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Short Report

Happiness in pre-pandemic Europe: correlates of individual happiness prior to Covid

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Abstract

Objective: To identify levels and key correlates of happiness across Europe in 2018, prior to the Covid-19 pandemic.

Methods: We used data from the European Social Survey to determine levels of happiness in individuals (n = 49,419) from 29 European countries and identify associations between happiness and age, gender, satisfaction with income, employment status, community trust, satisfaction with health, satisfaction with democracy, religious belief and country of residence.

Results: In 2018, self-rated happiness varied significantly across the 29 European countries, with individuals in Denmark reporting the highest levels of happiness (8.38 out of 10) and individuals in Bulgaria reporting the lowest (5.55). Ireland ranked 11th (7.7). Happiness had significant, independent associations with younger age, satisfaction with health, satisfaction with household income, community trust, satisfaction with democracy and religious belief. These factors accounted for 25.4% of the variance in happiness between individuals, and, once they were taken into account, country of residence was no longer significantly associated with happiness.

Conclusions: Self-rated happiness varied significantly across pre-pandemic. At individual level, happiness was more closely associated with certain variables than with country of residence. It is likely that the Covid-19 pandemic had significant impacts on some or all of these variables. This highlights the importance of further analysis of correlates of happiness in Europe over future years, when detailed happiness data from during and after the pandemic become available.

Keywords: Europe; happiness; mental health; psychiatry; psychology

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Introduction

The Covid-19 pandemic increased symptoms of mental ill-health around the world, with multiple studies reporting rises in anxiety, depressive and eating pathology symptoms (Schafer *et al*., 2022). Less attention has been devoted to the effects of the pandemic on happiness or measures of positive well-being, as opposed to symptoms of mental illness. The *World Happiness Report 2021* reports that while there were significant increases in average levels of sadness and worry during the pandemic, overall life evaluations and happiness rankings appeared to remain stable (Helliwell *et al*., 2021). More work is needed, however, to determine the precise correlates of happiness before, during and after the pandemic, in order to understand trends better.

The fact that the *World Happiness Report 2021* documents relatively stable rankings of happiness despite Covid-19 is both surprising and interesting. Trends matter not only when they change, but also when they remain stable despite apparent reasons for change. To elucidate this further, we examine levels and correlates of happiness prior to the pandemic, to both understand the position in 2018 in greater detail and provide a basis for future comparative analysis, when more recent data become available.

A decade before Covid-19, we used data from the European Social Survey (ESS) to study social and psychological correlates of happiness across seventeen European countries (Doherty and Kelly, 2010). We found that self-rated happiness varied significantly, with individuals in Denmark reporting the highest levels of happiness and those in Bulgaria reporting the lowest. On multi-variable analysis, happiness was positively correlated with younger age, satisfaction with household income, being employed, high community trust and religious belief.

Correlates of happiness, however, change over time. We found that satisfaction with health had the strongest association with happiness in Ireland in 2003, 2005 and 2007, but that satisfaction with income increased in significance over time (Doherty and Kelly, 2013). By 2009, satisfaction with income had the strongest association with happiness in Ireland, relative to other variables studied. This was a time of rapid economic change in Ireland, which likely accounts for the close relationship between income and happiness at this point. Mean happiness in Ireland fell to 6.8 in 2012, consistent with Ireland's economic difficulties at that time, but increased to 7.2 in 2014, likely owing to economic recovery (Kelly, 2017).

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Against this background, this paper aims to identify levels and key correlates of happiness across Europe in 2018, just prior to the Covid-19 pandemic, in order to (a) better understand levels and correlates of happiness in Europe at that time, and (b) provide a comparative basis for analysis of levels and correlates of happiness in Europe over subsequent years, when detailed happiness data from during and after the pandemic become available.

Methods

This paper is based on data from the ESS which is an academically driven cross-national survey that has been conducted across Europe since its establishment in 2001. Every two years, face-to-face interviews are conducted with newly selected, cross-sectional samples of individuals aged 15 years or over who are residents in participating European countries (random probability sampling). The ESS measures the attitudes, beliefs and behaviour patterns of diverse populations in more than thirty nations.

