Trend Happy-Life-Years in Nations 1946-2020
Change in how long and happy people live

Annegeke Jansen[1] and Ruut Veenhoven[2]

What 'Happy Life Years'?

Concept

Happy Life Years (HLY) is an estimate of how long and happy the average citizen will live in that nation in this era. This variable is described in more detail in Veenhoven. R. (1996) Happy Life Expectancy. A comprehensive indicator of quality of life in nations. in: Social Indicators Research. 39: 1-58.

Computation

HLY is computed by taking the average enjoyment of life in a nation (measured on a scale from 0-1) multiplied by statistically expected length of life of the average citizen in that nation:

For example: If average happiness in a nation on scale 0-10 is 5 and the average citizen is expected to live 80 years, HLY in the nation will be 0,5 x 80 = 40 years

Synonyms

The variable is also referred to as:

- Happy Life-Expectancy (HLE)
- Happiness Adjusted Life-Years (HALY) analogous to Disability Adjusted Life Years (DALYs)
- Wellbeing Years (Wellbys)

Importance

The significance of this measure is discussed in Veenhoven. R. (2000) The four qualities of life: Ordering concepts and measures of the good life, in Journal of Happiness Studies 1: 1-39. Veenhoven argues that the degree to which humans live up to their nature reflects in how long and happy they live.

Advantages over multi-dimensional indexes of quality of life in nations

Since the start of the social indicator movement in the 1960s, a wealth of indexes of quality of life in nations has been proposed, which combine the degree to which different desirable

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states are realized in a country, such as material affluence, social equality and physical health. The Human Development Index (HDI) is the best-known composite of that kind, combining GDP per capita, education and life-expectancy in nations. Today, interest in such multi-dimensional indexes revives in the context of the 'Beyond GDP' movement and several new amalgams of broader wellbeing are proposed, such as by statistics Netherlands.

In spite of their popularity, these measures are criticized. *Substantive* objections are that they tap presumed quality of life rather that apparent quality of life in nations and reflect the degree to which a political agenda is realized without considering the sense of that agenda. *Technical* objections are that such indexes draw on indicators that happen to be available in national statistics, that elements in such indexes tend to change over time as political interests shift and that the weighting of elements in such indexes is not well possible.

Veenhoven (2000, 2019) argues that use of Happy Life Years provides a better indication of the quality of life in a nation.

Reputation

This measure scored highest in a scholarly review of indicators of quality of life in nations. See: Hagerty. M. et. al. (2001) 'Quality of Life indexes for national policy: Review and agenda for research'. Social Indicators Research. 55: 1-96. Under the new name of Wellbys the indicator is now part of the yearly World Happiness Reports.

Use for policy making

Since Happy Life Years can be considered as the most comprehensive indicator of quality of life in a nation it can be used for evaluating how well a nation is doing and subsequently for choosing how it should develop in the future. The indicator can be used in two ways:

Comparing across nations at the same time

Comparison of Happy Life Years across nations, learns how much happy Life Years are realistically possible in a country and how far the country is from that optimum. As such it tells policy makers to what extend the country *could do better* in providing their members a good quality of life. Comparison across nations can also help to identify drivers of happy life years. Comparisons of this kind are available in the rank-report Happy Life Years in Nations of this World Database of Happiness

Comparing within nations over time

Comparison of Happy Life Years over time within nations tell policy makers whether the country is actually *doing better or worse* with respect to providing a conditions for a good quality of life. Happy Life Years can be used for evaluating for evaluating specific changes in society, such as extension of state welfare provisions and for choosing on wider developments in society, such as to what extend the autonomous forces of societal

modernization should be curtailed or enhanced. (Veenhoven & Berg). This report serves that goal.

This report

In this report we present the available data on change in Happy Life Years in nations over time. We limit to nations on which we have time series on happiness of at least 20 years involving minimally 10 datapoints. These data are taken from the Trend Report Average Happiness in Nations. These data on change of average happiness in a nation were combined with data on change in life-expectancy at birth in the same nation taken from The Human Mortality Database. HLY scores per year in each nation were entered in the datafile Trends in Nations, which can be downloaded from https://worlddatabaseofhappiness.eur.nl/related-sources/data-set-trends-in-nations/what-is-this-data-file-trends-in-nations/

On Table 1 we present difference between first and last observation in Happy Life Years, both in years gained or lost and in a percentage of the number of Happy Life Years at start. HLY has increased in all nations but not in all nations equally much.

On Table 2 we express the trend in a linear regression unstandardized coefficient, which can be interpreted as % rise or decline per year. This report encompasses findings reported in earlier trend reports over the years 1946-2006, 1946-2008, 1946-2010 and 1946-2015

Links in these tables behind nation names lead to scatter plots on which the trend is visualized and to which technical detail is added.

On Figure 1 we visualize the available data on change of Happy Life Years in nations in a joint time graph.

On Figure 2 we do the same in a cumulative time graph.

Technical detail is provided at the end of this report.

All data in this report show a considerable rise of Happy Life Years in the 24 nations considered here over periods of the past 50 to 20 years. Life got typically better in these industrialized modern nations. An exception is Greece, where the number of Happy Life Years declined slightly in the wake of an economic and institutional crisis.

Table 1
Trend HLY expressed in number of years gained

Nation	Period	Change years	Percentage change
Austria	1995-2019	3.60	6.53%
Belgium	1973-2019	4.15	7.80%
Bulgaria	2001-2019	8.81	30.26%
Germany	1990-2019	7.67	15.13%
Germany East	1990-2008	1.31	2.92%
Germany West	1973-2014	11.08	23.60%
Denmark	1973-2019	11.70	20.46%
EU 9	1973-2019	9.91	21.31%
Finland	1995-2019	8.23	15.56%
France	1973-2019	8.92	19.93%
Greece	1981-2019	-0.35	-0.87%
Ireland	1973-2019	6.18	11.26%
Italy	1973-2019	7.87	19.52%
Japan	1958-2014	15.65	40.77%
Korea	1981-2019	16.39	45.09%
Latvia	2001-2019	10.58	28.78%
Lithuania	2001-2019	15.38	46.73%
Luxembourg	1973-2019	11.85	23.87%
Netherlands	1973-2019	10.45	19.07%
Portugal	1985-2019	10.79	29.42%
Russia	1992-2014	16.91	70.02%
Spain	1985-2019	9.66	20.51%
Sweden	1995-2019	4.92	8.31%
United Kingdom	1973-2019	9.93	19.77%
United States	1946-2011	7.73	16.20%

Table 2
Trend HLY expressed in average annual increase

Nation	Period	Average annual increase					
		Happiness		*Life expectancy*		*HLY*	
		B	***CI 95***	***B***	***CI 95***	***B***	***CI 95***
Austria	1995 - 2019	.006	-0.07 ; .019	**.249**	.241 ; .257	**.187**	.070 ; .305
Belgium	1973 - 2019	**-.003**	-.010 ; .004	**.223**	.215 ; .231	**.133**	.081 ; .185
Bulgaria	2001 - 2019	**.052**	.033 ; .071	**.160**	.130 ; .189	.463	.326 ; .600
Denmark	1973 - 2019	**.014**	.011 ; .016	**.145**	.137 ; .154	**.257**	.237 ; .278
EU9	1973 - 2019	**.009**	.006 ; .012	**.219**	.214 ; .223	**.229**	.210 ; .248
Finland	1995 - 2019	**.025**	.018 ; .033	**.253**	.242 ; .263	**.375**	.308 ; .441
France	1973 - 2019	**.017**	.013 ; .020	**.244**	.236 ; .251	**.274**	.246 ; .303
Germany	1990 - 2019	**.028**	.016 ; .039	**.215**	.209 ; .221	**.355**	.270 ; .440
Greece	1981 - 2019	**-.031**	-.043 ; -.020	**.171**	.167 ; .175	**-.166**	-.260 ; -.072
Ireland	1981 - 2019	.007	.000 ; .013	**.219**	.211 ; .228	**.237**	.186 ; .288
Italy	1981 - 2019	.003	-.004 ; .010	**.276**	.265 ; .286	**.164**	.107 ; .221
Japan	1958 - 2014	**.005**	.001 ; .009	**.346**	.320 ; .372	**.207**	.177 ; .238
Korea	2006 - 2019	**.025**	.003 ; .047	**.583**	.549 ; .618	**.455**	.283 ; .627
Latvia	2001 - 2019	**.058**	.043 ; .072	**.058**	.031 ; .085	**.613**	.515 ; .710
Lithuania	2001 - 2019	**.067**	.049 ; .085	**.058**	.038 ; .077	**.654**	.529 ; .778
Luxembourg	1973 - 2019	**.006**	.002 ; .009	**.253**	.245 ; .261	**.250**	.221 ; .279
Netherlands	1973 - 2019	**.010**	.007 ; .013	**.155**	.149 ; .161	**.210**	.180 ; .239
Portugal	1985 - 2019	**-.015**	-.029 ; -.001	**.348**	.335 - .362	.025	-.086 ; .136
Russia	1992 - 2014	**.096**	.083 ; .109	**-.032**	-.059 ; -.004	**.899**	.815 ; .986
Spain	1985 – 2019	.003	-.006 ; .012	**.293**	.276 ; .310	**.157**	.080 ; .233
Sweden	1995 – 2019	**.017**	.011 ; .024	**.170**	.167 ; .174	**.267**	.212 ; .322
UK	1973 - 2019	**.014**	.011 ; .017	**.191**	.185 ; .196	**.256**	.229 ; .283
USA	1946 - 2019	.002	-.002 ; .006	**.174**	.168 ; .179	**.146**	.117 ; .175

