

# Technical methodology for the Vibrant Economy Index

## Structure of the Vibrant Economy Index

The Vibrant Economy Index uses a quantitative measurement by which to rank the vibrancy of local authority areas. As the premise underlying the index is that our UK economy should benefit society as a whole, it takes into account not only financial growth and economic return within an area, but also a wider set of social and environmental characteristics. The Vibrant Economy Index for an area is therefore created as an arithmetic average of a place's performance across the following six 'baskets':

- 1 **Prosperity** – Are we producing wealth and creating jobs?
- 2 **Dynamism and Opportunity** – Are we developing an entrepreneurial and innovative culture to drive future growth?
- 3 **Inclusion and Equality** – Are individuals benefiting from economic growth?
- 4 **Health, Wellbeing and Happiness** – Are our people living healthy, active and fulfilling lifestyles?
- 5 **Resilience and Sustainability** – Are we creating places that people want to live in and are not damaging our natural environment?
- 6 **Community, Trust and Belonging** – Are people engaged with their community and living lively and creative cultural lives?

Each basket holds a set of socio-economic and/or business indicators and as such is an index in its own right. The Vibrant Economy Index is therefore based on a three-tier model of:

- 1 Individual indicators
- 2 Baskets of indicators
- 3 Overall Vibrant Economy Index

## Step 1: Selecting indicators used for each basket

The indicators are drawn from nationally available data sets. An initial suite of indicators were proposed by our Place Analytics researchers based on a range of factors including the reliability of the data sources, spatial coverage and their coherence and relationship to other indicators within the wider basket (for example in the Prosperity basket work place-based measures were used as opposed to resident-based measures). The selection of indicators was then refined through discussions with the Vibrant Economy Commission, our Grant Thornton partners and people and feedback from the general public.

## A note on indicator selection

In some cases, the indicators used are proxy measures. For example, there is no measure for entrepreneurialism, so we've included 'business formation rates' as a good indicator of places that are creating new businesses. Likewise, there is no single measure for innovation so we have included 'patents granted' as a good measure of the creation of new products and ideas.

In a few cases we've used proprietary tools and algorithms to combine data sets to create a particular indicator. An example would be our 'inequality score', which measures the range in overall deprivation between all Super Outputs Areas within a local authority area and then indexes this to the national average to create a score. Another example would be the 'mean hours differential score' which we created to reflect the fact that places that worked significantly more than the average 35 hours per week and places that worked significantly less than the average could both be considered negatively when thinking about 'health, wellbeing and happiness' with the former an indicator of over work and the latter an indicator of under employment.

There are things that we would like to have measured but could not, because either the data sets are not collected (for example local volunteering levels), or they're not collected consistently across all local authorities for example community engagement.

## A note on boundaries

Owing to data limitations between English, Welsh and Scottish sources, we have produced three separate indices. Where possible we have kept the same indicator, but found a different source. In some cases a data set was unavailable and it has been necessary to include a different indicator. For Scotland, for example, we have had to remove the indicators for diabetes and adult obesity and have replaced it with one on long-term sickness and disability. As a result, the English, Welsh and Scottish indices are independent of each other and the resulting authority area rankings cannot be directly compared.

In England, due to data limitations, we have not included the City of London or Isles of Scilly in the analysis. We therefore analyse 324 areas instead of 326.

**Details of the specific indicators selected for each country and their associated metadata can be found in Appendix 1.**

## Step 2: Normalise each indicator with the min-max formula

Once the indicators were selected we then went through a two stage process to standardise and normalise in order to enable both comparison and aggregation.

The first stage was to ensure a 'fair' comparison by creating denominators for those indicators that would be unduly influenced by an area's size – for example there will be more businesses formed in areas with larger business populations but this does not mean that they are more entrepreneurial. As such this indicator was normalised by looking at business formations as a proportion of all active businesses.

The second stage was to ensure that each indicator value was normalised so that values measured on different scales (eg percentages, scores, actual numbers) were measured on a notionally common scale. To do this we applied the min-max formula so that each area receives a score between 0 to 1.

In applying this formula, indicators that relate to positive outcomes (for example knowledge-driven employment, or the proportion with skills at NVQ level 4 or above) were normalised to a score between 0 and 1. Indicators that relate to negative outcomes (such as unemployment or anxiety) were inversely calculated to reflect this.

## Step 3: Apply threshold to uplift zero entries

In line with other index construction, the Vibrant Economy Index is based on the benchmarking principle. Therefore, in order to ensure that we had no 'zero' entities, we have capped these values to be finitely small. Given that the analysis was undertaken across local authority areas and the variability between the values for each indicator we applied a minimum threshold scaled to one tenth (1/10) of the second lowest value. This step ensured that we were able to calculate geometric mean as it removed any zero values from the data and recognising the gap between each pair of lowest values for each indicator.

## Step 4: Calculating the geometric mean using the normalised scores to obtain the basket scores

All indicators are grouped together under their respective baskets and the geometric mean for each is calculated. The geometric mean provides a better reflection of the intrinsic differences between indicators compared to a simple average.

## Step 5: Scaling the basket scores

A geometric mean which ranges from 0 and 1 is not very practical, therefore a 'scaled score' was created to enable comparison between different spatial areas.

This calculation enabled all scores to be scaled against a national average of 100 and standard deviation of 5 (i.e.  $\mu = 100$ ,  $\sigma = 5$ ).

The local authority areas were then ranked according to their scores in each basket.

## Step 6: Calculating the Vibrant Economy Index

The final step was to create an arithmetic average of all six scales basket scores. This yielded a local authority's overall Vibrant Economy Index score. The index ranking is based on this score.

## Developing the index

Since launching the Index for England in November 2016, we have invited on-going comment and reflection on the indicators. Based on this feedback we have amended two indicators:

- The age of those living alone has been increased from those aged 50+ to 65+
- Cultural amenities per square hectare has been changed to square kilometre

Indicators have been updated where there have been new data releases in 2017 and we have also updated the data set with newly released national statistics data for:

- GVA total – this is now published by ONS at local authority level and is more accurate than using a proxy
- GVA per job – this is now published by ONS at local authority level and is more accurate than using a proxy
- House affordability score- new housing affordability ratio data published by ONS

We have 'washed' these small changes through the previous year's data to ensure like-for-like comparisons. This means there are some changes in an area's ranking in 2016 between the first and second release of the Index.

We have also developed trend data, looking back over the past five years to give an indication of 'direction of travel' for an area. We have taken last year's 2016 Vibrant Economy Index as the baseline and therefore have updated that with data one year on and have also gone back in time by three years so that we have five year data series. It is important to note that the year of the index may not relate directly to the same year of data. For example in the latest 2017 index, the GVA data is for 2015, the affordability data is for 2016 and planning applications is for 2017. We are constrained by the lag in which data is released and therefore it is impossible to have consistency in temporal coverages across all indicators across each year of the index. However, we have ensured that for each index there is a one year gap between data releases. For example in the 2016 index the planning applications is for 2016.

If the data is released on a monthly or quarterly basis we have ensured we use the same month/quarter for previous years so that we are comparing like-for-like, as some indicators will fluctuate throughout the year.

Where the data was missing for an indicator or it not available on an annual basis, we have followed the standard economic approach of flat-lining it. For example, the Census is only published every 10 years. So for a small number of instances where indicators are Census-based the latest data has been flat-lined for across all five years of the index. In a small number of cases there is a change in methodology which means that the data is not comparable with previous years. The methodology table below goes into more detail about the time series datasets and any caveats.

In order to provide a sense of scale, the average relative increase between 2013 and 2017 of the top 20 most improved areas in England was 61 places. For Scotland, the average change in rank for the 5 most improved regions was 6 places. For Wales, the average change for the top 5 most improved regions was 4 places.

# Appendix 1

## Vibrant Economy Index – English indicators

Key: **Y** = available across all years    **Y** = only available for some years    **N** = not available in time series

Indicator name	Description	Metadata	Included in time series analysis?	Time series notes
<b>Prosperity</b>				
<b>Total GVA (£m)</b>	This measures the value of goods and services produced in an area. The higher the GVA the larger the economy	Gross Value Added (Income Approach) at current basic prices, published at local authority level ( <i>Regional GVA(I) by local authority in the UK 2015, ONS</i> )	<b>Y</b>	Retrospectively updated 2016 index to reflect new source of data and make consistent across years. The last two indices have the same temporal coverage (2015 data for 2016 and 2017 indices) as the source is yet to publish more recent data.
<b>GVA per job (£000)</b>	This measures how productive an area is	Gross Value Added (Income Approach) at current basic prices, per filled job. This indicator is a bespoke Grant Thornton measure that has been constructed by dividing total GVA by the total number of jobs in the area (based on employee numbers) to provide a figure of GVA per job. ( <i>Regional GVA(I) by local authority in the UK 2015, ONS; Business Register and Employment Survey 2015, ONS</i> ).	<b>Y</b>	Retrospectively updated 2016 index to reflect new source of data and make consistent across years. The last two indices have the same temporal coverage (2015 data for 2016 and 2017 indices) as the source is yet to publish more recent data.
<b>Businesses turning over &gt;£100 million (%)</b>	This provides a proxy for a strong large business base that creates jobs and produces wealth	Total number of businesses with a turnover of over £100 million, as a proportion of the total business base in the area. Collated from postcoded Companies House data which is aggregated up to district level ( <i>FAME 2017, Bureau van Dijk 2017; Business Activity, Size and Location, ONS</i> ).	<b>Y</b>	
<b>Mean Workplace Weekly pay (£)</b>	This measures how wealthy the workplace employees are	The mean earnings estimates shows the earnings in pounds for employees who are on adult rates of pay and whose pay was not affected by absence ( <i>Annual Survey of Hours and Earnings 2016, ONS</i> ).	<b>Y</b>	
<b>Knowledge-driven employment (%)</b>	Knowledge driven sectors are those that generate most wealth in an economy	This workplace based figure provides the proportion of all employed persons working in the following Knowledge-driven sectors: Aerospace (30.3), Electric machinery and optical equipment (28.23, 26.20, 26.3, 32.5, 26.52, 26.70), Printing, publishing, recorded media (58.11-58.14, 59.20, 58.19, 18.11, 18.12), Chemicals (20), & Energy (06, 09.1, 19, 35, 36), Telecomms, computer & related services, R&D (61, 53.20, 62, 72), Finance, business services (64, 66, 69.10, 69.20, 73.20, 70.22,	<b>Y</b>	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE as well. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.

