Office for
National Statistics

Initial investigation into Subjective Well-being from the Opinions Survey

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Overview

 The analysis in this report provides an initial investigation into some of the differences between four overall monitoring questions introduced into ONS surveys from April 2011. The questions are analysed by key characteristics including those relating to what people told ONS was important in the Measuring National Well-being 'National Debate'. It provides potential users of subjective well-being estimates from the large scale Integrated Household Survey (IHS), due for publication in July 2012, with an understanding of the way these questions are likely to perform. It also shows how the additional subjective well-being questions that were asked over this period compare with one another and to the four overall monitoring questions. Methodological testing and development continues and ONS wants to involve users at an early stage to allow feedback; not only on what these data show but also on how the results have been presented.

Introduction

To measure national well-being it is important not just to rely on traditional indicators of economic progress, but also to collect information from people themselves about how they assess their own well-being. Individual or subjective well-being estimates are an important addition to existing official statistics and this research report presents experimental statistics from the ONS Opinions Survey (OPN) looking at the levels of subjective well-being in the British population during April to August 2011.

Executive summary

The four overall monitoring questions tested were designed to pick up different approaches to individual well-being. The estimates appear to show that these questions are picking up different concepts with interesting differences between the questions. Estimates are for Great Britain for April to August 2011 and are based on a 0 to 10 scale where 0 is 'not at all' and 10 is 'completely':

- When asked, 'Overall, how satisfied are you with your life nowadays?' the majority (76 per cent) of adults (aged 16 and over) were estimated to have a rating of 7 out 10 or more. However, a

- minority (8 per cent) were estimated to be below 5 out of 10. The mean score for this question was 7.4 out of 10.
- When asked, 'Overall, to what extent do you think the things you do in your life are worthwhile?' a slightly larger proportion (78 per cent) of adults rated this at 7 or more out of 10. A lower proportion of adults gave lower ratings to this question, with 6 per cent giving a rating below 5 out of 10. The mean score for the 'worthwhile' question was higher than the 'life satisfaction' question at 7.6 out of 10.
- When asked, 'Overall, how happy did you feel yesterday?' again the majority (73 per cent) of adults responded with 7 or more out of 10. However, the spread of ratings was wider than for the 'life satisfaction' and 'worthwhile' questions. For example a higher proportion of people gave higher ratings (36 per cent giving 9 or 10 out of 10) to the 'happy yesterday' question as well as lower scores (12 per cent below 5 out of 10). The mean score for the 'happiness yesterday' question was 7.4 out of 10.
- When asked, 'Overall, how anxious did you feel yesterday?' the ratings were even more spread out. Although over half (57 per cent) had ratings of less than 4 out of 10, a sizeable proportion (27 per cent) of people had ratings above 5 out of 10 (that is, closer to 10, feeling 'completely anxious' than 0, 'not at all anxious'). The mean score for this question was 3.4 out of 10.

When estimates are examined by age there appears to be a 'U shape' relationship for the 'life satisfaction', 'worthwhile' and 'happy yesterday' questions. That is, that younger and older adults in Great Britain reported higher levels to these questions on average than people in their middle years. Highest levels were for those aged 16 to 19 and aged 65 to 74. For 'anxious yesterday', this pattern does not appear in the data.

It is also possible to examine from the OPN how the four subjective well-being monitoring questions are related with some of the areas that the national debate identified as important for well-being, for example, 'health', 'personal relationships', 'job satisfaction and economic security' (in the last case unemployment has been used as a proxy):

- 'Life satisfaction', 'worthwhile' and 'happy yesterday' are all positively associated with self-reported health; that is, the better health someone reports the more likely they are on average to report higher ratings for these questions. For 'anxious yesterday' the opposite is true, with higher mean scores associated with lower levels of self-reported health.
- Having a partner is also positively associated with the 'life satisfaction', 'worthwhile' and 'happiness yesterday' questions. On average, adults who are married, in a civil partnership or cohabiting reported higher mean ratings than those who are single, widowed, divorced, separated or formerly in a civil partnership.
- Mean ratings of the 'life satisfaction' 'worthwhile' and 'happy yesterday' are all lower for those who are unemployed than those who are employed or economically inactive. However, the largest difference in the mean was for the 'life satisfaction' question compared with the 'worthwhile' and 'happiness yesterday' questions, where the differences were smaller.

Further questions on satisfaction with different aspects of peoples' lives were also asked in the April and June 2011 OPN. Satisfaction with 'financial situation' had the lowest mean (6.2 out of 10), followed by satisfaction with 'work situation' (6.7 out of 10) and also 'with time to do the things you like doing' (6.8 out of 10). Overall, satisfaction with 'personal relationships' and 'mental well-being' had the highest mean scores (both at 8.3 out of 10), although for people who have children,

the highest average was for their satisfaction with their child/children's well-being (8.7 out of 10). Satisfaction with 'physical health' and 'the area where you live' had mean ratings of 7.3 and 7.8 respectively.

This research report also provides initial findings from the testing of additional questions based on each of the main approaches to measuring subjective well-being. The answers are compared and the conclusion drawn is that the different approaches do appear to supplement each other and collect additional information. It also summarises the findings from the testing carried out on methods in the OPN; looking at whether respondents filling in questions on a laptop gave different responses on average from those where the interviewer asked the questions; analysis of non-response; how the estimates of the overall monitoring questions differ each month; the results from other evaluative questions that were asked (for example the Cantril Ladder of Life question, life satisfaction in the past and future and optimism about the future); and initial estimates from the question order test that was undertaken on the experience questions (that is, whether asking negative versus positive experience questions first has any impact on the answers that respondents give).

ONS is making the experimental OPN microdata available to approved researchers to allow them to undertake further analysis of these experimental questions at an early stage and to provide further feedback to ONS. Further estimates from a six-month dataset from the Annual Population Survey (the largest constituent survey of the IHS) will be made available in early 2012 and estimates from the first annual experimental IHS in July 2012.

Section 1: Background

This research report gives experimental estimates of responses to subjective well-being questions that were asked in the ONS Opinion Survey (OPN) in 2011. It is published as part of the Office for National Statistics Measuring National Well-being (MNW) Programme, which was launched in November 2010 to provide a fuller understanding of 'how society is doing' than economic measures alone can provide.

The aim of the programme is to develop and publish an accepted and trusted set of National Statistics that helps people to understand and monitor national well-being. This programme started with a national debate on 'What matters to you?' to ask what should be included in measures of the nation's well-being. The debate suggested that what people felt was particularly important to well-being was health, personal relationships, job satisfaction and economic security. Individual or subjective well-being, that is people's own assessment of their own well-being, was also thought to be important for measuring national well-being. ONS is currently consulting on a set of proposed domains and headline measures of overall national well-being (www.ons.gov.uk/ons/about-ons/consultations/open-consultations/measuring-national-well-being/index.html).

ONS believes it is important when making an assessment of 'how society is doing' to include subjective measures to provide a full picture. The UK is not alone in planning to use these types of information to make an assessment of well-being. The Organisation of Economic Co-operation and Development (OECD) and Eurostat (the statistical office of the European Union), as well as national statistics offices around the world, are increasingly recognising the importance of subjective well-being data (OECD 2011; Kroll 2011 & Eurostat 2010). The Commission on the Measurement of

Economic Performance and Social Progress recommended in its 2009 report (Stiglitz et al. 2009) that national statistics agencies should collect these types of data noting that:

Research has shown that it is possible to collect meaningful and reliable data on subjective well-being...subjective well-being should be measured [separately] to derive a more comprehensive measure of people's quality of life and to allow a better understanding of its determinants (including people's objective conditions).

In April 2011, ONS included subjective well-being questions for the first time in the Integrated Household Survey (IHS) and the Opinions Survey (OPN). These questions were developed with expert academic advice (Dolan et al. 2011) as well as benefiting from discussions between members of the National Statistician's Measuring National Well-being Advisory Forum. They represent a balanced approach to the measurement of subjective well-being drawing on the three main theoretical approaches identified (Dolan *et. al*. 2011 & ONS 2011).

The **evaluative approach** that asks individuals to step back and reflect on their life and make a cognitive assessment of how their life is going overall, or on certain aspects of their life.

The **'eudemonic' approach**, sometimes referred to as the psychological or functioning/flourishing approach which draws on self-determination theory and tends to measure such things as people's sense of meaning and purpose in life, connections with family and friends, a sense of control and whether they feel part of something bigger than themselves.

The **experience approach**, which seeks to measure people's positive and negative experiences over a short timeframe to capture people's well-being on a day-to-day basis.

The four overall monitoring questions that were included in the IHS and OPN are:

Overall, how satisfied are you with your life nowadays? (*Evaluative approach*)

Overall, to what extent do you feel the things you do in your life are worthwhile? (*Eudemonic approach*)

Overall, how happy did you feel yesterday? (*Experience approach*)

Overall, how anxious did you feel yesterday? (*Experience approach*)

Respondents are asked to provide an answer from 0 ('not at all') to 10 ('completely').

This report provides experimental statistical estimates using the responses to these four questions and from additional experimental questions tested in the OPN between April and August 2011. The aim of publishing these estimates at an early stage is to continue to involve potential users of subjective well-being estimates in the further development of these questions.

The report also summarises some of the methodology surrounding these questions, including some of the testing work that has been undertaken. We would like potential users of subjective well-being estimates to use this report to provide feedback not only on the estimates themselves but also on how these should be presented in future.

In early 2012 a research report will be published containing further experimental estimates of responses to the four questions listed above. This will use data from the first six months of collection through the Annual Population Survey (APS), which is the largest constituent survey of the IHS. Estimates from the first year's experimental IHS will be published in a statistical bulletin in July 2012. Both of these have larger sample sizes than the OPN (around 80,000 adults for six months of the APS and 200,000 adults for the full year of the IHS compared with 4,200 from the OPN over the period April to August 2011 answering the subjective well-being questions) and will provide more precise estimates. Anonymised micro datasets will also be made available for users to analyse.

Section 2: The Opinions Survey

The Opinions Survey (OPN) is a monthly omnibus survey carried out by ONS to allow quick and reliable information on topics of immediate policy interest; measure public awareness of new policies and initiatives; and pilot new research questions and methodologies.

The OPN uses a random probability sample stratified by: region, the proportion of households with no car, the proportion in National Statistics Socio-economic categories one to three and the proportion of people aged over 65 years. In common with other ONS social surveys, it uses the Royal Mail's small user postcode address file to draw the sample from across Great Britain.

An initial sample of 2,100 addresses is drawn each month and advance letters are sent to all addresses giving a brief account of the survey. Participation is purely voluntary and interviewers only call at addresses where no refusal has been made to the advance letter. The interviewer will make up to 20 calls at an address at different times in the day and the week to try to make contact, after which the address is marked as a non-contact.

The interviewing period starts in the first week of the calendar month and continues for the duration of the month in question. 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 interviewers trained to carry out National Statistics surveys.

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 per cent.

The data presented in this report are taken from the April, June, July and August 2011 OPN and relate to Great Britain. The OPN was not carried out in May 2011 because all interviewers were being used to carry out the Census Coverage Survey following the 2011 Census of Population.

The four overall questions were asked in the same way for each of these months. It is therefore possible when analysing these questions to use a combined four-month dataset to increase the sample size to around 4,200 adults aged 16 answering the subjective well-being questions. Wherever possible the largest sample has been used in this report. However, ONS also asked additional questions beyond the four overall questions and, in most cases, these were only asked in one month so the sample size is smaller.

All estimates in this report 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 well-being as those that do. There are two weights in the Opinions Survey, firstly a weight that adjusts for the differences in the probability of an individual being selected due to different household sizes and sample design and secondly a weight that calibrates the sample so that it is representative of the overall population levels in Great Britain by age, sex and region.

The overall monitoring questions were asked each month in the OPN. Additional questions drawing from the evaluative approach to measuring subjective well-being were asked in April and June 2011 in OPN. These questions asked about satisfaction with personal relationships, physical health, mental well-being, work situation, financial situation, area where you live, and time you have to do the things you like doing. Parents were also asked about satisfaction with the well-being of their child/children (see section 5). There were a number of other questions added to the July 2011 OPN survey, including the Cantril Ladder of Life question to compare with life satisfaction (see section 8).

In July 2011 the OPN carried further 'eudemonic' questions to explore how much these related to the worthwhile question and to see how much further information additional questions would provide. These included a range of questions looking at how individuals feel about themselves and how they function in relation to their surroundings (see section 6 for further information).

In August 2011 further experience questions were asked. A range of positive and negative adjectives were used other than just 'happy' and 'anxious', for example enjoyment, calm, worried, stressed. This was to see how much the estimates from using these different adjectives would differ from the overall monitoring questions that used the adjectives happy and anxious (see section 7 for further information). Additionally, there was an experiment undertaken to look at what effect the order of the questions had on the answers that respondents gave (see section 8 for further details).

In each of these months an experiment was also carried out using different questioning techniques, that is, with questions being asked directly by the interviewer versus allowing the respondent to fill out their answers on a laptop. This was done to explore further how sensitive these answers were to social desirability: to what people give answers that portray their own well-being in a more positive light to the interviewer. This is a known methodological limitation of subjective well-being questions which has been examined before and ONS wanted to explore this further using the OPN (see section 8 for detailed findings).

In line with usual practice, ONS is making the micro datasets underlying the estimates in this report available to researchers generally free of charge via the UK Data Archive (UKDA) under an 'end user' licence agreement. This will be done in such a way as to maximise research use while maintaining individuals' confidentiality. Registration is a one-off process that involves providing the UKDA with personal details, and agreement to an End User Licence, which outlines the conditions for using the data. The data are not to be used in any way that infringes the National Statistics Code of Practice.

Section 3: Comparing the four overall measures of subjective well-being

The four overall monitoring questions included in the OPN dataset were designed to collect different types of information from respondents about their own well-being. It is therefore useful to look at the results from each of the four questions and compare them with one another to see how much the estimates differ. In this report we use the abbreviations 'life satisfaction', 'worthwhile' 'happiness yesterday' and 'anxious yesterday' to refer to the overall monitoring questions outlined in section 1. Figure 3.1 shows the percentages of adults in Great Britain who were estimated to have the different levels of 'life satisfaction' and 'worthwhile' from April to August 2011.

