

## METHODOLOGY AND INTERPRETATION

**These guidelines include:**

- **The domains and questions comprising the Happiness Pulse**
- **An overview of the way individual scores within the survey themes are calculated.**

### DOMAINS

The Happiness Pulse has four domains of wellbeing:

General	GENERAL
Emotional	BE
Behavioural	DO
Social	CONNECT

For general wellbeing we use two of the ONS-4 questions on wellbeing.

Our BE domain comprises the seven questions from the short version Warwick-Edinburgh Mental Well-being scale (SWEMWBS) as these questions are robust, subject to stringent testing and provide the best way of summarising the main elements of emotional wellbeing. We also use their prescribed method for working out the results of the BE domain.

The Warwick-Edinburgh Mental Well-being Scale was developed with funding provided by the Scottish Government's National Programme for Improving Mental Health and Well-being. It was commissioned by NHS Scotland, developed by the University of Warwick and the University of Edinburgh in 2006, and is jointly owned by NHS Scotland, The University of Warwick and the University of Edinburgh.

All the questions in both the DO and CONNECT domains are based on indicators used by recognised data agencies, adapted and tested by Happy City.

The additional Community Pulse module, accessed via our Advanced package, uses the following data organisations as its source: the Office for National Statistics, the Understanding Society Survey, the European Quality of Life Survey, the Oxwell Survey. A number of the questions are adapted by Happy City.

Where we use a question directly from another source we also use the original response scale for that question.

## QUESTIONS

DOMAIN	TOPIC	QUESTION	RESPONSE SCALE	SOURCE
GENERAL Wellbeing	Life satisfaction	Overall, how satisfied are you with your life nowadays?	0 (Not at all) - 10 (Completely)	ONS
	Worthwhile	Overall, to what extent do you feel the things you do in your life are worthwhile?	0 (Not at all) - 10 (Completely)	ONS
BE	Optimism	I've been feeling optimistic about the future	1 (None of the time, 2 - rarely, 3 - Some of the time, 4 - Often, 5 - All of the time) - 5 (Always)	SWEMWBS
	Worth	I've been feeling useful	1 (None of the time, 2 - rarely, 3 - Some of the time, 4 - Often, 5 - All of the time) - 5 (Always)	SWEMWBS
	Peace of mind	I've been feeling relaxed	1 (None of the time, 2 - rarely, 3 - Some of the time, 4 - Often, 5 - All of the time) - 5 (Always)	SWEMWBS
	Resilience	I've been dealing with problems well	1 (None of the time, 2 - rarely, 3 - Some of the time, 4 - Often, 5 - All of the time) - 5 (Always)	SWEMWBS
	Competence	I've been thinking clearly	1 (None of the time, 2 - rarely, 3 - Some of the time, 4 - Often, 5 - All of the time) - 5 (Always)	SWEMWBS
	Autonomy	I've been able to make my own mind up about things	1 (None of the time, 2 - rarely, 3 - Some of the time, 4 - Often, 5 - All of the time) - 5 (Always)	SWEMWBS
	Relationships	I have been feeling close to other people	1 None of the time, 2 - rarely, 3 - Some of the time, 4 - Often, 5 - All of the time - 5 Always	SWEMWBS
DO	Be Active	How often do you spend 30 minutes playing sports or physical exercise?	1 - Never, 2 - less than once a week, 3 - 2-3 times a week, 4 - 5 times a week, 5 - Every day	Happy City
		How often do you spend 15 minutes walking or cycling?	1 - Never, 2 - less than once a week, 3 - 2-3 times a week, 4 - 5 times a week, 5 - Every day	Happy City
	Keep Learning	How often do you attend courses of some kind?	1 - never 2 - rarely, 3 - several times a year, 4 - once a month, 5 - more than once a month	Happy City
		How often do you spend time informally learning about something new?	1 - never 2 - rarely, 3 - several times a year, 4 - once a month, 5 - more than once a month	Happy City
	Take Notice	I notice and appreciate the little things in life.	1 Never 2 - Rarely, 3 - Sometimes, 4 - Every day, 5 - Many times a day	Happy City

