Variables include a cognition score, feelings of aggression, obsessive thoughts, mood swings, being detached from reality, having nightmares, addictions, anger, suicidal thoughts, pain, hallucinations, life satisfaction, flashbacks, feeling sad or hopeless, quality of physical health and many more. See here <https://sapienlabs.org/mhq/> and https://docs.google.com/spreadsheets/d/1yDGCIVgTthDvYpmco7XB0PuTQh7WCUpN714ITnK_zpU/edit?gid=1236331150#gid=1236331150

In all 20 countries there are significant and positive youth effects in [Table 10](#) using the fear, negative affect variable.¹³ In [Appendix Table 3](#) we report the 200/216 countries from MHQ equations from the Global Minds survey, with sample sizes, including the twenty in [Table 10](#) that have significant and negative age 18-24 coefficients. These include essentially all the countries we were unable to find significant coefficients for in the other datasets.¹⁴ Of note is that we do not find such evidence for these other countries in the other CATI surveys we examined, especially the Gallup World Poll.

Possible reasons for the differences between the findings from CAWI surveys such as Global Minds and others are sample size and sample selection. If we take India as an example, we have data from Gallup World Poll, Global Flourishing Study and Global minds. First, the proportion of young people is very different and markedly higher in GM at 29.5% as is sample size. We report coefficients and t-values in Cantril equations for the GFS and GWP, both of which are significantly positive and from an MHQ score for GM which is significantly negative. A contradiction?

India	GFS	GWP	Global Minds
% young	17.9	21.3	29.5
Cantril/MHQ	+0.6123 (7.42)	+0.4256 (10.50)	-0.486 (151.49)
N	12,389	28,933	247,903

6. Conclusions

We found evidence of low youth wellbeing in twenty countries - Argentina, Australia, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Indonesia, Ireland, Italy, Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, UK and USA. We chose these countries for inclusion as we found evidence from at least two of the dozen surveys that we analyzed, of low youth wellbeing. In every country we found this evidence from at least one CATI and one CAWI survey and in a number of countries, such as Sweden and the US from more than one of each.

It is clear that there is evidence for these twenty countries, in the years since 2020, wellbeing rises in age and ill-being declines in age. Prior to that there was little evidence of low youth wellbeing in the surveys with a long time run including the BRFSS survey for the US, the Eurobarometers in Europe and the Gallup World Poll.

An obvious question is why these 20? Why for the remaining countries are these effects *only* found in the CAWI surveys such as GM and EU Loneliness and GFS surveys and not in CATI surveys such as the GWP, Eurobarometers, World Values Surveys, European Social Surveys and the International Social Survey Programme surveys? Possibilities are that there are differences in sample selection in these surveys. The unhappy young may not show up to CATI surveys whereas

¹³ We experimented with other variables including life satisfaction, feeling sad or hopeless, having suicidal thoughts and the results were the same.

¹⁴ There were 16 countries we did not find significant coefficients with observations in parentheses– Burundi (76), Eritrea (48), French Polynesia (55), Laos (77), Liberia (91); Malta (89); Marshall Islands (25); Micronesia (71); Papua New Guinea (63); Serbia (114); Seychelles (34); Sierra Leone (73); Slovenia (88); Suriname (23); Tonga (34) and Turkmenistan (73).

they do to CAWI surveys in these, largely, developing countries. Small samples may also be an issue. There is much work to be done.

Table 1. 20 countries by GNI, wellbeing rankings and mobile penetration rates

	GNI	UNDP rank	GNI rank	WHR	% Mobile penetration
Australia	\$58,277	7	21	15	80
Argentina	\$25,876	47	67	42	59
Canada	\$54,688	16	25	25	83
Denmark	\$76,008	4	8	3	84
Finland	\$57,068	12	22	1	82
France	\$55,060	26	24	35	77
Germany	\$64,053	5	18	17	82
Greece	\$35,761	34	51	85	71
Iceland	\$69,117	1	13	2	87
Indonesia	\$13,700	105	113	87	78
Ireland	\$90,885	11	5	13	78
Italy	\$52,389	29	28	38	72
Netherlands	\$68,344	8	14	7	88
New Zealand	\$47,260	17	34	11	85
Norway	\$112,710	2	2	6	83
Spain	\$46,008	28	37	41	86
Sweden	\$66,102	5	15	5	84
Switzerland	\$81,949	2	7	10	81
United Kingdom	\$54,372	13	26	29	82
USA	\$73,650	17	10	23	72

Rankings from UNDP, World Happiness Report and UN

<https://www.worldhappiness.report/ed/2026/#appendices-and-data>

<https://hdr.undp.org/data-center/human-development-index#/indicies/HDI>

Table 2. Distribution of youth effects across twelve surveys

	1	2	3	4	5	6	7	8	9	10	11	12	13
Argentina									X	X			X
Australia					X		X	X	X	X			
Canada					X		X			X			
Denmark			X		X	X		X		X	X	X	
Finland					X	X		X		X	X	X	
France				X						X		X	
Germany				X					X	X		X	
Greece								X		X		X	
Iceland			X			X				X			
Indonesia												X	X
Ireland			X			X				X		X	
Italy				X						X		X	
Netherlands			X		X	X	X	X		X	X	X	
New Zealand					X		X	X		X			
Norway			X		X	X		X		X			
Spain				X					X	X		X	
Sweden			X	X	X	X			X	X	X	X	
Switzerland			X			X				X	X		
UK						X	X		X	X			
USA	X	X					X	X	X	X			