B = linear regression coefficient; CI 95 = 95% confidence interval. **Bold**: p<.05 (two-sided)

Figure 1
Trends of Happy Life Years in 24 nations

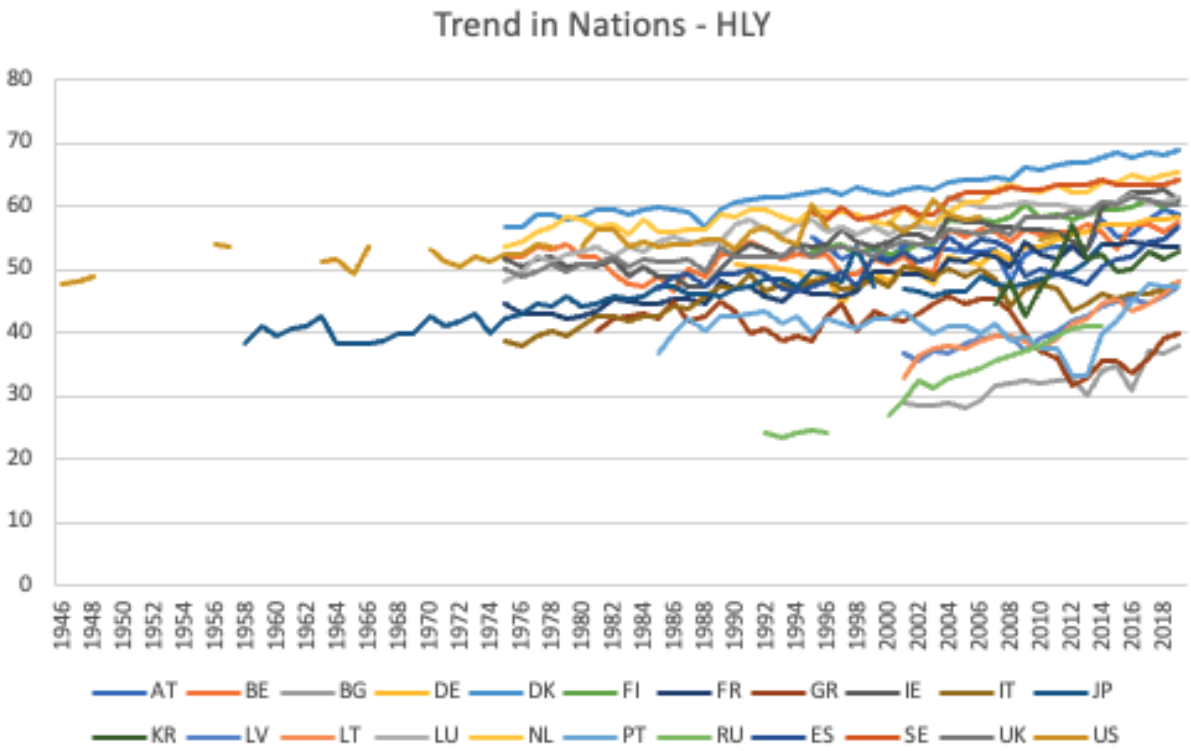
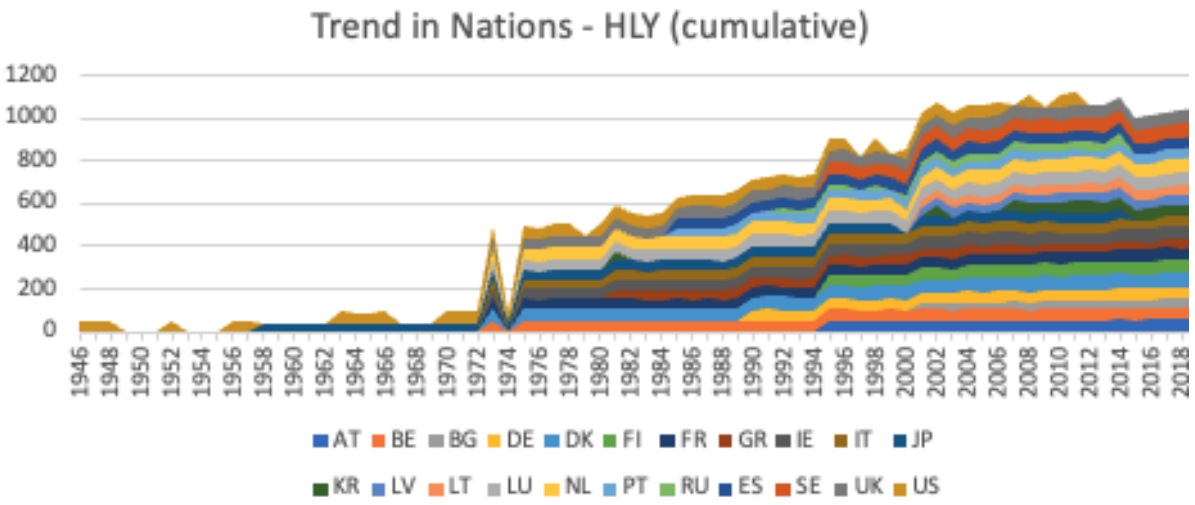
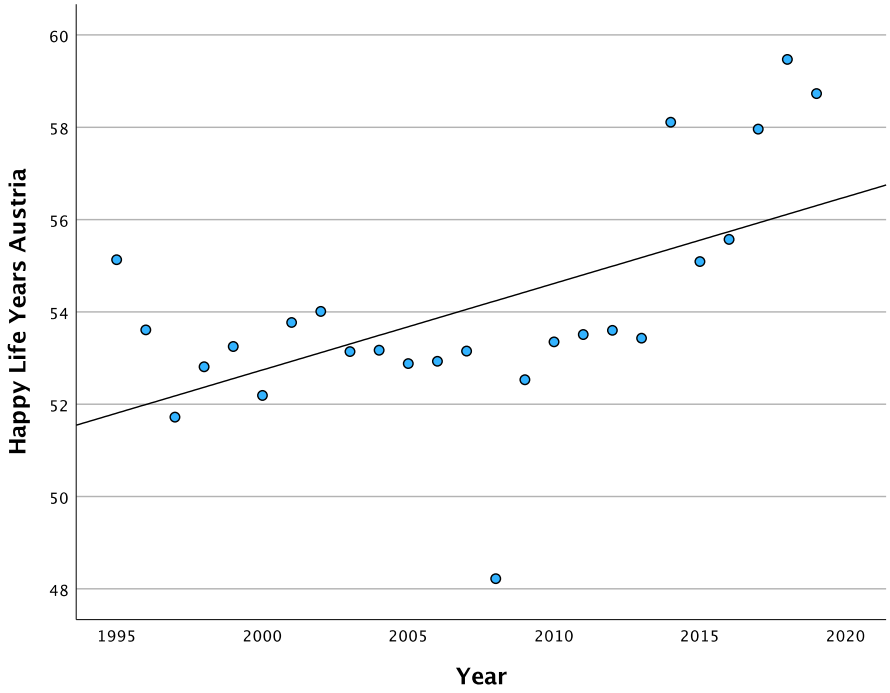


Figure 2
Cumulative trends of Happy Life Years in nations



Austria



Based on life expectancy at birth and average response to survey question on life satisfaction.
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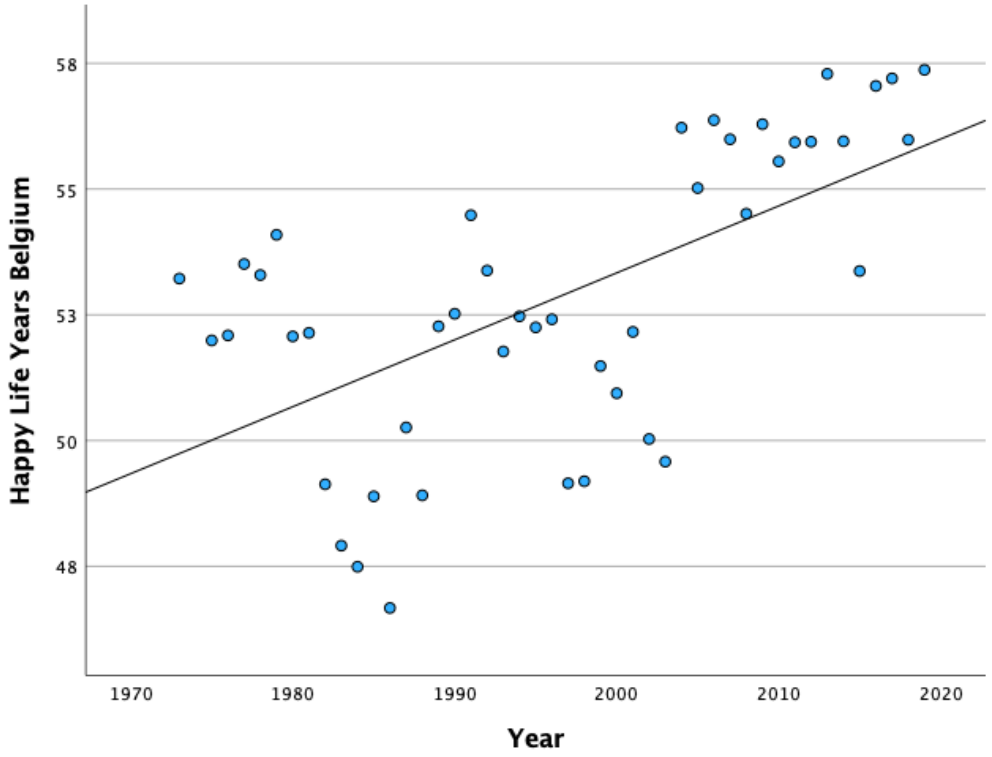
Variable code in data file Trends in nations: hly_at