Full ESS data are available on an open-access basis (www.europeansocialsurvey.org). We used Round 9 ESS data (2018) relating to 29 European countries for which full data were available for the relevant variables (ESS Round 9: European Social Survey Round 9 Data, 2018) (ESS Round 9: European Social Survey, 2021).

To measure happiness, each ESS respondent was asked 'Taking all things together, how happy would you say you are?' and rated happiness on a scale from 0 ('extremely unhappy') to 10 ('extremely happy'). To measure financial situation, each respondent was asked 'Which of the descriptions . . . comes closest to how you feel about your household's income nowadays?' and rated their financial situation on a scale from 1 ('living comfortably on present income') to 4 ('finding it very difficult on present income'). To measure employment status, each respondent was asked 'Have you ever been in paid employment or a paid apprenticeship for more than twenty hours or more per week for at least 3 months?' (yes/no).

Community trust was measured as the sum of answers to three questions: (1) 'Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?' where 0 means 'you can't be too careful' and 10 means 'most people can be trusted'; (2) 'Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?' where 0 means 'most people would try to take advantage of me' and 10 means 'most people would try to be fair'; and (3) 'Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?' where 0 means 'people mostly look out for themselves' and 10 means 'people mostly try to be helpful'. For ease of comparison with other scores (many of which were rated out of 10), the score for community trust was divided by 3 so as to be rated out of 10.

To measure satisfaction with health, each respondent was asked 'How is your health in general?' and rated their health on a scale from 1 ('very good') to 5 ('very bad'). In order to measure satisfaction with democracy, we used responses to the ESS question 'On the whole, how satisfied are you with the way democracy works in your country?' where 0 means 'extremely dissatisfied' and 10 means 'extremely satisfied'. In order to estimate level of religious belief, we used responses to the ESS question 'Regardless of whether you belong to a particular religion, how religious would you say you are?' where 0 means 'not at all religious' and 10 means 'very religious'.

Data were analysed using IBM SPSS Statistics (Version 28). Bi-variable correlations were calculated using Spearman's or Pearson's test (r), as appropriate. Multi-variable analysis was performed using linear regression analysis with happiness score as the outcome variable. Variables that were significantly associated with happiness on bi-variable testing were included as independent variables. We tested the model for multicollinearity, which is when two or more variables are so closely related to each other that the model cannot reliably distinguish the independent effects of each. To test for this, we calculated a 'tolerance value' for each independent variable; tolerance values below 0.10 would indicate significant problems with multicollinearity (Katz, 1999).

This study was performed in accordance with the Declaration of Helsinki (World Medical Association 2008). Ethical approval was not required by the local research ethics committee because this paper uses only publicly available, anonymised data. Data protection legislation was adhered to at all times.

Results

This study included 49,419 individuals from 29 European countries (Table 1). Over half (53.5%) of participants were female. Mean age was 51.1 years (standard deviation [SD]: 18.6). Mean happiness score was 7.42 (where 0 means 'extremely unhappy' and 10 means 'extremely happy'). Happiness differed across countries, with the highest mean happiness in Denmark (8.38) and the lowest in Bulgaria (5.55) (ANOVA: $F = 198.399$; $p < 0.001$).

Mean score for satisfaction with income was 1.96 (where 1 means 'living comfortably on present income' and 4 means 'finding it very difficult on present income'); the greatest satisfaction with income was in Denmark (1.31) and the lowest in Bulgaria (3.03) (Table 1). The percentage of respondents employed was 84.7%; the highest was in Latvia (95.9%) and the lowest in Portugal (63.7%). Mean score for community trust was 5.23 (where a higher score means greater trust, with a minimum possible score of 0 and maximum of 10); the highest was in Denmark (6.87) and the lowest in Serbia (3.56).

Mean score for satisfaction with health was 2.21 (where 1 means 'very good' and 5 means 'very bad'); the highest was in Latvia (2.73) and the lowest in Switzerland (1.81). Mean score for satisfaction with democracy was 5.26 (where 0 means 'extremely dissatisfied' and 10 means 'extremely satisfied'); the highest was in Switzerland (7.54) and the lowest in Bulgaria (2.92). Mean score for religious belief was 4.54 (where 0 means 'not at all religious' and 10 means 'very religious'); the highest was in Cyprus (6.90) and the lowest in Czechia (2.40).