1. Behavioral Risk Factor Surveillance System

2. Household Pulse Survey

3. Eurobarometers

4. Come Here

5. Gallup World Poll

6. European Social Survey

7. World Values Survey

8. International Social Survey Programme

9. Global Flourishing Survey CAWI & #13 CATI

10. Global Minds

11. EU Statistics on Income and Living Conditions

12. EU Loneliness

Table 3. Wellbeing in the USA

a) Despair USA BRFSS – coefficient on age 18-24 dummy with gender and state controls

	Coefficient	T-value	N
1993	-.0072	3.58	100,090
1994	-.0056	2.70	103,968
1995	-.0090	4.19	111,989
1996	-.0098	4.68	121,857
1997	-.0085	4.24	132,985
1998	-.0060	3.07	146,515
1999	-.0093	4.91	156,533
2000	-.0043	2.40	179,790
2001	-.0060	3.47	207,299
2002	-.0019	0.70	497,238
2003	-.0037	2.15	258,121
2004	-.0031	1.79	296,740
2005	-.0036	2.11	346,864
2006	-.0010	0.92	345,479
2007	-.0002	0.14	420,361
2008	-.0044	2.27	404,432
2009	-.0045	2.27	422,153
2010	-.0047	2.25	436,094
2011	-.0089	5.74	492,706
2012	-.0064	4.29	462,767
2013	-.0046	3.25	481,055
2014	-.0053	3.63	457,532
2015	-.0024	1.64	428,034
2016	-.0013	0.90	475,316
2017	+.0062	4.32	458,531
2018	+.0133	8.80	422,288
2019	+.0137	8.87	409,792
2020	+.0094	6.29	400,421
2021	+.0248	16.27	419,611
2022	+.0260	16.91	434,102
2023	+.0163	10.33	410,563
2024/5	+.0076	5.37	474,381

b) Ill-being in the US Household Pulse Surveys, 2020-2024

Coefficients on age 18-24 and female dummies & t-values

	Age 18-24	Female	N
Worry	.1362 (64.02)	.2533 (64.02)	4,318,728
Anxious	.1854 (76.17)	.2723 (272.57)	4,325,163
Down & depressed	.1827 (84.66)	.1348 (152.28)	4,319,439

Equations include gender, year and state.

Table 4. Eurobarometers -4-step life satisfaction. In nine countries. Coefficient on 18-24 variable, t-value and n

Sweden		
1995-2009	.0280 (2.60)	30,451
2010-2014	.0272 (1.46)	21,386
2015-2019	-.0253 (1.59)	36,422
2020-2024	-.1041 (5.13)	13,584
Denmark		
1995-2009	.0235 (3.89)	73,258
2010-2014	.0199 (1.42)	21,243
2015-2019	.0322 (2.79)	35,678
2020-2024	-.0813 (3.84)	12,242
Finland		
1995-2009	.1318 (13.24)	31,094
2010-2014	.1120 (8.13)	21,088
2015-2019	.0809 (7.04)	35,637
2020-2024	-.0285 (1.11)	13,888
Iceland		
2010-2014	.0954 (4.62)	5,031
2020-2024	-.1128 (3.07)	2,542
Ireland		
1995-2009	.0039 (0.60)	72,943
2010-2014	.0944 (5.85)	21,032
2015-2019	.0229 (2.16)	35,703
2020-2024	-.1602 (6.64)	11,451
Netherlands		
1995-2009	.0745 (11.34)	73,242
2010-2014	.1184 (8.33)	21,350
2015-2019	.0904 (7.12)	36,152
2020-2024	-.0796 (3.36)	12,329
Norway		
1995-2009	.0607 (3.70)	10,016
2020-2024	-.1098 (3.77)	7,304
Switzerland		
2020-2024	-.1211 (4.39)	7,372
UK		
1995-2009	.0122 (2.06)	96,472
2010-2014	.0824 (6.46)	27,559
2015-2019	.0119 (1.19)	43,021
2020-2024	-.0829 (3.77)	10,635

Table 5. Cantril life evaluation, Gallup World Poll 2005-2025

	pre 2020			≥2020		
	Coefficient	T-value	N	Coefficient	T-value	N
Australia	+.077 (1.26)		13,832	-.390 (4.22)		5,949
Canada	-.105 (2.00)		16,081	-.513 (5.26)		6,026
Denmark	-.072 (1.44)		14,371	-.178 (2.77)		5,927
Finland	+.098 (1.68)		12,646	-.599 (7.92)		5,994
Iceland	.154 (1.67)		3,971	-.096 (0.80)		2,748
Ireland	.145 (2.49)		13,189	.121 (1.39)		6,006
Netherlands	-.043 (0.94)		13,520	-.190 (2.94)		5,982
New Zealand	-.174 (2.87)		12,263	-.616 (7.09)		5,923
Norway	-.191 (3.14)		10,690	-.325 (4.13)		5,967
Sweden	-.185 (3.66)		14,250	-.380 (4.57)		5,964
Switzerland	.057 (0.87)		9,264	-.040 (0.39)		5,987
UK	-.006 (0.13)		34833	-.129 (1.23)		5,973
USA	-.007 (0.12)		16,062	-.565 (6.66)		5,896