Belgium



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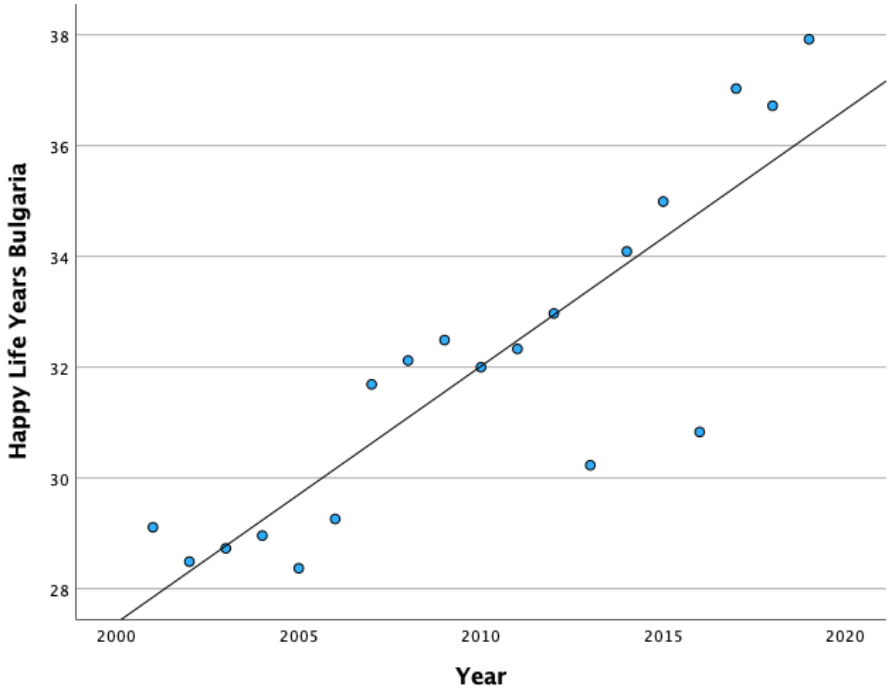
Variable code in data file Trends in nations: hly_be

Bulgaria



Based on life expectancy at birth and average response to survey question on life satisfaction.
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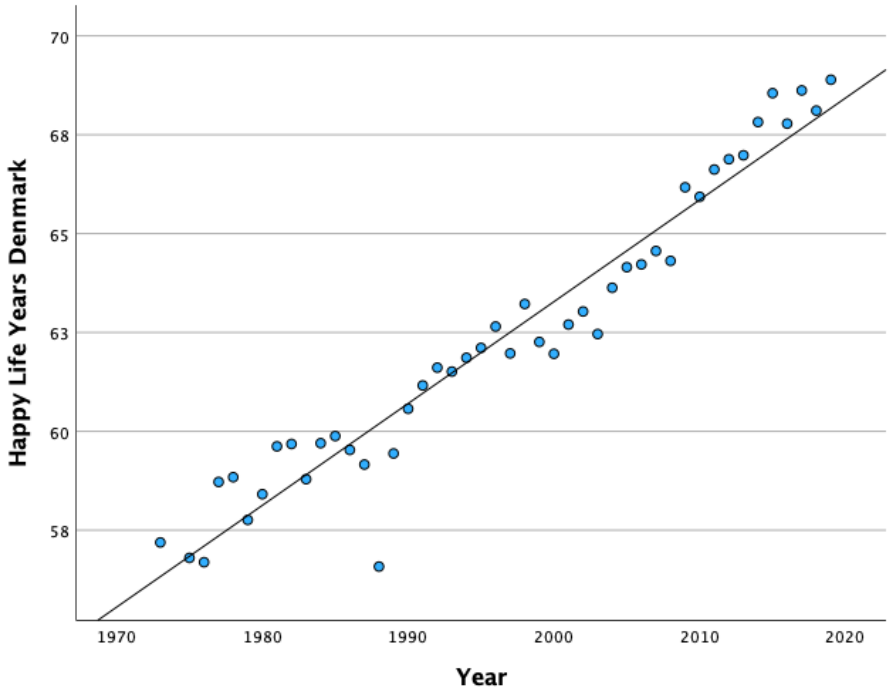
Denmark



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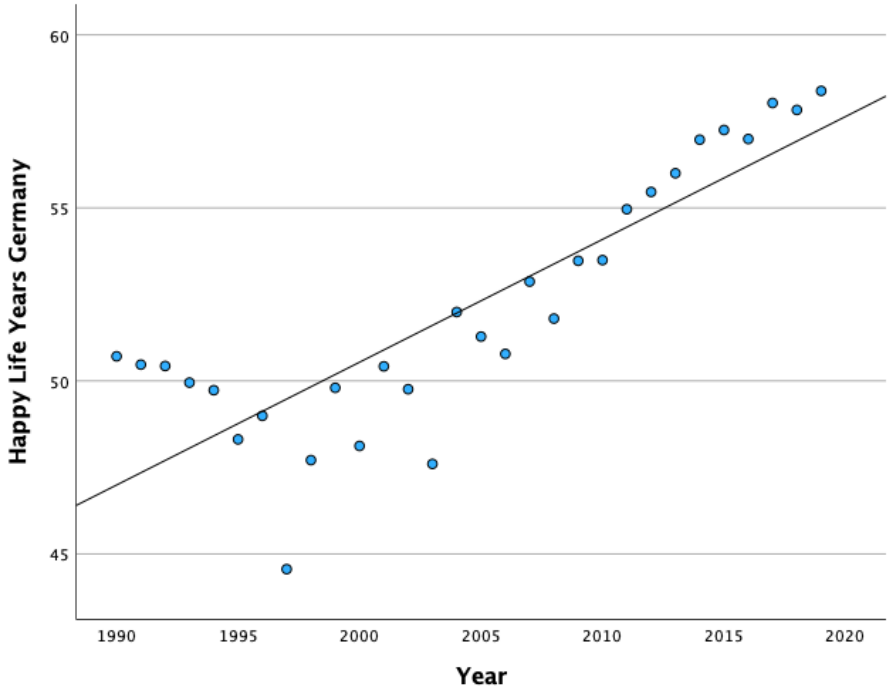
Germany



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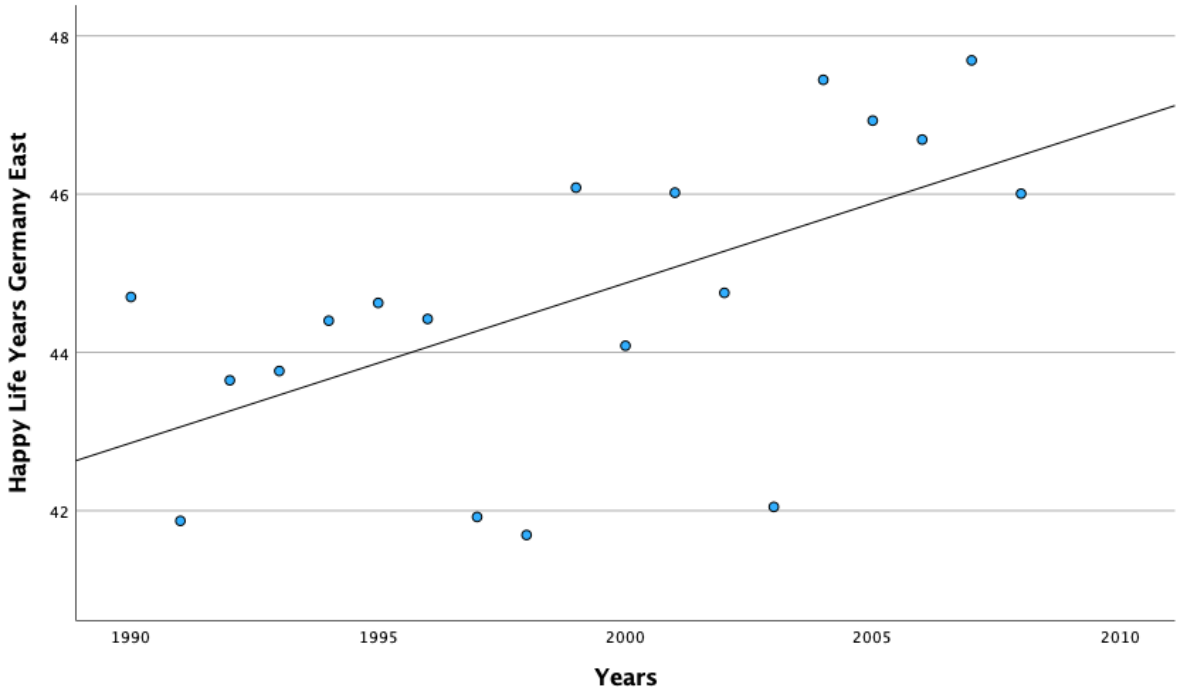
Germany East



