

Addressing the Social Determinants of Subjective Wellbeing

Evidence from the ONS Opinions Survey

UK Data Service

Opinions and Lifestyle Survey User Meeting

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Overview

1. Introduction – policy, background, aims
2. Methods – survey, empirical strategy
3. Findings – descriptive stats, models, interactions
4. Conclusions – development of policy, future directions



BACKGROUND



Context / history...

1994	United Nations publishes first Human Development Index
2000	First issue of the Journal of Happiness Studies is published
2002	UK Cabinet Office Report, Life Satisfaction: the State of Knowledge and Implication for Government
2007	European Commission initiates the 'Beyond GDP' project
2008	President Sarkozy est. Commission on the Measurement of Economic Performance & Social Progress
2009	OECD starts Better Life Initiative and Work programme on measuring wellbeing and progress
2010	The US government est. Commission on Key National Indicators, allocating \$70 million to the project
2010	UK ONS begins a programme to develop statistics to measure national wellbeing
2011	US National Research Council, the National Institute on Aging and the UK Economic and Social Research Council jointly support an expert panel on subjective wellbeing and public policy.
2011	UN General Assembly Resolution on Happiness 65/309
2012	UN High-Level meeting on happiness and wellbeing. Release of the UN World Happiness Report



🌟 Some quotes...

- Joseph Stiglitz (2008) “GDP tells you nothing about sustainability”
- Amartya Sen (2010) “HDI is people-centered ... GDP is commodity-centered”
- David Cameron (2006) “It's time we admitted that there's more to life than money, and it's time we focused not just on GDP but on GWB - general wellbeing”

http://www.beyond-gdp.eu/key_quotes.html



🔥 Aim of study:

- examine and report on the personal/household characteristics associated with low levels of well-being in British population using data from Opinions Survey



ONS average ratings

		Life satisfaction	Worthwhile	Happy	Anxious
Sex	Men	7.3	7.5	7.3	3.3
	Women	7.5	7.8	7.5	3.6
Age	16 to 19	7.8	7.8	7.8	3.7
	20 to 24	7.4	7.7	7.3	3.3
	25 to 29	7.1	7.4	7.2	3.6
	30 to 34	7.4	7.5	7.4	3.3
	35 to 39	7.0	7.5	7.1	3.7
	40 to 44	7.3	7.6	7.2	3.7
	45 to 49	7.2	7.5	7.2	3.3
	50 to 54	7.4	7.7	7.2	3.5
	55 to 64	7.4	7.7	7.4	3.6
	65 to 74	7.9	7.9	7.8	3.0
	75 or over	7.7	7.4	7.6	3.1
	Health	Very good	7.9	8.1	7.9
Good		7.4	7.6	7.4	3.4
Fair		6.8	7.0	6.7	4.0
Bad		5.5	6.0	5.5	5.1
Very Bad		4.2	4.6	4.8	5.0
Illness/disability	Yes	7.0	7.2	7.0	3.8
	No	7.6	7.8	7.6	3.3

Source: ONS (n.d.), Reference tables for investigation into subjective well-being data from the ONS Opinions Survey: File: 'referencetables_tcm77-245640.xls', Table 2.

METHODS



The ONS Opinions Survey

- Allows reliable information on topics of immediate policy interest
- Random probability stratified sample, region, age etc.
- Royal Mail's small-user postcode address file to draw the sample from across Great Britain
- Participation is purely voluntary and interviewers only call at addresses where no refusal has been made to the advance letter
- The interviewer uses a Kish grid to randomly select one of the adults (aged 16 and over) living within the household for interview
- All interviews are carried out face-to-face (except for a very small number of telephone reissues) by ONS trained interviewers
- The final achieved sample is around 1,100 adults (aged 16 and over) per month with an approximate overall survey response rate of around 60%