Figure 3.1 Comparison of overall 'life satisfaction' and 'worthwhile' question, April to August 2011
Great Britain, Adults 16 and over
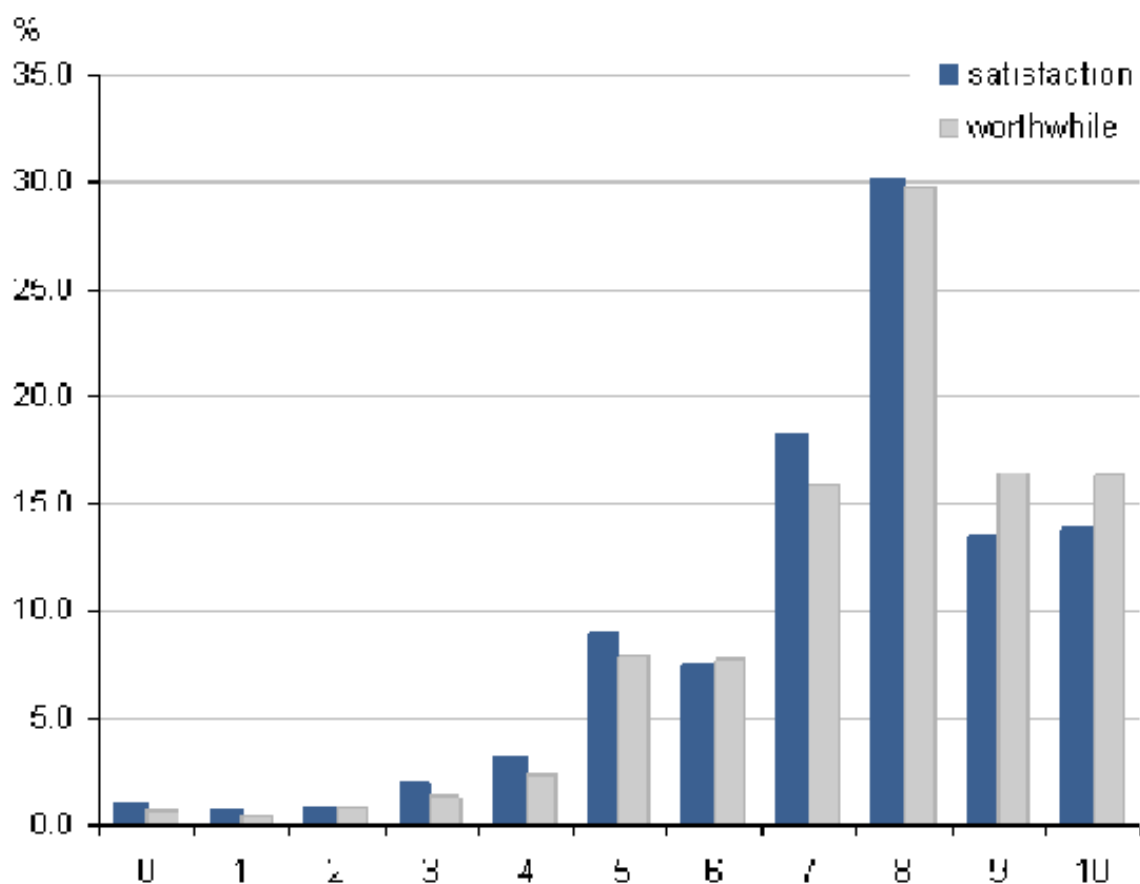
Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:
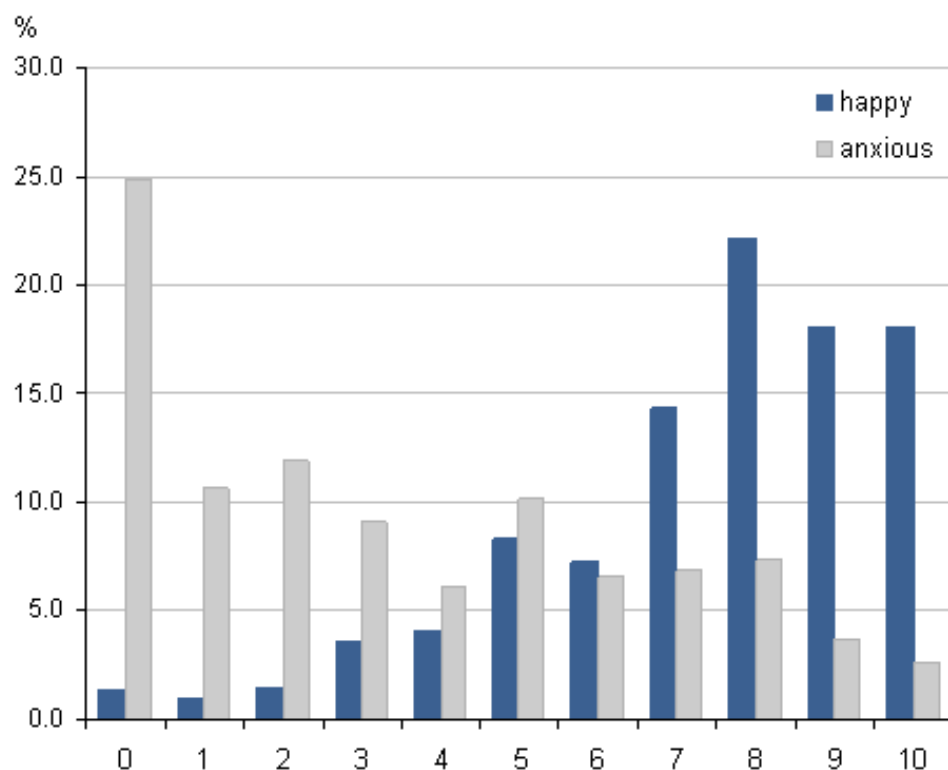1.   Scale 0 = 'not at all' and 10 = 'completely'

Download chart

In April to August 2011 in Great Britain, 76 per cent of adults (16 and over) had levels of 'life satisfaction' of 7 or more out of 10 and 24 per cent below 7 out of 10. There was a sizeable minority of the population who were estimated to have ratings lower than 5 out of 10 (8 per cent).

In terms of the 'worthwhile' question, a higher proportion gave ratings of 7 or more out of 10 than was the case for 'life satisfaction': 78 per cent of adults had a score of 7 or more out of 10 and 22 per cent less than 7 out of 10. This difference was driven by the higher percentages of adults giving a 9 or 10 out of 10 for 'worthwhile' compared with 'life satisfaction' (33 per cent and 27 per cent respectively). The percentage of adults who gave ratings of less than 5 out of 10 for 'worthwhile' was lower (6 per cent) than 'life satisfaction'.

The distributions of ratings for 'life satisfaction' and 'worthwhile' were broadly similar but, as noted above, there were some noticeable differences, with more people giving higher ratings for 'worthwhile' compared with 'life satisfaction'. When these distributions are compared with the 'happiness yesterday' and 'anxious yesterday' questions (see Figure 3.2), the distributions for 'life satisfaction' and 'worthwhile' are the most similar out of the four overall monitoring questions.

Figure 3.2 Comparison of happy yesterday and anxious yesterday questions, April to August 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

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A lower percentage of adults were estimated to have 'happiness yesterday' levels of 7 or more out of 10 than was the case for the 'life satisfaction' or 'worthwhile' questions. In April to August 2011 in Great Britain, 73 per cent of adults (16 and over) felt that their 'happiness yesterday' levels were 7 or more out of 10.

Although the highest proportion of respondents (22 per cent) rated 'happy yesterday' at 8 out of 10, this was lower than for 'life satisfaction' and 'worthwhile'. However, the proportions of respondents giving a rating of 9 or 10 out of 10 (36 per cent) was higher than for 'life satisfaction' or 'worthwhile'. A higher percentage were also estimated to have 'happy yesterday' scores below 5 out of 10 (12 per cent). This compares with 8 per cent for 'life satisfaction' and 6 per cent for 'worthwhile'.

Table 3.1 Percentages of adults above and below certain thresholds and average ratings for overall subjective well-being monitoring questions

April, June, July and August 2011 combined

April, Jun, July and August 2011 combined

| **Great Britain, Adults aged 16 and over** | | | | | | | **0 to 10 scale[4]** |

Question	**Thresholds[5]**				**Averages**			
	% below 5	**% 5 or 6**	**% 7 or 8**	**% above 8**	**Mean**	**95% Confidence Intervals of the mean**	**Mode**	**Median**
Life satisfaction[6]	7.8	16.5	48.4	27.3	7.4	+ / - 0.08	8	8
Worthwhile[7]	5.8	15.8	45.7	32.7	7.6	+ / - 0.07	8	8
Happy yesterday[8]	11.6	15.6	36.5	36.3	7.4	+ / - 0.09	8	8
	% above 5	**% 5 or 4**	**% 3 or 2**	**% below 2**				
Anxious yesterday[9]	27.2	16.2	21.0	35.6	3.4	+ / - 0.11	0	3

Table source: Office for National Statistics

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These differences suggest that people are more likely to tend towards the extremes of the scale when providing answers to 'happiness yesterday' than when answering the 'life satisfaction' or 'worthwhile' questions. This tendency towards using the extremes of scale is confirmed by the

standard deviation for this question which is higher than the other questions (see reference tables for further details). This is perhaps to be expected given the reference period to the 'happiness' question is yesterday and, on a day-to-day basis, people's emotions are likely to vary more than when they are asked to make a cognitive evaluation of how their life is more generally.

In April to August 2011, it was estimated that 57 per cent of adults felt that they had anxiety levels yesterday of 3 or below out of 10 compared with 43 per cent who reported more than 3 out of 10 (note that 0 is 'not at all anxious' and 10 is 'completely anxious' therefore the thresholds for comparison with the other questions have been reversed).

It is interesting to note that the percentage of adults who report being 'not at all anxious' is much higher than those who report being 'completely happy' (both positive outcomes). The estimates show that 25 per cent of adults were 'not at all anxious yesterday' compared with 18 per cent being completely 'happy yesterday'.

Twenty seven per cent of adults had 'anxious yesterday' scores of more than 5 out of 10, that is, that they positioned themselves closer towards being 'completely anxious yesterday' than 'not at all anxious yesterday'. This was over twice the percentage who reported being closer to 'not at all happy yesterday', that is 12 per cent reported less than 5 out of 10 for 'happiness yesterday'.

One potential reason for the larger percentage of respondents at this point on the scale could be because respondents became confused by the change from a positive to a negative experience question which, although uses the same scale, 'not at all' to 'completely', the most positive outcome is reversed when asking about anxiety. Put another way 0 = 'not at all anxious yesterday' is the most positive outcome while for 'happy yesterday' it is 10 = 'completely happy'. In order to help overcome this potential problem, the scale was reinforced to respondents in the anxious yesterday question, but it is possible that some individuals gave the same score for anxious as they did happy yesterday not realising the difference in the scales. This effect will be investigated further by ONS as we go forward.

Averages for the four questions

As well as looking at percentages above and below different thresholds on the distribution, it is also possible to calculate means on the 0 to 10 scale. The average (mean) rating for responses to the 'life satisfaction' question in Great Britain for April to August 2011 was 7.4 on the 0 to 10 scale. The mean for the 'worthwhile' question was higher at 7.6 out of 10, while 'happy yesterday' had a mean of 7.4 out of 10. The difference between the mean of the 'worthwhile' and 'life satisfaction' question is statistically significant at the 5 per cent level, with non-overlapping confidence intervals. This is also the case for the difference between 'worthwhile' and 'happiness yesterday'. The mean for 'anxious yesterday' was lower at 3.4 out of 10 due to 0 being the best possible outcome (see Table 3.1).

The most frequently occurring rating (the mode) was the same for 'life satisfaction', 'worthwhile' and 'happiness yesterday' at 8 out of 10. The middle (median) rating was also 8 out of 10 for these

questions. The mode for 'anxious yesterday' was 0 out of 10 and the median 3 out of 10 (see Table 3.1).

Analysis by grouping subjective well-being ratings

Another way of examining subjective well-being estimates from these overall questions is to group similar scores for each question. Grouping subjective well-being ratings for the different questions and tabulating against one another enables differences in responses between the different questions to be shown. These differences would be overlooked if only the overall averages or percentages above or below certain thresholds were compared.

In this section, 'life satisfaction', 'worthwhile' and 'happiness yesterday' scores of 0 to 6, 7 to 8 and 9 to 10 have been grouped together for comparison purposes and labelled 'low', 'medium' and 'high'. For 'anxious yesterday', the comparisons are made with the opposite scales, as 'not at all anxious' is the most positive outcome and better compared with 'completely happy yesterday'. For this question, 4 to 10 has been labelled 'high', 3 or 2 'medium' and 1 or 0 'low'.

In Table 3.2 the groupings for the 'life satisfaction' and 'worthwhile' questions have been tabulated against each other. Interestingly, despite the overall distributions for these two questions appearing similar, when individual responses are compared to each question there is a substantial proportion of people who gave different ratings to the different questions, suggesting that they are picking up different concepts. Table 3.2 shows that people who give a 'low' 'life satisfaction' score can also give a higher 'worthwhile' score (42 per cent of respondents did so). Those who gave a 'high' 'life satisfaction' score were less likely to give a lower worthwhile score (29 per cent) though, and those that gave a 'medium' 'life satisfaction' score were more likely to give a 'high' 'worthwhile' score (23 per cent) than a 'low' 'worthwhile' score (13 per cent).

Table 3.2 Percentage of people in each 'life satisfaction' grouping who answered low, medium & high to 'worthwhile'.

Great Britain, Adults aged 16 and over

Ratings for "life satisfaction" monitoring question [5]	Ratings for "worthwhile" monitoring question [6]		0 to 10 scale [4]	
	Low rating (0-6)	Medium rating (7-8)	High rating (9-10)	Total
Low rating (0-6)	57.7	32.9	9.4	100
Medium rating (7-8)	13.0	64.2	22.8	100
High rating (9-10)	4.7	24.1	71.2	100

Table source: Office for National Statistics

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As perhaps expected, a high percentage (68 per cent) of respondents who gave a 'low' rating for 'happy yesterday' also provided a 'high' rating for 'anxious yesterday' (see Table 3.3). However, it is entirely possible for people to have low and high levels of anxiety and happiness at any one time. For those respondents who gave a low 'happy yesterday' score, a sizeable minority of adults gave a medium 'anxious yesterday' rating (18 per cent) and a low 'anxious yesterday' score (14 per cent). An interesting finding is that around a quarter (26 per cent) of people who gave a high 'happy yesterday' score also gave a high anxiety score, again this could be due to respondents not noticing the switch in the best possible outcome for anxious yesterday being 0 rather than 10 as it is for 'happiness yesterday'.

Table 3.3 Percentage of people in each 'happy yesterday' grouping who answered high, medium & low to 'anxious yesterday'

Great Britain, Adults aged 16 and over

Ratings for "happy yesterday" monitoring question[5]	Ratings for "anxiety yesterday" monitoring question[6]	0 to 10 scale[4]		
	Anxiety high (4-10)	Anxiety medium (3-2)	Anxiety low (1-0)	Total
Happy low(0-6)	68.1	18.0	13.9	100
Happy medium (7-8)	41.9	27.9	30.3	100
Happy high (9-10)	26.4	16.4	57.2	100

Table source: Office for National Statistics

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Correlations between the overall monitoring questions

A further way to examine the relationship between the four overall monitoring questions is to look at how they correlate with one another. Put more simply, this means calculating a single statistic, between minus one and plus one, that summarises how similar individuals' responses to the different questions are. For example, a correlation coefficient of +1 would be a perfect positive

association between questions, a correlation of 0 means there no association and a correlation coefficient of -1 would be a perfect negative association.

Table 3.4 shows the correlations between the four main subjective well-being questions. All the measures are correlated with each other, the first three positively, and the fourth (anxious yesterday) is negatively correlated with the first three measures as might be expected since 0 is the most positive outcome for this question (that is, not at all anxious) while 10 is the most positive outcome for the other questions. The correlation for anxiety with the three other questions is not as strong as the first three questions. The differences in these correlations suggest that respondents are interpreting these questions differently and providing different scores for each of them. This suggests that they are indeed measuring different aspects of subjective well-being, all of which are important for monitoring individuals' well-being.