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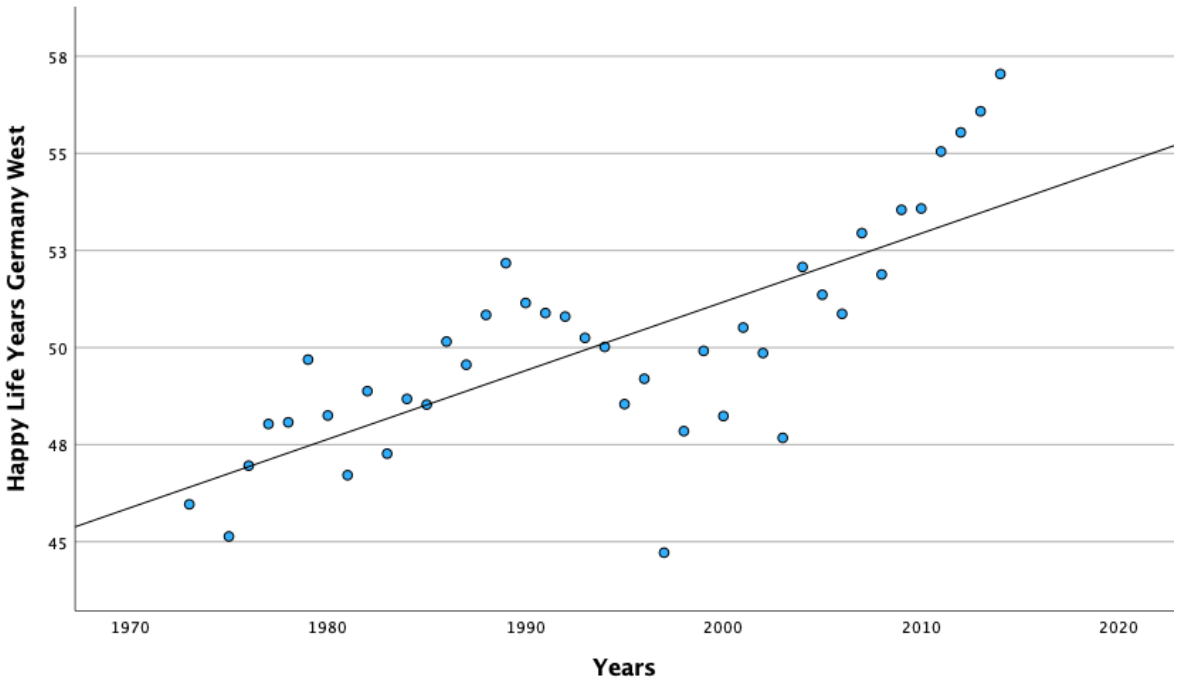
Germany West



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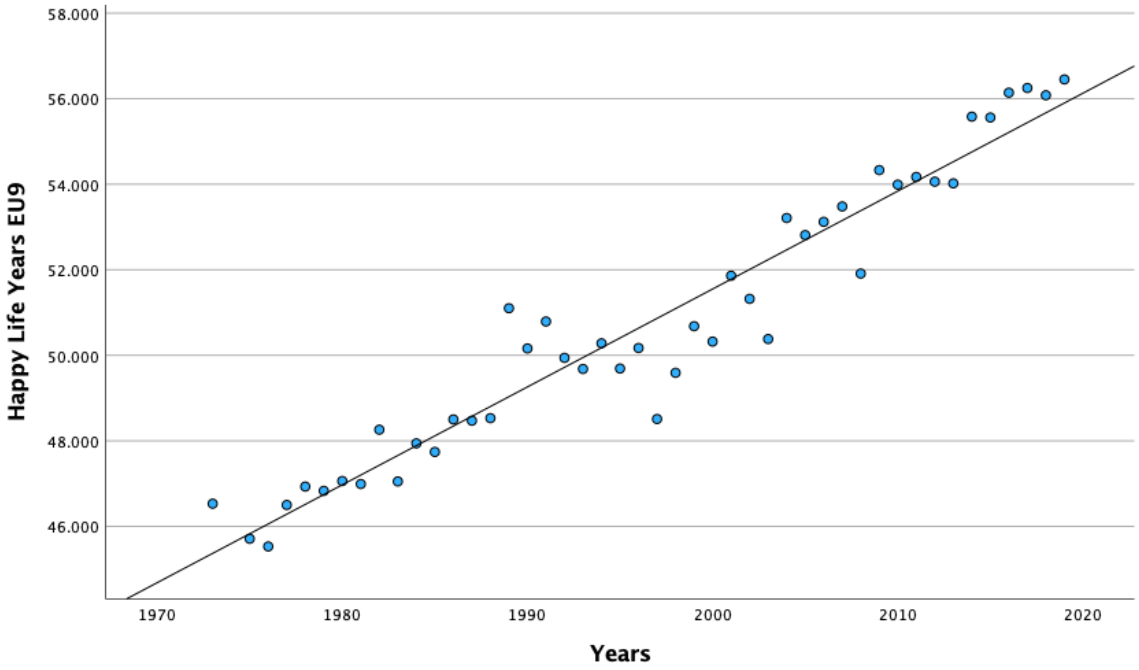
Variable code in data file Trends in nations: hly_dew

EU 9

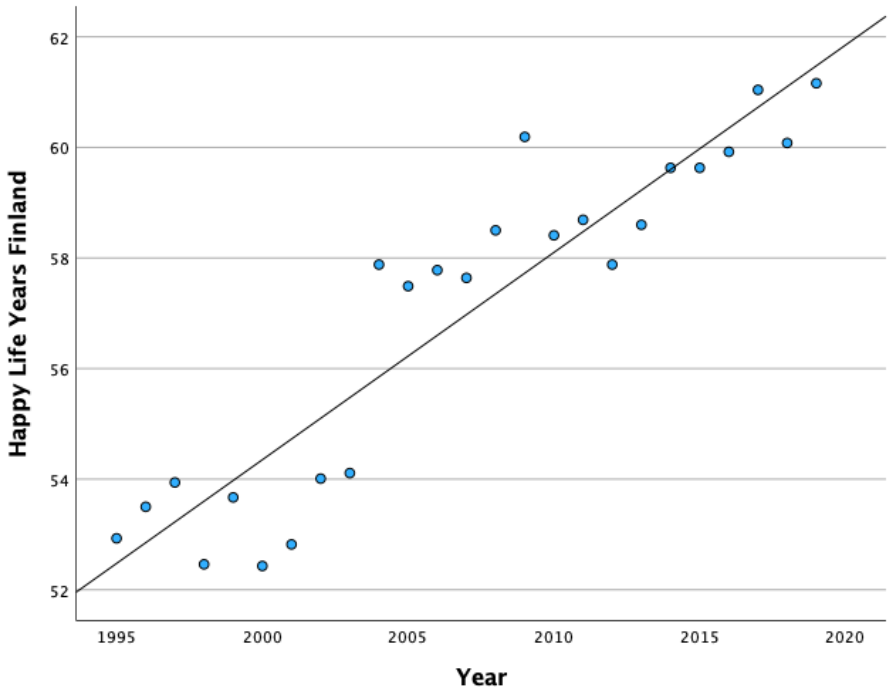


Based on life expectancy at birth and average response to survey question on life satisfaction.
Question code in collection of happiness measures: O-SLL-u-sq-v-4-b.
Variable code in data file Trends in nations: hly_eu9

Weighted average is calculated based on population size in 2015.

EU-9 (2015) = Belgium x 0.036 + Denmark x 0,018 + France x 0,213 + West-Germany x 0,260 + Ireland x 0,015 + Italy x 0,195 + Luxemburg x 0,002 + Netherlands x 0,054 + UK x 0,208

Finland



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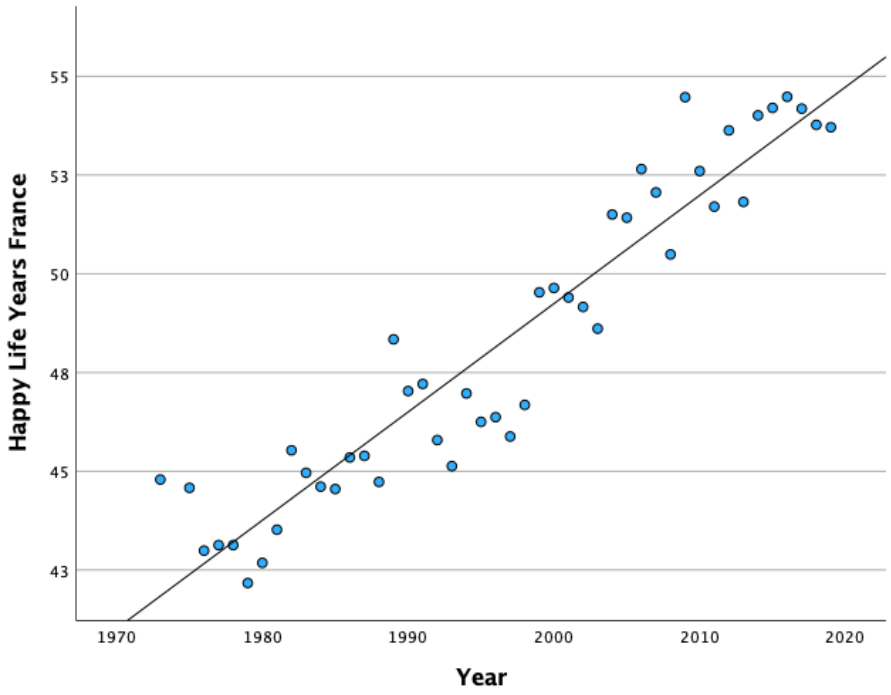
France