Wellbeing Module

- Data here taken from UK Data Archive Study Number 6893 ONS Opinions Survey, Well-Being Module, April, June, July, August and September, 2011 which provides a combined sample size of around 4,200 adults in Great Britain aged 16 and above
- All calculations and estimates in this study are weighted
- By weighting the estimates, we ensure that they are more representative of the population but with the assumption that those people who did not respond to the survey would provide on average the same ratings of subjective wellbeing as those that do
- There are two weights in the Opinions Survey
 - a weight that adjusts for the differences in the probability of an individual being selected due to different household sizes and sample design
 - a weight that calibrates the sample so that it is representative of the overall population levels in Great Britain by age, sex and region

Subjective well-being questions

MCZ_1

HOverall, how satisfied are you with your life nowadays?
i@|Where nought is 'not at all satisfied' and 10 is 'completely satisfied'.

(0)	0
(1)	1
(2)	2
(3)	3
(4)	4
(5)	5
(6)	6
(7)	7
(8)	8
(9)	9
(10)	10

MCZ_3

HOverall, how happy did you feel yesterday?
i@|Where nought is 'not at all happy' and 10 is 'completely happy'.

(0)	0
(1)	1
(2)	2
(3)	3
(4)	4
(5)	5
(6)	6
(7)	7
(8)	8
(9)	9
(10)	10

MCZ_2

HOverall, to what extent do you feel that the things you do in your life are worthwhile?
i@|Where nought is 'not at all worthwhile' and 10 is 'completely worthwhile'.

(0)	0
(1)	1
(2)	2
(3)	3
(4)	4
(5)	5
(6)	6
(7)	7
(8)	8
(9)	9
(10)	10

MCZ_4

HOn a scale where nought is 'not at all anxious' and 10 is 'completely anxious',
overall, how anxious did you feel yesterday?

(0)	0
(1)	1
(2)	2
(3)	3
(4)	4
(5)	5
(6)	6
(7)	7
(8)	8
(9)	9
(10)	10

Source: ONS (2011), National Statistics Opinions Survey: Technical Report, Newport, Wales: ONS

🔥 Dependent variables (global measures of subjective well-being)

Variable	Variable label	Monitoring question
MCZ_1	Life satisfaction	Overall, how satisfied are you with your life nowadays?
MCZ_2	Worthwhile	Overall, to what extent do you feel the things you do in your life are worthwhile?
MCZ_3	Happy	Overall, how happy did you feel yesterday?
MCZ_4	Anxious	Overall, how anxious did you feel yesterday?

Source: ONS (2011), National Statistics Opinions Survey: Technical Report, Newport, Wales: ONS



Independent variables

Variable	Description	Specification in the study
AGEX	Age	Age may help to explain wellbeing in the British population. Age recoded 6 groups.
RSEX	Sex/gender	Sex/gender may help to explain wellbeing in the British population.
Ethnicity	To which of these groups do you belong?	Ethnicity may help to explain wellbeing. Responses to this question are recoded into two groups: 'white' and 'black and minority ethnic' (BME).
DVILO4a	DV for ILO in employment (4 categories)	Being in work may help to explain wellbeing, here we have four categories (i) Employed (ii) Unpaid family workers (iii) Unemployed (iv) Economically inactive
sumgross	Gross Annual Income	Income may help to explain wellbeing. Responses recoded into income quintiles.
Ten1	Housing tenure	Three groups (i) home-owner inc. mortgage (ii) private renter (iii) social housing (housing association or local authority housing)
DeFact1	Marital status (grouped)	Household composition may help to explain wellbeing. Responses to this question are recoded into two groups: -Couple (includes married, cohabiting, civil partner) -Single (living alone, inc. Divorced, separated, widowed).
QHealth	How is your health in general?	Self-reported health may help to explain wellbeing. There are five categories: 'very good', 'good', 'fair', 'bad' and 'very bad'.
LSIII	Have any long-standing illness, disability or infirmity?	Long-standing illness and disability may help to explain levels of wellbeing in the British population. Responses to this question are recoded into two groups: 'yes' and 'no'.
highed4	What is the highest level of qualification?	Education—attainment—may help to explain wellbeing in the British population. There are three categories: 'Degree or equivalent', 'Below degree level', 'None (no qualifications)'.
NSECAC3	Socio-economic Classification (NS-SEC)	Social class and socio-economic position may help to explain patterns of wellbeing (we use the standard NS-SEC 8 classification).
GorA	Government Office Region	Wellbeing in Britain may vary by geography and region of residence.