Table 3.4 Pearson's pair wise correlations between four overall subjective well-being measures

Great Britain, Adults aged 16 and over

Table 3.4

Pearson's Pairwise correlations[1,2] between four overall subjective well-being measures (April, June, July and August 2011 combined[3])

Monitoring questions		Life satisfaction[5]	Worthwhile[6]	Happy yesterday[7]	Anxious yesterday[8]
		Correlation coefficients			
Life satisfaction[5]	*Correlation coefficients*	1.00			
Worthwhile[6]		0.66*	1.00		
Happy yesterday[7]		0.55*	0.51*	1.00	
Anxious yesterday[8]		-0.26*	-0.22*	-0.39*	1.00

Table source: Office for National Statistics

Table notes:
1.

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Section 4: Factors associated with the four overall subjective well-being questions

This section compares the mean scores for the four overall monitoring subjective well-being questions with some personal and socio-economic characteristics such as people's gender, age, self-reported health, marital status, household size, and labour market activity. This is important as analysis of this nature goes beyond just looking at the overall scores that people give and seeks to examine why these differences may exist. It is one way to look at the validity of subjective well-being estimates. It also allows us to examine some of the areas that were considered important aspects of well-being from the national debate, for example, 'health', 'personal relationships', 'job satisfaction and economic security' (in the last case unemployment has been used).

Gender

Figure 4.1 shows the mean ratings on each of the four questions for men and women. The graph shows that the mean for men and women are very similar. On average, women respondents gave a slightly higher rating for the first three positive questions than men. Although the only difference that is statistically significant at the 5 per cent level is for the 'worthwhile' question where the mean for women was 7.8 compared with men where it was 7.5 out of 10. Women also provided on average a slightly higher rating for the anxiety question than men, but this was not a statistically significant difference.

Figure 4.1 Comparison of the mean ratings from men and women for overall subjective well-being questions

April - August 2011

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

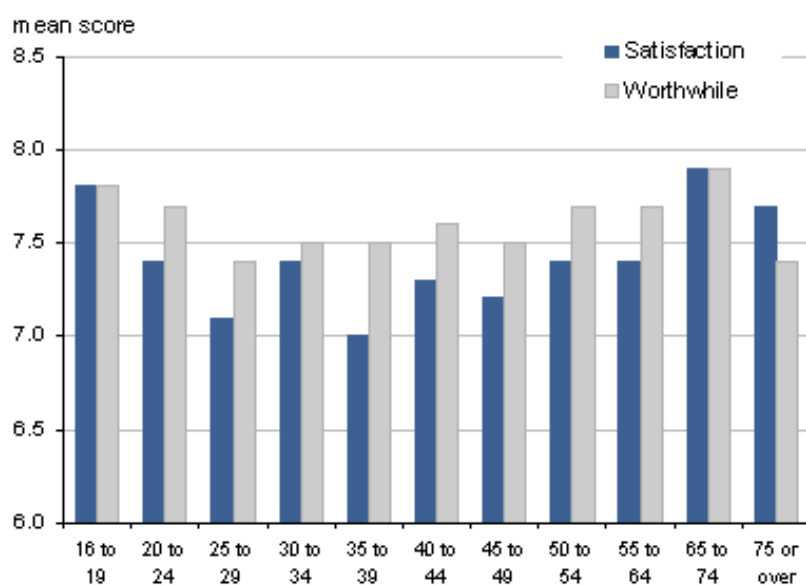**Download chart**

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Age

Figure 4.2 shows the mean rating for each of the life satisfaction and worthwhile questions by age group. As has been found in previous studies, (Dolan et. al. 2008 & ONS 2011) there appears to

be a U-shaped curve for 'life satisfaction' as respondents' ratings are highest at the youngest (16 to 19) and older age groups (65 to 74), and dip slightly in the middle years. This U-shape is less noticeable for the 'worthwhile' question, which may suggest that people's views on the extent to which the things that they do in life are worthwhile remain more stable throughout life compared with 'life satisfaction'.

What is also noticeable is that on average people of all ages up to aged 64 (apart from 16 to19-year-olds) have higher worthwhile ratings than life satisfaction ratings. After state pension age, this no longer holds: for 65 to 74-year-olds the scores are the same and for those aged 75 and over 'life satisfaction' scores are higher than 'worthwhile' scores. This finding will be investigated further using subjective well-being data from the IHS when it is available in order to investigate if this difference remains in a dataset with larger sample sizes than the OPN and where sampling variability will be smaller.

Figure 4.2 Comparison of the mean rating for life satisfaction and the worthwhile questions by age group, April - August 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

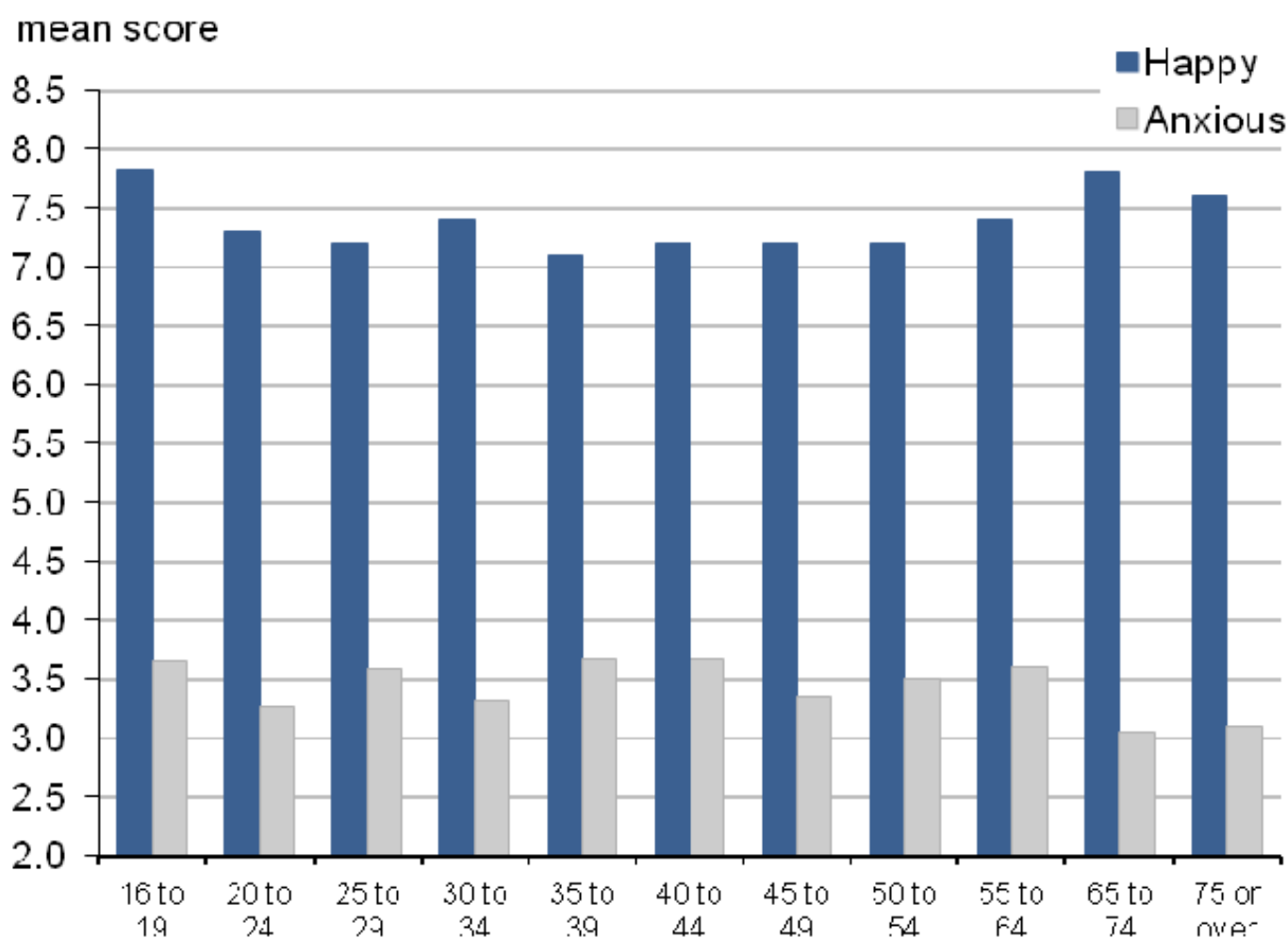1.   Scale 0 = 'not at all' and 10 = 'completely'

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Figure 4.3 shows the mean ratings for the 'happy yesterday' and 'anxious yesterday' questions by age group. A slight U-shape can be observed for the distribution of ratings for the 'happy yesterday' question, with the lowest average rating of 7.1 provided by respondents aged 35 to 39 years, and highest average ratings given by respondents aged 16 to 19 and 65 to 74. However, there does not seem to be a noticeable pattern for anxiety, the highest ratings for anxiety (3.7 out of 10) were provided by respondents aged 16 to 19, 35 to 39 and 40 to 44 and the lowest for those 65 and over.

Figure 4.3 Comparison of the mean rating for the anxious and happy questions by age group, April - August 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1. Scale 0 = 'not at all' and 10 = 'completely'
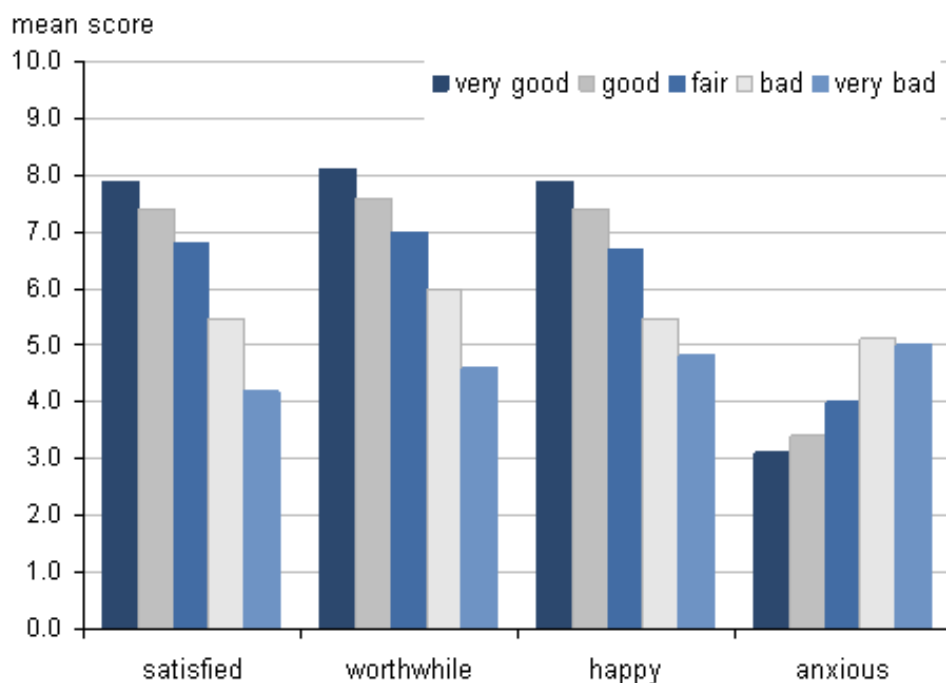
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Health

Health was reported as being an important part of well-being in the national debate and there appears to be a strong association between self-reported health and adults' subjective well-being scores. This is something that has been seen previously in the academic research (Dolan et. al. 2008). Respondents who described their health as 'very good' provided the highest mean ratings for the first three subjective well-being questions with average ratings of 7.9 for 'life satisfaction', 8.1 for 'worthwhile' and 7.9 for 'happy yesterday'. This compares with respondents who rated their health as very bad with ratings of 4.2 for 'life satisfaction', 4.6 for 'worthwhile' and 4.8 for 'happy yesterday'. Respondents who reported that they had 'bad' or 'very bad' health reported high levels of anxiety, 5.1 and 5.0 respectively which is higher than those who reported their health as 'very good' or 'good', 3.1 and 3.4 respectively (see Figure 4.4). It should be noted however, that the health measure here is self-reported health and like the 4 overall monitoring questions relies on the person's own perceptions which could be factor in the reason for the strong association between these measures.

Figure 4.4 Comparison of the mean rating for overall subjective well-being questions by self-reported health, April - August 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

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A similar association between the subjective well-being questions and people who report having a long-standing illness or disability can also be seen. Table 4.1 shows that respondents who reported having a long-standing illness or disability gave lower ratings for 'life satisfaction', 'worthwhile' and 'happy yesterday' questions and a higher rating for the 'anxious yesterday' question, compared with those who reported not having any long standing illness or disability.

Table 4.1 Comparison of the mean rating of overall SWB questions by whether someone reports having a long standing illness or disability, April - August 2011

Great Britain, Adults aged 16 and over

Long standing illness, disability or infirmity	Monitoring questions			0 to 10 scale
	Life satisfaction	Worthwhile	Happy yesterday	Anxious yesterday
Yes	7.0	7.2	7.0	3.8
No	7.6	7.8	7.6	3.3

Table source: Office for National Statistics

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Personal relationships

Another area that the national debate on well-being showed was important for well-being was people's personal relationships. Overall, it appears that those who are not in a partnership with someone or who live alone report lower levels of 'life satisfaction', 'worthwhile' and 'happiness yesterday' and higher 'anxious yesterday' scores.

Table 4.2 shows that respondents who are married or in civil partnerships and respondents who cohabit with their partners report on average the highest mean ratings for overall life satisfaction (7.7 and 7.5 out of 10). The differences between these two groups are not statistically significant at the 5 per cent level. Separated or divorced people have the lowest levels of life satisfaction (6.5 out of 10), lower than those who are single (7.1 out of 10). Those who are widowed had a higher mean score (7.4 out of 10) than people who are single or separated or divorced.

Similar differences can be observed for the 'worthwhile' question. Although there is less of a difference on average in mean ratings for 'worthwhile' for those who are divorced or separated compared with people in other states than there is for 'life satisfaction'. As with 'life satisfaction', the highest ratings on average for 'worthwhile' are for those who are married or in a civil partnership (7.9 out of 10) and those who are cohabiting (7.7 out of 10), again the differences between these two groups were not statistically significant.

For 'happiness yesterday', the highest levels were also for people who are married or in a civil partnership and lowest for single or separated or divorced.

The differences in the mean ratings for 'anxious yesterday' are smaller than those of 'happy yesterday', 'life satisfaction' and 'worthwhile'. For 'anxious yesterday', none of the differences seen are statistically significant at the 5 per cent level.