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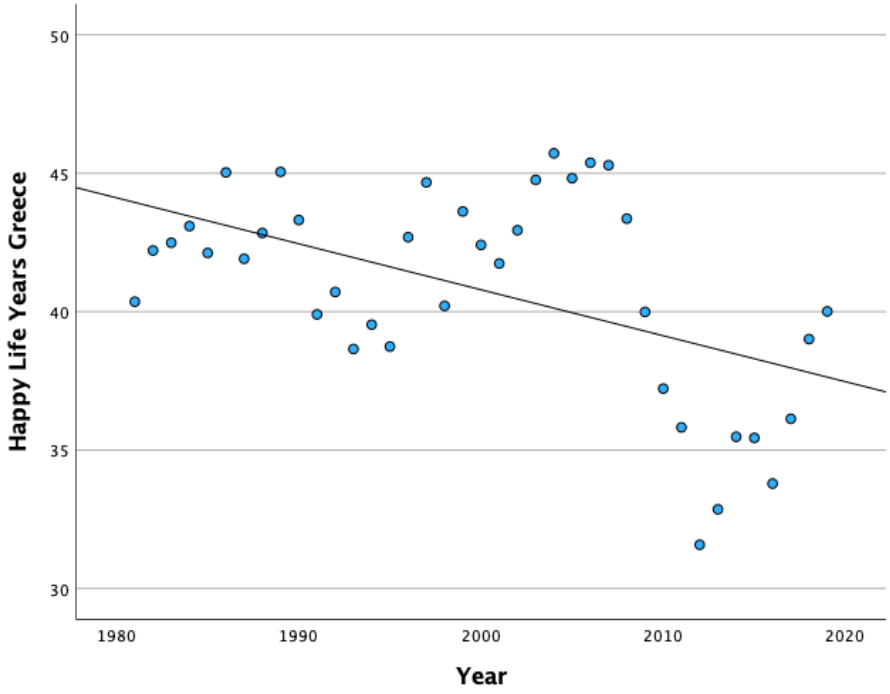
Greece



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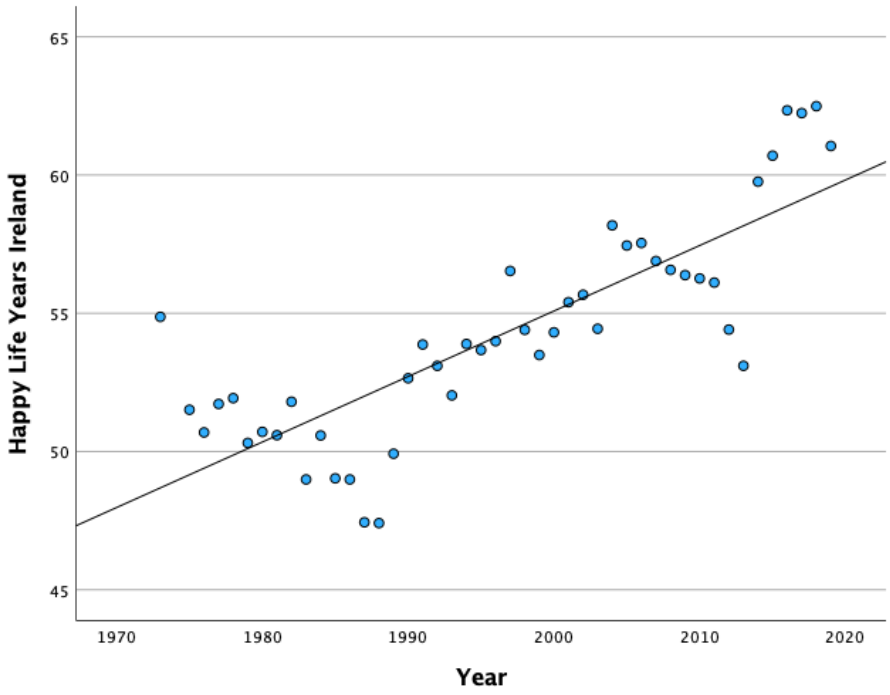
Ireland



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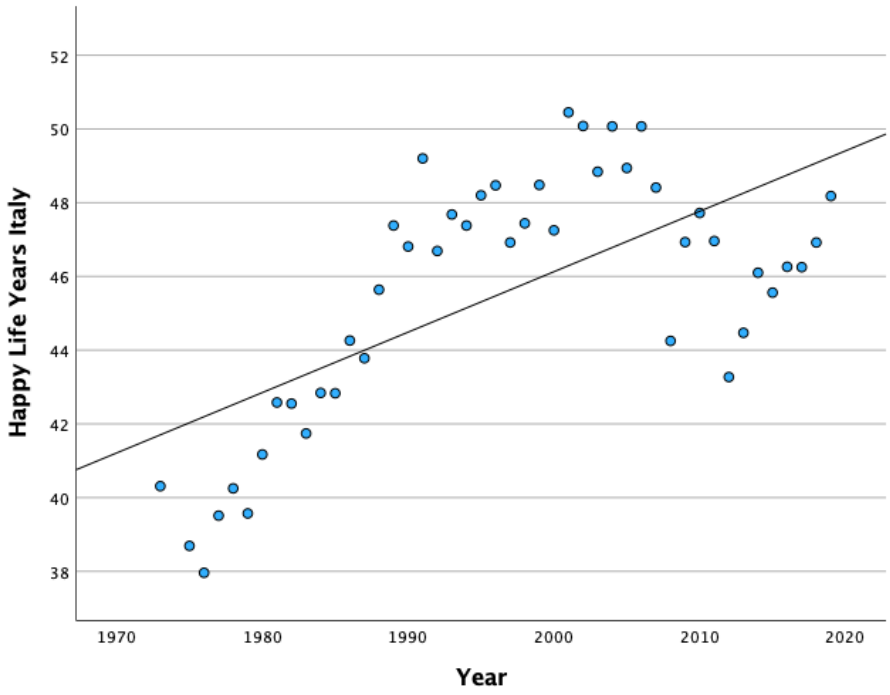
Italy



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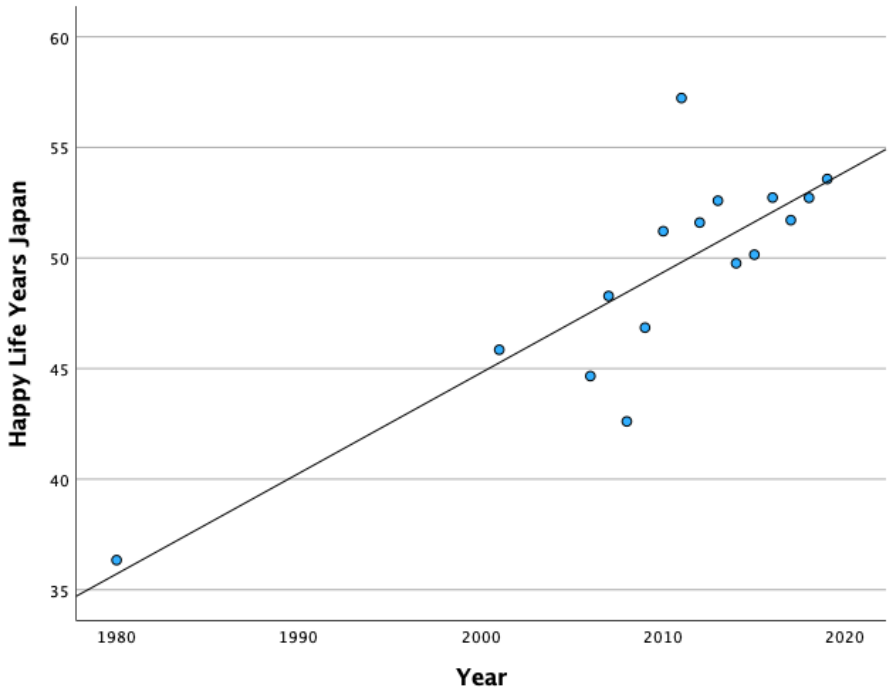
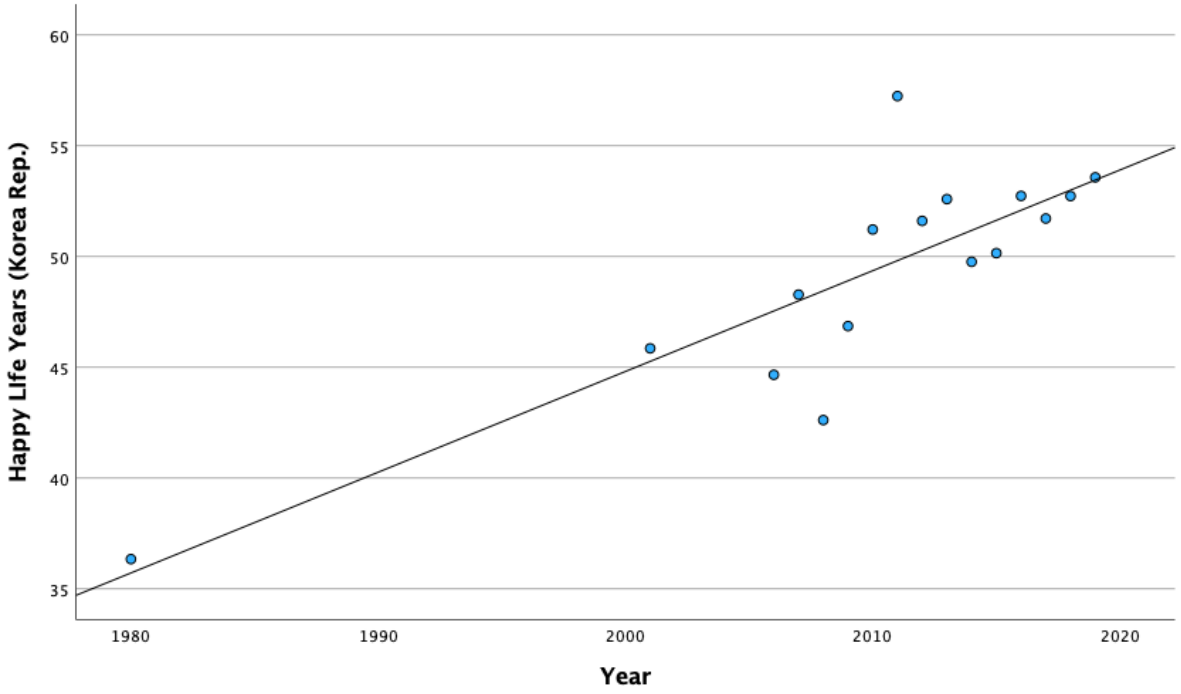
Japan