Table 6. ISSP, European Social Surveys and World Values Surveys an (coefficients on age 18-24 dummy with gender dummy)

a) ISSP, 2021 & 2022 7-step Happiness			controls for gender and year	
Australia	-.4310 (3.13)	1,772		
Denmark	-.2240 (3.15)	2,933		
Finland	-.2396 (2.82)	2,160		
Iceland	-.3652 (3.75)	2,172		
Netherlands	-.2142 (2.73)	2,843		
New Zealand	-.4463 (4.20)	2,068		
Norway	-.0576 (0.77)	2,639		
Sweden	-.0401 (0.33)	1,557		
Switzerland	-.2776 (5.63)	5,763		
USA	-.1964 (2.27)	2,125		
European Social Survey Sweep 11 Denmark *(wave 9 2017/18)				
	10-step happiness		10=step life satisfaction	
Denmark*	-.2504 (2.10)	1,504	-.2766 (2.11)	1,505
Finland	-.4645 (3.06)	1521	-.1950 (1.19)	1,523
Iceland	-.8151 (4.24)	822	-.5462 (2.38)	821
Ireland	-.0370 (0.22)	1,995	.0573 (03.0)	1981
Netherlands	-.2475 (2.16)	1,644	-.1456 (1.19)	1626
Norway	-.4080 (2.89)	1,283	-.3476 (2.24)	1281
Sweden	-.6331 (3.50)	1,205	-.5227 (2.65)	1206
Switzerland	-.6339 (4.45)	1349	-.5650 (4.45)	1,346
UK	-.2900 (1.24)	1655	-.1611 (0.63)	11657
b) World Values Survey Wave #7 10-step life satisfaction				
Australia	-.9200 (4.00)	1,774		
Canada	-.5289 (5.20)	4,018		
Netherlands	-.6123 (3.27)	2,063		
New Zealand	-1.0770 (2.85)	995		
UK	-.4766 (3.20)	2854		
USA	-.4964 (3.73)	2,583		

Table 7. Well-being -Come Here 2020-2025 coefficients & t-values on age 18-24 (see Appendix Table 1 for variable definitions)

	Sweden (n=9,124)	Germany (n=13,132)	France (n=14,920)	Italy (n=14,467)	Spain (N=15,200)
Life satisfaction	-.8740 (8.17)	-.8989 (10.45)	-.4659 (6.61)	-.4280 (7.66)	-.4082 (5.38)
Worthwhile	-1.0880 (10.18)	-1.2478 (13.62)	-.7242 (10.06)	-.7634 (13.01)	-.8331 (10.22)
GAD7_1	.5263 (13.51)	.5547 (17.85)	.1913 (6.83)	.3524 (16.85)	.4052 (13.42)
GAD7_2	.3976 (10.78)	.5769 (18.80)	.2060 (7.47)	.3219 (14.53)	.3197 (10.31)
GAD7_3	.4676 (12.25)	.5600 (17.73)	.2316 (8.48)	.3603 (16.16)	.3498 (11.19)
GAD7_4	.5085 (12.88)	.5124 (15.43)	.2089 (7.32)	.3088 (13.58)	.3613 (11.26)
GAD7_5	.4781 (13.95)	.5242 (17.46)	.3103 (12.12)	.3015 (13.50)	.4154 (13.71)
GAD7_6	.4823 (13.57)	.4643 (15.05)	.2207 (8.09)	.3372 (15.23)	.4083 (13.81)
GAD7_7	.4094 (11.40)	.4866 (16.05)	.2122 (7.89)	.2295 (10.23)	.3361 (10.91)
GAD7_total	3.2698 (14.70)	3.6792 (20.19)	1.5810 (9.63)	2.2116 (17.21)	2.5958 (14.39)
PHQ_1	.3342 (8.69)	.4922 (15.87)	.2873 (10.94)	.3177 (15.22)	.3867 (12.58)
PHQ_2	.4659 (12.29)	.5766 (18.83)	.2873 (10.94)	.4245 (19.85)	.3899 (12.62)
PHQ_3	.3229 (7.66)	.3348 (9.30)	.1405 (4.75)	.2423 (10.33)	.3039 (9.27)
PHQ_4	.4279 (10.10)	.4992 (14.67)	.2428 (8.29)	.2854 (13.06)	.4011 (12.45)
PHQ_5	.4813 (12.52)	.5639 (18.40)	.4162 (15.43)	.3815 (16.74)	.4700 (14.85)
PHQ_6	.5622 (15.12)	.6154 (20.80)	.3704 (12.03)	.4578 (20.44)	.4786 (15.29)
PHQ_7	.4384 (11.84)	.5534 (18.44)	.3111 (12.03)	.4036 (19.00)	.4088 (13.68)
PHQ_8	.3580 (12.21)	.4807 (18.34)	.3150 (13.55)	.2940 (14.35)	.3940 (14.28)
PHQ_9	.3534 (11.34)	.4649 (17.60)	.2576 (10.68)	.3221 (15.31)	.4219 (15.01)
PHQ_total	3.7443 (14.05)	4.5810 (21.17)	2.5844 (13.49)	3.1289 (20.68)	3.6549 (16.61)
Lonely_1	.2850 (6.45)	.3621 (9.75)	.2061 (6.51)	.3028 (12.68)	.3601 (10.39)
Lonely_2	.2240 (5.21)	.4018 (11.19)	.1276 (3.98)	.1945 (7.80)	.2777 (8.10)
Lonely_3	-.3536 (9.79)	-.1630 (4.42)	-.4000 (13.20)	-.2399 (10.55)	-.3074 (9.18)
Lonely_4	.3603 (8.56)	.5048 (14.55)	.2885 (9.71)	.3285 (13.48)	.4141 (12.76)
Lonely_5	.2634 (5.95)	.5188 (14.56)	.2146 (6.74)	.3041 (12.12)	.4047 (11.97)
Lonely_6	-.1291 (3.07)	-.1277 (3.17)	-.1584 (4.84)	-.1198 (5.00)	-.1077 (3.00)
Lonely_7	.5368 (13.66)	.5286 (14.75)	.2424 (7.70)	.3512 (14.39)	.4475 (13.25)
Lonely_8	.4923 (11.56)	.4322 (12.67)	.1108 (3.53)	.2232 (9.05)	.2919 (8.40)
Lonely_total	2.6444 (11.09)	3.0391 (16.39)	1.7486 (10.20)	2.0638 (15.99)	2.6110 (13.60)