Table 4.2 Comparison of the mean ratings of overall SWB questions by marital status, April - August 2011

Great Britain, Adults aged 16 and over

				0 to 10 scale
Marital status	**Monitoring questions**			
	Life satisfaction	**Worthwhile**	**Happy yesterday**	**Anxious yesterday**
Married or in a civil partnership	7.7	7.9	7.6	3.4
Cohabiting	7.5	7.7	7.3	3.3
Single	7.1	7.3	7.1	3.6
Widowed	7.4	7.3	7.3	3.2
Divorced, separated or formerly in a civil partnership	6.5	7.1	6.9	3.7

Table source: Office for National Statistics

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Figure 4.5 shows that adults who live alone give on average lower ratings for 'life satisfaction', 'worthwhile' and 'happiness yesterday' questions than those who live with others. Those who are in one-person households have a mean 'life satisfaction' score of 6.9 compared with 7.5 out of 10 for those living with others. Similar differences exist for the 'worthwhile' question (7.1 versus. 7.8) and the 'happiness yesterday' question (7.0 versus 7.5). Interestingly, little difference is found between the mean scores for the 'anxious yesterday' question for the two groups (3.5 versus 3.4) and this is not statistically significant. These estimates are for total household size and include dependent children in the household as well as adults. Obviously, not all people living with others will be in a partnership with someone else in the household and this measure is showing something different to the marital status variable analysed in Table 4.2.

Figure 4.5 Comparison of the mean ratings for overall subjective well-being questions by household size April - August 2011
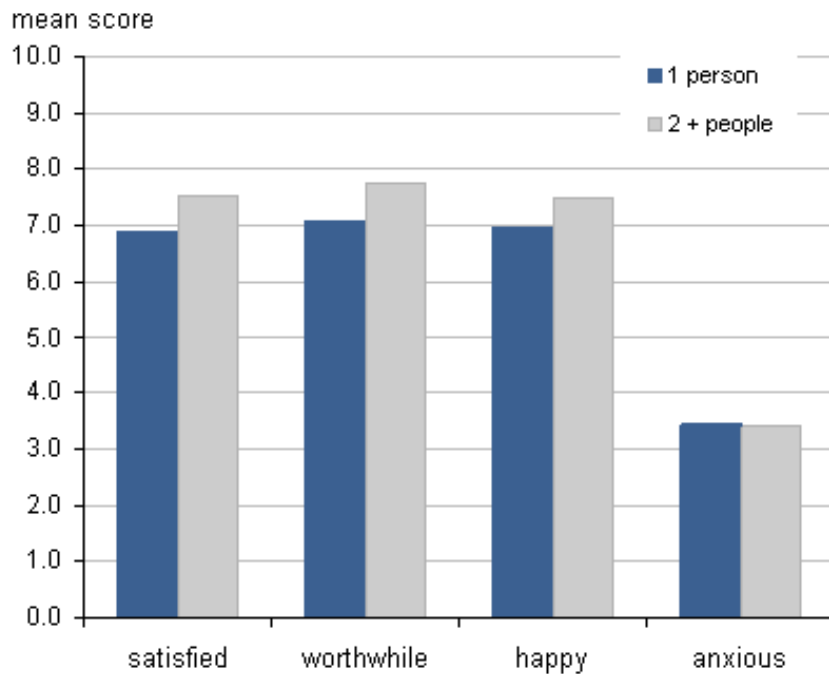
Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1. Scale 0 = 'not at all' and 10 = 'completely'

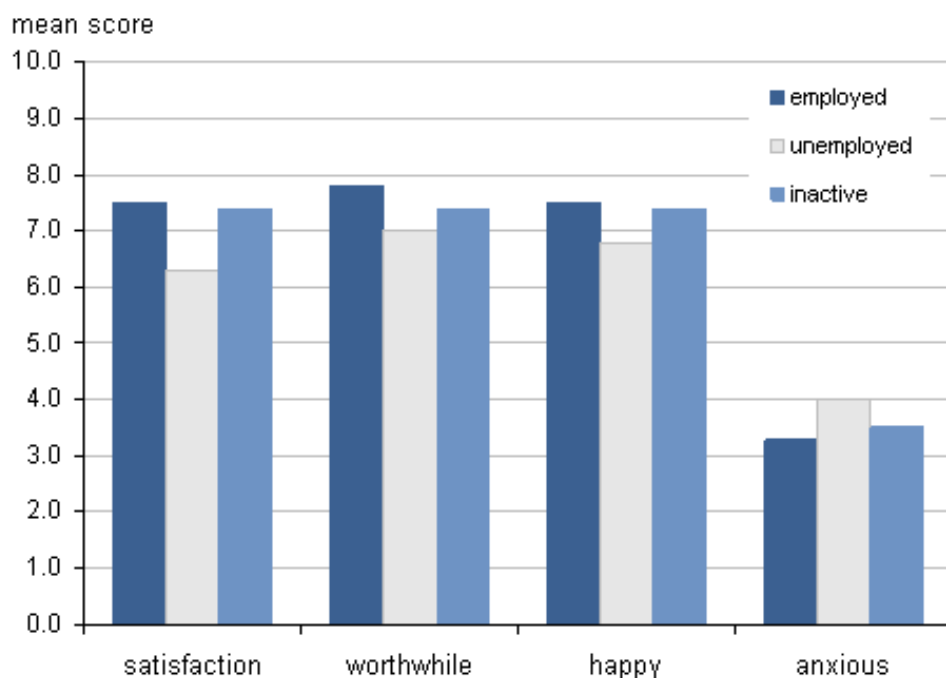**Download chart**

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Unemployment

A relationship between unemployment and subjective well-being has been found in previous academic research (Dolan et. al. 2008). Figure 4.6 shows that unemployed respondents provide

lower average ratings for the first three measures of subjective well-being than employed respondents, for example for life satisfaction a mean score of 6.3 for unemployed respondents compared with 7.5 for employed respondents, for the 'worthwhile' question 7.0 compared with 7.8, and for 'happy yesterday' 6.8 compared with 7.5. Unemployed respondents gave higher ratings for the anxiety question than employed respondents (4.0 compared with 3.3) but this difference, with the sample size that the OPN offers, is not statistically significant at the 5 per cent level.

Economically inactive people are those who are not in paid work but are not unemployed because they have not been actively seeking work or are unavailable to start work. Some of the groups that fall under this category include students, retired people, those looking after family/home, as well as people who are sick. On average, the economically inactive population are more likely than those who are unemployed to report higher 'life satisfaction', 'worthwhile' 'happiness yesterday' and lower levels of 'anxious yesterday'.

Figure 4.6 Comparison of the mean rating for all headline subjective well-being questions by economic activity size April - August 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1. Scale 0 = 'not at all' and 10 = 'completely'
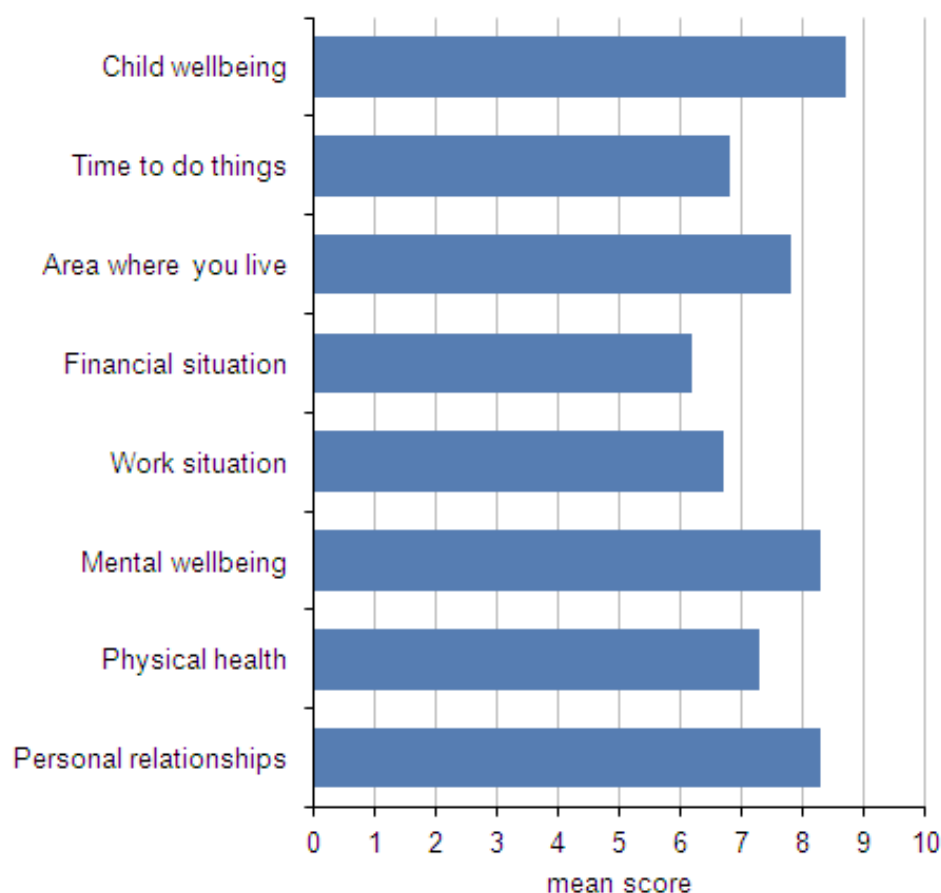
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Section 5: Analysis of evaluative domain subjective well-being questions (April and June modules)

Given the multi-dimensional nature of well-being, ONS also tested other questions on the OPN drawing from the different approaches to measuring subjective well-being. The questions asked in April and June 2011 reflect the evaluative approach to measuring subjective well-being and allowed further information on domain-specific questions to be collected.

The inclusion of these more detailed evaluation questions provides the opportunity to ask questions on, and investigate further, many of the aspects of subjective well-being that were shown to be important to people in the national well-being debate and which informed the areas recommended in ONS's proposed domain and headline indicators that are currently out for consultation. These include areas such as satisfaction with personal relationships, physical health, mental well-being, work situation, financial situation, the area in which people live, the amount of time people have to do the things they like doing and the well-being of their child/children (if they have any).

Figure 5.1

Mean score for satisfaction with different domains, April and June 2011

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1. Scale 0 = 'not at all' and 10 = 'completely'

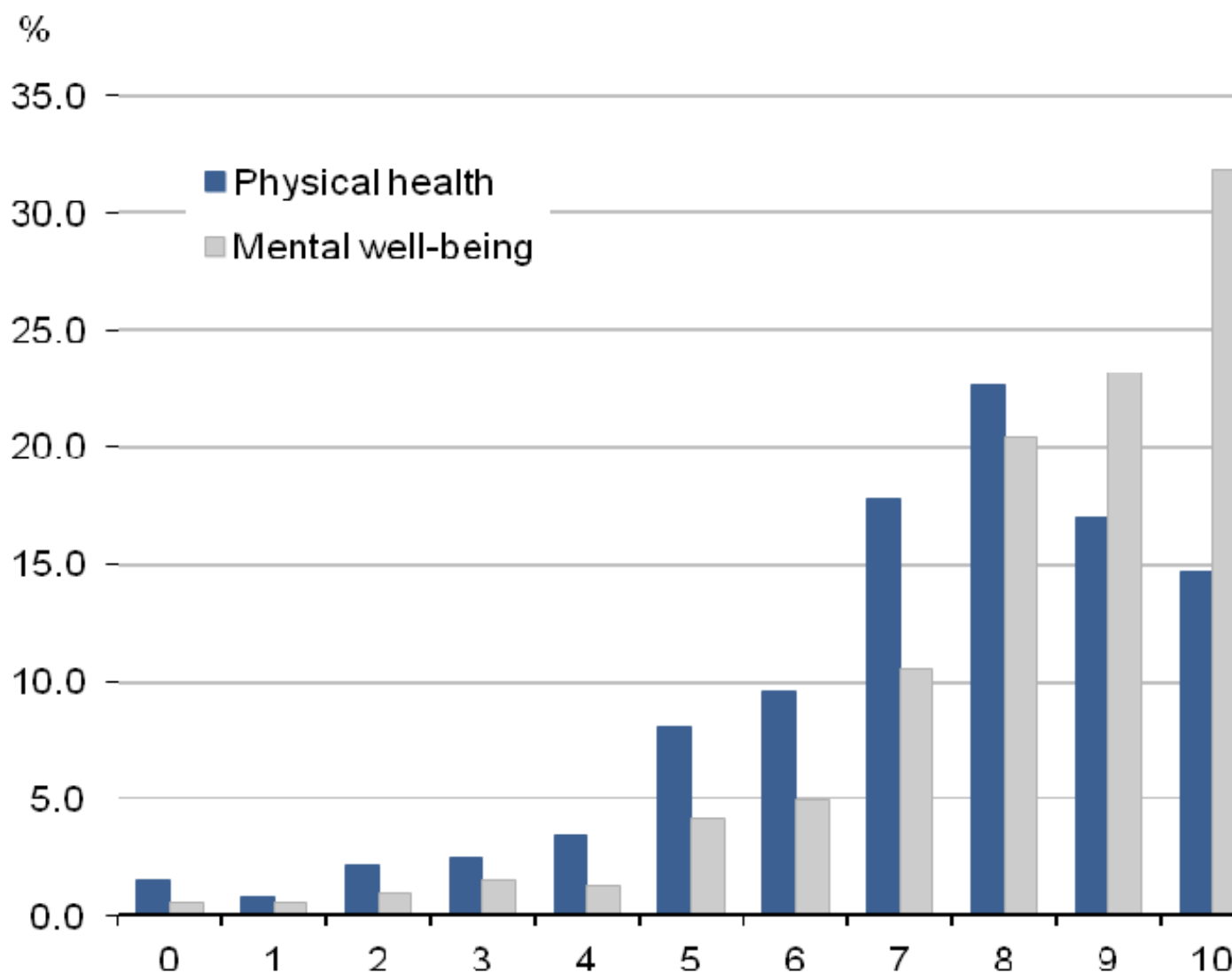**Download chart**

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Satisfaction with the respondent's financial situation had the lowest mean rating of 6.2 and a median and mode of 7 and 8 respectively. This is followed closely by satisfaction with their work situation (6.7) and the amount of time respondents have to do the things they like doing (6.8) (see Figure 5.1). However, it should also be noted that despite the low average for satisfaction with work situation the most common answer to this question was 10 out of 10, with 21 per cent of respondents giving this answer, but it also had the most amount of variation in response ratings.

The satisfaction of parents with their child/children's well-being showed the least amount of variation and the highest mean rating of 8.7 with two-thirds of respondents scoring 9 or 10 out of 10 (see reference tables that accompany this report). Satisfaction with mental well-being (8.3) and personal relationships (8.3) had the next highest mean ratings. They also both had a mode of 10 and similar amounts of variation between responses (standard deviation of 1.9 and 2.0). These variables also show a fairly strong positive correlation (or relationship) with one another (Pearson's correlation coefficient of +0.38, see reference tables for details).

Similarly, satisfaction with mental well-being was also correlated fairly highly with satisfaction with physical health (+0.54). Also a respondents' satisfaction with their work situation and their satisfaction with their financial situation also had a fairly strong positive relationship (+0.53).

Figure 5.2 shows that there is a clear difference in the distribution of scores for satisfaction of mental well-being compared with physical health. The distributions show that overall people report being more satisfied with their mental well-being than their physical health, with 32 per cent of respondents giving a score of 10 out of 10 for their mental well-being compared with 15 per cent for physical health.

Figure 5.2 Comparison of satisfaction with physical health and mental well-being, April and June 2011

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1. Scale 0 = 'not at all' and 10 = 'completely'

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 Overall, the 'life satisfaction' question had the strongest correlations with domain questions asked in April and June. That is perhaps not surprising given that they were drawn from the evaluative approach. Although the correlation coefficients of the 'worthwhile' and 'happy yesterday' questions

are slightly lower, the associations with the satisfaction by domain follow similar patterns. The 'anxious yesterday' had weaker association with the domain questions, with the weakest association in relation to satisfaction with the area in which the respondent lives. The correlation coefficients for all the questions in April and June can be found in the reference tables that accompany this report.