Based on life expectancy at birth and average response to survey question on life satisfaction.
Question codes in collection of happiness measures:
- O-SLL-u-sq-v-4 variants a, e, f
- SLW-c-sq-v-4-e
- O-SLW-u-sq-v-5 variants a, g, k, l, r

Variable code in data file Trends in nations: hly_jp

Korea (Rep.)



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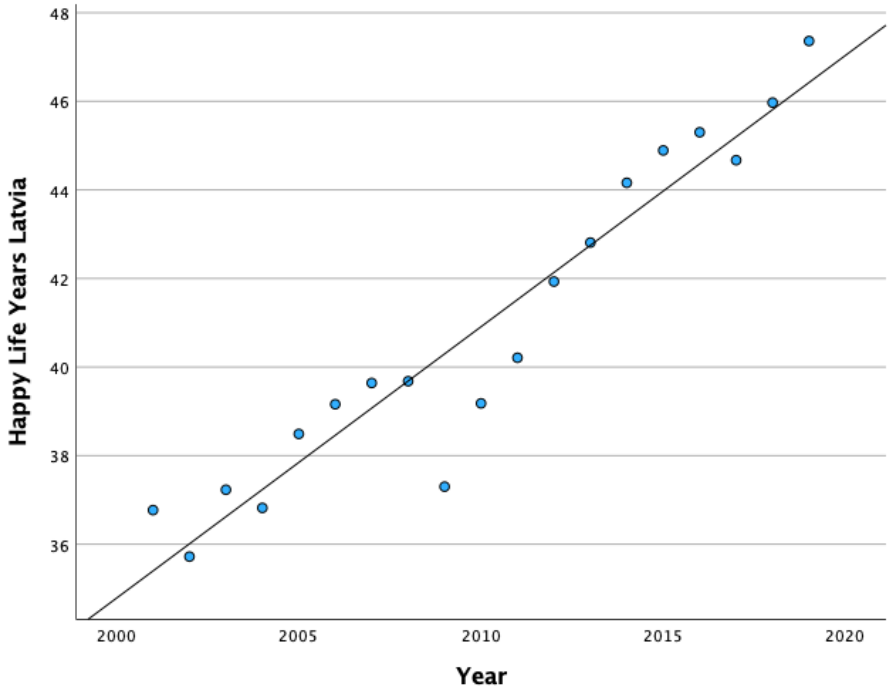
Latvia



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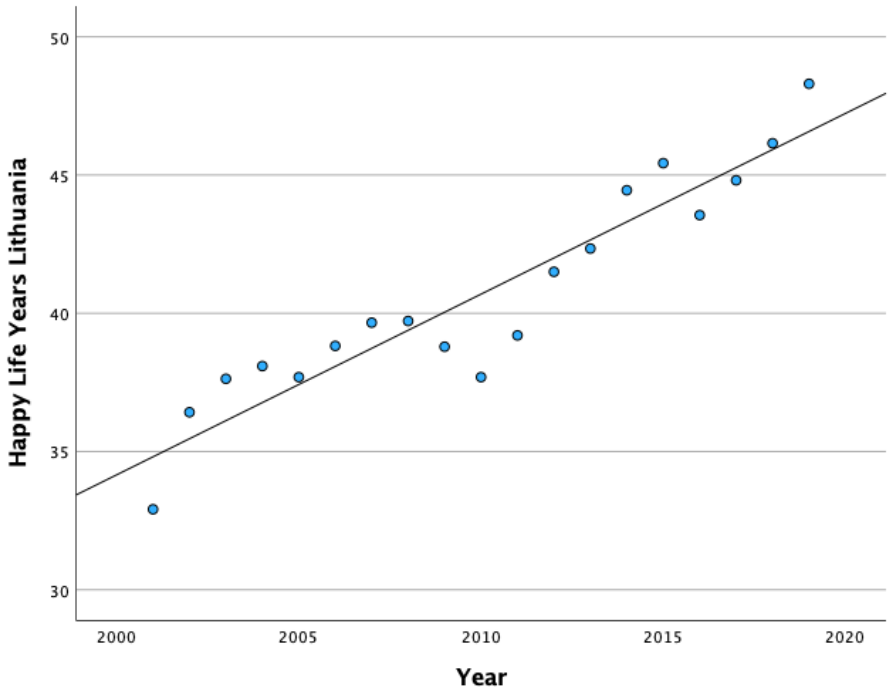
Lithuania



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Question code in collection of happiness measures: O-SLL-u-sq-v-4-b.
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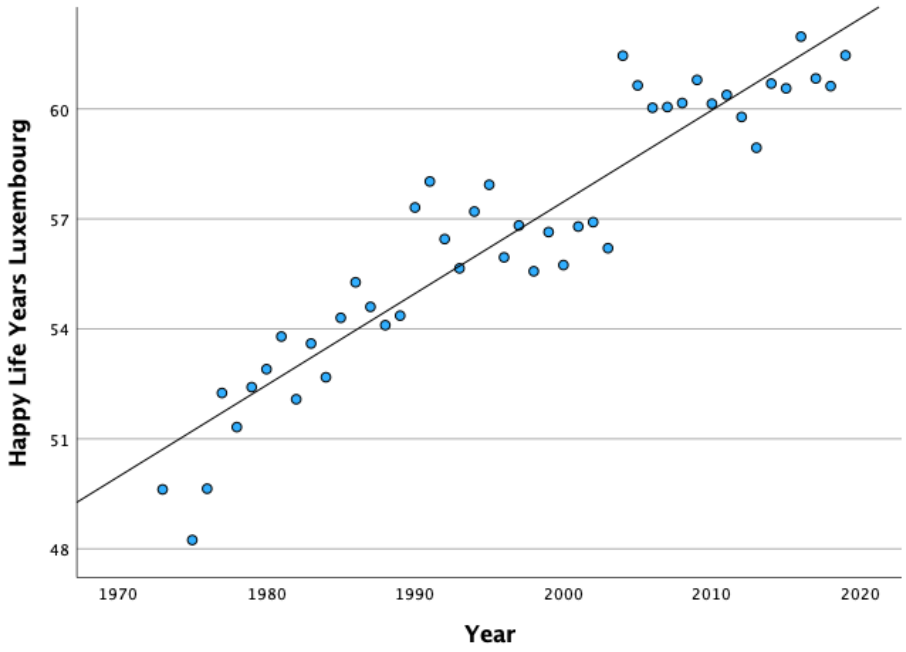
Luxembourg