Mean happiness score did not differ between women and men (7.42, SD 1.96 and 7.42, SD 1.90, respectively; $t = 0.205$, $p = 0.837$), but correlated negatively with age; that is, the greater the age, the lower the happiness ($r = -0.128$; $p < 0.001$). Mean happiness score was higher among the employed than the unemployed (7.44, SD 1.90 and 7.33, SD 2.07, respectively; $t = 4.156$, $p < 0.001$), and positively correlated with satisfaction with health ($r = -0.359$; $p < 0.001$), satisfaction with household income ($r = -0.381$; $p < 0.001$), community trust ($r = 0.308$; $p < 0.001$), satisfaction with democracy ($r = 0.268$; $p < 0.001$) and religious belief ($r = 0.029$; $p < 0.001$).

On multi-variable linear regression analysis, happiness had significant, independent associations with younger age, satisfaction with health, satisfaction with household income, community trust, satisfaction with democracy and religious belief (Table 2). Adjusted r^2 for the model was 25.4%; that is, these factors explained 25.4% of the variance in happiness levels between individuals. All tolerance values were greater than 0.10, indicating no significant problems with multicollinearity.

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Table 1. Levels of happiness and relevant social and psychological factors in twenty-nine European countries

			Happiness[a]		Age		Gender (% female)	Satisfaction with income[b]		Employment (% employed)	Community trust[c]		Satisfaction with health[d]		Satisfaction with democracy[e]		Religious belief[f]	
	Country	*n*	Mean	SD	Mean	SD		Mean	SD		Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	**Denmark**	1572	8.380	1.349	49.760	19.199	46.2	1.310	0.577	91.5	6.8769	1.43428	1.930	0.908	7.340	2.008	3.820	2.780
2	**Iceland**	861	8.290	1.296	50.180	18.526	51.1	1.390	0.615	89.4	6.8568	1.41645	1.930	0.900	6.000	2.248	4.970	3.054
3	**Finland**	1755	8.180	1.352	50.900	19.135	51.7	1.830	0.675	92.5	6.7435	1.39074	2.150	0.815	6.410	2.070	4.900	2.866
4	**Switzerland**	1542	8.180	1.498	47.500	18.852	49.7	1.630	0.790	89.5	6.0962	1.53238	1.810	0.766	7.540	1.741	4.690	3.055
5	**Netherlands**	1673	8.020	1.181	48.660	18.817	50.2	1.510	0.697	89.9	6.2079	1.28353	2.150	0.780	6.440	1.738	3.940	3.166
6	**Norway**	1406	7.990	1.542	47.100	18.203	44.7	1.480	0.656	84.7	6.6588	1.50046	1.970	0.874	7.200	2.007	3.210	2.749
7	**Sweden**	1539	7.880	1.507	52.530	19.183	49.2	1.410	0.633	92.2	6.4295	1.51765	1.930	0.838	6.430	2.198	3.070	2.850
8	**Germany**	2358	7.820	1.699	49.650	19.055	48.6	1.660	0.711	91.6	5.6762	1.67069	2.310	0.894	5.890	2.361	4.160	3.051
9	**Belgium**	1767	7.810	1.437	47.910	19.181	50.9	1.860	0.810	83.3	5.311	1.60101	2.080	0.798	5.400	2.160	4.590	3.218
10	**Austria**	2499	7.800	1.687	51.560	18.044	53.9	1.840	0.738	93.1	5.8445	1.92366	2.010	0.887	6.410	2.260	4.770	3.018
11	**Ireland**	2216	7.700	1.654	52.230	17.694	52.4	1.820	0.791	79	5.9172	1.74606	1.880	0.863	5.550	2.328	4.910	2.914
12	**Spain**	1668	7.690	1.762	48.520	18.677	49.2	1.940	0.811	81.4	5.0404	1.67435	2.280	0.889	4.790	2.490	3.950	3.091
13	**Slovenia**	1318	7.620	1.786	49.350	18.820	53.7	1.670	0.813	86	4.8715	1.92574	2.230	0.907	4.200	2.410	4.660	3.229
14	**Montenegro**	1200	7.610	1.964	48.420	17.341	49.3	2.150	0.892	58.6	3.6376	2.09282	2.120	0.976	4.100	2.678	4.980	2.873
15	**United Kingdom**	2204	7.570	1.891	52.400	18.376	54.7	1.720	0.771	91.7	5.5645	1.7543	2.230	0.968	4.990	2.454	3.610	3.074
16	**Portugal**	1055	7.480	1.959	52.360	18.311	57.8	2.190	0.849	63.7	4.57	1.752	2.470	0.910	5.100	2.300	5.370	2.934
17	**Croatia**	1810	7.430	2.261	51.160	17.989	59.8	1.880	0.832	79.4	4.2216	2.02412	2.150	1.074	3.290	2.344	5.630	3.212
