Social and psychological correlates of happiness in 17 European countries

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Abstract

Objectives: Happiness has been associated with a number of individual and societal factors, but much of the individual-to-individual variation in happiness remains unexplained. The purpose of this paper is to examine a broad range of social and psychological correlates of self-rated happiness in Europe.

Methods: We used data from the European Social Survey to determine levels of happiness in individuals (n = 30,816) from 17 European countries and to identify associations between happiness and age, gender, family relationships, satisfaction with income, employment status, community trust, satisfaction with health, satisfaction with democracy, religious belief and country of residence.

Results: Self-rated happiness varies significantly between European countries, with individuals in Denmark reporting the highest levels of happiness and individuals in Bulgaria reporting the lowest levels. On multi-variable analysis, happiness is positively correlated with younger age, satisfaction with household income, being employed, high community trust and religious belief. Overall, these factors account for 22.5% of the individual-to-individual variation in happiness in Europe.

Conclusions: For the individual, this study highlights possible associations between happiness and the individual's attitudes towards various aspects of their personal, household and societal circumstances. For social policy-makers, this study suggests the potential usefulness of civic measures to increase community trust and social capital. Further studies of the inter-relationships between individual and community-level variables would assist in further explaining the variance in happiness between individuals and countries.

Key words: Happiness; Mental health; Psychology; Psychiatry; Europe.

Introduction

In 1948, the World Health Organisation (WHO) defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" and stated that this was "basic to the happiness, harmonious relations and security of all peoples".[1]

While happiness had been the subject of intense philosophical and literary speculation since the start of recorded history,[2,3] it was only in the latter part of the 20th century that this interest was translated into the systematic, scientific study of happiness.[4]

There is now a sizable body of evidence examining correlations between happiness and a range of biological, social and psychological factors including age, gender, genetic inheritance, family upbringing and various factors in adult life, such as financial situation and health. Current evidence suggests that happiness decreases with age until age 40 years and then increases again.[5,6] There is little difference between women and men.[7] Genetic inheritance has an effect: the correlation coefficient for happiness within twin pairs is 0.44 for monozygotic twins and 0.08 for dizygotic twins; this persists when twins are reared apart.[8,9] Family upbringing is also important: parental conflict has a strongly negative effect on the psychological well-being of children.[10]

Layard,[7] in a review of literature, identifies seven further factors in 'adult life' that appear to have significant effects on happiness: family relationships, financial situation, work, community and friends, health, personal freedom and personal values. There is also evidence to support the role of religion, with multiple studies showing a positive relationship between religious involvement and better mental health.[11]

The purpose of the present paper is to examine the social and psychological correlates of self-rated happiness in Europe, with a particular focus on country of residence as well as other factors that are already linked with happiness in the literature.

Method

This paper is based on data from the European Social Survey (ESS) which is an academically driven social survey designed to study attitudes, beliefs and behaviour patterns in European countries. The ESS is an ongoing, multi-centre, population-based project involving random sampling of individuals aged 15 years or over who are resident in participating European countries; detailed methodology is outlined by Jowell and Central Co-ordinating Team[12] and full ESS data are available on an open-access basis *(www.europeansocialsurvey.org)*. We used ESS data relating to 17 European countries for which full data were available for the relevant variables.

To measure happiness, each respondent was asked "How happy would you say you are?" and rated happiness on a scale from 0 ('extremely unhappy') to 10 ('extremely happy'). To measure quality of family relationships, each respondent

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Table 1: Levels of happiness and relevant social and psychological factors in seventeen European countries