Section 6: Analysis of eudemonic subjective well-being questions

The additional 15 subjective well-being questions asked in the July module of the Opinions Survey (OPN) reflect the eudemonic approach to measuring subjective well-being. The inclusion of these has allowed ONS to gather more detailed information about a range of aspects of people's lives in addition to the overall headline eudemonic question 'Overall, to what extent do you feel that the things you do in your life are worthwhile?'. This was also done to see how well the single overall monitoring question captures the varied aspects of well-being from this approach.

Tables 6.1 includes the mean score for all the additional subjective well-being questions that were asked on the OPN in July 2011. For information including total number of respondents, average mean scores and standard deviation for each question please see the reference tables that accompany this report.

Table 6.1

Mean rating for each of the eudemonic subjective well-being questions, July 2011

Great Britain, Adults aged 16 and over

Monitoring questions	0 to 10 scale
	Mean
How much control do you feel you have over important aspects of your life?	7.4
How lonely do you feel in your daily life?	3.0
In your daily life, how much opportunity do you feel you have to show how capable you are?	6.8
To what extent do you generally feel you have a sense of direction in your life?	7.1
How positive do you feel about yourself as a person?	7.6
How important is it to you to learn new things?	7.5
How well do you generally get on with people around you?	8.4
How useful a role do you feel you play in the world around you?	7.0
To what extent do you feel that people treat you with respect?	7.5
To what extent do you feel appreciated by the people you know?	7.7
How optimistic do you feel about your future?	7.1

To what extent do you feel a sense of accomplishment from things you do in your daily life?	7.3
How quickly do you feel you return to normal after setbacks in your life?	6.9
To what extent do you feel that you learn new things in your daily life?	6.6
To what extent do you feel able to deal with important problems in your life?	7.5

Table source: Office for National Statistics

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Not including the estimates of the four headline questions, the highest mean ratings were for the questions 'How well do you generally get on with people around you?' (8.4), and 'To what extent do you feel appreciated by the people you know?' (7.7).The lowest mean rating was provided for the question 'How lonely do you feel in your daily life?' (3.0), however, this is not surprising as this question was the only 'negative' question asked in this module. The loneliness question also had the largest spread of ratings. Of the positive questions asked in this month, the lowest rating was received for the question 'To what extent do you feel that you learn new things in your daily life?' (6.6), and a low score was also received for 'In your daily life, how much opportunity do you feel you have to show how capable you are?' (6.8).

Pairwise correlations tests were carried out in order to investigate the extent to which the extra 15 eudemonic questions asked were correlated with the four headline subjective well-being questions. For a full list of correlations, see reference tables that accompany this report.

The overall 'life satisfaction' and 'worthwhile' questions were most highly correlated with the question asking about a sense of direction in life (Pearson's pairwise correlation of +0.48 and +0.55), how positive respondents felt about themselves as a person (+0.49 & +0.52) and the extent to which people get a sense of accomplishment from the things they do in life (+0.53 & +0.60). The 'worthwhile' question also had a fairly strong positive correlation with how useful a role respondents felt that they played in the world around them (+0.51).

The experience questions correlated less strongly with the additional eudemonic questions asked in July, particularly the 'anxious yesterday' question. The strongest correlation for 'happy yesterday' was with how positive respondents felt about themselves as a person (+0.45).. None of the extra eudemonic questions correlated with the 'anxious yesterday' question above -0.3. This lack of

correlation suggests that the experience questions are measuring different aspects of individuals' well-being than the eudemonic questions.

The eudemonic question that correlated least well with the four headline questions was 'how important is it to you to learn new things'. This had a correlation of between 0 and +/- 0.2.

Control and life satisfaction

The degree of control that individual's have over important decisions in their life is seen by many theorists as fundamental for positive subjective well-being. When the distributions of the 'control' and 'life satisfaction' questions are compared they follow a broadly similar pattern, although there are some differences. A slightly higher proportion of respondents provide a rating of 7 or 8 out of 10 for life satisfaction than for 'control'. Additionally, higher proportions of respondents provided a rating of 9 or 10 out of 10 for the 'control' question than for 'life satisfaction'.

Figure 6.1 Comparison of life satisfaction and sense of control, July 2011

Great Britain, Adults 16 and over
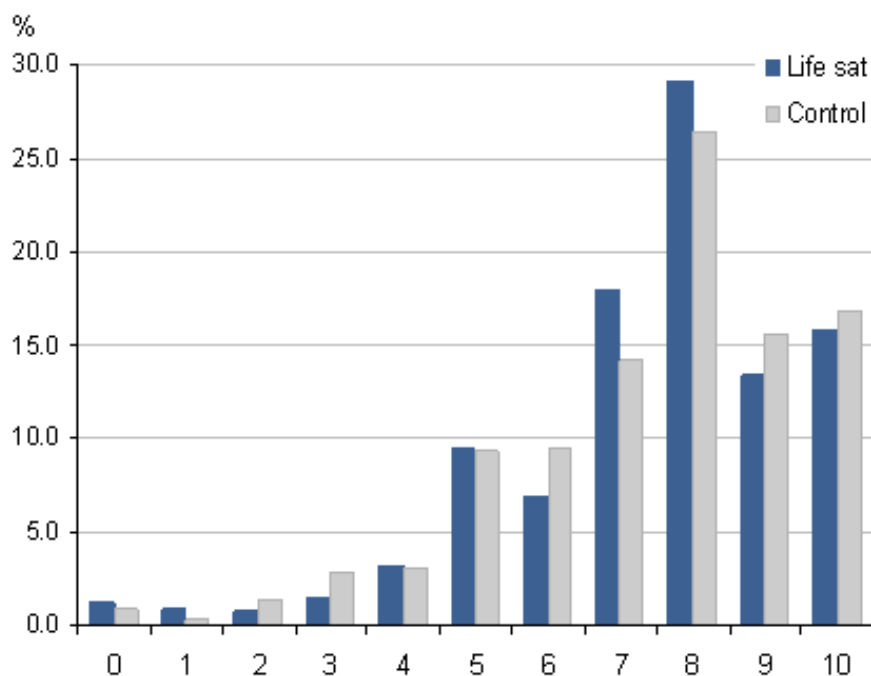
Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1. Scale 0 = 'not at all' and 10 = 'completely'

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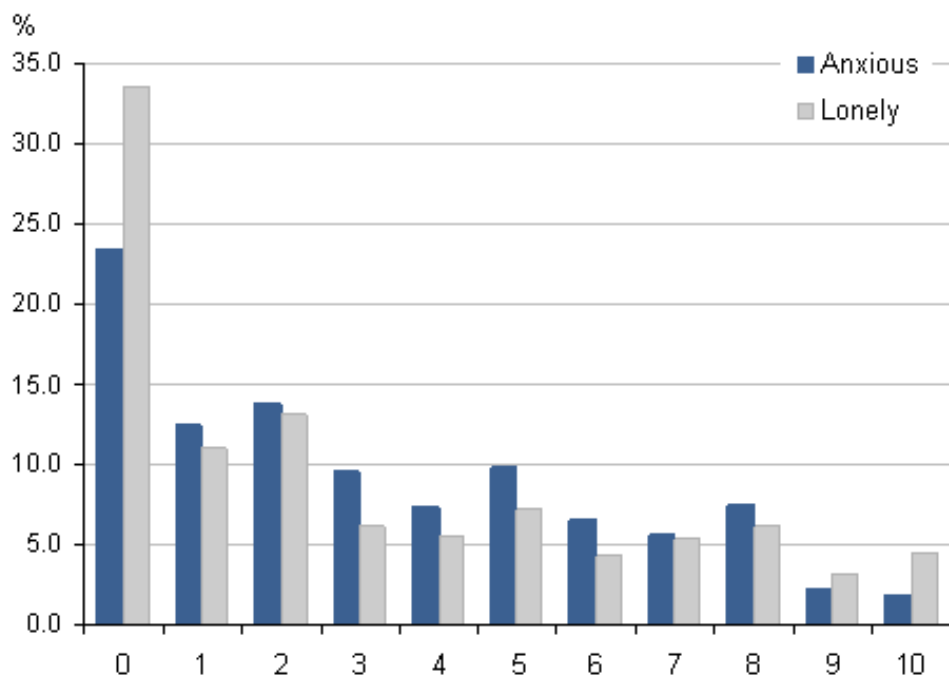**XLS** XLS format
(17.5 Kb)

Lonely and anxiety

The 'lonely in daily life' question was the only 'negative' eudemonic question asked in the July module. This was compared with the negative affect question 'anxious yesterday' in order to compare distribution of ratings. A fairly similar distribution of ratings can be observed for the two questions, although there was a higher proportion of 0 out of 10 for the 'lonely' question (see Figure 6.2).

Figure 6.2 Anxiety yesterday and loneliness in day-to-day life, July 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'
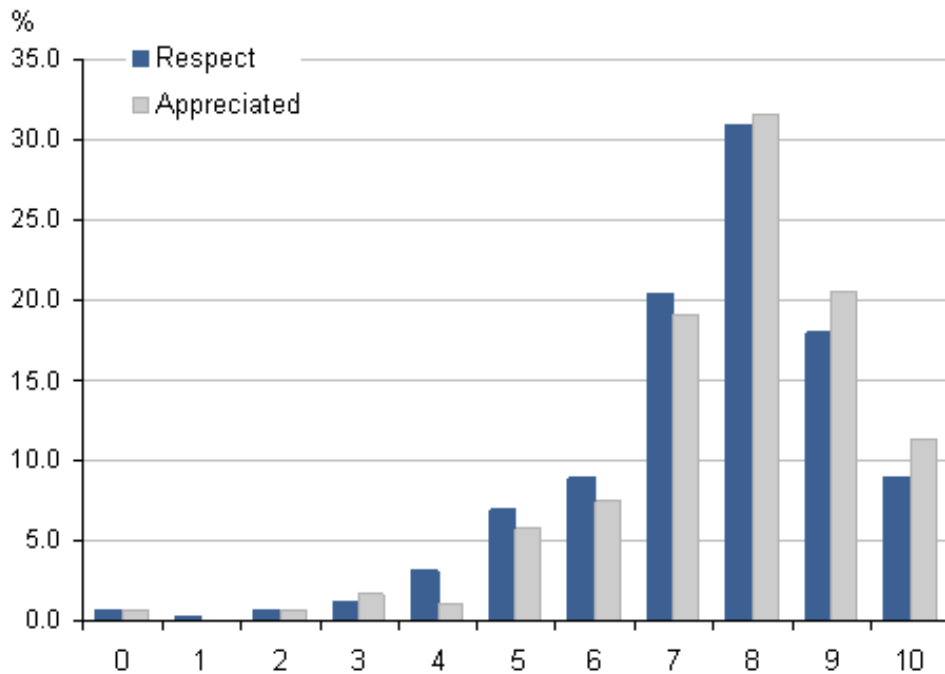
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Respect and feeling appreciated

As the concepts of respect and appreciated are related, we may expect a similar distribution from the results of the two questions asking about the extent to which respondents feel people treat them with respect and the extent they feel appreciated by people they know.

The distributions of ratings on the 0 to 10 scale are broadly similar, although again there are noticeable differences. Larger proportions of respondents reported higher ratings for 'respect' for the ratings of 4, 5, 6 and 7 out of 10. For the ratings of 8, 9 and 10 out of 10, slightly larger proportions of respondents reported feeling appreciated than respected (see Figure 6.3) although the differences are small.

Figure 6.3 Respect and appreciation, July 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

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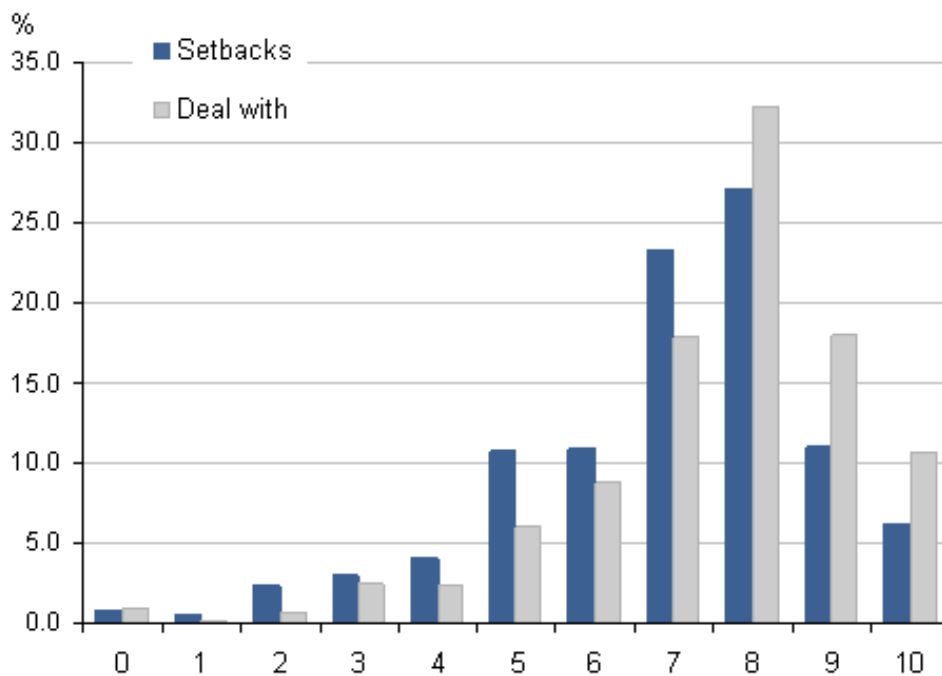
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Return to normal after setbacks and deal with important problems

These two questions are both asking about difficulties in life and looking at respondents' ability to cope, often referred to as resilience in the literature. One question asked how able respondents are to deal with important problems, and the other asked how quickly respondents return to normal after setbacks.

The different distributions of responses to these questions implies that on average respondents do recognise that these two questions are asking about distinct concepts. The graph shows that respondents give proportionally higher ratings for the 'deal with problems' question than for the 'return to normal after setbacks' question.

Figure 6.4 Comparison of return to normal after setbacks and deal with problems, July 2011

Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:
1. Scale 0 = 'not at all' and 10 = 'completely'

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In summary, the eudemonic questions asked in July appear to be picking up aspects more similar to the 'overall life satisfaction' question and the 'worthwhile' question than to the 'happy' and 'anxious yesterday' questions. There are however, difference between the ratings for the additional July questions and the headline eudemonic question, 'Overall, to what extent do you feel the things you do in your life are worthwhile?'.

Section 7: Analysis of experience subjective well-being questions (August 2011)

In the August 2011 Opinions Survey, as well as asking the four overall well-being questions further experience questions were also asked, including both positive and negative affect questions. A range of adjectives were included (see Figure 7.1 and 7.5) to allow for comparisons between these additional questions and the overall monitoring questions. These all used the 0 to 10 scale used for the overall monitoring questions asking 'Overall how [much] .... did you feel yesterday?'. In most instances the 'not at all' to 'completely' scale labels were used but on occasions an alternative label was used at the top end of the scale due to the language or concept not working well with 'completely' (see reference tables that accompany this report).