GAD7_1 Feeling nervous, anxious or on edge
GAD7_2 Not being able to stop or control worrying
GAD7_3 Worrying too much about different things
GAD7_4 Trouble relaxing
GAD7_5 Being so restless that it is hard to sit still
GAD7_6 Becoming easily annoyed or irritable
GAD7_7 Feeling afraid as if something awful might happen
GAD7_total Anxiety (0-21)

Not at all=0; several days=1; more than half the days =2; nearly every day=3

PHQ_1 Little interest or pleasure in doing things
PHQ_2 Feeling down, depressed, or hopeless
PHQ_3 Trouble falling or staying asleep, or sleeping too much
PHQ_4 Feeling tired or having little energy
PHQ_5 Poor appetite or overeating
PHQ_6 Feeling bad about yourself
PHQ_7 Trouble concentrating on things
PHQ_8 Moving or speaking so slowly / being so fidgety or restless
PHQ_9 Better off dead or of hurting yourself in some way
PHQ_total Depression (0-27)

Not at all=0; several days=1; more than half the days =2; nearly every day=3

Loneliness_1 Feel that you lack companionship?
Loneliness_2 Feel that there is no one you can turn to?
Loneliness_3 Feel outgoing and friendly?
Loneliness_4 Feel left out?
Loneliness_5 Feel isolated from others?
Loneliness_6 Feel you can find companionship when you want it?
Loneliness_7 Feel shy?
Loneliness_8 Feel that people are around you but not with you?
Loneliness_total : UCLA Loneliness Scale (0-24)

Never =0, rarely=1, sometimes =2, often =3

Life satisfaction "Past week, degree of satisfaction with your life 0=Not at all ..10=completely"

Worthwhile "Past week extent that the things you are doing in your life are worthwhile 0=Not at all ..10=completely". Notes equations also include gender

Table 8. Results of regressing 6-step loneliness and 6-step happiness on age 18-24 and gender in the EU Loneliness Study. T-statistics in parentheses.

	Loneliness		Happiness	
		N		N
Denmark	.3309 (3.02)	949	-.2363 (2.12)	978
Finland	.4376 (4.23)	971	-.0123 (0.12)	993
France	.4291 (3.40)	967	-.1987 (1.47)	991
Germany	.4572 (2.80)	1077	-.0550 (0.32)	1084
Ireland	.2797 (2.69)	948	-.3105 (3.17)	972
Italy	.7444 (5.68)	964	-.1189 (0.88)	986
Netherlands	.4213 (4.05)	958	-.3228 (2.87)	985
Spain	.3269 (2.84)	970	-.1939 (1.64)	990
Sweden	.3781 (3.26)	967	.0505 (0.46)	991

Table 9. Not flourishing and flourishing CAWI, GFS 2022-2024, fourteen countries (two gender and immigrant controls)

	Not flourishing		Flourishing	
	18-24	N	18-24	N
a) CAWI				
Australia	1.9284 (8.60)	3,808	-.9672 (8.52)	3,782
Germany	1.5765 (13.76)	9,390	-.2512 (4.42)	9,322
Spain	1.0685 (7.84)	6,189	-.1092 (1.82)	6,111
Sweden	1.7814 (23.69)	14,755	-.4787 (11.53)	14,457
UK	1.8631 (8.41)	5,286	-.5420 (4.91)	5,184
USA	1.9385 (12.23)	37,537	-1.0590 (12.66)	37,282
Argentina	1.4293 (10.70)	5,197	-.2011 (3.52)	5,135
Indonesia	1.0665 (9.24)	3,346	-.2367 (4.51)	3,256
b) CATI				
Argentina	.8277 (2.08)	1,412	-.6885 (4.02)	1,371
Indonesia	.3382 (2.34)	3,570	-.1190 (1.58)	3,565