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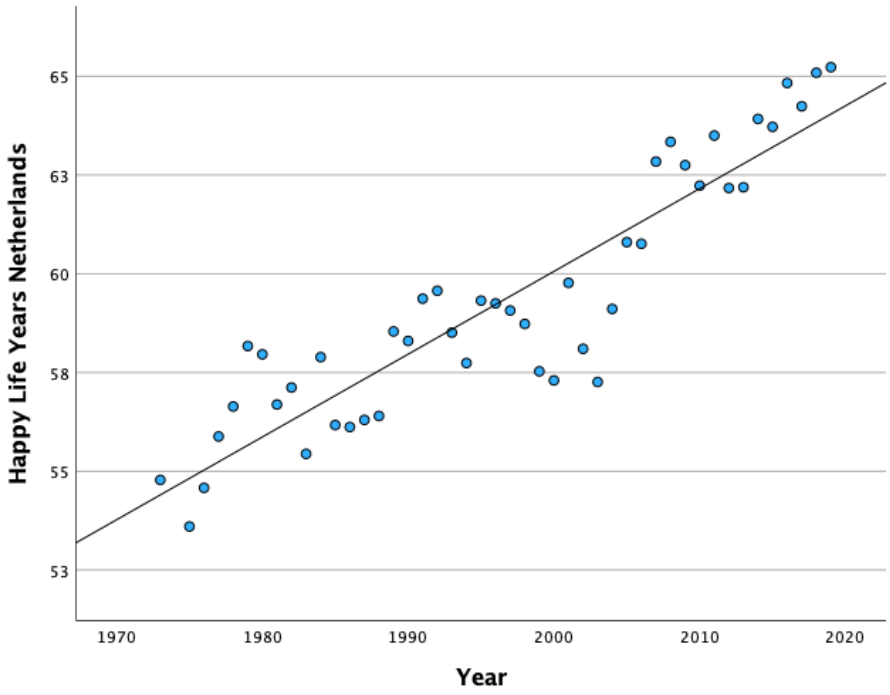
Netherlands



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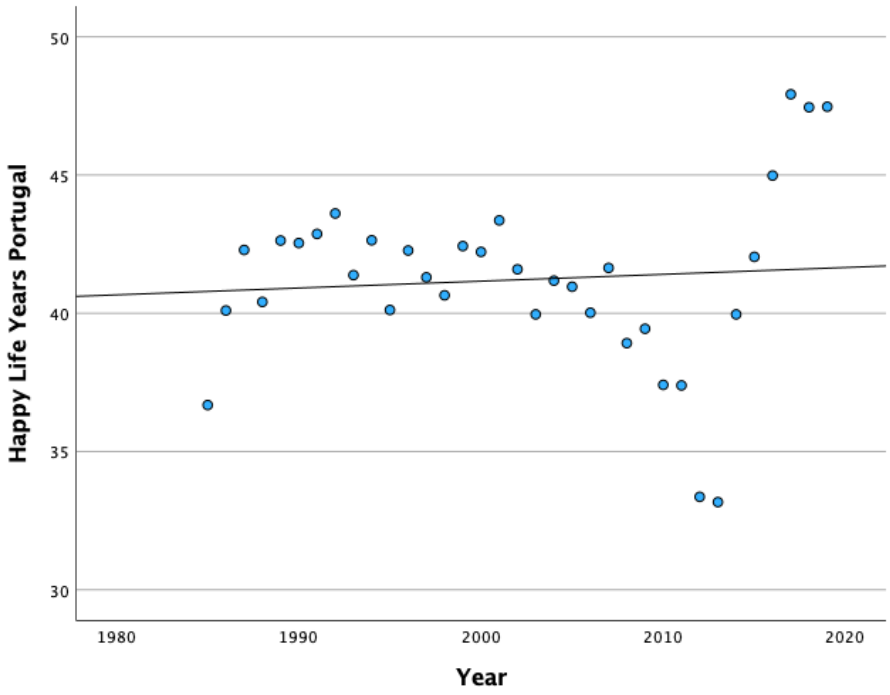
Portugal



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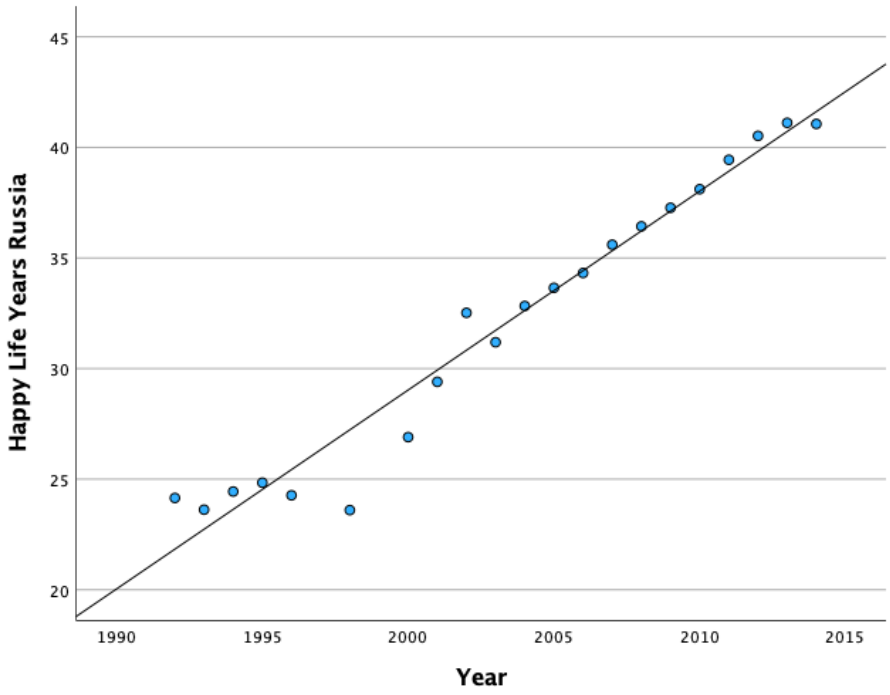
Russia



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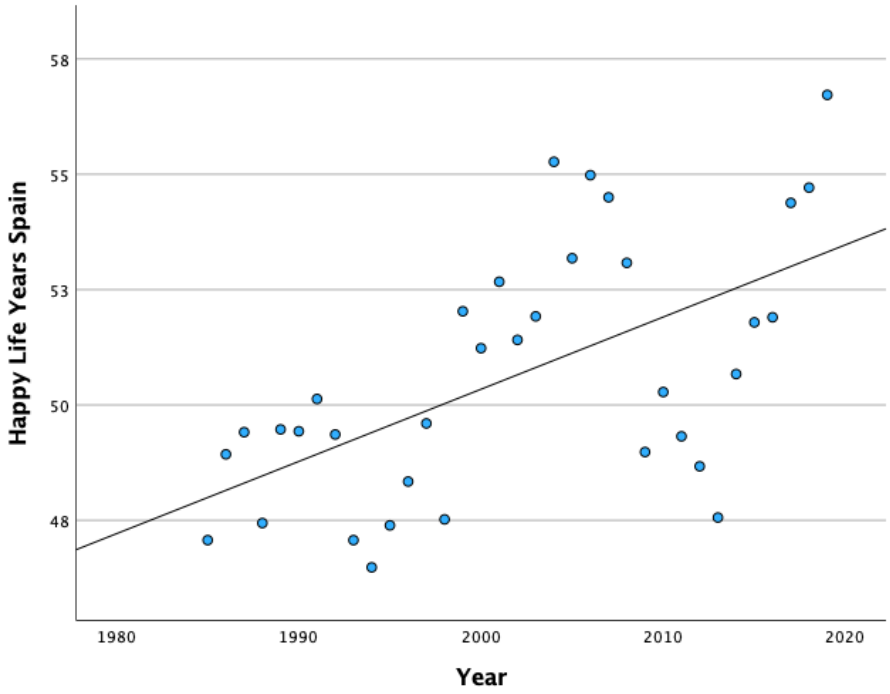
Spain



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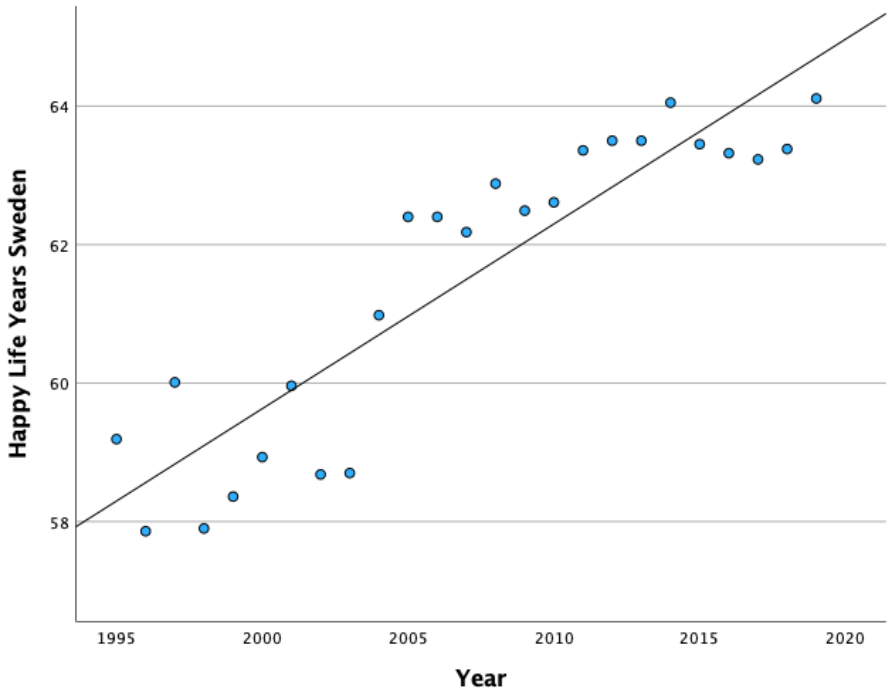
Sweden