Source: ONS (2011), National Statistics Opinions Survey: Technical Report, Newport, Wales: ONS

Logistic regression

- In the study persons scoring 4 or below on the question about 'happiness', for instance, are coded as (1) 'unhappy', while those scoring 5 or above are coded as (0) 'happy'
- This dichotomy coding was repeated for the other measures of SWB: 'anxiety', 'dissatisfaction' and feeling that life is 'unfulfilled'
- Respondents who did not answer the survey questions on wellbeing are not included in this study
- Logistic regression ideally suited to situations where a continuous response variable, such as SWB, has been categorized as a dichotomy using binary coding
- Logistic regression is a statistical technique that belongs to the theoretical framework of the General Linear Models (GLM)



Generalised linear models

Response variable Explanatory variables	Binary	Nominal with more than two categories	Continuous
Binary category	Logistic regression (gender) Log linear models 2x2 contingency tables	Logistic regression Log linear models Contingency tables	t-tests Analysis of variance
Nominal with more than two categories	Logistic regression (region, income group) Log linear models	Logistic regression Log linear models Contingency tables	Analysis of variance
Continuous	Logistic regression (age, income) Discriminant analysis		Multiple regression
Some continuous and some categorical			Analysis of covariance Multiple regression

Source: Adapted from Dobson (1990: 3).

Notation

$$P(Y) = \frac{1}{1 + e^{-(b_0 + b_1 X_1)}}$$

$P(Y)$ is the probability of Y occurring, e is the base natural logarithm; there is a constant (b_0) a predictor variable (X_1) and a coefficient (or weight) attached to the predictor (b_1).



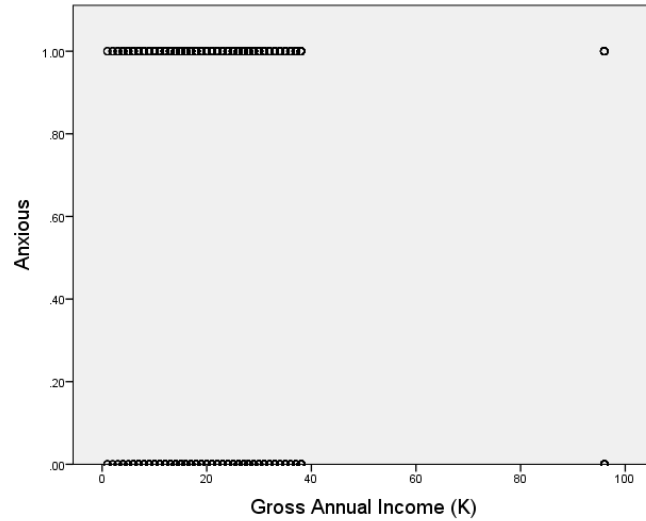
Logistic regression

The equation is extended to include more than one predictor, and when there are several predictors the equation becomes:

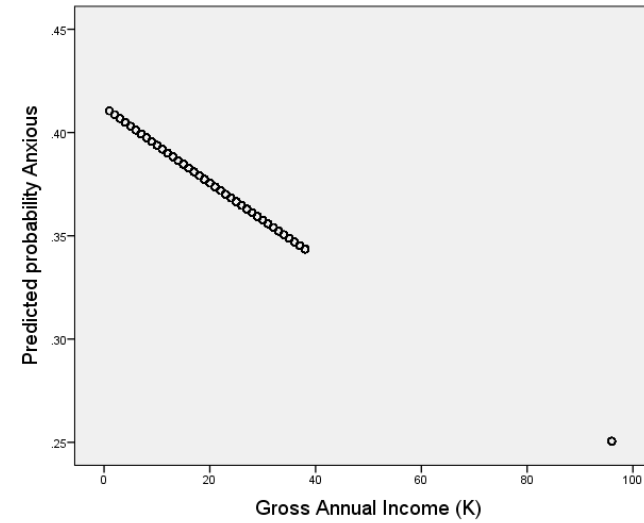
$$P(Y) = \frac{1}{1 + e^{-(b_0 + b_1 X_1 + b_2 X_2 + b_3 X_3)}}$$