Equations include two gender control and immigrant

Table 10. Global Minds MHQ and fear and anxiety 2020-2026. N=

	MHQ scored 100 to +200	9-step fear and anxiety	N
Argentina	-63.8 (99.93)	1.3330 (55.37)	100,661
Australia	-59.0 (61.08)	1.4176 (43.72)	31,570
Canada	-64.6 (70.93)	1.5433 (49.03)	43,538
Denmark	-61.0 (7.64)	1.4672 (5.13)	437
Finland	-64.8 (20.33)	1.7093 (15.15)	4,659
France	-55.1 (73.72)	1.2272 (45.72)	50,285
Germany	-49.8 (42.53)	1.1174 (26.50)	31,091
Greece	-57.8 (7.16)	1.1493 (3.75)	358
Iceland	-59.3 (5.66)	1.1841 (3.15)	300
Indonesia	-54.4 (10.50)	1.0867 (5.95)	760
Ireland	-58.8 (25.75)	1.2789 (15.87)	12,608
Italy	-46.1 (25.04)	1.0959 (15.39)	41,370
Netherlands	-46.3 (7.30)	1.1100 (4.97)	634
New Zealand	-66.0 (37.01)	1.5891 (25.95)	14,771
Norway	-70.5 (6.99)	1.9752 (5.24)	314
Spain	-47.9 (68.83)	1.0282 (41.81)	56,140
Sweden	-59.7 (8.29)	1.3733 (5.43)	641
Switzerland	-52.9 (9.34)	1.3758 (6.82)	1,995
UK	-51.6 (69.84)	1.1331 (46.23)	69,548
USA	-65.5 (129.78)	1.7473 (97.03)	140,555

Includes two gender variables and year. Coefficient on age 18-24 variable and t-value