64.20, 71.1, 71.2, 73.1, 78.1-78.3, 80.30, 80.10, 74.20, 82.11, 82.19, 74.30, 82.20), Air transport services (51), & Recreational & cultural services (90, 93, 91). All figures in brackets are 2010 Standard Industrial Classification (SIC). SIC Codes group similar industries together in a nationally recognised coding system (*Business Register and Employment Survey 2016, ONS*).

<b>Businesses turning over &gt;£1 million (%)</b>	This provides a proxy for a strong small business base that creates jobs and produces wealth	Number of enterprises that have a turnover above £1 million as a proportion of all enterprises ( <i>Enterprise by Turnover size band and GB Local Authority Districts 2017, ONS</i> ).	Y	
<b>Businesses turning over &gt;£1 million (%)</b>	This provides a proxy for a strong small business base that creates jobs and produces wealth	Number of enterprises that have a turnover above £1 million as a proportion of all enterprises ( <i>Enterprise by Turnover size band and GB Local Authority Districts 2017, ONS</i> ).	Y	
<b>Foreign owned businesses (%)</b>	Foreign investment is a key driver of wealth and prosperity.	Number of foreign owned businesses is collated from postcoded Companies House data which is aggregated up to district level and expressed as proportion of the total business base. Excludes financial services and includes subsidiaries ( <i>FAME 2017, Bureau van Dijk 2017; Business Activity, Size and Location, ONS</i> ).	N	Not possible to collate for past years from FAME so have had to flatline for 2015, 2014 and 2013 index.

#### Dynamism and opportunity

<b>Business formation rate (%)</b>	This is a proxy for entrepreneurship	The number of businesses that have registered for VAT within the last year, as a proportion of all active businesses ( <i>Business Demography 2015, MHCLG</i> )	Y	
<b>High level skills (%)</b>	This is an indicator of a highly skilled economy	This residence based indicator provides the percentage of working age people, who are qualified to NVQ level 4 (degree-level) or above ( <i>Annual Population Survey Dec 2015-Dec 2016, ONS</i> )	Y	
<b>Knowledge workers (%)</b>	Knowledge workers are some of the most productive in the economy and play an important role in creating growth	The proportion of the employed resident population who are employed in knowledge occupations based on SOC groups (1) Managers and senior officials, (2) Professional occupations, (3) Associate professional and technical occupations, based on place of	Y	

residence (*Annual Population Survey March 2016, ONS*).

<b>Patents granted (per 100,000 pop)</b>	This indicator is a proxy for how innovative an area is	Total patents granted between 2015 and 2016, per 100,000 population ( <i>Intellectual Property Office, 2017</i> ).	Y	Changed temporal coverage in order to allow time series analysis- instead of each year of index covering 10 years, each index relates to a 2 year time period (e.g. 2014 - 2016). The 2016 index has also been retrospectively updated to reflect this change in temporal coverage.
<b>GCSE's A*-C achieved (%)</b>	This indicator reflects the level of future opportunity that exists within an area	Percentage of pupils achieving 5 or more GCSEs at grades A*-C (including English and Maths) or equivalent, percentage of pupils at end of Key Stage 4 based on local authority of the pupil's residence, at the end of the academic year, persons ( <i>Department for Education 2015-16</i> ).	Y	Time series only for last three indices (2017, 2016 and 2015). There was a change to methodology for 2013/14 figures which means the data is not comparable to earlier years- have had to flat line 2013/14 data for the 2013 and 2014 index.
<b>Higher Education employment (%)</b>	Higher Education institutions are a source of new and innovative ideas. This indicator provides a proxy for capturing this	Proportion of employees in higher education as a proportion of all employees. Higher education defined using SIC code: '854: Higher education'. Workplace based measure ( <i>Business Register and Employment Survey 2016, ONS</i> ).	Y	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.
<b>R&amp;D employment (%)</b>	Research and development is a central component of innovation	Proportion of employment in research & development as a proportion of all employees. Research and development defined using SIC code: '721: Research and experimental development on natural sciences and engineering' and '722: Research and experimental development on social sciences and humanities'. Workplace based measure ( <i>Business Register and Employment Survey 2016, ONS</i> ).	Y	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE as well. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.

### Inclusion and equality

<b>Deprivation (score)</b>	This is the national indicator of how deprived an area is	Population weighted average of the combined Overall IMD scores for the LSOAs in a larger area. The Index of Multiple Deprivation (IMD) is an overall relative measure of deprivation constructed by combining seven domains of deprivation according to their respective weights, as described below. The larger the score, the	N	MHCLG guidance specifies it is not possible to measure real change in deprivation over time. In addition, the IMD is only released every 3 years which would make it problematic to look at annual change
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more deprived the area (and the lower its rank). The domains were combined using the following weights to produce the overall Index of Multiple Deprivation: Income Deprivation (22.5%) Employment Deprivation (22.5%) Education, Skills and Training Deprivation (13.5%) Health Deprivation and Disability (13.5%) Crime (9.3%) Barriers to Housing and Services (9.3%) Living Environment Deprivation (9.3%) (*English Indices of Deprivation 2015, MHCLG*).

<b>Inequality (score)</b>	This measures the difference between an area's most and least deprived neighbourhoods	The indicator provides an index of the inequality score to the national average. This indicator is a measure of inequality and shows the range in overall deprivation between all the Super Output Areas within each local authority area. The higher the score, the more inequality within the area ( <i>English Indices of Deprivation 2015, MGCLG</i> ).	<b>N</b>	MHCLG guidance specifies it is not possible to measure real change in deprivation over time. In addition, the IMD is only released every 3 years which would make it problematic to look at annual change
<b>Average income (£)</b>	This measures levels of wealth in the resident population	Total personal income in pound thousands ( <i>Personal Income by Tax year 2014-15, HM Revenue &amp; Customs</i> )	<b>Y</b>	
<b>Child poverty (score)</b>	This measures levels of child poverty in an area	Population weighted average of the Income Deprivation Affecting Children score for the LSOAs in a larger area. A high score indicates high deprivation. The Income Deprivation Affecting Children Index (IDACI) measures the proportion of all children aged 0 to 15 living in income deprived families. Income deprived families are defined as families that either receive Income Support or income-based Jobseekers Allowance or income-based Employment and Support Allowance or Pension Credit (Guarantee) or families not in receipt of these benefits but in receipt of Working Tax Credit or Child Tax Credit with an equivalised income (excluding housing benefit) below 60 per cent of the national median before housing costs. Shrinkage was applied to construct the Income Deprivation Affecting Children Index score. It is a subset of the Income Deprivation Domain which measures the proportion of the population in an area experiencing deprivation relating to low income ( <i>English Indices of Deprivation 2015, MHCLG</i> ).	<b>N</b>	MHCLG guidance specifies it is not possible to measure real change in deprivation over time. In addition, the IMD is only released every 3 years which would make it problematic to look at annual change

**Housing Affordability (score)**

This measure compares average house prices with average earnings

Housing affordability is calculated by dividing house prices by annual earnings. House prices are taken from the House Price Statistics for Small Areas (HPSSAs) produced by the Office for National Statistics (ONS) and refer to the median and lower quartile price paid for residential properties in England and Wales. They are calculated using open data from the Land Registry, a source of comprehensive record level administrative data on residential property transactions. Earnings data are from the Annual Survey of Hours and Earnings (ASHE) and refer to median and lower quartile gross annual earnings for full-time employees. (*Housing affordability in England and Wales: 2016, ONS*)

Y

Using new source of data, so retrospectively updated 2016 index to make consistent across years. The latest data has not yet been published by source so we have had to use same year of data for 2016 and 2017 index.

**Employment rate (%)**

This measures the number of working age adults in employment

This residence based indicator provides the proportion of people aged 16 to 64 in employment (*Annual Population Survey March 2017, ONS*).

Y

**Benefit claimant rate (%)**

This measures the level of benefit take up in an area

The proportion of people of working age who are claiming at least one benefit (Work and Pensions Longitudinal Study Nov 2016, DWP).

Y

**Homeless households (per 000 households)**

This measures the number of homeless households in an area

Numbers accepted as being homeless and in priority need PER 1,000 households (*Table 784: Local Authority Summary 2016-2017, MHCLG*).