		I can laugh and see the funny side of things	1 - Never, 2 - Rarely, 3 - Sometimes, 4 - Every day, 5 - Many times a day	Happy City
CONNECT	Connect	How often do you meet socially with friends, relatives or work colleagues?	1 - Never, 2 - less than once a week, 3 - 2-3 times a week, 4 - 5 times a week, 5 - Every day	Happy City
		How often do you participate in social activities of a club, society or an association?	1 - Never, 2 - less than once a week, 3 - 2-3 times a week, 4 - 5 times a week, 5 - Every day	Happy City
		How often do you feel lonely?	1- Always, 2- Often, 3- Sometimes, 4- Occasionally, 5- Never	Happy City
	Give	How often do you help out informally with friends or neighbours?	1 - Never, 2 - less than once a week, 3 - 2-3 times a week, 4 - 5 times a week, 5 - Every day	Happy City
		How often do you get involved in work for voluntary or charitable organisations?	1 - Never, 2 - less than once a week, 3 - 2-3 times a week, 4 - 5 times a week, 5 - Every day	Happy City
	Support	Do you have a friend/s or family member/s with whom you can discuss personal matters?	Yes, No	Happy City
	Community	I feel like I belong to this neighbourhood	1 Disagree Strongly, 2 - Disagree, 3 - Neither Agree/Disagree, 4 - Agree, 5 - Agree Strongly	Happy City

## DEMOGRAPHICS

QUESTION	CATEGORIES
Country	United Kingdom (standard list of countries)
Postcode	Postcode district and sector (eg BS3 4)
Gender	Male; Female; Prefer not to say; Prefer to self-describe
Age	Under 16, 16-24, 25-34, 35-49, 50-64, 65-74, 75+
Ethnicity	White British, White Other, Mixed/multiple, Asian/Asian British, Black/Black British, Other Ethnic group

## CALCULATING SURVEY USER RESULTS

The calculation of survey results information applies to the basic Happiness Pulse domains - general wellbeing, Be, Do and Connect. The Community Pulse results are analysed separately using standard question by question analysis approaches.

The basic Happiness Pulse survey results are automatically calculated on the Pulse app as follows:

### **Step 1 Standardising scores**

Questions in the Pulse have different response scales. To make them easier to compare, the scores are standardised by converting them to z-scores:

$$Z\text{-score} = [(original\ response) - (mean\ response)] / (standard\ deviation\ of\ responses)$$

The means and standard deviations are taken from a nationally representative sample of 2,000 Pulse responses, which was collected by YouGov in October 2018. This is updated every four years.

### **Step 2 Aggregation**

To get a score for a whole domain from the responses to individual questions, scores are aggregated by adding together all the Z-scores within a domain, and dividing by the number of questions in the domain.

### **Step 3 Rescaling**

Although Z-scores are comparable, to aid understanding the domain scores are rescaled so that the overall mean for each domain is 6.5 and the range is 0-10.

### **Step 4 Transformation to percentiles**

To aid interpretation of scores, scores are also transformed into a percentile: a 1-100 scale, where each unit on the scale represents a 100th of the range of scores in the nationally representative sample. For instance, a percentage score of 1 would mean that the user is in the lowest 100th of user scores in the UK; 36 would mean the user is in the 36th percentile in the UK; and so on.

To do this, we calculated percentiles for the nationally representative sample, which can be done using a formula, or manually in the following way:

Order range of domain scores from lowest to highest

Divide total amount of domain scores (e.g. 722) by 100 to find out how many user domain scores belong to each percentile (e.g. 7.22)

Record range of domain scores for each percentile (e.g. the first percentile will consist on the lowest 7 user domain scores)

To show users of the Pulse their percentile score for a domain, the Pulse app looks up what percentile their domain score falls into in the nationally representative sample. For example, if a user got a general wellbeing score of 5, this score falls into the 23rd percentile of scores for the nationally representative sample and a score of 23% is displayed. This means they scored higher than 23% of the UK population.

## SAMPLE SIZE AND REPRESENTATIVENESS

In order to get meaningful data the Happiness Pulse must be used in a way which ensures optimum outreach so that both the sample size and the representativeness of that sample provide valid and reliable data at a local level, while preserving the anonymity of the respondent.

We work with our clients to ensure that this is the case, and provide guidelines on the parameters for comparison and analysis.