Positive affect questions

In terms of the average scores the additional positive affect questions had lower scores than the 'happiness yesterday' question which was asked as part of the four overall monitoring questions (see Figure 7.1). The August 2011 Opinions Survey gives an estimate of 7.4 for 'Overall how happy did you feel yesterday' on a scale of 0 to 10. The adjective yielding the closest estimate to 'happy yesterday' was 'content' at 7.1 out of 10. 'Calm', 'relaxed' and 'peaceful' provided similar averages (6.7, 6.4 and 6.3 out of 10) suggesting perhaps that these questions were picking up similar concepts. Likewise, 'enjoyment' and 'joyful' also gave similar averages (6.4 and 6.3 out of 10). 'Energised' (5.5) and 'excitement' (5.0) gave the lowest averages out of all the positive affect questions tested.

Figure 7.1 Mean ratings for positive affect questions, August 2011
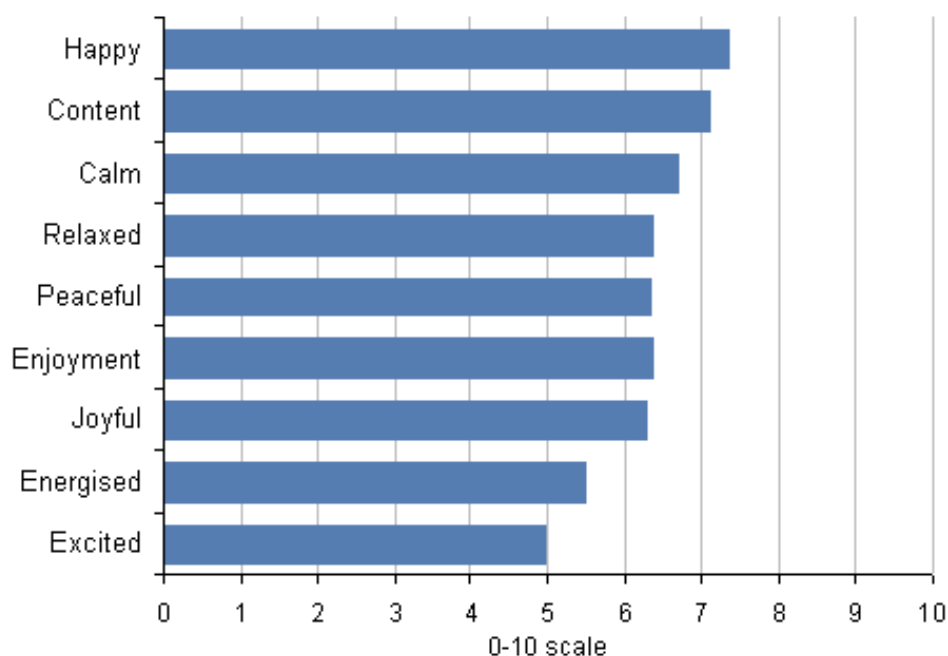
Great Britain, Adults 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'
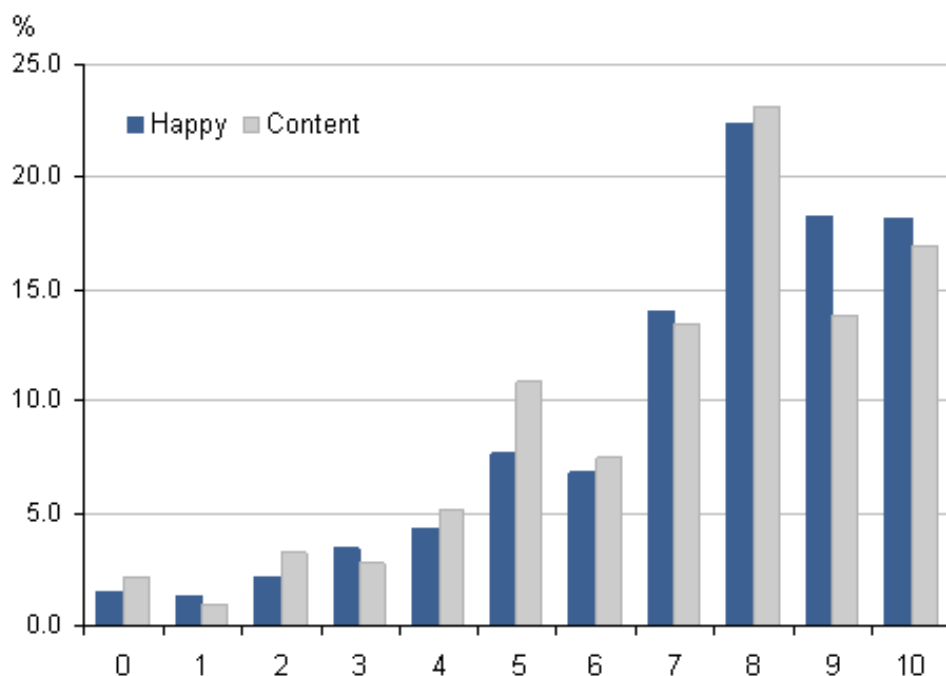
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It is also useful to look at the how each of these questions are correlated with each other to see how much respondents provide the same score for each of them. Overall, all the additional positive affect questions are positively associated with the 'happiness yesterday' question. This is particularly the case for content (Pearson's coefficient of +0.62), joyful (+0.63) and enjoyment (+0.58) which suggests that respondents see these as similar concepts. These questions are also positively associated with 'life satisfaction' and 'worthwhile' but not as much as for 'happy yesterday'. Overall

the additional positive affect questions asked have fairly high correlations with each other (see reference tables that accompany this report for more details).

As well as just looking at the mean scores it is also possible to look at the distributions of these measures. Figure 7.2 shows that 'happy' and 'content' provide similar distributions. 'Calm', 'relaxed' and 'peaceful' also showed similar distributions as did 'enjoyment' and 'joyful' (see figure 7.3 and 7.4).

Figure 7.2 Percentage of people for each rating to the happy and content yesterday questions, August 2011

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

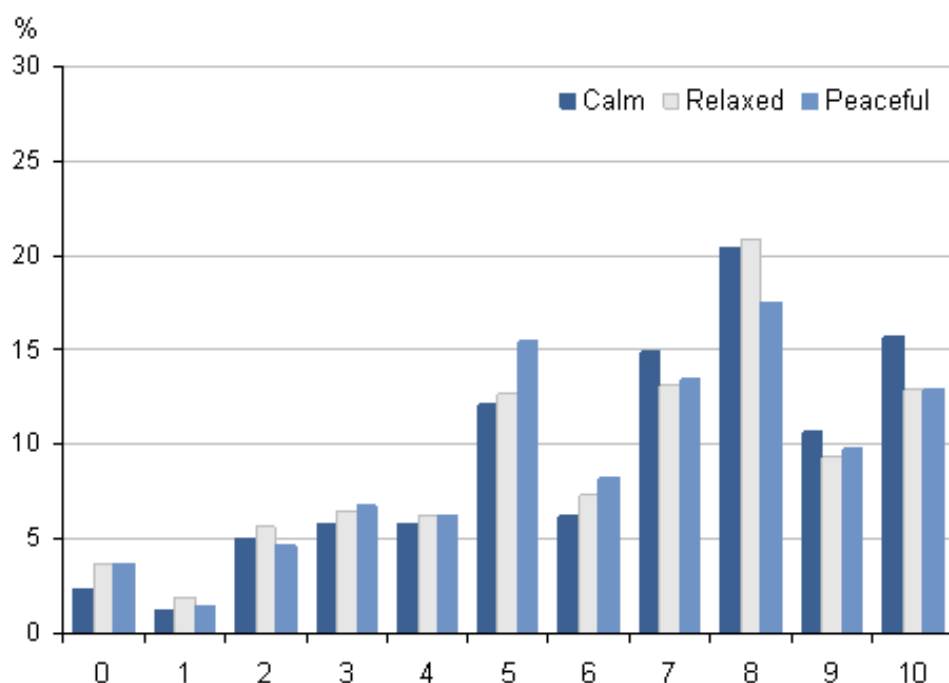1.   Scale 0 = 'not at all' and 10 = 'completely'

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Figure 7.3 Percentage of people for each rating to the calm, relaxed and peaceful yesterday questions, August 2011

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:
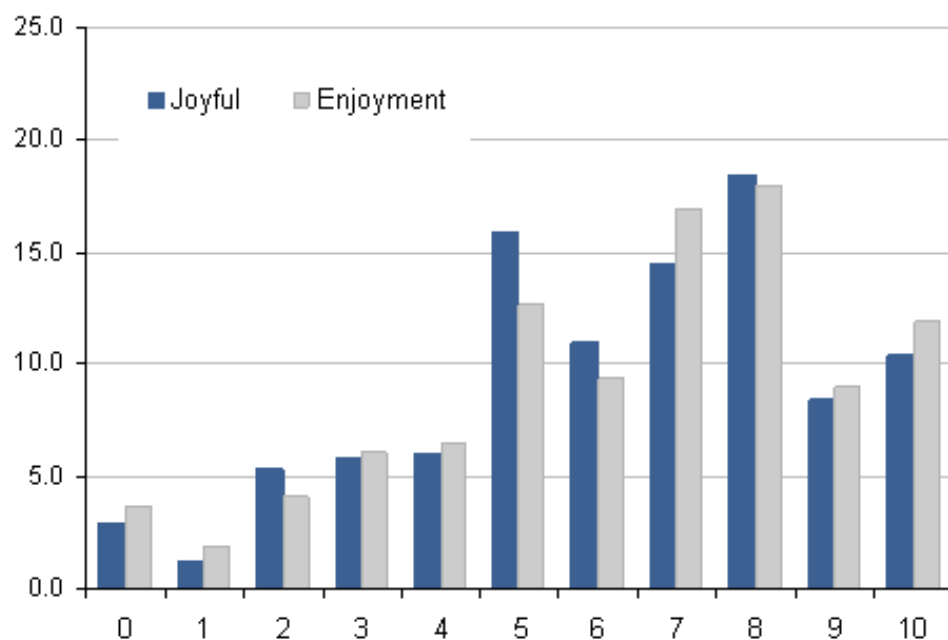
1. Scale 0 = 'not at all' and 10 = 'completely'

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Figure 7.4 Percentage of people for each rating to the joyful and enjoyment yesterday questions, August 2011

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

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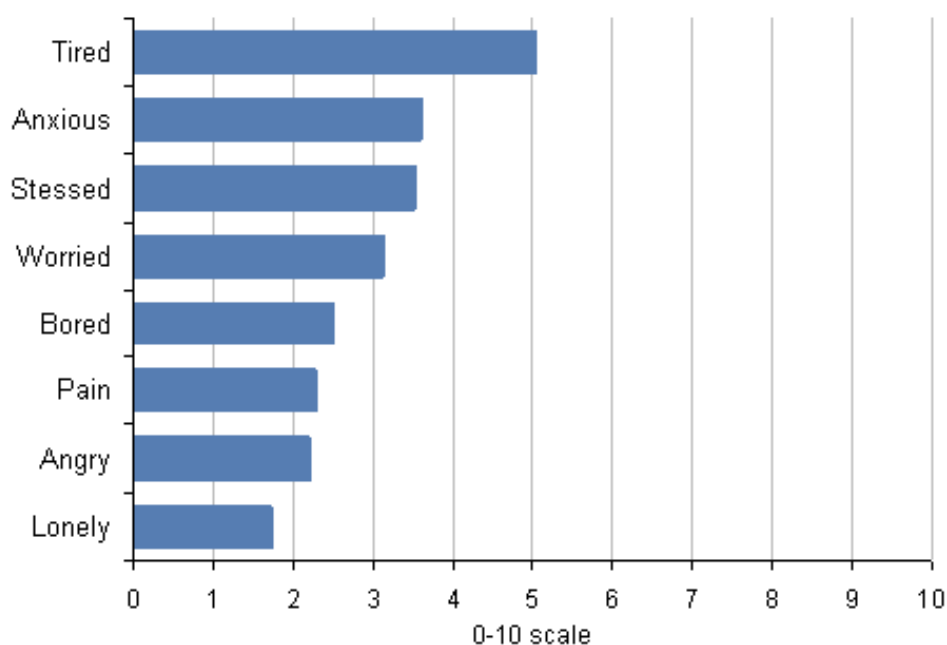(18 Kb)

Negative affect questions

A number of adjectives which reflect more negative day to day experiences were tested and these have been compared with the overall monitoring question of 'Overall, how anxious did you feel

yesterday?'. It is important to note for the negative affect questions 0 is the best possible outcome rather than 10.

Feelings of 'tiredness yesterday' gave the highest mean out of all the negative affect questions tested. This question seems to evoke quite different responses from respondents than the other questions. The mean rating for this question was 5.1 out of 10 whereas all the other adjectives had lower mean ratings (see Figure 7.5). This measure is also not that strongly correlated with other negative affect questions asked, with the highest correlation coefficient being with stress (+0.36).

Figure 7.5 Mean ratings for negative affect questions, August 2011

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'
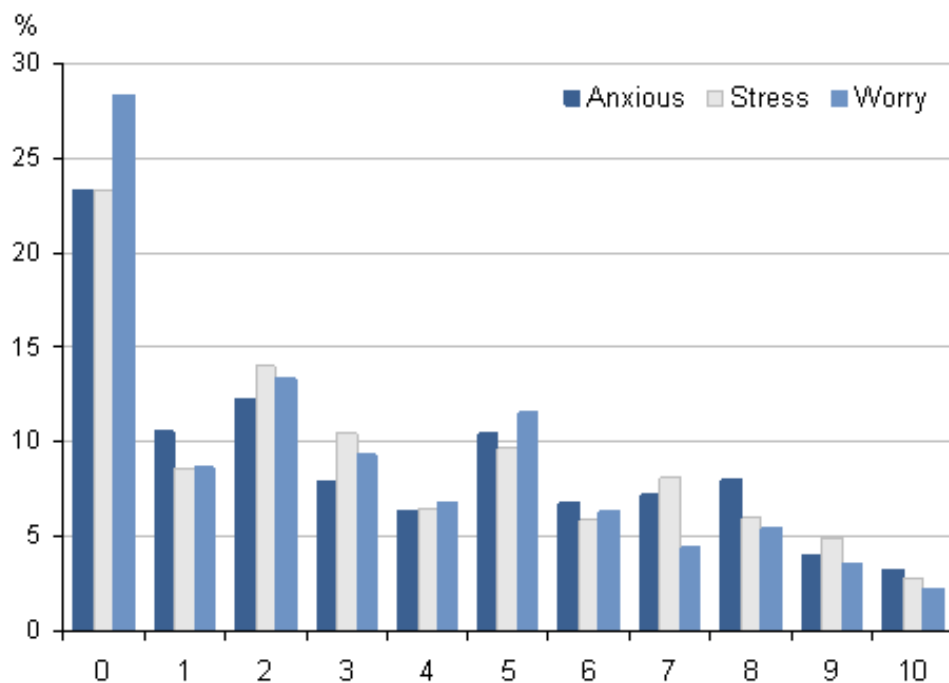
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The next highest means were for the extent that people felt 'anxious yesterday', 'stressed yesterday' or 'worried yesterday', with the mean for 'worried yesterday' being slightly lower than the other two. This appears to be driven primarily by the fact that a higher proportion (28 per cent) of people gave a rating of 0 for the worried question than they did for the anxiety and stress questions where 23 per cent of adults gave this rating for both questions in August 2011. However, this difference is not statistically significant at the 5 per cent level and overall the distributions for all these questions are very similar (see Figure 7.6). This is perhaps not surprising given that they can be considered related concepts and it appears that respondents give similar scores for these questions. For example, these questions had the highest correlations in this module with a correlation coefficient of above +0.5 for all these measures (see reference tables) The correlations between the other negative affect questions are not that high (apart from between boredom and loneliness) perhaps suggesting that these other concepts are seen by respondents as some how different.