18	**Cyprus**	781	7.340	1.937	54.440	18.648	53.1	2.270	0.930	78	3.9448	1.863282	2.010	0.979	4.560	2.304	6.900	2.533
19	**Estonia**	1904	7.330	1.812	50.730	19.312	56.0	2.120	0.716	94.7	5.5564	1.70566	2.510	0.872	5.320	2.358	3.270	3.086
20	**Poland**	1500	7.260	1.907	47.620	18.884	52.7	2.100	0.581	87	4.2974	1.91853	2.170	0.936	5.540	2.458	6.110	2.678
21	**France**	2010	7.240	1.767	52.370	18.970	54.6	1.960	0.780	91	5.1573	1.54753	2.360	0.905	4.330	2.479	4.720	3.484
22	**Latvia**	918	7.130	2.084	55.850	17.761	67.6	2.380	0.758	95.9	5.0496	1.97934	2.730	0.792	4.270	2.678	4.160	2.962
23	**Italy**	2745	7.030	1.865	51.280	19.429	52.7	2.100	0.838	68.1	4.6487	1.93713	2.170	0.875	5.120	2.142	5.590	2.824
24	**Czechia**	2398	7.000	1.773	49.040	17.561	56.3	2.190	0.809	86.7	5.0842	1.8727	2.200	0.911	5.480	2.360	2.400	2.813
25	**Lithuania**	1835	6.840	2.061	56.330	17.695	68.7	2.350	0.794	95.1	4.7528	2.13575	2.610	0.828	4.730	2.292	5.640	2.710
26	**Serbia**	2043	6.760	2.564	53.610	18.034	51.8	2.270	0.859	69.7	3.5614	2.32104	2.560	1.083	3.670	2.888	5.870	3.031
27	**Hungary**	1661	6.640	2.078	50.970	18.476	57.5	2.290	0.697	83.3	4.7965	2.04628	2.350	0.932	4.470	2.696	3.850	2.993
28	**Slovakia**	1083	6.610	2.018	55.050	17.036	53.6	2.300	0.795	66.4	4.1265	2.06897	2.420	0.933	4.340	2.339	6.020	3.082
29	**Bulgaria**	2198	5.550	2.455	54.550	18.121	55.6	3.030	0.848	87.6	3.7581	2.01586	2.430	0.950	2.920	2.069	4.230	2.617
	Overall	**49519**	**7.420**	**1.935**	**51.070**	**18.647**	**53.5**	**1.960**	**0.85**	**84.7**	**5.2298**	**2.03107**	**2.212**	**0.928**	**5.260**	**2.578**	**4.540**	**3.136**

[a]Happiness was rated on a scale from 0 to 10, in response to the question: 'How happy would you say you are?'; 0 means 'extremely unhappy' and 10 means 'extremely happy'.
[b]Satisfaction with income was rated on a scale of 1 to 4 in response to: 'Which of the descriptions . . . comes closest to how you feel about your household's income nowadays?' where 1 means 'living comfortably on present income' and 4 means 'finding it very difficult on present income'.
[c]Community trust was measured as the sum of answers to three questions: (1) 'Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?' where 0 means 'you can't be too careful' and 10 means 'most people can be trusted'; (2) 'Do you think that most people would try to take advantage of you if they got the chance, or would they try to be fair?' where 0 means 'most people would try to take advantage of me' and 10 means 'most people would try to be fair'; and (3) 'Would you say that most of the time people try to be helpful or that they are mostly looking out for themselves?' where 0 means 'people mostly look out for themselves' and 10 means 'people mostly try to be helpful'. For ease of comparison with other scores (many of which were rated out of 10), the score for community trust was divided by 3 so as to be rated out of 10.
[d]Satisfaction with health was rated on a scale of 1 to 5 in response to the question: 'How is your health in general', where 1 means 'very good' and 5 means 'very bad'.
[e]Satisfaction with democracy was rated on a scale of 1 to 10, in response to the question: 'On the whole, how satisfied are you with the way democracy works in your country?', where 0 means 'extremely dissatisfied' and 10 means 'extremely satisfied'.
[f]Religious belief was rated on a scale of 1 to 10 is response to the question: 'Regardless of whether you belong to a particular religion, how religious would you say you are?', where 0 means 'not at all religious' and 10 means 'very religious'.