Plots



Scatter-plot

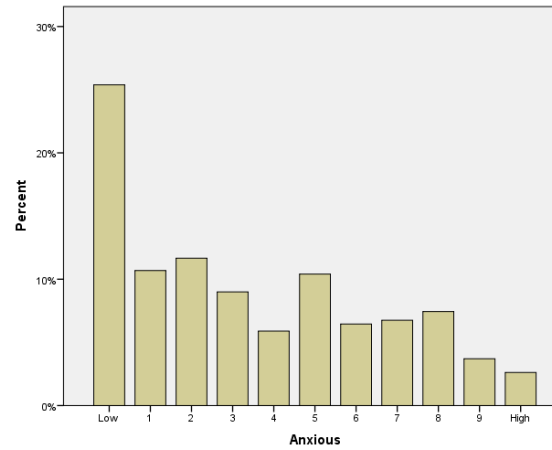
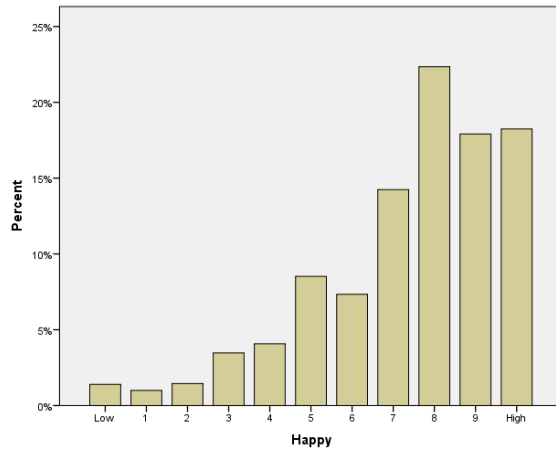
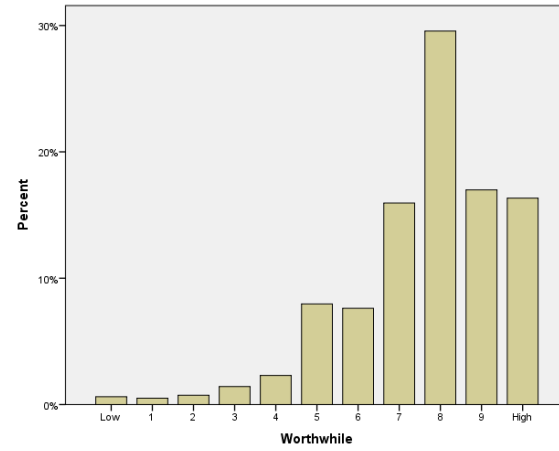
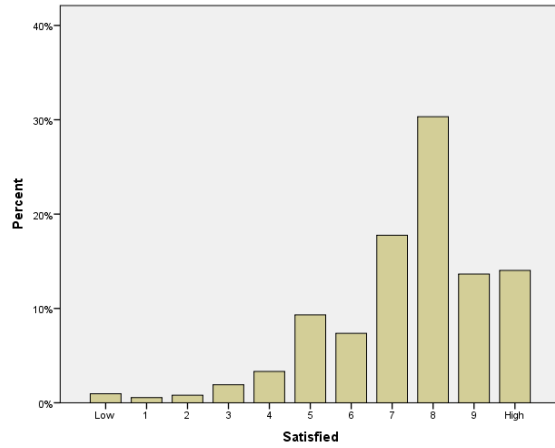


Logistic regression plot

FINDINGS



🌟 Descriptive statistics



Distributions: global well-being in the British population



Correlation coefficients

	Satisfied	Worthwhile	Happy	Anxious
Satisfied	1.00			
Worthwhile	0.66**	1.00		
Happy	0.54**	0.51**	1.00	
Anxious	-0.24	-0.21	-0.36	1.00