Y

**NEETS (%)**

This measures those not in education, employment or training. It is a valuable indicator of youth unemployment and the challenges facing young people

Estimated number of 16-18 year olds not in education, employment or training, as a proportion of all 16-18 year olds known to the local authority. Note- some figures are only unitary and county so where it is not available for the district we have applied the county figure to each of the districts (*NEET data by local authority 2015, Department for Education*).

Y

The DfE have changed the definition of NEET at the end of 2016 figures to include those young people whose activity is not known and shifted the period for which the average is made from November to January to December to February. As such these figures cannot be compared with NEET publications for previous years. Therefore we can't use the latest 2016 data so have had to apply the 2015 data to the 2016 and 2017 index.

**Housing benefit claimant rate (% of all hhlds)**

This is a useful measure for the disparities that exist in the housing market

All housing benefit claimants as a proportion of total households (*Housing Benefit claimants by Region and Local Authority May 2017, DWP*).

Y

Have had to change source of denominator to use Household projections instead of Census so that we can obtain annual total household

estimates. Have retrospectively update the 2016 index to reflect this change and ensure consistency across all years of the index.

<b>Long term unemployment (%)</b>	This measures long-term unemployment and identifies those furthest from the labour market	The proportion of all unemployed people who have been unemployed for over five years ( <i>Claimant Count August 2017, ONS</i> ).	Y	
<b>Fuel poor households (%)</b>	This is a good indicator of poverty, particularly amongst the elderly	Proportion of households that are fuel poor. Under the Hills Low Income High Costs (LIHC) definition, a fuel poor household is one in which: a household has required fuel costs above the median level; and were the household to spend that amount, they would be left with a residual income below the official poverty line ( <i>Fuel Poverty Sub-regional statistics 2015, Department for Business, Energy &amp; Industrial Strategy</i> ).	Y	
<b>Unemployment inequality (ethnicity)</b>	This measures the difference between non-white and white unemployment levels as a proxy for ethnic inequality within an area	This indicator measures the difference between the white unemployment rate and non-white unemployment rate. A higher figure indicates greater inequality ( <i>Census 2011, ONS</i> ).	N	Census only published every 10 years, therefore we have had to flatline across all years of the index

### Health, wellbeing and happiness

<b>Mean hours worked differential</b>	This measures the how many hours people work and is a good proxy for work-life balance	This measures the how many hours people work above or below the standard 35 hour weeks. The distance from this standard – above or below – is counted equally. A lower value therefore shows that the area is closer to this ideal, which is assumed as a better work life balance ( <i>Annual Survey of Hours and Earnings 2016, ONS</i> ).	Y	
<b>Sports participation (adults) (%)</b>	This indicator shows how active people are and reflects personal health lifestyles	The percentage of the adult (age 16 and over) population in a local area who participate in sport and active recreation, at moderate intensity, for at least 30 minutes on at least 12 days out of the last 4 weeks (equivalent to 30 minutes on 3 or more days a week) ( <i>Active Peoples Survey October 2014-September 2016, Sport England</i> ).	Y	

<b>Adults overweight or obese (%)</b>	This is a good indicator of the health of an area and in particular how healthy lifestyles are	Adults with a BMI classified as overweight (including obese), calculated from the adjusted height and weight variables. . Adults are defined as overweight (including obese) if their body mass index (BMI) is greater than or equal to 25kg/m2. Expressed as a proportion of all adults registered with GP ( <i>Health Profiles 2013-2015, Public Health England</i> ).	Y	Only published by source for last two years, therefore have flat lined for 2015, 2014 and 2013 index.
<b>Life Satisfaction (score)</b>	This measures how satisfied people are with their individual prospects	Based on question: Overall, how satisfied are you with your life nowadays? Where 0 is 'not at all satisfied' and 10 is 'completely satisfied' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	
<b>Life worthwhile (score)</b>	This measures how worthwhile people feel that their lives are	Based on question: Overall, to what extent do you feel the things you do in your life are worthwhile? Where 0 is 'not at all worthwhile' and 10 is 'completely worthwhile' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	
<b>Happiness (score)</b>	This indicator measures how happy people are	Based on question: Overall, how happy did you feel yesterday? Where 0 is 'not at all happy' and 10 is 'completely happy' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	
<b>Anxiety (score)</b>	This measures how anxious people are and is a good proxy for well-being	Based on question: Overall, how anxious did you feel yesterday? Where 0 is 'not at all anxious' and 10 is 'completely anxious' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	
<b>Diabetes prevalence (%)</b>	This is a good indicator of the health of an area and in particular how healthy lifestyles are	Patients registered with GP practices, with a coded diagnosis of diabetes and aged 17 and over at midnight on 31st March (in a particular year) (QOF DM19), as a proportion of patients aged 17 and over. ( <i>Health Profiles 2014/15, Public Health England</i> ).	Y	Not a more recent publication so latest 2017 index has same year temporal coverage as 2016 index.
<b>Average Life Expectancy (yrs.)</b>	This is a good indicator of the overall health of an area	How long, on average, people can expect to live using estimates of the population and the number of deaths. This is a male and female combined life expectancy figure that has been population weighted according to the number of males and females in the area ( <i>Life Expectancy at Birth 2013-2015, ONS</i> ).	Y	

<b>Child Obesity (Year 6) (%)</b>	This is a good indicator of the health of an area and in particular how healthy lifestyles are	Number of children in Year 6 (aged 10-11 years) classified as obese in the National Child Measurement Programme (NCMP) attending participating state maintained schools in England as a proportion of all children measured ( <i>Health Profiles 2015/16, Public Health England</i> ).	<b>Y</b>
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### Resilience and sustainability

<b>Air Quality (score)</b>	This measures the quality of air in different areas and is a good indicator on the impact being had on the environment	The indicator is an estimate of the concentration of the four pollutants: nitrogen dioxide, benzene, sulphur dioxide and particulates. A higher score for the indicator represents a higher level of deprivation. Figures are released at LSOA level and aggregated up using population weightings to provide the local authority average. It forms part of the Index of Multiple Deprivation ( <i>English Indices of Deprivation 2015, MHCLG</i> ).	<b>N</b>	MHCLG guidance specifies it is not possible to measure real change in deprivation over time. In addition, the IMD is only released every 3 years which would make it problematic to look at annual change
<b>Recycling rate (%)</b>	This measures levels of household waste recycled in an area and is a good indicator on the impact being had on the environment	Percentage of household waste sent for reuse, recycling or composting (Ex NI192) ( <i>Local Authority Collected Waste Statistics 2015/16, WasteDataFlow- Department for Environment, Food and Rural Affairs (Defra)</i> )	<b>Y</b>	No figures for individual Dorset districts so had to apply the Dorset waste Partnership figure across all Dorset districts.
<b>Co2 emissions per capita (Kt CO2)</b>	This measures the level of CO2 per had and is a good indicator on the impact being had on the environment	Total carbon dioxide emissions in Kt CO2 per head of population ( <i>UK local authority and regional carbon dioxide emissions national statistics 2015, Department of Energy &amp; Climate Change</i> )	<b>Y</b>	
<b>Energy consumption (GWh)</b>	This measure looks at how much energy is being consumed an is a good indicator on how much natural resources are being used	Total final energy consumption (all fuels) ( <i>Total final energy consumption at regional and local authority level 2015, Department for Business, Energy &amp; Industrial Strategy</i> )	<b>Y</b>	
<b>New residential addresses created in National Flood zone (%)</b>	New homes are a good proxy for resilience but not if they are being built in flood zones	Proportion of new residential addresses created in National Flood Zone 3 ( <i>Land Use Change Statistics 2013-2016, MHCLG</i> ).	<b>Y</b>	In 2015 a revised methodology was introduced which means that figures are not comparable with the historic Land Use Change. Therefore, we have only included the latest two years of data (for 2017 and 2016)

				index) and flat lined across prior years.
<b>Previously developed land usage (addresses per ha)</b>	This measures the density of housing on previously developed land surrounding a new development and is a good proxy of brownfield site utilisation	Average density of residential addresses surrounding newly created residential addresses on previously developed land ( <i>Land Use Change Statistics 2013-2016, MHCLG</i> ).	Y	In 2015 a revised methodology was introduced which means that figures are not comparable with the historic Land Use Change. Therefore, we have only included the latest two years of data (for 2017 and 2016 index) and flat lined across prior years.
<b>Dwellings completed (no.)</b>	This measures the number of new homes being built and is a good proxy for resilience	Count of the number of permanent dwellings completed ( <i>Table 253 Housebuilding: permanent dwellings started and completed 2016/17, by tenure and district, MHCLG</i> ).	Y	
<b>Households on LA waiting list (%)</b>	This is the number of people waiting to be housed by the local authority and is a proxy for housing undersupply	Number of households on Local Authority household waiting list, as a proportion of total households ( <i>Live tables on rents, lettings and tenancies 2016, MHCLG; Household projections for England and local authority districts, MHCLG</i> ).	Y	Have had to change source of denominator to use Household projections instead of Census so that we can obtain annual total household estimates. Have retrospectively update the 2016 index to reflect this change and ensure consistency across all years of the index.
<b>Planning applications (no.)</b>	This measures the volume of planning applications within an area and is a proxy for how an area is responding to the challenges of growth	Total number of district planning applications received ( <i>Table P134: District planning authorities - applications received, decided, granted and delegated and environmental statements received by local planning authority 2017, MHCLG</i> ).	Y	
<b>Community, trust and wellbeing</b>				
<b>Community assets (per 1,000 pop)</b>	This measures the number of community assets in an area per 000 population, including for example, libraries, youth organisations and social clubs and is a good proxy for community activity	Community assets within each area are counted using OS Points of Interest. Community assets are defined as: Cafes, snack bars and tea rooms; pubs, bars and inns; picnic areas; playgrounds; sports grounds, stadia and pitches; social clubs; doctor surgeries; first, primary and infant schools; independent and preparatory schools; broad age range and secondary state schools; nursery schools and pre and after school care; libraries; places of worship; sports clubs and associations; youth organisations;	Y	Only available for the last two years of the index (2017 and 2016 index) and flatlined across prior years.

walk-in centre. The total number of these community assets are summed per district, divided by the total population of the area and then multiplied by 1,000 to give the overall figure (*Points of Interest 2017, OS*).