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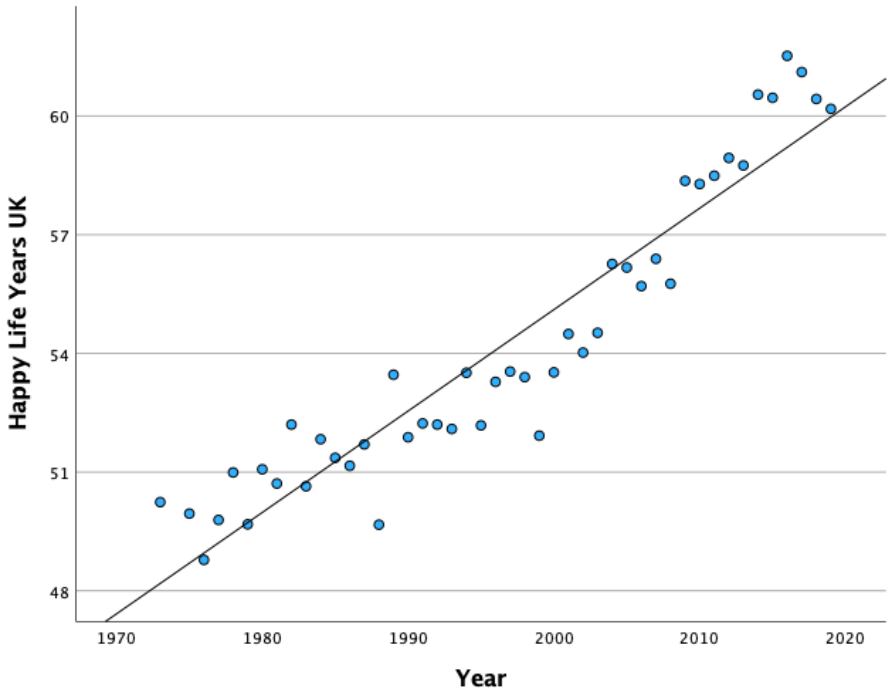
UK



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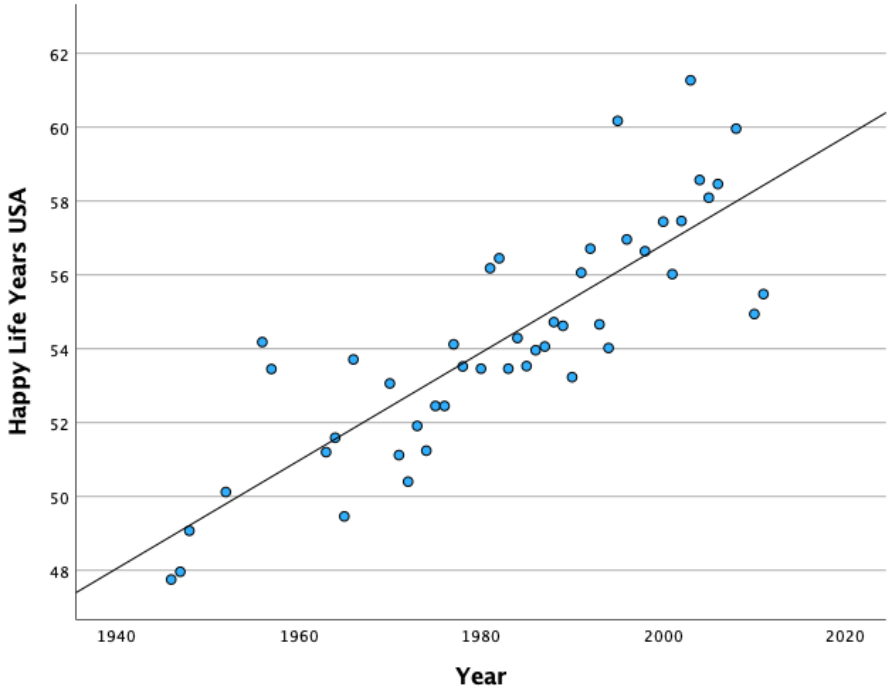
USA



Based on life expectancy at birth and average response to survey question on life satisfaction.
Question codes in collection of happiness measures:
- O-HL-c-sq-v-3-aa
- O-HL-g-sq-v-3 variants a, d, g, l, f
- O-HL-g-sq-v-4 variants a, aa, b, f
Variable code in data file Trends in nations: hly_us

Technical details

Variables

Description	*Code (1)*	*Nation*	*Since*
Computed from M-ls4_at and LE_at	HLY_at	Austria	1995
Computed from M-ls4_be and LE_be	HLY_be	Belgium	1973
Computed from M-ls4_bg and LE_bg	HLY_bg	Bulgaria	2001
Computed from M-ls4_de and LE_de	HLY_de	Germany (re-united)	1991
Computed from M-ls4_dee and LE_dee	HLY_dee	Germany East	1990
Computed from M-ls4_dew1990de and LE_dew	HLY_dew	Germany West	1973
Computed from M-ls4_dk and LE_dk	HLY_dk	Denmark	1973
Computed from M-ls4_eu7 and LE_eu7	HLY_eu7	EU 7	1973
Computed from M-ls4_eu8 and LE_eu8	HLY_eu8	EU 8	1973
Computed from M-ls4_eu9 and LS_eu9	HLY_eu9	EU 9	1973
Computed from M-ls4_eu12 and LS_eu12	HLY_eu12	EU 12	1985
Computed from M-ls4_fi and LE_fi	HLY_fi	Finland	1995
Computed from M-ls4_fr and LE_fr	HLY_fr	France	1973
Computed from M-ls4_gr and LE_gr	HLY_gr	Greece	1981
Computed from M-ls4_ie and LE_ie	HLY_ie	Ireland	1973
Computed from M-ls4_it and LE_it	HLY_it	Italy	1973
Computed from M-ls4_jp and LE_jp	HLY_jp	Japan	1958
Computed from M_ls45_jp and LE_jp	HLY_jp2	Japan	1958
Computed from M_ls_10 and LE_jp	HLY_jp3	Japan	1958
Computed from M_ls11_kr and LE_kr	HLY_kr	Korea (Rep.)	1981
Computed from M-ls4_lv and LE_lv	HLY_lv	Latvia	2001
Computed from M-ls4_lt and LE_lt	HLY_lt	Lithuania	2001

Computed from M-ls4_lu and LE_lu	HLY_lu	Luxembourg	1973
Computed from M-ls4_nl and LE_nl	HLY_nl1	Netherlands	1973
Computed from M-ls4_pt and LE_pt	HLY_pt	Portugal	1985
Computed from m_ls5_ru and LE_ru	HLY_ru	Russia	1989
Computed from M-ls4_sp and LE_sp	HLY_es	Spain	1985
Computed from M-ls4_se and LE_se	HLY_se	Sweden	1995
Computed from M-ls4_uk and LE_uk	HLY_uk	UK (Great Britain)	1973
Computed from m_hl3_us and LE_us	HLY_us	USA	1946
Computed from M-mix_us and LE_us	HLY_usmix	USA	1946

Life expectancy is estimated on the basis of civil registrations of birth and death. Source: Human Mortality Database: https://www.mortality.org, Human Development Reports: https://hdrstats.undp.org/en/indicators/69206.html and the World Health Organization WHO http://apps.who.int/gho/data/view.main.SDG2016LEXv?lang=en Human Mortality Database Human Development Report

Happiness assessed by means of surveys in general public samples. The trends presented here are based on standard surveys that used the same question over the years. The precise questions are reported in the technical remarks to Trend Report Average Happiness_1946_2021. The sorting of comparable question is explained here. Conversion of scores to a comparable 0-10 range is explained here.

Codes. The variables used here are also described at https://worlddatabaseofhappiness.eur.nl/related-sources/data-set-trends-in-nations/variables-in-data-file-trends-in-nations/data-trend-happy-life-years-in-nations

Change. The average annual change is expressed in a regression coefficient (B) that stands for the size of the slope of the linear regression line through the dots (averages) in the time charts. A positive coefficient denotes a rise in years lived happily and a negative coefficient a decline. A regression-coefficient of +.10 means a gain of one tens per year, so one full happy life-year every ten years.
The observed regression coefficient is based on a sample of assessments of happiness during this era and the coefficient in this sample may differ from the 'true' coefficient. The confidence interval gives an estimated range in which this true coefficient is likely to be included with 95% probability.

Time series This report limits to time series of at least 20 years involving at least 10

datapoints on happiness.

Data file The data are recorded in the Excel file TrendsInNations, which can be downloaded from https://worlddatabaseofhappiness.eur.nl/related-sources/data-set-trends-in-nations/variables-in-data-file-trends-in-nations/data-trend-happy-life-years-in-nations/

Cite as: Jansen. A. & Veenhoven. R. *Trend Happy-Life-Years in Nations 1946-2019: How long and happy people live* World Database of Happiness. Trend Report Happy Life Years 2023

Internet address: https://worlddatabaseofhappiness.eur.nl/wp-content/uploads/TrendReport-HappyLifeYears_2023.pdf