Figure 1. Despair in the United States from the BRFSS

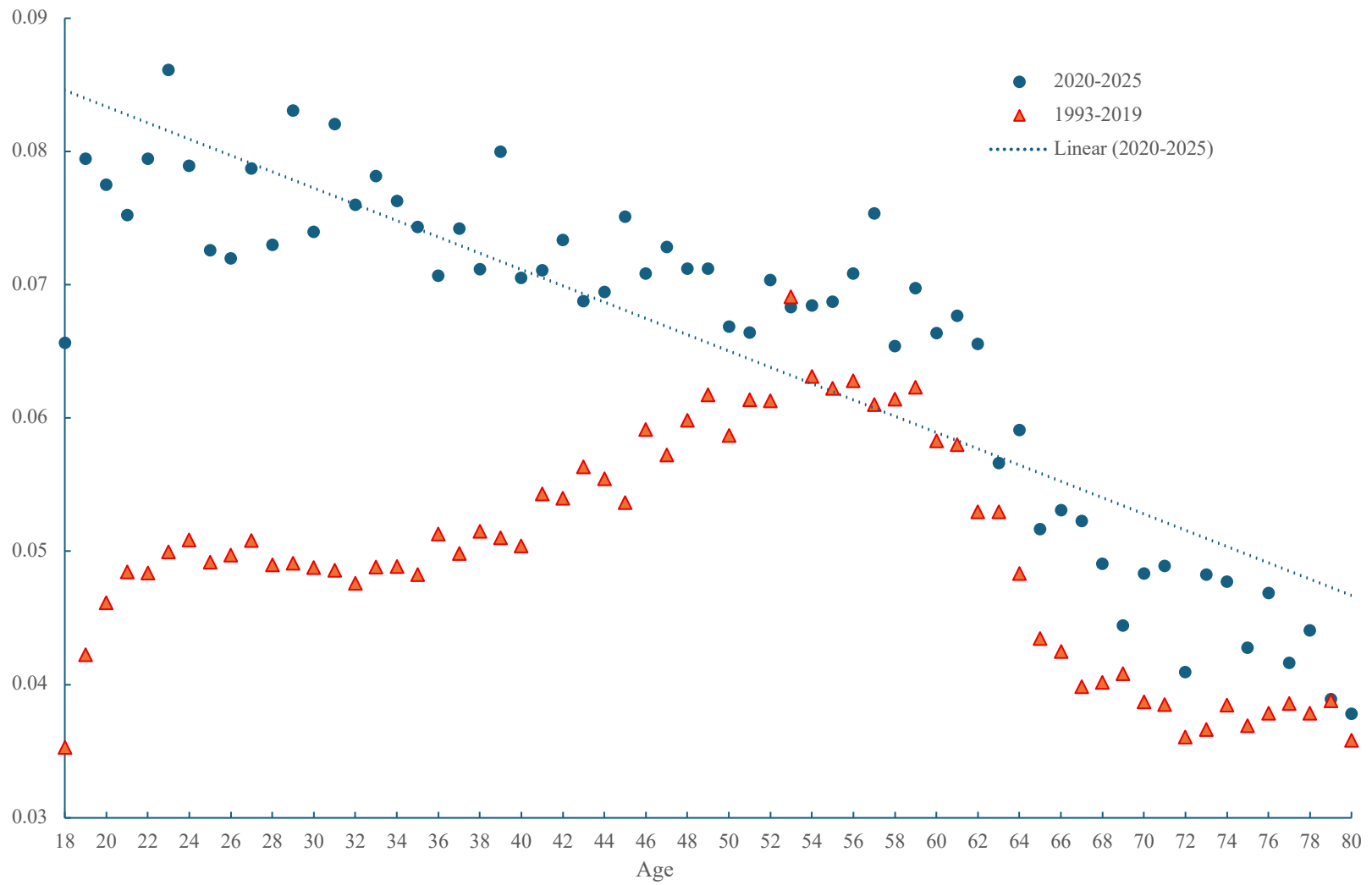
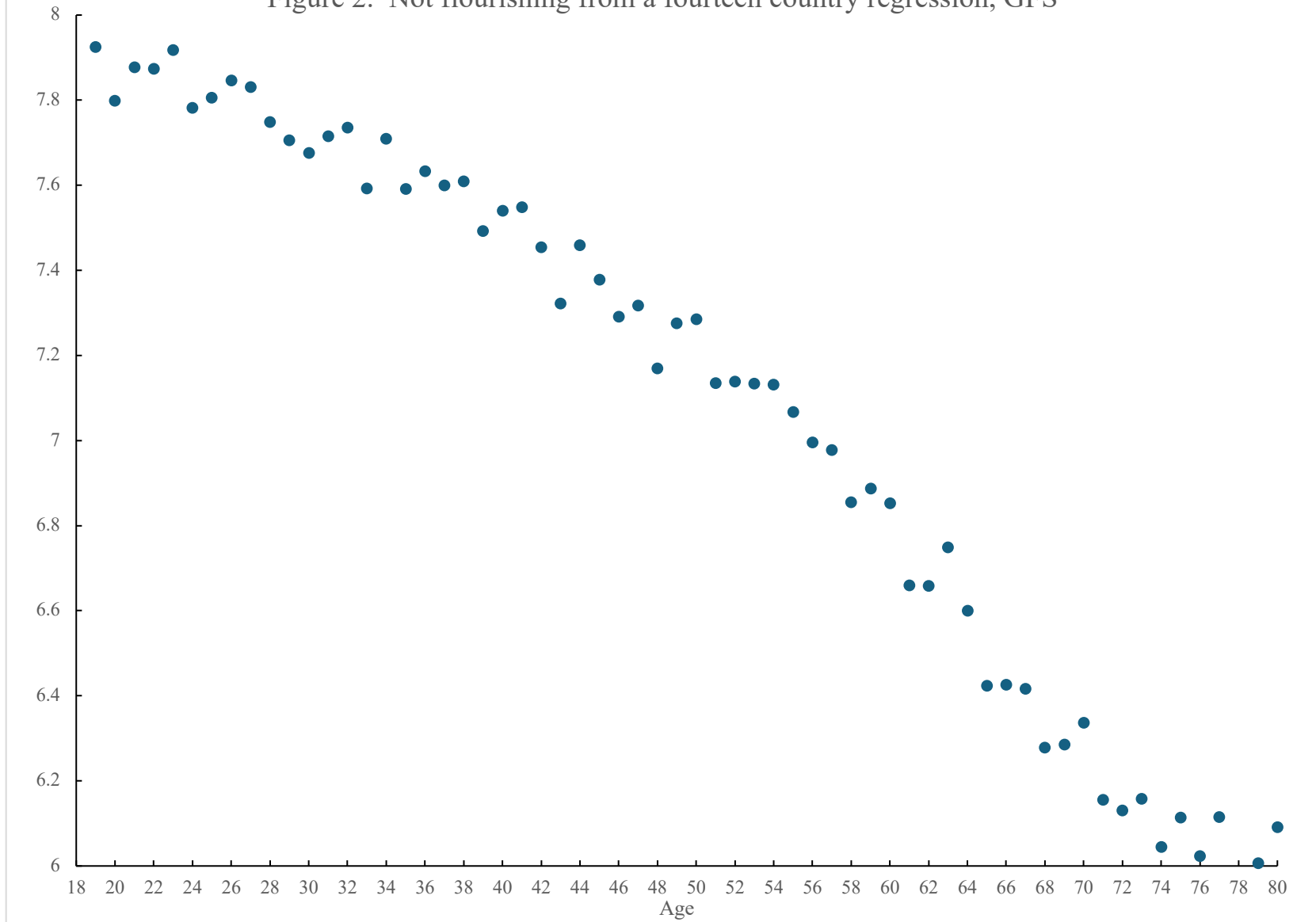


Figure 2. Not flourishing from a fourteen country regression, GFS



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Appendix Table 1. Life satisfaction by age in 2023 On a scale from 0 (very dissatisfied) to 10 (very satisfied). EU SILC <https://qery.no/life-satisfaction-in-european-countries/>