<b>Cultural amenities (per sq. km)</b>	This measures the number of museums, galleries and other cultural venues in an area, giving a sense of the place that people would want to visit	Cultural amenities within each area are counted using OS Points of Interest. Cultural amenities include: Horticultural attractions; zoos and animal collections; archaeological sites; historic buildings including castles, forts and abbeys; historic and ceremonial structure; museums; art galleries; country and national parks; designated scenic features; sightseeing, tours, viewing and visitor centres; theatres and concert halls; aquaria and sea life centres; bird reserves, collections and sanctuaries; battlefields; railways (heritage, steam and miniature); theme and adventure parks; tarns, pools and meres; laseria, observatories and planetarium; historical ships. The total number of these amenities are summed per district and divided by the total number of hectares ( <i>Points of Interest 2017, OS</i> ).	<b>Y</b>	Only available for the last two years of the index (2017 and 2016 index) and flatlined across prior years. For the latest index we have changed the unit to be per square kilometre and have therefore retrospectively updated the 2016 index to reflect this change and maintain consistency.
<b>Living alone, aged 65 and over (%)</b>	This indicator is used as a proxy for loneliness and isolation	Number of 65 year olds and over who live in one person households, as a proportion of all 65 year old residents who live in a households ( <i>Census 2011, ONS</i> ).	<b>N</b>	Census only every 10 years, therefore we have had to flat line across all years of the index. We have also changed the measure since the last index to reflect a more elderly population by changing the definition to '65 and over'. We have therefore retrospectively updated the 2016 index to reflect this change and maintain consistency.
<b>Valid votes turnout (%)</b>	This is a good indicator of how engaged a community is	Total number of valid votes counted (in the English Local Council elections) as a proportion of the electorate (this excludes all rejected ballots). The 2015 electoral data was chosen as this had the fullest coverage out of most recent elections. Local Elections Electoral data does not include coverage for all local authorities. Where missing the national average has been applied- this affects circa 40 districts ( <i>Elections Centre, University of Plymouth from Returning Officers and Electoral Registration Officers 2015, The Electoral Commission</i> ).	<b>N</b>	Not consistent over the five years so have had to flat line the 2016 index data across all years.

<b>Violent crimes (per 1,000 pop)</b>	This is a good indicator of how safe an area is	Violence against the person offences, based on police recorded crime data, crude rate per 1,000 population ( <i>Home Office 2015/16; Mid-year Population Estimates, ONS</i> ).	Y	
<b>Ethnic diversity (score)</b>	This is a good indication of how ethnically diverse the resident population is within an area	The Ethnicity Diversity Index measures the probability that two individuals randomly selected from the population belong to different ethnic groups. The index is scored between 0 and 1, with scores closer to 1 indicating higher levels of diversity. The component indicators that have determined this fractionalisation index are the Proportion of all people classified as Indian, Bangladeshi, Caribbean, Chinese, African, Pakistani, White British, White Irish and Mixed ( <i>Census 2011, ONS</i> ).	N	Census only published every 10 years, therefore we have had to flat line across all years of the index

## Vibrant Economy Index – Welsh indicators

Key for inclusion in time series: : **Y** = available across all years **Y** = only available for some years **N** = not available in time

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Prosperity</b>					
<b>Total GVA (£m)</b>	This measures the value of goods and services produced in an area. The higher the GVA the larger the economy	Gross Value Added (Income Approach) at current basic prices, published at local authority level ( <i>Regional GVA(I) by local authority in the UK 2015, ONS</i> )	<b>Y</b>	<b>Y</b>	Retrospectively updated 2016 index to reflect new source of data and make consistent across years. The last two indices have the same temporal coverage (2015 data for 2016 and 2017 indices) as the source is yet to publish more recent data.
<b>GVA per job (£000)</b>	This measures how productive an area is	Gross Value Added (Income Approach) at current basic prices, per filled job. This indicator is a bespoke Grant Thornton measure that has been constructed by dividing total GVA by the total number of jobs in the area (based on employee numbers) to provide a figure of GVA per job. ( <i>Regional GVA(I) by local authority in the UK 2015, ONS; Business Register and Employment Survey 2015, ONS</i> ).	<b>Y</b>	<b>Y</b>	Retrospectively updated 2016 index to reflect new source of data and make consistent across years. The last two indices have the same temporal coverage (2015 data for 2016 and 2017 indices) as the source is yet to publish more recent data.
<b>Businesses turning over &gt;£100 million (%)</b>	This provides a proxy for a strong large business base that creates jobs and produces wealth	Total number of businesses with a turnover of over £100 million, as a proportion of the total business base in the area. Collated from postcoded Companies House data which is aggregated up to district level ( <i>FAME 2017, Bureau van Dijk 2017; Business Activity, Size and Location, ONS</i> ).	<b>Y</b>	<b>Y</b>	
<b>Mean Workplace Weekly pay (£)</b>	This measures how wealthy the workplace employees are	The mean earnings estimates shows the earnings in pounds for employees who are on adult rates of pay and whose pay was not affected by absence ( <i>Annual Survey of Hours and Earnings 2016, ONS</i> ).	<b>Y</b>	<b>Y</b>	

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Knowledge-driven employment (%)</b>	Knowledge driven sectors are those that generate most wealth in an economy	This workplace based figure provides the proportion of all employed persons working in the following Knowledge-driven sectors: Aerospace (30.3), Electric machinery and optical equipment (28.23, 26.20, 26.3, 32.5, 26.52, 26.70), Printing, publishing, recorded media (58.11-58.14, 59.20, 58.19, 18.11, 18.12), Chemicals (20), & Energy (06, 09.1, 19, 35, 36), Telecomms, computer & related services, R&D (61, 53.20, 62, 72), Finance, business services (64, 66, 69.10, 69.20, 73.20, 70.22, 64.20, 71.1, 71.2, 73.1, 78.1-78.3, 80.30, 80.10, 74.20, 82.11, 82.19, 74.30, 82.20), Air transport services (51), & Recreational & cultural services (90, 93, 91). All figures in brackets are 2010 Standard Industrial Classification (SIC). SIC Codes group similar industries together in a nationally recognised coding system ( <i>Business Register and Employment Survey 2016</i> , ONS).	Y	Y	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE as well. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.
<b>Businesses turning over &gt;£1 million (%)</b>	This provides a proxy for a strong small business base that creates jobs and produces wealth	Number of enterprises that have a turnover above £1 million as a proportion of all enterprises ( <i>Enterprise by Turnover size band and GB Local Authority Districts 2017</i> , ONS).	Y	Y	
<b>Dynamism and opportunity</b>					
<b>Business formation rate (%)</b>	This is a proxy for entrepreneurship	The number of businesses that have registered for VAT within the last year, as a proportion of all active businesses ( <i>Business Demography 2015</i> , DCLG)	Y	Y	
<b>High level skills (%)</b>	This is an indicator of a highly skilled economy	This residence based indicator provides the percentage of working age people, who are qualified to NVQ level 4 (degree-level) or above ( <i>Annual Population Survey Dec 2015-Dec 2016</i> , ONS)	Y	Y	