* <0.05 ; ** <0.01 ; *** <0.001



🔥 Relative odds of wellbeing bivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Disability				
No rated disability	1.00	1.00	1.00	1.00
Reported disability	1.95^{***}	2.29^{***}	2.96^{***}	1.44^{***}

*<0.05; **<0.01; ***< 0.001

🔥 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Sex/gender				
Female	1.00	1.00	1.00	1.00
Men	1.05	1.30	1.63**	0.82*

*<0.05; **<0.01; ***< 0.001



🔥 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Ethnicity				
White British	1.00	1.00	1.00	1.00
BME	1.59*	1.18	1.18	1.24

*<0.05; **<0.01; ***< 0.001

🔥 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Age				
16-24	1.00	1.00	1.00	1.00
25-44	1.18	2.13*	1.29	1.18
45-54	1.13	2.37*	1.07	1.01
55-64	0.77	1.11	0.64	1.00
65-74	0.56	0.98	0.50	0.73
75+	0.44*	1.07	0.99	0.74

*<0.05; **<0.01; ***< 0.001

🌟 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Health				
Very good	1.00	1.00	1.00	1.00
Good	1.43*	2.08***	2.03**	1.25**
Fair	3.13***	5.66***	6.70***	1.84***
Poor	7.90***	18.1***	19.6***	2.73***
Very Poor	10.3***	53.8***	29.8***	3.28***

*<0.05; **<0.01; ***< 0.001

🔥 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Disability				
No rated disability	1.00	1.00	1.00	1.00
Reported disability	1.07	0.95	1.10	1.18

*<0.05; **<0.01; ***< 0.001



🌟 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Education				
Degree	1.00	1.00	1.00	1.00
Below Degree	1.65**	1.15	1.62	1.21*
No formal qualifications	1.88**	0.94	1.22	1.20

*<0.05; **<0.01; ***< 0.001

🌟 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Socio-economic position				
Managerial/professional	1.00	1.00	1.00	1.00
Intermediate	0.80	1.22	0.74	0.82
Manual workers	0.99	1.44*	1.24	0.87

*<0.05; **<0.01; ***< 0.001



🌟 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Income quintile				
Top	1.00	1.00	1.00	1.00
Second	0.83	1.29	0.98	0.83
Middle	0.70	1.45	1.15	1.00
Fourth	0.81	1.43	1.47	1.20
Bottom	0.91	2.17*	1.27	1.16

*<0.05; **<0.01; ***< 0.001

🔥 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Household composition				
Couple	1.00	1.00	1.00	1.00
Single person	1.77***	2.79***	2.64***	0.97

* <0.05 ; ** <0.01 ; *** <0.001



🔥 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Housing tenure				
Home owner	1.00	1.00	1.00	1.00
Private rental	1.49*	1.06	1.25	1.03
Social housing	1.04	1.17	1.32	0.80

*<0.05; **<0.01; ***< 0.001



🌟 Relative odds of wellbeing multivariate model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Region of residence				
North East	1.00	1.00	1.00	1.00
North West	0.71	0.70	0.81	0.73
Yorkshire & the Humber	0.66	0.94	1.15	0.64*
East Midlands	0.59	0.74	0.78	0.70
West Midlands	0.75	0.78	0.62	0.67
East of England	0.52*	0.72	0.70	0.59*
London	0.76	1.80	2.13	0.77
South East	0.58	0.95	0.77	0.76
South West	0.43*	0.93	0.71	0.86
Wales	0.84	0.71	1.34	0.82
Scotland	0.79	1.17	0.81	0.80

*<0.05; **<0.01; ***< 0.001



🔥 Relative odds of wellbeing interactions model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Income*Health				
Second Quintile Very Poor Health	7.50***	14.26***	7.56*	5.60**
Middle Quintile Very Poor Health	10.12***	21.36***	22.70***	3.38**
Fourth Quintile Very Poor Health	12.98***	61.82***	32.45***	5.63*
Bottom Quintile Very Poor Health	7.06**	43.64***	28.05***	7.42*