	16-24	25-64	65+
Croatia	8.3	7.3	6.2
Romania	8.3	7.8	7.3
Cyprus	8.2	7.5	6.9
Czechia	8.1	7.5	6.9
Slovenia	8.1	7.8	7.3
Slovakia	8.0	7.4	6.6
Belgium	7.9	7.7	7.6
Hungary	7.9	7.4	6.8
Lithuania	7.9	7.3	6.7
Poland	7.9	7.7	7.4
Portugal	7.8	7.2	6.7
Spain	7.8	7.2	7.0
Austria	7.7	7.6	7.8
France	7.7	7.2	7.1
Norway	7.7	7.6	7.8
Serbia	7.7	6.4	5.8
EU27	7.6	7.3	7.1
Estonia	7.6	7.3	6.8
Ireland	7.6	7.5	7.8
Italy	7.6	7.3	7.0
Latvia	7.6	6.9	6.5
Luxembourg	7.6	7.1	7.8
Malta	7.6	7.4	7.3
Finland	7.5	7.7	7.9
Greece	7.4	7.0	6.5
Netherlands	7.4	7.6	7.8
Denmark	7.3	7.4	8.0
Germany	7.3	7.0	6.8
Sweden	7.3	7.4	7.8
Switzerland	7.3	7.7	8.4
Bulgaria	6.8	6.1	5.2
Türkiye	5.7	5.6	5.7

Appendix Table 2. 200 countries with significant negatives in MHQ equation, GM 2020-2026

Afghanistan	1,849	Croatia	120	Ireland	12,608
Albania	1,889	Cuba	539	Isle of Man	93
Algeria	71,776	Curacao	67	Israel	21,333
American Samoa	1,109	Cyprus	128	Italy	41,370
Andorra	761	Czechia	203	Jamaica	329
Angola	18,433	Denmark	437	Japan	4,838
Anguilla	492	Djibouti	72	Jersey	92
Antigua & Barbuda	335	Dominica	403	Jordan	37,989
Argentina	100,661	Dominican Republic	11,882	Kazakhstan	1,049
Armenia	4,095	DR Congo	9,604	Kenya	14202
Aruba	419	Ecuador	18,394	Kiribati	37
Australia	31,570	Egypt	121,557	Korea North	97
Austria	2,714	El Salvador	14,486	Korea South	10,176
Azerbaijan	1,956	Equatorial Guinea	55	Kosovo	35
Bahamas	116	Estonia	116	Kuwait	439
Bahrain	358	Eswatini	48	Kyrgyzstan	5,992
Bangladesh	13,872	Ethiopia	196	Latvia	156
Barbados	99	Faroe Islands	49	Lebanon	310
Belarus	4,452	Fiji	78	Lesotho	47
Belgium	12,020	Finland	4,837	Libya	441
Belize	131	France	50,285	Liechtenstein	31
Benin	1,950	FS Antarctic Lands	71	Lithuania	116
Bermuda	67	Gabon	556	Luxembourg	106
Bhutan	141	Gambia	58	Macau	143
Bolivia	19,976	Georgia	3,660	Madagascar	4,048
Bosnia & Herzegovina	94	Germany	31,093	Malawi	241
Botswana	158	Ghana	4,624	Malaysia	7,458
Brazil	26,954	Gibraltar	61	Maldives	80
Brunei	73	Greece	358	Mali	130
Bulgaria	185	Greenland	66	Mauritania	109
Burkina Faso	319	Grenada	77	Mauritius	100
BVI	207	Guam	74	Mexico	110,327
Cabo Verde	88	Guatemala	19,991	Moldova	741
Cambodia	162	Guinea	107	Monaco	88
Cameroon	12,301	Guinea-Bissau	50	Mongolia	119
Canada	43,540	Guyana	98	Montenegro	65
CAR	210	Haiti	116	Montserrat	31
Cayman Islands	57	Honduras	13,659	Morocco	41,515
Chad	160	Hong Kong	1,179	Mozambique	15,341
Chile	23,645	Hungary	263	Myanmar	173
China	2,758	Iceland	300	N Mariana Islands	57
Colombia	67,412	India	247,903	Namibia	149
Comoros	74	Indonesia	760	Nepal	469
Costa Rica	9,922	Iran	298	Netherlands	634
Côte d'Ivoire	11,377	Iraq	39,206	New Zealand	14,771

Nicaragua	13,694	Tokelau	20
Niger	251	Trinidad & Tobago	6,359
Nigeria	34,332	Tunisia	26,853
North Macedonia	72	Turkey	1,018
Norway	333	Turks & Caicos	64
Oman	446	Tuvalu	60
Pakistan	58,179	UAE	10,607
Palau	49	Uganda	1,131
Panama	8,818	UK	69,548
Paraguay	18,002	Ukraine	12,853
Peru	33,268	Uruguay	16,243
Philippines	36,498	USA	140,556
Poland	508	Uzbekistan	5,950
Portugal	9,693	Vatican City	149
Puerto Rico	8,629	Venezuela	86,648
Qatar	277	Vietnam	338
Rep Congo	1,116	Yemen	38,800
Romania	431	Zambia	391
Russia	3,668	Zimbabwe	8,183
Rwanda	1,212		
Samoa	27		
Samoa Americana	94		
San Marino	54		
Sao Tome Principe	26		
Saudi Arabia	19,193		
Senegal	565		
Singapore	9,854		
Slovakia	97		
Solomon Islands	40		
Somalia	101		
South Africa	48,434		
South Sudan	124		
Spain	56,140		
Sri Lanka	9,500		
St Helena	92		
St Kitts/Nevis	28		
St Lucia	39		
Sudan	1,869		
Sweden	641		
Switzerland	1,995		
Syria	1,197		
Taiwan	1,366		
Tajikistan	524		
Tanzania	10,321		
Thailand	256		
Togo	634		