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Knowledge workers (%)</b>	Knowledge workers are some of the most productive in the economy and play an important role in creating growth	The proportion of the employed resident population who are employed in knowledge occupations based on SOC groups (1) Managers and senior officials, (2) Professional occupations, (3) Associate professional and technical occupations, based on place of residence ( <i>Annual Population Survey March 2016, ONS</i> ).	Y	Y	
<b>Patents granted (per 100,000 pop)</b>	This indicator is a proxy for how innovative an area is	Total patents granted between 2015 and 2016, per 100,000 population ( <i>Intellectual Property Office, 2017</i> ).	Y	Y	Changed temporal coverage in order to allow time series analysis- instead of each year of index covering 10 years, each index relates to a 2 year time period (e.g. 2014 - 2016). The 2016 index has also been retrospectively updated to reflect this change in temporal coverage.
<b>GCSE's A*-C achieved (%)</b>	This indicator reflects the level of future opportunity that exists within an area	Percentage of pupils in year 11/aged 15 who achieved Level 2 (equivalent to the volume of 5 GCSE's grades A*-C) incl. English/Welsh and maths ( <i>KS4 examination results - Key Performance measures, Welsh Government (2015/16)</i> ).	N	Y	
<b>Higher Education employment (%)</b>	Higher Education institutions are a source of new and innovative ideas. This indicator provides a proxy for capturing this	Proportion of employees in higher education as a proportion of all employees. Higher education defined using SIC code: '854: Higher education'. Workplace based measure ( <i>Business Register and Employment Survey 2016, ONS</i> ).	Y	Y	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>R&amp;D employment (%)</b>	Research and development is a central component of innovation	Proportion of employment in research & development as a proportion of all employees. Research and development defined using SIC code: '721: Research and experimental development on natural sciences and engineering' and '722: Research and experimental development on social sciences and humanities'. Workplace based measure ( <i>Business Register and Employment Survey 2016, ONS</i> ).	<b>Y</b>	<b>Y</b>	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE as well. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.
<b>Inclusion and equality</b>					
<b>Deprivation (score)</b>	This is the national indicator of how deprived an area is	The percentage of the local authorities LSOA's in Wales in the most deprived 10% of all Welsh LSOA's. WIMD is the Welsh Government's official measure of relative deprivation for small areas in Wales. It is designed to identify those small areas where there are the highest concentrations of several different types of deprivation. As such, WIMD is a measure of multiple deprivation that is both an area-based measure and a measure of relative deprivation.  WIMD ranks all small areas in Wales from 1 (most deprived) to 1,909 (least deprived). ( <i>WIMD 2014 Local Authority Analysis, Welsh Government</i> ).	<b>N</b>	<b>N</b>	As the WIMD is a relative index, it's important not to compare ranks from one edition of the WIMD to another.
<b>Inequality (score)</b>	This measures the difference between an area's most and least deprived neighbourhoods	This indicator is a measure of inequality and shows the range in overall deprivation between all the Super Output Areas within each local authority area. The range is the difference in ranks between the most and least deprived LSOA within the authority. The higher the range, the more inequality within the area ( <i>WIMD 2014 Local Authority Analysis, Welsh Government</i> ).	<b>N</b>	<b>N</b>	As the WIMD is a relative index, it's important not to compare ranks from one edition of the WIMD to another.

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Average income (£)</b>	This measures levels of wealth in the resident population	Total personal income in pound thousands ( <i>Personal Income by Tax year 2014-15, HM Revenue &amp; Customs</i> )	Y	Y	
<b>Child poverty (score)</b>	This measures levels of child poverty in an area	Proportion of children living in poverty after housing costs. Households are living in poverty if their household income (adjusted to account for household size) is less than 60% of the average. ( <i>Local indicators of child poverty 2017, End Child Poverty</i> ).	N	N	Currently not comparable over time.
<b>Housing Affordability (score)</b>	This measure compares average house prices with average earnings	Housing affordability is calculated by dividing house prices by annual earnings. House prices are taken from the House Price Statistics for Small Areas (HPSSAs) produced by the Office for National Statistics (ONS) and refer to the median and lower quartile price paid for residential properties in England and Wales. They are calculated using open data from the Land Registry, a source of comprehensive record level administrative data on residential property transactions. Earnings data are from the Annual Survey of Hours and Earnings (ASHE) and refer to median and lower quartile gross annual earnings for full-time employees. ( <i>Housing affordability in England and Wales: 2016, ONS</i> )	Y	Y	Using new source of data, so retrospectively updated 2016 index to make consistent across years. The latest data has not yet been published by source so we have had to use same year of data for 2016 and 2017 index.
<b>Employment rate (%)</b>	This measures the number of working age adults in employment	This residence based indicator provides the proportion of people aged 16 to 64 in employment ( <i>Annual Population Survey March 2017, ONS</i> ).	Y	Y	
<b>Benefit claimant rate (%)</b>	This measures the level of benefit take up in an area	The proportion of people of working age who are claiming at least one benefit ( <i>Work and Pensions Longitudinal Study Nov 2016, DWP</i> ).	Y	Y	

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Homeless households (per 000 households)</b>	This measures the number of homeless households in an area	Households unintentionally homeless and in priority need - Rate per 10,000 households (Section 75). ( <i>Statutory Homelessness: Key Indicators 2016-2017, Welsh Government</i> ).	<b>N</b>	<b>Y</b>	Only available for last two years (2016-17, 2015-16)
<b>NEETS (%)</b>	This measures those not in education, employment or training. It is a valuable indicator of youth unemployment and the challenges facing young people	Year 11 Leavers for Schools in Wales known to be not in education, employment or training by local authority (NEET) Year to 31 March 2016 (NEETS March 2016, Welsh Government)	<b>N</b>	<b>Y</b>	Years 2015, 2014, 2013, 2012, 2011
<b>Housing benefit claimant rate (% of all hhlds)</b>	This is a useful measure for the disparities that exist in the housing market	All housing benefit claimants as a proportion of total households ( <i>Housing Benefit claimants by Region and Local Authority May 2017, DWP</i> ).	<b>Y</b>	<b>Y</b>	Have had to change source of denominator to use Household projections instead of Census so that we can obtain annual total household estimates. Have retrospectively update the 2016 index to reflect this change and ensure consistency across all years of the index.
<b>Long term unemployment (%)</b>	This measures long-term unemployment and identifies those furthest from the labour market	The proportion of all unemployed people who have been unemployed for over five years ( <i>Claimant Count August 2017, ONS</i> ).	<b>Y</b>	<b>Y</b>	
<b>Fuel poor households (%)</b>	This is a good indicator of poverty, particularly amongst the elderly	Proportion of households that are fuel poor. ( <i>Lle Estimated levels of fuel poverty in Wales 2015, Welsh Government</i> )	<b>N</b>	<b>N</b>	New source of data so only one year of data available- flatlined across previous years.

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Unemployment inequality (ethnicity)</b>	This measures the difference between non-white and white unemployment levels as a proxy for ethnic inequality within an area	This indicator measures the difference between the white unemployment rate and non-white unemployment rate. A higher figure indicates greater inequality ( <i>Census 2011, ONS</i> ).	Y	N	Census only published every 10 years, therefore we have had to flatline across all years of the index
<b>Health, wellbeing and happiness</b>					
<b>Mean hours worked differential</b>	This measures the how many hours people work and is a good proxy for work-life balance	This measures the how many hours people work above or below the standard 35 hour weeks. The distance from this standard – above or below – is counted equally. A lower value therefore shows that the area is closer to this ideal, which is assumed as a better work life balance ( <i>Annual Survey of Hours and Earnings 2016, ONS</i> ).	Y	Y	
<b>Sports participation (adults) (%)</b>	This indicator shows how active people are and reflects personal health lifestyles	Proportion of adults who reported being physically active on 5 or more days in the past week (observed).The survey asked adults on which days in the past week they did at least 30 minutes of light, moderate, and vigorous exercise or physical activity. Blocks of activity lasting more than 10 minutes, which were done on the same day, count towards the full 30 minutes. (Prior to 2011 the Department of Health recommended that adults do at least 30 minutes of moderate intensity physical activity on at least 5 days a week, however guidelines were revised during 2011 to allow more flexibility in how target activity levels are met). ( <i>Welsh Health Survey 2015, Welsh Government</i> ).	N	Y	Have had to use Welsh Health Survey (which has since been superseded by the National Survey for Wales) in order to get comparable time series. The latest available is for 2015.

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Adults overweight or obese (%)</b>	This is a good indicator of the health of an area and in particular how healthy lifestyles are	Proportion of adults who were overweight or obese (observed). The survey asked adults to report their height and their weight. In order to define overweight or obesity, a measurement is required which allows for differences in weight due to height. The Body Mass Index (BMI) is calculated as weight (kg) divided by squared height (m <sup>2</sup> ). Overweight= BMI 25 to under 30, Obese = BMI 30 and over (Welsh Health Survey 2015, Welsh Government).	<b>N</b>	<b>Y</b>	Have had to use Welsh Health Survey (which has since been superseded by the National Survey for Wales) in order to get comparable time series. The latest available is for 2015.
<b>Life Satisfaction (score)</b>	This measures how satisfied people are with their individual prospects	Based on question: Overall, how satisfied are you with your life nowadays? Where 0 is 'not at all satisfied' and 10 is 'completely satisfied' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	<b>Y</b>	<b>Y</b>	
<b>Life worthwhile (score)</b>	This measures how worthwhile people feel that their lives are	Based on question: Overall, to what extent do you feel the things you do in your life are worthwhile? Where 0 is 'not at all worthwhile' and 10 is 'completely worthwhile' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	<b>Y</b>	<b>Y</b>	
<b>Happiness (score)</b>	This indicator measures how happy people are	Based on question: Overall, how happy did you feel yesterday? Where 0 is 'not at all happy' and 10 is 'completely happy' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	<b>Y</b>	<b>Y</b>	
<b>Anxiety (score)</b>	This measures how anxious people are and is a good proxy for well-being	Based on question: Overall, how anxious did you feel yesterday? Where 0 is 'not at all anxious' and 10 is 'completely anxious' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	<b>Y</b>	<b>Y</b>	

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Diabetes prevalence (%)</b>	This is a good indicator of the health of an area and in particular how healthy lifestyles are	Proportion of adults currently being treated for diabetes (age-standardised). Adult respondents were asked whether they were currently being treated for diabetes, making no distinction between type 1 and type 2 diabetes. ( <i>Welsh Health Survey 2015, Welsh Government</i> ).	N	Y	Have had to use Welsh Health Survey (which has since been superseded by the National Survey for Wales) in order to get comparable time series. The latest available is for 2015. Each year of data is based on two years aggregated together e.g 2014 & 2015.
<b>Average Life Expectancy (yrs.)</b>	This is a good indicator of the overall health of an area	How long, on average, people can expect to live using estimates of the population and the number of deaths. This is a male and female combined life expectancy figure, that has been population weighted according to the number of males and females in the area ( <i>Life Expectancy at Birth by Local Areas in England and Wales 2012-14, ONS</i> ).	Y	Y	
<b>Child Obesity (Year 6) (%)</b>	This is a good indicator of the health of an area and in particular how healthy lifestyles are	Percentage of children aged 4 to 5 years who are obese. Prevalence rates were calculated using the age and sex-specific body mass index (BMI) centiles calculated using the British 1990 growth reference (UK90) (from a method proposed by Cole et al (1995)). The body mass index (BMI) was calculated using a method proposed by Keys et al (1972). The following weight categories have been assigned: obese: 95th centile and above. ( <i>Child Measurement Programme for Wales: Archived Reports &amp; Data 2015/16, Public Health Wales</i> ).	N	Y	