Figure 7.6 Comparison of anxious, stressed and worried yesterday questions, August 2011

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

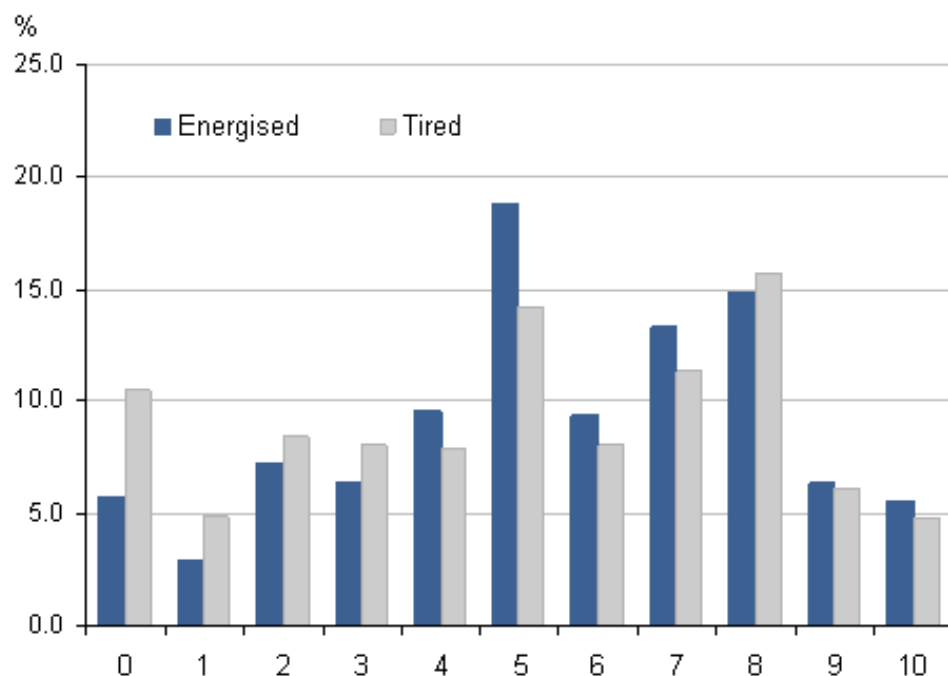1.   Scale 0 = 'not at all' and 10 = 'completely'

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The distribution of responses to the tiredness question looks quite different to the other negative affect questions, with responses more evenly distributed across the scale. Figure 7.7 illustrates this and also compares tiredness yesterday with how energised people felt yesterday (a positive affect question). It is interesting that even though one question is phrased in a positive light and the other in a negative light the answers given are similar and perhaps considered as similar concepts by respondents. The difference between the measures for 0 out of 10 is statistically significant at the 5 per cent level but not the difference for 5 out of 10.

Figure 7.7 Comparison of energised and tiredness yesterday questions, August 2011

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

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The pain question and loneliness question also appear to be picking up very different things to the other questions and the distributions seem to be different again to the other questions. These questions resulted in the largest proportion of people give a rating of 0 out of 10, 46 per cent for pain and 55 per cent for loneliness yesterday. The responses at other points at the scale are fairly evenly

distributed, although there are higher proportions for the lower ratings of pain and loneliness than for higher ratings (see reference tables for more information).

Section 8: Methodological Considerations

There are many methodological considerations to take into account when assessing the quality of subjective well-being estimates. These include, among others, non-response to the subjective well-being questions, the effect of the mode of interview, question order and context effects, response scales and the general context in which the questions are asked in.

ONS is undertaking a range of qualitative and quantitative testing to better assess the quality of these estimates. Over the period April 2011 to August 2011, ONS used the OPN to:

- run split sample trials to test the effect that the mode of interview (self completion using a laptop versus the interviewer completing on behalf of the respondent),
- test the Cantril Ladder of Life question against the life satisfaction question
- looking at ratings of past and future subjective well-being
- run an order test on the positive and negative affect questions, to see whether asking the negative questions before or after the positive questions had any effect on the ratings that respondents gave.

Some initial results from these tests are provided in this section of the report.

From September onwards, ONS has been using the OPN to test how the order of the four overall questions impacts on respondents' ratings of each question as well as the effect of making slight wording changes. It will take some months to build samples large enough to look at the differences and ONS will report further findings to the Measuring National Well-being Technical Advisory Group and make papers available to other users as we go forward. Also in September 2011 ONS ran questions on the OPN that will allow analysis of how subjective societal factors are associated with the four overall monitoring questions. ONS will also be analysing the APS for potential mode effects between telephone and face-to-face interviewing as well as reporting on the findings from further cognitive testing, which is being undertaken to better assess how people respond to the subjective well-being questions.

Mode of interview

Previous research has found that on average lower scores to well-being questions are received if the interview is carried out via self-completion rather than administered by an interviewer, particularly for female respondents (Pudney 2010). To test for this effect, ONS developed a split sample trial in the OPN from April to August 2011 to examine whether respondents who were able to fill in scores themselves on the interviewer's computer gave different scores to those who told the interviewer their scores. The sample was split in half and respondents were randomly allocated to one of the two groups.

When the subjective well-being questions were first added to the Opinions survey (OPN) in April 2011, if the respondent who was selected for a self-completion interview did not want to answer the questions on the laptop, the interviewers would revert to asking the respondents the subjective

well-being questions. From June 2011 this was rectified and interviewers were instructed to ask the questions in the event someone refused to use the self-completion method. For this reason, tables 8.1 to 8.4 only present data from June to August 2011.

Table 8.1 shows that there is little difference in the mean from the interviewer led interviews compared with the self-completion interviews. The biggest difference in result was for the 'anxious yesterday' question which was higher for self-completion (3.7) than for interviewer led (3.2). The differences between the mean scores by mode of interview are small and the only statistically significant difference was for the 'anxious yesterday' question. It is important to note that even for the questions that were self-completed on a laptop the respondent was still completing these questions in the presence of an interviewer which may also have had an effect on the responses given.

Table 8.1

Comparison of response rates for interviewer led and self-completion interviews

Well-being question	Mean average interviewer led	Mean average self completion
Life satisfaction	7.4	7.4
Worthwhile	7.6	7.7
Happy yesterday	7.4	7.3
Anxious yesterday	3.2	3.7

Table source: Office for National Statistics

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One finding that did emerge from this test was that the non-response rate was significantly affected by the self-completion mode. Table 8.2 shows that the interviews in which respondents were asked to self-complete the subjective well-being questions using a laptop had lower response rates to these questions that those who were asked the subjective well-being questions by an interviewer. We know that this was because of the laptop rather than the questions themselves because respondents were asked whether they minded using a laptop to self-complete the questions ahead of knowing the subject matter.

Table 8.2

Response rate by mode of interview

		Response rate by mode of interview
Life Satisfaction	**Interviewer led**	98.7
	Self completion	77.1
Worthwhile	**Interviewer led**	98.5
	Self completion	77.1
Happy yesterday	**Interviewer led**	98.7
	Self completion	77.1
Anxious yesterday	**Interviewer led**	98.5
	Self completion	77.1

Table source: Office for National Statistics

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In order to investigate why this might be happening response rate by mode was calculated by age group for the life satisfaction question.

Table 8.3 shows that the response rate for self-completion interviews on average declines with the age of the respondent, for example, nearly nine-tenths of respondents (89.0 per cent) aged 16 to 24 carried out the self-completion questions on a laptop, whereas less than half (45.3 per cent) of respondents ages 75+ agreed to complete the subjective well-being questions by this mode.

Table 8.3

Comparison of age band and response rate by mode of interview

Age Band	Response rate interviewer led	Response rate self completion
16-24	99.8	89.0
25-44	98.2	88.1
45-64	98.8	75.9
65-74	98.6	65.1
75+	98.3	45.3

Table source: Office for National Statistics

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Overall Item Non-response

Table 8.4 shows the overall response rate for each of the four overall monitoring questions after taking into account the non-response due to the introduction of the laptop for half of the sample. Non response for all four questions is very low (at around 1 per cent). This indicates that the vast majority of respondents are willing and able to provide answers to these subjective well-being questions.

Table 8.4

Response rate breakdown

	Satisfied	Worthwhile	Happy	Anxious
Valid response	99.1	99.0	99.1	99.0
Refusal	0.7	0.7	0.7	0.8
Don't know	0.2	0.3	0.2	0.2

Table source: Office for National Statistics

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The proportion of refusal and don't know responses was low for all four questions. The maximum base number of don't know or refusal responses for each of the four overall monitoring questions was 30, from a sample of 3,494 (for June to August). This small base number makes it unfeasible to draw conclusions on the demographics of these responders, but provides evidence that respondents accept questions on well-being and can provide responses. Further analysis of non-responders is likely to be feasible from the IHS when a larger sample is available.

Response by month

Another test of quality is to look at how stable the overall estimates are from month to month. The mean scores for the 'life satisfaction', 'worthwhile' and 'happiness yesterday' questions are very similar from month to month over the period April to August 2011, differing by no more than 0.2 points on the 0 to 10 scale (see Table 8.5). Note that the questions were not asked in May 2011 as OPN interviewers were all working on the Census Coverage Survey. It is interesting to note that the 'anxious yesterday' mean scores appear to change more from month to month than the other questions. This is perhaps expected as previous academic research has shown that the negative

affect questions are more likely to respond to external conditions than positive affect questions. However, with only four months of data we are not able to say what is driving these changes and whether this is a seasonal pattern or whether external factors are affecting the results. In terms of seasonality it could be for example that the experience questions are more likely to be affected by holiday periods than the evaluative and eudemonic questions which are designed to get responses from respondents over a longer time frame than just 'yesterday'. As we go forward and continue to collect further data over the year further analysis of these monthly differences will be undertaken.

Table 8.5

Average ratings for overall Subjective Well-being monitoring questions

April, June, July and August 2011 combined

0 to 10 scale

Monitoring Questions	April	June	July	August	April, June, July and August combined
Overall, how satisfied are you with your life nowadays?	7.4	7.4	7.4	7.3	7.4
Overall, to what extent do you feel the things you do in your life are worthwhile?	7.6	7.6	7.6	7.6	7.6
Overall, how happy did you feel yesterday?	7.5	7.3	7.4	7.4	7.4
Overall, how anxious did you feel yesterday?	3.4	3.5	3.2	3.6	3.4

Table source: Office for National Statistics

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Figure 8.1 shows that there is a similar distribution of scores for the 'life satisfaction' question for each of the four months suggesting that there is low variability in scores given to 'life satisfaction' in each of the months asked. Distributions for this question and the other three overall monitoring questions for each of the four months can be found in the reference tables that accompany this report.

Figure 8.1 Distribution of life satisfaction scores by month

Great Britain, Adults aged 16 and over
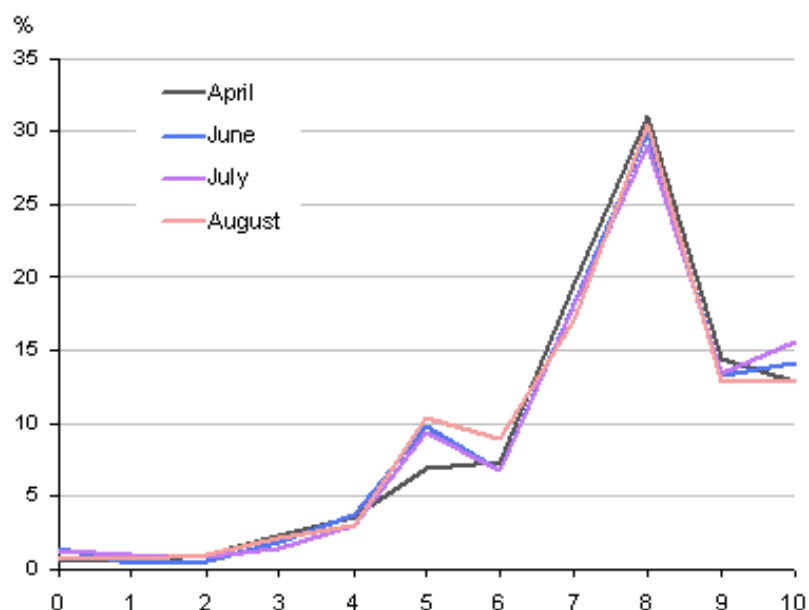
Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

Download chart

Extra June 2011 Evaluative questions

In June 2011, further evaluative questions were asked of respondents to see how they responded to these different questions and to see how different time periods in the question wording affected the answers given. Table 8.6 provides summary statistics for these questions.

Table 8.6

Additional June Evaluation questions

	Life satisfaction 5 years ago	Life satisfaction 12 months ago	Optimistic next 5 years	Optimistic next 12months	Step on ladder now	Step on ladder in 5 years	Time in work and other aspects
Total number of respondents	571	480	567	475	1052	1022	603
Mean score	7.1	7	6.8	7.3	6.7	7.6	6.4
Std. Deviation	2.4	2.6	2.2	2.3	2	2.1	2.2

Table source: Office for National Statistics

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Of the extra evaluative questions asked in June the lowest mean score given was for the question about satisfaction with the balance of time spent on paid work and the time spent on other aspects of life (6.4 per cent). Similar mean scores were obtained for the 'life satisfaction 5 years ago', and 'life satisfaction 12 months ago' (7.1 and 7.0 respectively). The standard deviation shows that these two questions also had the largest spread of scores of all the questions asked in June. Split samples tests were carried out on these questions which meant that respondents were only asked one of the life satisfaction questions above, one of the optimism questions, and one of the Cantril 'ladder' questions. The results of these split sample trials are outlined below.

How satisfied with your life were you five years ago/ 12 months ago?

These two questions were designed as a split sample, that is half the sample was asked about 12 months and the other half about 5 years ago. This way the respondent would never be asked both questions, but it does mean that these estimates are based on around only 500 people for each question. Overall, asking this question about past life satisfaction gives lower estimates than when respondents gave an answer about their life satisfaction 'nowadays'. However, there is very little

difference between the summary descriptions of the responses to the two variants of the question. Both the 12 month and 5 years ago questions gave mean response scores of around 7 and a median and mode score of 8 as well as similar amounts of variation between responses. Figure 8.2 compares the response distributions.