Negative coefficient on age 18-24 variable and sample size

Appendix A Country rankings mobile phone penetration (Source: UN)

1	UAE	98.3	46	Thailand	73.8
2	Malta	93.3	47	Slovakia	73.8
3	BruneiDarussalam	93.2	48	Mongolia	73.5
4	South Korea	92.8	49	Peru	73.5
5	Cyprus	89.6	50	Japan	73.4
6	Netherlands	88.4	51	Czechia	72.8
7	Iceland	87.3	52	Barbados	72.7
8	Qatar	87.2	53	Ecuador	72.5
9	Hong Kong	86.7	54	Turkey	72.2
10	Spain	85.8	55	Italy	72.1
11	Chile	85.2	56	Lebanon	72.1
12	New Zealand	85.1	57	Poland	71.8
13	Singapore	84.2	58	Costa Rica	71.7
14	Sweden	83.9	59	USA	71.5
15	Denmark	83.6	60	Greece	71.1
16	Norway	83.5	61	Mexico	71.1
17	Canada	83.3	62	Trinidad & Tobago	70.9
18	Germany	82.3	63	China	70.8
19	Finland	82.0	64	Brazil	70.3
20	United Kingdom	81.9	65	Romania	70.1
21	Kuwait	81.5	66	Croatia	69.6
22	Switzerland	81.3	67	Russia	69.5
23	Bahrain	81.2	68	Maldives	69.1
24	Saudi Arabia	80.6	69	Vietnam	68.3
25	Austria	80.0	70	Mauritius	68.3
26	Latvia	79.9	71	St Vincent & Grenadines	66.8
27	Libya	79.8	72	Dominican Republic	66.5
28	Australia	79.4	73	Bulgaria	64.0
29	Slovenia	78.9	74	Jordan	63.6
30	Malaysia	78.9	75	Cambodia	62.8
31	Uruguay	78.5	76	Panama	62.5
32	Argentina	78.3	77	Armenia	62.2
33	Estonia	78.3	78	Luxembourg	61.8
34	Belgium	77.9	79	Bolivia	61.3
35	Oman	77.7	80	Ukraine	61.2
36	Ireland	77.6	81	Kazakhstan	61.1
37	Portugal	77.5	82	Paraguay	60.8
38	Israel	77.3	83	Belize	60.2
39	France	77.2	84	Bhutan	60.0
40	Georgia	77.0	85	Iraq	59.8
41	Lithuania	75.9	86	Fiji	59.8
42	Montenegro	74.5	87	El Salvador	59.4
43	Hungary	74.2	88	Indonesia	59.3
44	Philippines	74.1	89	Bahamas	59.1
45	Colombia	73.9	90	Tunisia	59.0

91	Suriname	58.8	137	Uzbekistan	15.5
92	Tonga	58.7	138	Nigeria	14.4
93	North Macedonia	57.7	139	Gambia	13.9
94	Saint Lucia	57.5	140	Guinea	13.9
95	Guyana	57.3	141	Cameroon	13.8
96	Serbia	56.7	142	Zambia	13.4
97	Morocco	56.0	143	Congo	12.9
98	Albania	55.9	144	Liberia	12.0
99	Samoa	54.3	145	Guinea-Bissau	11.3
100	Bosnia/Herzegovina	53.9	146	Tajikistan	10.9
101	Algeria	52.4	147	Angola	10.4
102	Nicaragua	50.6	148	Benin	10.0
103	Cabo Verde	50.0	149	Madagascar	9.8
104	Venezuela	48.6	150	Zimbabwe	9.7
105	Jamaica	46.8	151	Yemen	9.4
106	Guatemala	45.9	152	Sierra Leone	9.2
107	Belarus	45.3	153	Papua New Guinea	9.1
108	Laos	44.5	154	Burkina Faso	9.1
109	Botswana	44.4	155	Togo	8.5
110	Honduras	42.6	156	Mali	7.8
111	Egypt	42.5	157	Afghanistan	7.6
112	South Africa	41.5	158	Tanzania	7.6
113	Nepal	41.1	159	Mozambique	7.4
114	Kyrgyzstan	40.6	160	Rwanda	5.8
115	Azerbaijan	40.2	161	Burundi	5.6
116	Moldova	38.7	162	Ethiopia	5.2
117	Sri Lanka	33.3	163	Congo DR	5.1
118	India	32.9	164	Uganda	4.2
119	Iran	31.7	165	South Sudan	4.0
120	Pakistan	30.7	166	Malawi	3.8
121	Gabon	28.7	167	Chad	2.8
122	Eswatini	28.1	168	Sudan	2.3
123	Vanuatu	27.8	169	CAR	2.3
124	Namibia	27.2	170	Niger	1.7
125	Myanmar	27.1			
126	Bangladesh	26.3			
127	Timor-Leste	25.7			
128	Lesotho	22.3			
129	Comoros	20.3			
130	Ghana	20.2			
131	Kenya	18.6			
132	Cote d'Ivoire	17.8			
133	Haiti	17.4			
134	Solomon Islands	16.9			
135	Senegal	16.5			
136	Mauritania	16.4			