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Resilience and sustainability</b>					
<b>Air pollution (NO2 µg/m3)</b>	This measures the quality of air in different areas and is a good indicator on the impact being had on the environment	Average NO2 concentrations across local authority areas, derived from modelled data for each square kilometre in Wales, measured in µg/m3 . ( <i>DEFRA Air Quality Exposure Indicators 2017, Welsh Government</i> ).	<b>N</b>	<b>Y</b>	
<b>Recycling rate (%)</b>	This measures levels of household waste recycled in an area and is a good indicator on the impact being had on the environment	Percentage of household waste sent to be reused/recycled (as defined by the Statutory Local Authority Recovery Target, LART), as a percentage of total municipal waste collected/generated ( <i>WasteDataFlow, Natural Resources Wales 2017, Welsh Government</i> ).	<b>N</b>	<b>Y</b>	
<b>Co2 emissions per capita (Kt CO2)</b>	This measures the level of CO2 per head and is a good indicator on the impact being had on the environment	Total carbon dioxide emissions in Kt CO2 per head of population ( <i>UK local authority and regional carbon dioxide emissions national statistics 2015, Department of Energy &amp; Climate Change</i> )	<b>Y</b>	<b>Y</b>	
<b>Energy consumption (GWh)</b>	This measure looks at how much energy is being consumed and is a good indicator on how much natural resources are being used	Total final energy consumption (all fuels) ( <i>Total final energy consumption at regional and local authority level 2015, Department for Business, Energy &amp; Industrial Strategy</i> )	<b>Y</b>	<b>Y</b>	
<b>High flood risk (%)</b>	New homes are a good proxy for resilience but not if they are being built in flood zones	Proportion of properties at 'High' risk of flooding from rivers and sea in Wales. High Risk; Greater than or equal to 1 in 30 (3.3%) chance in any given year ( <i>National Flood Risk Assessment data, Natural Resources Wales 2014, Welsh Government</i> ).	<b>N</b>	<b>N</b>	Only published for one year so have had to flatline across earlier years of index.

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Dwellings completed (no.)</b>	This measures the number of new homes being built and is a good proxy for resilience	Count of the number of new house building undertaken by the private sector, Registered Social Landlords (RSLs) and local authorities ( <i>New house building data collection 2016-17, Welsh Government</i> ).	N	Y	
<b>Affordable housing delivery (%)</b>	This is the number of new affordable housing delivered as a proportion of total dwelling completions	Rate of all additional affordable housing units delivered per 10,000 households, by local authority area 2016-17 ( <i>Affordable housing provision data collection 2016-17; Welsh Government</i> ).	N	Y	
<b>Community, trust and belonging</b>					
<b>Community assets (per 1,000 pop)</b>	This measures the number of community assets in an area per 000 population, including for example, libraries, youth organisations and social clubs and is a good proxy for community activity	Community assets within each area are counted using OS Points of Interest. Community assets are defined as: Cafes, snack bars and tea rooms; pubs, bars and inns; picnic areas; playgrounds; sports grounds, stadia and pitches; social clubs; doctor surgeries; first, primary and infant schools; independent and preparatory schools; broad age range and secondary state schools; nursery schools and pre and after school care; libraries; places of worship; sports clubs and associations; youth organisations; walk-in centre. The total number of these community assets are summed per district, divided by the total population of the area and then multiplied by 1,000 to give the overall figure ( <i>Points of Interest 2017, OS</i> ).	Y	Y	Only available for the last two years of the index (2017 and 2016 index).

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Cultural amenities (per sq. km)</b>	This measures the number of museums, galleries and other cultural venues in an area, giving a sense of the place that people would want to visit	Cultural amenities within each area are counted using OS Points of Interest. Cultural amenities include: Horticultural attractions; zoos and animal collections; archaeological sites; historic buildings including castles, forts and abbeys; historic and ceremonial structure; museums; art galleries; country and national parks; designated scenic features; sightseeing, tours, viewing and visitor centres; theatres and concert halls; aquaria and sea life centres; bird reserves, collections and sanctuaries; battlefields; railways (heritage, steam and miniature); theme and adventure parks; tarns, pools and meres; laseria, observatories and planetarium; historical ships. The total number of these amenities are summed per district and divided by the total number of hectares ( <i>Points of Interest 2017, OS</i> ).	Y	Y	Only available for the last two years of the index (2017 and 2016 index). For the latest index we have changed the unit to be per square kilometre and have therefore retrospectively updated the 2016 index to reflect this change and maintain consistency.
<b>Living alone, aged 65 and over (%)</b>	This indicator is used as a proxy for loneliness and isolation	Number of 65 year olds and over who live in one person households, as a proportion of all 65 year old residents who live in a households ( <i>Census 2011, ONS</i> ).	Y	N	Census only every 10 years, therefore we have had to flatline across all years of the index. We have also changed the measure since the last index to reflect a more elderly population by changing the definition to '65 and over'. We have therefore retrospectively updated the 2016 index to reflect this change and maintain consistency.

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Valid votes turnout (%)</b>	This is a good indicator of how engaged a community is	Total number of valid votes counted (in the 2017 Welsh Local Council elections) as a proportion of the electorate (this excludes all rejected ballots). <i>(Elections Centre, University of Plymouth from Returning Officers and Electoral Registration Officers 2017, The Electoral Commission).</i>	<b>N</b>	<b>N</b>	Not consistent over the five years so have had to flatline the 2017 index data across all years.
<b>Violent crimes (per 1,000 pop)</b>	This is a good indicator of how safe an area is	Numbers of violent offences (including violence with and without injury) recorded by the police at a local authority level, per 1,000 population. Violence against the person offences, based on police recorded crime data, crude rate per 1,000 population <i>(Home Office 2015/16; Mid-year Population Estimates, ONS).</i>	<b>N</b>	<b>Y</b>	
<b>Ethnic diversity (score)</b>	This is a good indication of how ethnically diverse the resident population is within an area	The Ethnicity Diversity Index measures the probability that two individuals randomly selected from the population belong to different ethnic groups. The index is scored between 0 and 1, with scores closer to 1 indicating higher levels of diversity. the component indicators that have determined this fractionalisation index are the Proportion of all people classified as Indian, Bangladeshi, Caribbean, Chinese, African, Pakistani, White British, White Irish and Mixed <i>(Census 2011, ONS).</i>	<b>Y</b>	<b>N</b>	Census only published every 10 years, therefore we have had to flatline across all years of the index

# Vibrant Economy Index – Scotland

Key for inclusion in time series:

Y = available across all years

Y = only available for some years

N = not available in time

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Prosperity</b>					
<b>Total GVA (£m)</b>	This measures the value of goods and services produced in an area. The higher the GVA the larger the economy	Gross Value Added (Income Approach) at current basic prices, published at local authority level ( <i>Regional GVA(I) by local authority in the UK 2015, ONS</i> )	Y	Y	Retrospectively updated 2016 index to reflect new source of data and make consistent across years. The last two indices have the same temporal coverage (2015 data for 2016 and 2017 indices) as the source is yet to publish more recent data.
<b>GVA per job (£000)</b>	This measures how productive an area is	Gross Value Added (Income Approach) at current basic prices, per filled job. This indicator is a bespoke Grant Thornton measure that has been constructed by dividing total GVA by the total number of jobs in the area (based on employee numbers) to provide a figure of GVA per job. ( <i>Regional GVA(I) by local authority in the UK 2015, ONS; Business Register and Employment Survey 2015, ONS</i> ).	Y	Y	Retrospectively updated 2016 index to reflect new source of data and make consistent across years. The last two indices have the same temporal coverage (2015 data for 2016 and 2017 indices) as the source is yet to publish more recent data.
<b>Businesses turning over &gt;£100 million (%)</b>	This provides a proxy for a strong large business base that creates jobs and produces wealth	Total number of businesses with a turnover of over £100 million, as a proportion of the total business base in the area. Collated from postcoded Companies House data which is aggregated up to district level ( <i>FAME 2017, Bureau van Dijk 2017; Business Activity, Size and Location, ONS</i> ).	Y	Y	
<b>Mean Workplace Weekly pay (£)</b>	This measures how wealthy the workplace employees are	The mean earnings estimates shows the earnings in pounds for employees who are on adult rates of pay and whose pay was not affected by absence ( <i>Annual Survey of Hours and Earnings 2016, ONS</i> ).	Y	Y	

# Vibrant Economy Index – Scotland

Key for inclusion in time series:

Y = available across all years

Y = only available for some years

N = not available in time

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Knowledge-driven employment (%)</b>	Knowledge driven sectors are those that generate most wealth in an economy	This workplace based figure provides the proportion of all employed persons working in the following Knowledge-driven sectors: Aerospace (30.3), Electric machinery and optical equipment (28.23, 26.20, 26.3, 32.5, 26.52, 26.70), Printing, publishing, recorded media (58.11-58.14, 59.20, 58.19, 18.11, 18.12), Chemicals (20), & Energy (06, 09.1, 19, 35, 36), Telecomms, computer & related services, R&D (61, 53.20, 62, 72), Finance, business services (64, 66, 69.10, 69.20, 73.20, 70.22, 64.20, 71.1, 71.2, 73.1, 78.1-78.3, 80.30, 80.10, 74.20, 82.11, 82.19, 74.30, 82.20), Air transport services (51), & Recreational & cultural services (90, 93, 91). All figures in brackets are 2010 Standard Industrial Classification (SIC). SIC Codes group similar industries together in a nationally recognised coding system ( <i>Business Register and Employment Survey 2016, ONS</i> ).	Y	Y	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE as well. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.
<b>Businesses turning over &gt;£1 million (%)</b>	This provides a proxy for a strong small business base that creates jobs and produces wealth	Number of enterprises that have a turnover above £1 million as a proportion of all enterprises ( <i>Enterprise by Turnover size band and GB Local Authority Districts 2017, ONS</i> ).	Y	Y	
<b>Foreign owned businesses (%)</b>	Foreign investment is a key driver of wealth and prosperity.	Number of foreign owned businesses is collated from postcoded Companies House data which is aggregated up to district level and expressed as proportion of the total business base. Excludes financial services and includes subsidiaries ( <i>FAME 2017, Bureau van Dijk 2017; Business Activity, Size and Location, ONS</i> ).	Y	N	Not possible to collate for past years from FAME so have had to flatline for 2015, 2014 and 2013 index.

# Vibrant Economy Index – Scotland

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Dynamism and opportunity</b>					
<b>Business formation rate (%)</b>	This is a proxy for entrepreneurship	The number of businesses that have registered for VAT within the last year, as a proportion of all active businesses ( <i>Business Demography 2015, DCLG</i> )	Y	Y	
<b>High level skills (%)</b>	This is an indicator of a highly skilled economy	This residence based indicator provides the percentage of working age people, who are qualified to NVQ level 4 (degree-level) or above ( <i>Annual Population Survey Dec 2015-Dec 2016, ONS</i> )	Y	Y	
<b>Knowledge workers (%)</b>	Knowledge workers are some of the most productive in the economy and play an important role in creating growth	The proportion of the employed resident population who are employed in knowledge occupations based on SOC groups (1) Managers and senior officials, (2) Professional occupations, (3) Associate professional and technical occupations, based on place of residence ( <i>Annual Population Survey March 2016, ONS</i> ).	Y	Y	
<b>Patents granted (per 100,000 pop)</b>	This indicator is a proxy for how innovative an area is	Total patents granted between 2015 and 2016, per 100,000 population ( <i>Intellectual Property Office, 2017</i> ).	Y	Y	Changed temporal coverage in order to allow time series analysis- instead of each year of index covering 10 years, each index relates to a 2 year time period (e.g. 2014 - 2016). The 2016 index has also been retrospectively updated to reflect this change in temporal coverage.
<b>Pupils achieving 5 or more awards at SCQF Level 5 or higher (%)</b>	This indicator reflects the level of future opportunity that exists within an area	Percentage of senior phase (S4-S6) pupils achieving 5 or more awards at SCQF Level 5 or higher (CHN4) ( <i>Local Government Benchmarking Framework 2016-17; Local Government Benchmarking Framework</i> ).	N	Y	

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Key for inclusion in time series:

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Higher Education employment (%)</b>	Higher Education institutions are a source of new and innovative ideas. This indicator provides a proxy for capturing this	Proportion of employees in higher education as a proportion of all employees. Higher education defined using SIC code: '854: Higher education'. Workplace based measure ( <i>Business Register and Employment Survey 2016, ONS</i> ).	Y	Y	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.
<b>R&amp;D employment (%)</b>	Research and development is a central component of innovation	Proportion of employment in research & development as a proportion of all employees. Research and development defined using SIC code: '721: Research and experimental development on natural sciences and engineering' and '722: Research and experimental development on social sciences and humanities'. Workplace based measure ( <i>Business Register and Employment Survey 2016, ONS</i> ).	Y	Y	There has been a methodological change to latest release of BRES data which means that the latest year of data (2016) includes units registered for PAYE as well. Prior to 2016, such units were excluded from the data. We carried out testing prior to incorporating to ensure that this did not adversely affect the time series.

# Vibrant Economy Index – Scotland

Key for inclusion in time series:

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Inclusion and equality</b>					
<b>Deprivation (10% most deprived)</b>	This is the national indicator of how deprived an area is	<p>The Scottish Index of Multiple Deprivation (SIMD) identifies small area concentrations of multiple deprivation across all of Scotland in a consistent way. It allows effective targeting of policies and funding where the aim is to wholly or partly tackle or take account of area concentrations of multiple deprivation.</p> <p>SIMD ranks small areas (called data zones) from most deprived (ranked 1) to least deprived (ranked 6,976). People using SIMD will often focus on the data zones below a certain rank, for example, the 5%, 10%, 15% or 20% most deprived data zones in Scotland. In this index we focus on the percentage of the local authorities Data Zones that are in the most deprived 10% of all Scottish Data Zone's. (<i>SIMD 2016, Scottish Government</i>).</p>	N	N	As the SIMD is a relative index, it's important not to compare ranks from one edition of the SIMD to another.
<b>Inequality (range)</b>	This measures the difference between an area's most and least deprived neighbourhoods	This indicator is a measure of inequality and shows the range in overall deprivation between all the Data Zones within each local authority area. The range is the difference in ranks between the most and least deprived Data Zone within the authority. The higher the range, the more inequality within the area ( <i>Scottish Index of Multiple Deprivation (SIMD), Scottish Government</i> ).	N	N	As the SIMD is a relative index, it's important not to compare ranks from one edition of the SIMD to another.
<b>Average income (£)</b>	This measures levels of wealth in the resident population	Total personal income in pound thousands ( <i>Personal Income by Tax year 2014-15, HM Revenue &amp; Customs</i> )	Y	Y	

## Vibrant Economy Index – Scotland

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Child poverty (score)</b>	This measures levels of child poverty in an area	Proportion of children living in poverty after housing costs. Households are living in poverty if their household income (adjusted to account for household size) is less than 60% of the average. ( <i>Local indicators of child poverty 2017, End Child Poverty</i> ).	N	N	Currently not comparable over time.
<b>Housing Affordability (score)</b>	This measure compares average house prices with average earnings	Housing affordability is calculated by dividing house prices by annual earnings. House prices are taken from the Land and Property Data produced by the Registers of Scotland (ROS) and are an annual average of four quarters of data. Earnings data are from the Annual Survey of Hours and Earnings (ASHE) and refer to mean gross annual earnings for all employees ( <i>Land and Property Data 2017, Registers of Scotland; ASHE 2017</i> ).	N	Y	
<b>Employment rate (%)</b>	This measures the number of working age adults in employment	This residence based indicator provides the proportion of people aged 16 to 64 in employment ( <i>Annual Population Survey March 2017, ONS</i> ).	Y	Y	
<b>Benefit claimant rate (%)</b>	This measures the level of benefit take up in an area	The proportion of people of working age who are claiming at least one benefit ( <i>Work and Pensions Longitudinal Study Nov 2016, DWP</i> ).	Y	Y	
<b>Homeless households (per 000 households)</b>	This measures the number of homeless households in an area	Number of applications under the Homeless Persons legislation by Local Authority in Scotland - Rate per 1,000 households ( <i>Homelessness in Scotland: Annual Publication 2016-17, Scottish Government</i> )	N	Y	

# Vibrant Economy Index – Scotland

Key for inclusion in time series:

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>NEETS (%)</b>	This measures those not in education, employment or training. It is a valuable indicator of youth unemployment and the challenges facing young people	Year 11 Leavers for Schools in Scotland known to be not in education, employment or training by local authority (NEETs) ( <i>School Leavers Destinations Publication 2014, Department for Work and Pensions</i> ).	N	Y	
<b>Housing benefit claimant rate (% of all hhlds)</b>	This is a useful measure for the disparities that exist in the housing market	All housing benefit claimants as a proportion of total households ( <i>Housing Benefit claimants by Region and Local Authority May 2017, DWP</i> ).	Y	Y	
<b>Long term unemployment (%)</b>	This measures long-term unemployment and identifies those furthest from the labour market	The proportion of all unemployed people who have been unemployed for over five years ( <i>Claimant Count August 2017, ONS</i> ).	Y	Y	
<b>Fuel poor households (%)</b>	This is a good indicator of poverty, particularly amongst the elderly	The proportion of households in each Local Authority that are fuel poor (required fuel costs >10% of income)( <i>Scottish House Condition Survey 2014-2016, Scottish Government</i> ).	N	Y	
<b>Unemployment inequality (ethnicity)</b>	This measures the difference between non-white and white unemployment levels as a proxy for ethnic inequality within an area	This indicator measures the difference between the white unemployment rate and non-white unemployment rate. A higher figure indicates greater inequality ( <i>Census 2011, ONS</i> ).	Y	N	Census only published every 10 years, therefore we have had to flatline across all years of the index

# Vibrant Economy Index – Scotland

Key for inclusion in time series:

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Health, wellbeing and happiness</b>					
<b>Mean hours worked differential</b>	This measures the how many hours people work and is a good proxy for work-life balance	This measures the how many hours people work above or below the standard 35 hour weeks. The distance from this standard – above or below – is counted equally. A lower value therefore shows that the area is closer to this ideal, which is assumed as a better work life balance ( <i>Annual Survey of Hours and Earnings 2016, ONS</i> ).	Y	Y	
<b>Sports participation (adults) (%)</b>	This indicator shows how active people are and reflects personal health lifestyles	Percentage of adults who participated in physical activity and sport in the last four weeks (excluding walking) ( <i>Scottish Household Survey 2016, Scottish Government</i> ).	N	Y	
<b>Long-term sickness or disability (%)</b>	This is a good indicator of the health of an area	Proportion of households in each Local Authority where one or more of the members are Long Term Sick or Disabled (LTSD). ( <i>Scottish House Condition Survey 2014-2016, Scottish Government</i> ).	N	Y	
<b>Life satisfaction (score)</b>	This measures how satisfied people are with their individual prospects	Based on question: Overall, how satisfied are you with your life nowadays? Where 0 is 'not at all satisfied' and 10 is 'completely satisfied' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	Y	
<b>Life worthwhile (score)</b>	This measures how worthwhile people feel that their lives are	Based on question: Overall, to what extent do you feel the things you do in your life are worthwhile? Where 0 is 'not at all worthwhile' and 10 is 'completely worthwhile' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	Y	

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Key for inclusion in time series:

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Happiness (score)</b>	This indicator measures how happy people are	Based on question: Overall, how happy did you feel yesterday? Where 0 is 'not at all happy' and 10 is 'completely happy' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	Y	
<b>Anxiety (score)</b>	This measures how anxious people are and is a good proxy for well-being	Based on question: Overall, how anxious did you feel yesterday? Where 0 is 'not at all anxious' and 10 is 'completely anxious' ( <i>Annual Population Survey (APS) Personal Well-being dataset 2016/17, ONS</i> ).	Y	Y	
<b>Average Life Expectancy (yrs.)</b>	This is a good indicator of the overall health of an area	How long, on average, people can expect to live using estimates of the population and the number of deaths. This is a male and female combined life expectancy figure, that has been population weighted according to the number of males and females in the area ( <i>Life Expectancy for Administrative Areas within Scotland 2014-2016, National Records of Scotland; Mid-Year Population estimates 2016, ONS</i> ).	N	Y	
<b>Child Obesity (Year 6) (%)</b>	This is a good indicator of the health of an area and in particular how healthy lifestyles are	Percentage of primary school children (aged between 4 and 6) classified as obese (BMI $\geq$ 98th and $<$ 99.6th centile) ( <i>BMI Distribution in Primary 1 School Children by NHS Board of Residence 2016-17, Information Services Division (ISD) NHS Scotland</i> ).	N	Y	Missing East Dunbartonshire latest year of data so had to use previous years figure as a proxy
<b>Resilience and sustainability</b>					
<b>Air pollution (NO2 <math>\mu\text{g}/\text{m}^3</math>)</b>	This measures the quality of air in different areas and is a good indicator on the impact being had on the environment	Average NO2 concentrations across local authority areas, derived from modelled data for each square kilometre in Scotland, measured in $\mu\text{g}/\text{m}^3$ . ( <i>Estimated Background Air Pollution Maps (baseline 2015), Scottish Air Quality</i> )	N	N	Flat-lined across all years

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Key for inclusion in time series:

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Recycling rate (%)</b>	This measures levels of households waste recycled in an area and is a good indicator on the impact being had on the environment	Percentage of household waste sent to be recycled as a percentage of total municipal waste collected/generated ( <i>Household Waste Summary Data 2016, Scottish Environment Protection Agency</i> ).	N	Y	
<b>Co2 emissions per capita (Kt CO2)</b>	This measures the level of CO2 per head and is a good indicator on the impact being had on the environment	Total carbon dioxide emissions in Kt CO2 per head of population ( <i>UK local authority and regional carbon dioxide emissions national statistics 2015, Department of Energy &amp; Climate Change</i> )	Y	Y	
<b>Energy consumption (GWh)</b>	This measure looks at how much energy is being consumed and is a good indicator on how much natural resources are being used	Total final energy consumption (all fuels) ( <i>Total final energy consumption at regional and local authority level 2015, Department for Business, Energy &amp; Industrial Strategy</i> )	Y	Y	
<b>Dwellings completed (no.)</b>	This measures the number of new homes being built and is a good proxy for resilience	Count of the number of new house building completions undertaken by all sectors ( <i>NB1 and NB2 returns by local authorities 2017, Communities Analysis Division (Housing Statistics) Scottish Government</i> ).	N	Y	
<b>Planning applications (no.)</b>	This measures the volume of planning applications within an area and is a proxy for how an area is responding to the challenges of growth	Total number of local planning applications received post 2009 ( <i>2017/18 Annual Planning Performance Statistics Scotland Tables, Scottish Government</i> ).	N	Y	

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Below housing quality standard (%)</b>	This measure provides an indication of the quality of existing housing provision	The proportion of occupied dwellings in each Local Authority and sub-group failing the Scottish Housing Quality Standard overall ( <i>Scottish House Condition Survey 2014-2016, Scottish Government</i> )	N	Y	
<b>Community, trust and belonging</b>					
<b>Community assets (per 1,000 pop)</b>	This measures the number of community assets in an area per 000 population, including for example, libraries, youth organisations and social clubs and is a good proxy for community activity	Community assets within each area are counted using OS Points of Interest. Community assets are defined as: Cafes, snack bars and tea rooms; pubs, bars and inns; picnic areas; playgrounds; sports grounds, stadia and pitches; social clubs; doctor surgeries; first, primary and infant schools; independent and preparatory schools; broad age range and secondary state schools; nursery schools and pre and after school care; libraries; places of worship; sports clubs and associations; youth organisations; walk-in centre. The total number of these community assets are summed per district, divided by the total population of the area and then multiplied by 1,000 to give the overall figure ( <i>Points of Interest 2017, OS</i> ).	Y	Y	Only available for the last two years of the index (2017 and 2016 index).

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Key for inclusion in time series:

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Y = only available for some years

N = not available in time

Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Cultural amenities (per sq. km)</b>	This measures the number of museums, galleries and other cultural venues in an area, giving a sense of the place that people would want to visit	Cultural amenities within each area are counted using OS Points of Interest. Cultural amenities include: Horticultural attractions; zoos and animal collections; archaeological sites; historic buildings including castles, forts and abbeys; historic and ceremonial structure; museums; art galleries; country and national parks; designated scenic features; sightseeing, tours, viewing and visitor centres; theatres and concert halls; aquaria and sea life centres; bird reserves, collections and sanctuaries; battlefields; railways (heritage, steam and miniature); theme and adventure parks; tarns, pools and meres; laseria, observatories and planetarium; historical ships. The total number of these amenities are summed per district and divided by the total number of hectares ( <i>Points of Interest 2017, OS</i> ).	Y	Y	Only available for the last two years of the index (2017 and 2016 index). For the latest index we have changed the unit to be per square kilometre and have therefore retrospectively updated the 2016 index to reflect this change and maintain consistency.
<b>Living alone, aged 65 and over (%)</b>	This indicator is used as a proxy for loneliness and isolation	Number of 65 year olds and over who live in one person households, as a proportion of all 65 year old residents who live in a households ( <i>Scottish Census 2011, Scottish Government</i> ).	N	N	Census only every 10 years, therefore we have had to flatline across all years of the index.
<b>Valid votes turnout (%)</b>	This is a good indicator of how engaged a community is	Total number of valid votes counted (in the 2017 Scottish Local Council elections) as a proportion of the electorate (this excludes all rejected ballots). ( <i>Elections Centre, University of Plymouth from Returning Officers and Electoral Registration Officers 2017, The Electoral Commission</i> ).	N	N	Not consistent over the five years so have had to flatline the 2017 index data across all years.

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Indicator name	Description	Metadata	Same source as English Index?	Included in time series analysis?	Time series notes
<b>Violent crimes (per 10,000 pop)</b>	This is a good indicator of how safe an area is	Numbers of non-sexual violent offences (homicide etc., attempted murder and serious assault, robbery and other violence) recorded by the police at a local authority level, per 10,000 population ( <i>Recorded Crime in Scotland 2016-17, Scottish Government</i> )	N	Y	
<b>Ethnic diversity (score)</b>	This is a good indication of how ethnically diverse the resident population is within an area	The Ethnicity Diversity Index measures the probability that two individuals randomly selected from the population belong to different ethnic groups. The index is scored between 0 and 1, with scores closer to 1 indicating higher levels of diversity. the component indicators that have determined this fractionalisation index are the Proportion of all people classified as Indian, Bangladeshi, Caribbean, Chinese, African, Pakistani, White British, White Irish, White Polish, White Gypsy/Traveller, Mixed, Other ethnic group ( <i>Scottish Census 2011, Scottish Government</i> ).	N	N	Census only published every 10 years, therefore we have had to flatline across all years of the index
<b>Cultural engagement (%)</b>	This measures levels of adult participation in cultural activity and/or attendance at cultural events and places	Cultural engagement is defined as those adults who have either participated in a cultural activity or who have attended at least one type of cultural event or place in the past 12 months. This is expressed as a proportion ( <i>Scottish Household Survey 2017, Scottish Government</i> ).	N	Y	