Country	n	Happiness[a]		Age		Gender (% Female)	Family relationships[b]		Satisfaction with income[c]		Employment (% employed)	Community trust[d]		Satisfaction with health[e]		Satisfaction with democracy[f]		Religious belief[g]	
		Mean	SD	Mean	SD		Mean	SD	Mean	SD		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Bulgaria	1383	5.23	2.55	50.30	17.84	61.0	5.00	1.26	3.14	0.80	89.5	3.72	2.24	2.53	1.01	2.66	2.23	4.30	2.78
Portugal	2222	6.43	1.87	51.08	19.14	61.2	5.28	0.99	2.50	0.84	78.6	4.28	1.90	2.68	0.90	4.22	2.11	5.79	2.41
Slovakia	1722	6.52	2.01	43.43	17.89	51.6	4.98	1.19	2.43	0.84	71.7	4.38	1.96	2.34	0.93	4.78	2.26	5.90	2.96
Estonia	1515	6.78	1.96	47.41	19.30	56.5	5.05	1.09	2.29	0.74	77.6	5.21	1.88	2.59	0.82	4.87	2.28	3.58	2.88
Poland	1721	6.95	2.14	44.13	18.57	52.6	5.21	1.06	2.32	0.64	86.5	4.13	1.83	2.41	0.94	4.34	2.28	6.48	2.38
Germany	2870	7.01	1.95	48.27	18.08	50.7	4.91	1.07	2.00	0.76	90.5	5.14	1.74	2.33	0.93	5.01	2.47	3.86	3.04
France	1986	7.15	1.77	48.18	17.74	53.2	5.23	1.00	1.89	0.71	87.6	4.92	1.63	2.25	0.86	4.57	2.29	3.70	3.00
Slovenia	1471	7.24	1.99	46.76	18.88	54.8	5.20	1.00	1.70	0.75	74.8	4.50	2.00	2.44	0.92	4.61	2.31	4.69	2.98
Britain	2387	7.43	1.95	49.75	19.08	54.9	5.07	1.10	1.78	0.78	87.0	5.62	1.66	2.06	0.94	4.88	2.37	4.08	2.95
Spain	1876	7.63	1.66	46.09	18.91	51.9	5.40	0.92	1.87	0.75	84.6	4.99	1.50	2.34	0.90	5.92	1.98	4.58	2.89
Belgium	1798	7.67	1.58	46.19	18.64	53.3	4.47	1.10	1.87	0.84	86.9	5.12	1.70	2.08	0.80	5.49	2.08	4.92	2.95
Cyprus	985	7.69	1.73	49.90	17.49	52.4	5.19	0.91	2.06	0.75	82.3	4.34	1.92	1.91	0.88	6.63	2.16	7.02	1.97
Sweden	1926	7.89	1.54	47.21	18.70	50.6	5.25	0.78	1.52	0.70	91.3	6.31	1.57	1.95	0.85	6.35	2.13	3.55	2.77
Norway	1750	7.93	1.55	45.89	18.12	49.1	5.11	0.89	1.56	0.70	88.6	6.64	1.46	1.94	0.84	6.63	1.95	3.81	2.70
Finland	1896	8.00	1.42	48.74	19.02	51.5	5.00	0.84	1.92	0.64	91.8	6.44	1.48	2.19	0.81	6.76	1.87	5.29	2.64
Switzerland	1803	8.07	1.44	50.05	18.00	54.8	5.11	0.87	1.65	0.76	94.5	5.95	1.55	1.89	0.79	6.87	1.91	5.50	2.83
Denmark	1505	8.33	1.39	49.78	17.51	51.0	5.21	0.83	1.40	0.64	93.8	6.84	1.56	1.92	0.90	7.45	1.93	4.29	2.59
Total	30816	7.30	1.94	47.76	18.57	53.5	5.12	1.01	1.98	0.85	86.0	5.25	1.94	2.23	0.92	5.40	2.45	4.70	2.95

Notes

a Happiness was rated on a scale from 0 to 10, in response to the question\; 'How happy are you?'; 0 means 'extremely unhappy' and 10 means 'extremely happy.'

b Family relationship was rated on a scale from 0 to 6, in response to the question: 'How much of the time spent with family is enjoyable?'; 0 means 'none of the time' and 6 means 'all of the time.'

c Satisfaction with income was rated on a scale of 1to 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'.

d Community trust was measured as the sum of the answers to three questions, all on a scale of 1 to 10:

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; 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; 10 means most people would try to be fair.
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; 10 means people mostly try to be helpful.