Figure 8.2 Comparison of life satisfaction 5 years and 12 months ago

Great Britain, Adults aged 16 and over
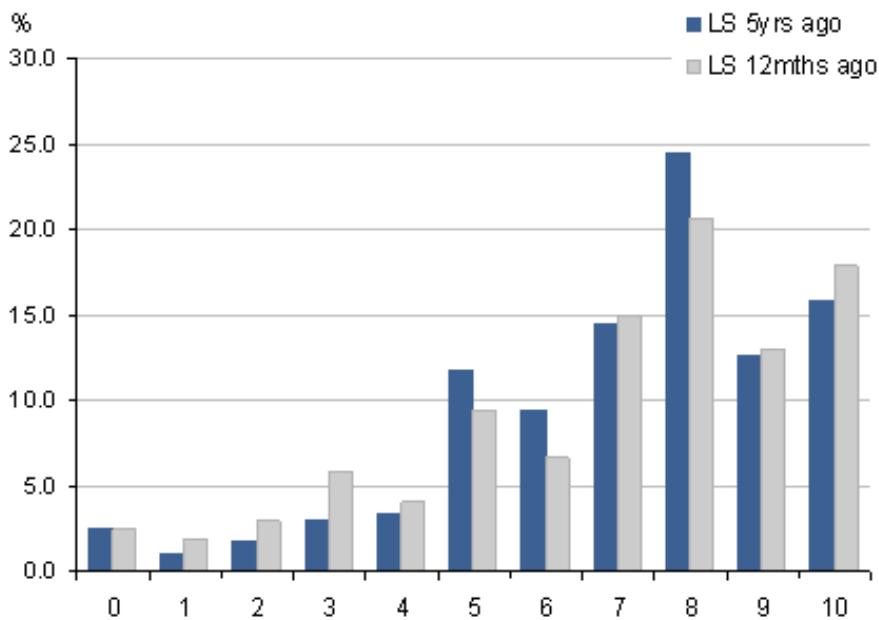
Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'
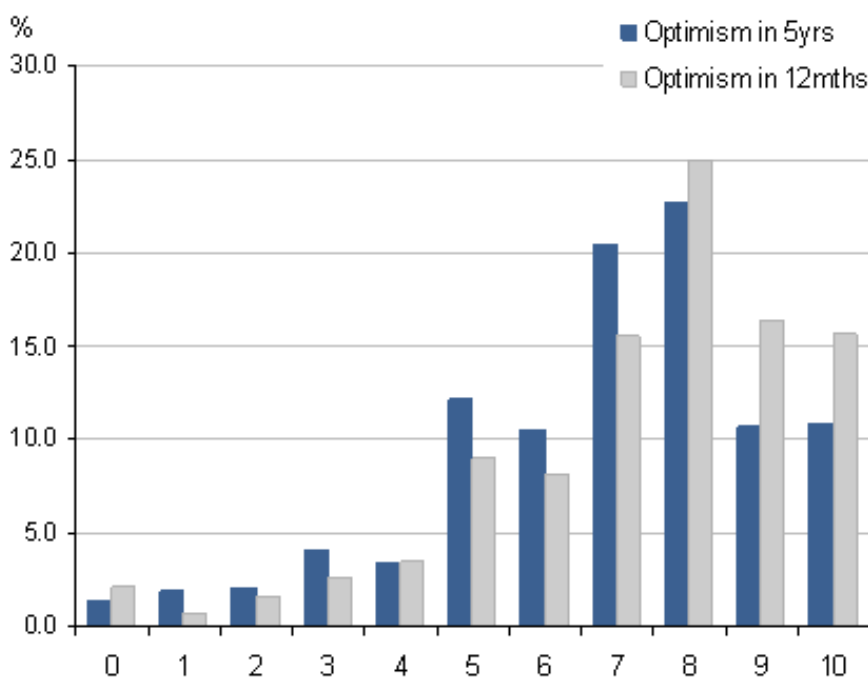
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Statistically there is an association between the response scores for these two questions (Chi Sq), but no significant difference between the mean scores for these two questions (t-test). This would suggest that respondents are neither more nor less satisfied with their lives 12 months ago than they were 5 years ago.

Overall how optimistic do you feel about the next 5 years/12months?

Once again these two questions were designed as a split sample so no respondent would be asked both questions. The mean and median scores of these two questions suggest that respondents are less optimistic about the next 5 years than they are about the next 12 months, with means of 6.8 and 7.3 and medians of 7 and 8 respectively. The distribution illustrates this (see Figure 8.3).

Figure 8.3 Comparison of respondent optimism in the next 5 years and 12 months

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale = 'not at all' and 10 = 'completely'
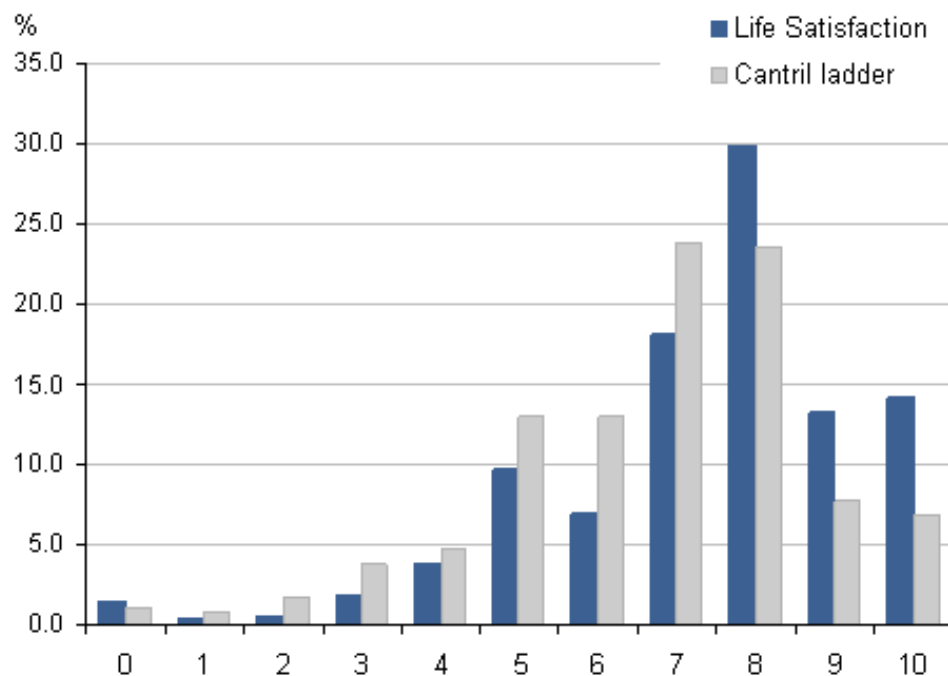
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Life Satisfaction and the Cantril Ladder of Life question

There is interest about the association between the Cantril ladder question: 'Please imagine a ladder with steps numbered from nought at the bottom to 10 at the top. 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. On which step of the ladder would you say you personally feel you stand at this time?' and the overall life satisfaction question: 'Overall, how satisfied are you with your life nowadays?'. Asking both these questions to the same respondents allows us to make a comparison of the estimates to both questions. However, it should be noted that the 'life satisfaction' question was the first question in the module to be asked and the Cantril Ladder of Life was asked after the domain satisfaction questions, the past life satisfaction questions and optimism questions which may have led to some focus or context effects affecting the answers. The Pearson's correlation between these questions was a strong positive relationship at (+0.65). Interestingly the Cantril Ladder of life mean was lower than the life satisfaction mean (6.7 versus 7.4) and looking at the distribution shows that people were more likely to provide estimates below 8 out of 10 for the Cantril Ladder of life question.

Figure 8.4 Comparison of life satisfaction and the Cantril Ladder of Life

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1. Life Satisfaction: 0 = 'not at all' and 10 = 'completely'
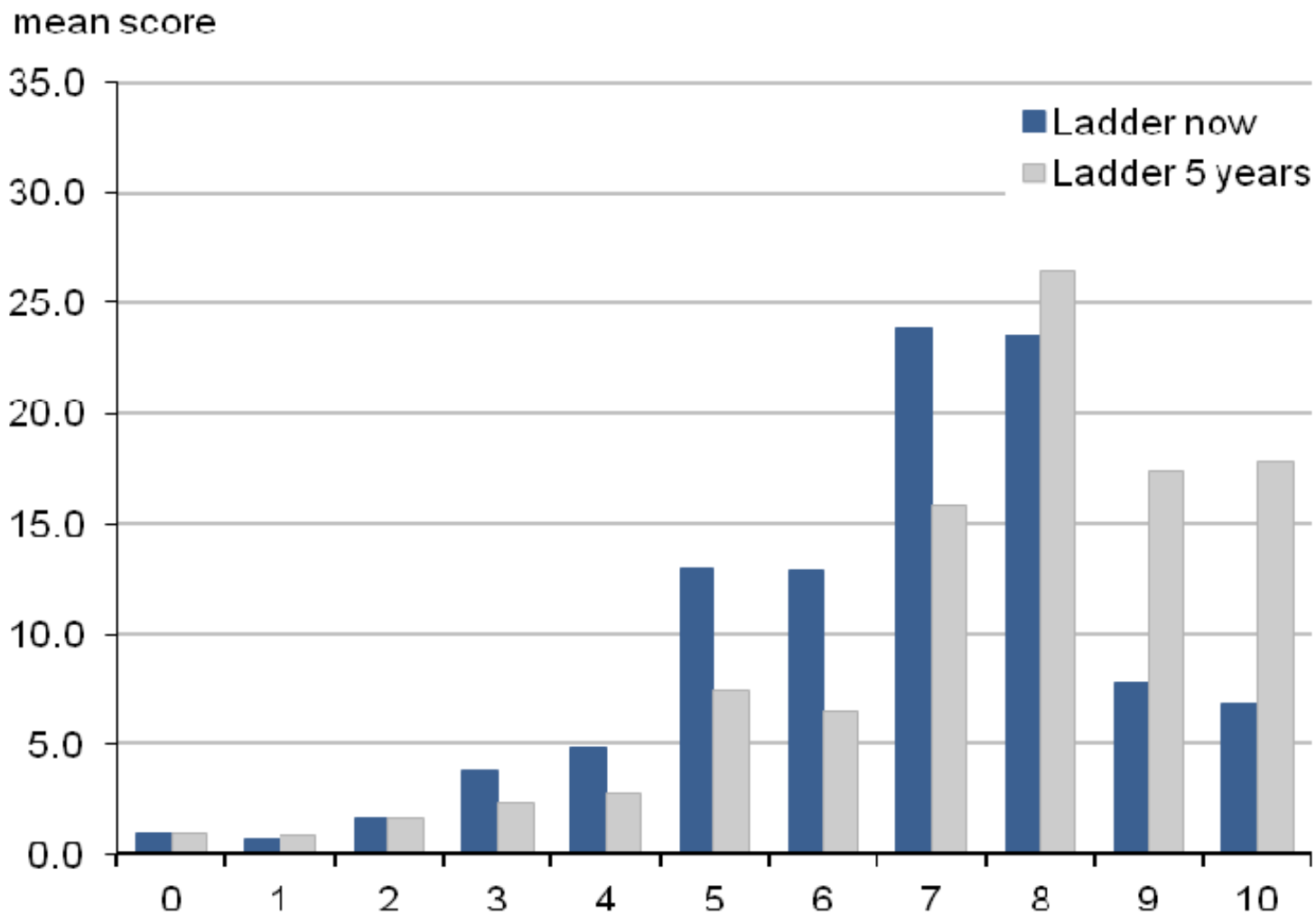
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On which step of the ladder would you say you personally feel you stand at this time/5 years from now?

The Cantril ladder question was also followed by a question about where respondents felt they would be in five years time on the ladder. The comparison between these two questions suggests that, overall, respondents' expectations would be to be standing higher up the ladder in five years than at this time. Figure 10 shows the distribution. This suggests that respondents are optimistic

about the future and comparisons can be made with the optimism for the next 5 years question asked in the same month. As you would perhaps expect there is a significantly strong relationship between the responses to these two variables with a correlation coefficient of +0.57.

Figure 8.5 Comparison of which step of the ladder the respondent feels they stand now will stand in 5 years time

Great Britain, Adults aged 16 and over

Source: Opinions (Omnibus) Survey - Office for National Statistics

Notes:

1.   Scale 0 = 'not at all' and 10 = 'completely'

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Results from the order test on the experience questions

The order that subjective well-being questions are asked can have an impact on the responses that are recorded. This is a known methodological consideration when asking subjective well-being survey questions. One test that was carried out in the August OPN was again a split sample trial where half of the respondents were asked the additional positive experience questions first, and half were asked the additional negative experience questions first. This was undertaken to investigate whether the ordering of the questions in this way would have an impact on the estimates.

Table 8.7 shows that when the negative affect questions were asked first then the estimated mean ratings for the positive experience questions were consistently lower. Also when the positive affect questions were asked first the mean ratings for the negative questions in most cases were higher compared with when the negative experience questions were asked first. This suggests that when the negative questions are asked first the focus on negative experiences causes respondents to respond with lower scores to the positive questions and when positive questions are asked first it causes respondents to provide higher scores to the negative affect questions. Some of these differences for different questions, with only one month of OPN data were statistically significant at the 5 per cent level and these are marked in Table 8.7. At the 1 per cent level only the positive affect differences were identified as significance differences. ONS will be running this test again on the OPN and with a larger sample the differences will be examined again.

It is also interesting to note that there is no difference for the pain question and only a small difference to the tired yesterday question. This could be that because they are more about actual physical experiences and perhaps less susceptible to order effects.

Table 8.7

Differences in mean scores when the positive affect and negative affect questions were asked in different order of two sides of the sample

	Positive affect questions asked first	Negative affect questions asked first	Difference
	Mean score	**Mean Score**	*Per cent*
Positive affect questions			
Overall, how relaxed did you feel yesterday?	6.8	5.9	*-13.1*
Overall, how calm did you feel yesterday?	7.0	6.4	*-8.7*
Overall, how content did you feel yesterday?	7.2	7.0	*-2.5*
Overall, how excited did you feel yesterday?	5.5	4.5	*-17.6*
Overall, how energised did you feel yesterday?	5.9	5.1	*-12.4*
Overall, how peaceful	6.5	6.2	*-3.8*

did you feel yesterday?			
Overall, how joyful did you feel yesterday?	6.4	6.1	*-4.9*
Overall, how much enjoyment did you experience yesterday?	6.5	6.2	*-3.8*
Negative affect questions			
Overall, how much pain did you experience yesterday?	2.3	2.3	*0.0*
Overall, how stressed did you feel yesterday?	3.8	3.3	*-12.7*
Overall, how worried did you feel yesterday?	3.5	2.9	*-17.1*
Overall, how angry did you feel yesterday?	2.4	2.1	*-13.9*
Overall, how lonely did you feel yesterday?	1.9	1.6	*-20.0*
Overall, how tired did you feel yesterday?	5.1	5.0	*-3.2*

Overall, how bored did you feel yesterday?	2.7	2.3	*-17.2*

Table source: Office for National Statistics

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[Well-being reports and articles](#)
Summary reports and articles on well-being

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[Social Trends](#)
An established reference source, Social Trends draws together social and economic data from a wide range of government departments and other organisations; it paints a broad picture of UK society today, and how it has been changing.

Related Internet Links

[Eurostat feasibility study on wellbeing indicators](#)
Link to Eurostat feasibility study on wellbeing indicators website

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References

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Appendices

Reference Tables

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