Discussion

We found that, in 2018, self-rated happiness varied significantly between European countries, with individuals in Denmark reporting the highest levels of happiness and individuals in Bulgaria reporting the lowest. Happiness had significant, independent associations with younger age, satisfaction with health, satisfaction with income, community trust, satisfaction with democracy and religious belief.

Why do we need to understand trends? There is an inconclusive, but growing, literature examining the relationship between population happiness and mental illness, mental disorder and self-harm (Daly *et al.*, 2011). The Covid-19 pandemic has been linked with increased rates of certain mental illnesses in certain populations, but mental illness affects a minority of populations at any given time (O'Connor *et al.*, 2020). However, while it is

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Table 2. Correlates of happiness in 29 European countries: multi-variable linear regression model

Variable	Coefficient		
	β	SE	p
Country	0.005	0.001	0.239
Age	−0.011	0.000	0.020
Employment	−0.007	0.022	0.096
Satisfaction with health	−0.239	0.010	<0.001
Satisfaction with income	−0.243	0.010	<0.001
Community trust	0.151	0.004	<0.001
Satisfaction with democracy	0.117	0.003	<0.001
Religious belief	0.086	0.003	<0.001

SE: Standard error.
Adjusted $r^2 = 25.4\%$.

natural for researchers to explore increases in mental illness secondary to Covid-19, because it will affect quality-adjusted life years and disability-adjusted life years, it is likely that overall shifts in population wellbeing or happiness as a result of the pandemic will have a large aggregate effect across populations, given the numbers affected, and might affect risk of mental illness or self-harm.

Many of the findings in this study are consistent with our previous work linking happiness with younger age, satisfaction with income, being employed, high community trust and religious belief (Doherty and Kelly 2010). In the context of the Covid-19 pandemic, the *World Happiness Report 2021* found that trust was a key factor linking happiness and Covid-19 control (Helliwell *et al.*, 2021), which is consistent with our finding linking happiness with community trust prior to the pandemic.

Perhaps the most interesting finding in our study is that, after age, community trust, religious belief, and satisfaction with health, income and democracy were taken into account, country of residence was no longer significantly associated with happiness. Further work is needed to determine the precise manner in which different variables interact with country of residence to create the impression that it is country itself, rather than these other variables, that is linked with individual happiness.

Our study has various strengths and limitations. Strengths include the large sample size ($n = 49{,}419$); the number of European countries included ($n = 29$); and the use of data from a methodologically rigorous, well-validated social sciences survey (the ESS). We included a wide range of variables that are associated with happiness. ESS data are available on an open-access basis for other researchers to perform similar or related analyses.

Limitations of this study include the fact that it was a *post-hoc* analysis of the ESS dataset and therefore, like previous analyses, omits certain variables of possible relevance (e.g. genetic inheritance, childhood circumstances, etc.) (Kelly 2021). Our multi-variable model accounted for 25.4% of the variance in happiness between individuals, suggesting that most of the variance in happiness is attributable to factors other than those in our model.

Conclusions

Happiness varied significantly between countries across pre-pandemic Europe, with Ireland rated 11th happiest of 29 countries in the ESS. At individual level, happiness was more closely associated with age, community trust, religious belief, and satisfaction with health, income and democracy, than with country of residence. It is likely that the Covid-19 pandemic had significant impacts on some or all of these factors. As a result, there is a clear need for further analysis of levels and correlates of happiness across Europe in future years, when more detailed happiness data from during and after the pandemic become available.

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