For ease of comparison with other scores (most of which were rated out of 10), score for community trust was divided by 3 so as to be rated out of 10.

e Satisfaction with health was rated on a scale of 1 to 5 in response to the question: 'How is your health (meaning physical and mental health) in general', where 1means 'very good', 5 means 'very bad'.

f Satisfaction with democracy was rated on a scale of 1 to 10, in response to the question: 'And on the whole, how satisfied are you with the way democracy works in your country?', where 0 means 'extremely dissatisfied'; 10 means 'extremely satisfied'.

g 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'.

was asked "How much of the time spent with family is enjoyable?" and rated quality of family relationships on a scale from 0 ('none of the time') and 6 ('all of the time'). 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 "Are you in paid employment or an apprenticeship for more than twenty hours per week?" (yes/no).

Community trust was measured as the sum of answers to three questions:

- "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.'
- "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.'
- "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 (most of which were rated out of 10), 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 (meaning physical and mental health) in general?" and rated their health on a scale from 1 ('very good') to 5 ('very bad').

The ESS did not contain data about genetic inheritance or family upbringing, both of which have been related to happiness.[8-10] Neither were there data relating directly to personal freedom or personal values, both of which are associated with happiness.[7] In order to estimate personal freedom, however, 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

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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 the Statistical Package for Social Sciences, version 11.5 (SPSS Inc, Chicago, Illinois). 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 at the outcome variable. Predictor variables included age, gender and other variables significantly associated with happiness on bi-variable testing. Where a cluster of predictor variables were strongly correlated with each other ($r > 0.300$), the predictor variable with the closest correlation to the outcome variable (happiness) was included in the multi-variable model and the others were omitted.

Results

This study included 30,816 individuals from 17 European countries *(Table 1)*. A total of 53% of participants were female and mean age was 47.8 years. Mean happiness score was 7.3 (where 0 means 'extremely unhappy' and 10 means 'extremely happy'); the highest mean happiness score was in Denmark (8.3) and the lowest was in Bulgaria (5.2). *Table 1* shows levels of happiness, numbers of subjects, and relevant social and psychological factors, stratified by country, starting with the country with the lowest mean happiness score (Bulgaria).

Mean score for quality of family relationships was 5.1 (where 0 means that 'none of the time' spent with family is enjoyable and 6 means 'all of the time'); the highest score was in Spain (5.4) and the lowest was in Belgium (4.5). Mean score for satisfaction with income was 2.0 (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 (1.4) and the least satisfaction with income was in Bulgaria (3.1). The percentage employed was 86%; the highest was in Switzerland (94%) and the lowest was in Slovakia (72%). Mean score for community trust was 5.2 (where a higher score means greater trust, with a minimum possible score of 0 and a maximum of 30); the highest was in Denmark (6.8) and the lowest was in Bulgaria (3.7).

Mean score for satisfaction with health was 2.2 (where 1 means 'very good' and 5 means 'very bad'); the highest was in Portugal (2.7) and the lowest was in Switzerland (1.9). Mean score for satisfaction with democracy was 5.4 (where 0 means 'extremely dissatisfied' and 10 means 'extremely satisfied'); the highest was in Denmark (7.4) and the lowest was in Bulgaria (2.7). Mean score for religious belief was 4.7 (where 0 means 'not at all religious' and 10 means 'very religious'); the highest was in Cyprus (7.0) and the lowest was in Sweden (3.5).

For the sample as a whole ($n = 30,816$), the mean happiness score for men (7.3, SD 1.9) was marginally higher than that for women (7.3, SD 2.0; $t = 2.34$, $p = 0.019$). The mean happiness score amongst individuals who were employed (7.3, SD 1.9) was higher than that amongst individuals who were not employed (7.2, SD 2.0; $t = 4.04$, $p < 0.001$). Happiness had statistically significant positive correlations with satisfaction with household income ($r = 0.401$; $p < 0.001$), community trust ($r = 0.324$; $p < 0.001$), satisfaction with democracy ($r = 0.324$; $p < 0.001$), satisfaction with health ($r = 0.364$, $p < 0.001$) and religious belief ($r = 0.036$; $p < 0.001$). Happiness had statistically significant negative correlations with age ($r = -0.113$; $p < 0.001$) and proportion of time spent with family that was enjoyable ($r = -0.024$; $p < 0.001$).