*<0.05; **<0.01; ***< 0.001

🌟 Relative odds of wellbeing interactions model

	'Unhappy' (i)	'Dissatisfied' (ii)	'Unfulfilled' (iii)	'Anxious' (iv)
Socio-economic position*Health				
Manual Very Good Health	1.00	1.00	1.00	1.00
Manual Good Health	NS	NS	NS	NS
Manual Fair Health	2.27***	3.48***	3.01***	1.47*
Manual Poor Health	5.43***	10.64***	6.33***	1.94**
Manual Very Poor Health	11.25***	33.00***	11.46***	2.13**

*<0.05; **<0.01; ***< 0.001

NS Not Significant

🔥 Relative odds of wellbeing domains model

	Personal relations (i)	Physical health (ii)	Mental wellbeing (iii)	Work (iv)	Financial situation (v)	Local area (vi)	Personal time (vii)	Work-life balance (viii)
Sex/gender								
Female	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Men	-	-	-	1.76**	2.08***	-	-	2.54***

* <0.05 ; ** <0.01 ; *** <0.001

Relative odds of wellbeing domains model

	Personal relations (i)	Physical health (ii)	Mental wellbeing (iii)	Work (iv)	Financial situation (v)	Local area (vi)	Personal time (vii)	Work-life balance (viii)
Health								
Very good	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Good	-	4.35*	-	-	1.61*	1.95*	-	-
Fair	-	48.01***	10.45***	1.98*	3.57***	2.33*	2.68**	-
Poor	-	844.78***	39.71***	-	3.43**	3.93*	2.69*	-
Very Poor	11.18*	1334.83***	19.77**	14.69**	13.96**	10.45**	25.33***	-

*<0.05; **<0.01; ***< 0.001

CONCLUSIONS



Subjective wellbeing and the policy process

	Monitoring progress	Informing policy design	Policy appraisal
Evaluation measures	-Life satisfaction	-Life satisfaction -Domain satisfactions (work, relationships etc.)	-Life satisfaction -Domain satisfactions -Detailed sub-domains -Satisfaction with services
Experience measures	-Happiness -Anxious		- Happiness and worry -Affect associated with particular activities
Eudemonic measures	-Worthwhile life		-Worthwhile things in life -Reward from activities

Source: Dolan, P., R. Layard and R. Metcalfe (2011), *Measuring Subjective Well-being for Public Policy*, Newport: ONS

Source: Dolan, P. and R. Metcalfe (2012), *Measuring Subjective Wellbeing: Recommendations on Measures for use by National Governments*, *Journal of Social Policy* 41(2): 409-427.

Issues

- Can we use SWB measures to inform and develop policy?
- Correlations not evidence of one-way causation from factors to 'happiness', e.g. civil partnerships example
- Cross-sectional survey data limited when it comes to studying changes in SWB over time and/or across the life-course
- International and comparative work measuring happiness and wellbeing raises cultural issues. Research suggests that the norms and values that people from different cultures attribute to subjective wellbeing and their understandings and reporting of happiness may differ
- Understandings of happiness may be co-related, at least in part to other culturally contingent tendencies related to welfare, e.g. notions of the independent versus interdependent self, personal accomplishment and self-esteem verses social harmony and connectedness



Future

1. More work on domains and dimensions of SBW within UK
2. More disaggregate work on individual and household predictors of SWB in the UK – data e.g. ethnicity
3. More work on SWB between nations – multilevel modelling
4. Longitudinal study – cohorts / panel surveys look at trends in SWB and change over time e.g. welfare reform or whether the same population has become happier



Acknowledgements

- The study was supported by ESRC grant ES/K001353/1 'New Cultural Contradictions in Society'
- The ONS material used in this study is Crown Copyright and has been used with relevant permissions.
- The study is registered with the UK Data Archive (datasets for usage: 63168, study number: 6893).