Table 2: Predictors of happiness in 17 European countries: multi-variable linear regression model[1]

Variable	Coefficient		t	p
	β	SE[2]		
Age	-0.012	0.001	-20.201	< 0.001
Gender	0.009	0.021	0.428	0.669
Quality of family relationships	-0.002	0.001	-1.572	0.116
Satisfaction with household income	0.758	0.013	59.691	< 0.001
Employment	0.120	0.031	3.858	< 0.001
Community trust	0.077	0.002	41.650	< 0.001
Religion	0.064	0.004	18.015	< 0.001
Country	0.013	0.002	6.879	< 0.001
Constant	8.114	0.071	115.066	< 0.001

Notes: [1] Adjusted r2 = 22.5%; [2] Standard error

We performed multi-variable linear regression analysis in order to determine which of these variables were independent predictors of happiness. On bi-variable analysis, satisfaction with household income was strongly correlated with satisfaction with health ($r = 0.301$, $p < 0.001$) and democracy ($r = 0.309$, $p < 0.001$); because satisfaction with household income had a stronger correlation with happiness ($r = 0.401$; $p < 0.001$) than the other two variables had, satisfaction with household income was included in the multi-variable analysis and satisfaction with health and democracy were omitted.

The other predictor variables entered in the model were: age, gender, quality of family relationships, employment status, community trust, religious belief and country.

The multi-variable analysis showed that significant predictors of happiness include younger age, satisfaction with household income, being employed, high community trust, religious belief and country of origin *(see Table 2)*. Adjusted r^2 for the model was 22.5%; ie. these factors explained 22.5% of the variance in happiness levels between countries.

Discussion

Self-rated happiness varies significantly between European countries, with individuals in Denmark reporting the highest levels of happiness and individuals in Bulgaria reporting the lowest levels. On multi-variable analysis, happiness is positively correlated with younger age, satisfaction with household income, being employed, high community trust and religious belief. Overall, these factors account for 22.5% of the individual-to-individual variation in happiness seen in Europe.

Strengths of this study include the large sample size ($n = 30,816$); the number of European countries included

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(n = 17); and the use of data from a methodologically rigorous, well-validated social sciences survey.[12] The fact that data used in this paper are available on an open-access basis increases transparency and allows other researchers readily to follow-up this study with further analyses and re-analyses of their own *(www.europeansocialsurvey.org)*. Our study included a wide range of variables that have been associated with happiness in previous studies, such as age, gender, family relationships, satisfaction with income, employment status, community trust, satisfaction with health.

Limitations of this study include the fact that this was a *post-hoc* analysis of the ESS data-set, with the resultant possibility of bias. This analysis also excludes certain variables that have been or may be associated with happiness (eg. genetic inheritance, family upbringing, personal freedom, personal values, loneliness, social isolation), as well as certain location-specific factors (eg. climate, environmental and urban conditions) which may also have an impact on life satisfaction.[13]

We attempted to make up for the absence of data on 'personal freedom' by including 'satisfaction with democracy'; there are, however, no systematic data to support a strong relationship between these two variables and they are unlikely to be precisely inter-changeable.

The large sample size in this analysis increased the chances of findings that were statistically significant but small in magnitude; eg. the correlations between happiness and age, religious belief and quality of family relationships were statistically significant but of extremely small magnitude. Similarly, the associations between happiness and male gender and being employed, both identified on bi-variable testing, were also of extremely small magnitude; the association between happiness and male gender was not borne out on multi-variable testing. Finally, it is regrettable that data on Ireland are not included in this analysis and it is not clear to what extent these findings can be extrapolated to include Ireland.

One of the central methodological concerns in most studies of happiness is the method used to measure happiness. Our paper focuses on happiness rated as a single, self-rated item and it could be argued that the question used in the ESS ("How happy would you say you are?") lacks the sophistication to examine different dimensions of happiness or disparate aspects of individual wellbeing. In addition, this measure requires more study in terms of validity and reliability. Nonetheless, for the purposes of this study, this approach to measuring happiness has the merits of simplicity and directness, and permits the recording of happiness as a linear, as opposed to dichotomous, variable.

Conceptions of happiness are subject to change over time, and, in recent years, happiness is increasingly referred to in the literature as hedonic wellbeing, as opposed to eudaemonic wellbeing, which refers to a sense of fulfilment in life.[14,15] This development might serve to counterbalance a tendency, especially in earlier papers on happiness, to treat wellbeing as synonymous with happiness. Deci and Ryan[14] note that, since the publication of *Well-Being: The Foundation of Hedonic Psychology* by Kahneman *et al*[16] subjective well-being has been associated with the hedonistic approach to happiness, but go on to emphasise that both the hedonistic and eudaemonic approaches offer useful perspectives. Peiró,[17] in an analysis of happiness, satisfaction and socio-economic conditions in 15 countries reported significant differences between happiness and satisfaction, noting, for example, that unemployment was associated with satisfaction but not with happiness, and that income was associated with satisfaction and happiness, but its association with happiness was weaker.

Our findings confirm previously described associations between happiness and satisfaction with income, being employed, community trust, satisfaction with health and religious belief. While we did not examine 'personal freedom', which was previously associated with happiness,[7] we found a significant association between happiness and satisfaction with democracy. Our data did not show a strong relationship between happiness and gender, which is also consistent with previous studies.[7]

In contrast with previous studies,[5,6] we showed a steady decline in happiness with increasing age; ie. we did not identify an increase in happiness in older age. This result should, however, be interpreted with caution, as the effect of age was not especially strong in our study, and further study is needed in order to clarify this matter further. Our finding that happiness had a significant negative correlation with proportion of time spent with family that was enjoyable is somewhat counter-intuitive; it is worth noting that this correlation, although statistically significant, was weak in strength, and replication is required prior to further speculation on this point.

We found that country of residence was a significant predictor of happiness, with Denmark reporting the highest level of happiness and Bulgaria the lowest. This result is difficult to interpret with precision because 'country' is likely to be a composite variable, reflecting a range of factors that vary between countries. Nonetheless, it is noticeable that certain Scandinavian countries (Denmark, Finland, Norway, Sweden) were amongst the happiest and certain eastern European countries (Bulgaria, Slovakia, Estonia) amongst the least happy; this may reflect differing political arrangements, economic circumstances or social structures in these regions. This trend was not, however, absolute and further study is needed in order to confirm and explain this pattern.

Conclusions

Overall, our findings support the associations between happiness and a diverse range of factors related to community (eg. community trust), household (eg. household income) and the individual (eg. religious belief). Taken together, however, these factors account for only 22.5% of the variance in happiness between individuals; it is likely that other factors, such as genetic inheritance,[8,9] account for the remaining variance. Further analysis at the level of individual countries would help identify the extent to which the relationships between happiness and various specific factors hold true within each country and across different countries; eg. does the relationship between age and happiness vary between countries?

In addition, cross-sectional data such as these are ill-suited to determining directions of causality; eg. it is unclear if increased satisfaction with income results in increased happiness, or if increased happiness results in increased satisfaction with income. Further longitudinal studies would help elucidate these issues.

For social policy-makers, this study suggests associations between social circumstances (eg. community trust) and

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individual happiness; on this basis, efforts to improve community trust and build social capital merit close examination.[18,19] For the individual, this study similarly suggests associations between happiness and the individual's attitudes towards various aspects of their personal, household and societal circumstances (eg. satisfaction with income, satisfaction with democracy). While the directionality of these relationships may be difficult to determine, it is possible that at least some of these factors contribute to a 'virtuous cycle' of happiness with, for example, increased religious belief causing increased happiness; increased happiness causing increased community trust; and, in turn, increased community trust causing increased satisfaction with democracy.

Further exploration of the inter-relationships between these variables, possibly using multi-level analysis of individual and ecological variables, would undoubtedly assist in further explaining the variance in happiness between individuals and between countries.

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