



INDICATOR CALCULATIONS

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Below are explanations of the calculations carried out to calculate indicators in the TPI 2021. Please refer to the indicator list available [here](#) for further information about each indicator. Not all indicators in the TPI are included in this document. This is because many of the indicators in the TPI are ready 'off-the-shelf' from the original dataset, with no calculations required.

For information about calculations of indicators that are unique to the Thriving Places Wales, please visit www.thrivingplaces.wales.

Local Conditions	2
NO2	2
Use of active transport	2
Journey times to key services	2
Safety at dark	2
Lifelong learning	2
Unwillingly out of work	3
Good jobs	3
Percentage with low income	4
Organisation membership	4
Participation in heritage	4
Neighbourhood trust,	4
Social Fragmentation Index	5
Sustainability	5
Renewable electricity generation	5
Housing energy efficiency	5
Land use change	5
Equality	5
Income Inequality	6
Social mobility enabled by the education system	6
Indicators subject to simple calculations	6
Further information	7

Acronyms

LA = Local authority

ONS = Office for National Statistics

PHE = Public Health England

RSA = Royal Society for arts, manufactures and commerce

TPI = Thriving Places Index

USS = Understanding Society Survey

Local Conditions

NO2

We downloaded NO2 values for England, provided in 1x1km grid squares. We obtained 2011 population estimates for each grid square. We then multiplied the average population of a grid square by the NO2 value for that grid square. For each local authority (LA), we took the sum of these population x pollution values to get a pollution total. We then calculate the average pollution per person by dividing the pollution total by the population total.

Use of active transport

The percentage of adults walking for travel three times a week and the percentage of adults cycling for travel three times a week were first converted to z-scores. The indicator value for each LA is the average of the two z-scores. Note that this averaged value was standardised again into a new z-score, like all other indicators, such that the standard deviation across upper tier authorities in England is reset to 1.0. This ensures that the indicator has equal weight to the other transport indicators when they average together to calculate the Transport sub-domain score.

Journey times to key services

We combine average walking times to the following services: schools, GPs, and food stores by taking the average of walking times to primary schools and secondary schools (giving each type of school a weight of 0.5), and averaging this with walking times to the GPs and food stores.

Safety at dark

The variable 'f_crdark' from the local neighbourhood module of Wave 6 of the USS was used to produce this indicator. This variable captures responses to the question "How safe do you feel walking alone in this area after dark?".

'f_crdark' was recoded to collapse the responses 'never goes out after dark' and 'very unsafe'. To obtain an indicator value per LA, responses were averaged across participants from each LA. The USS data was weighted using weights provided within the dataset. A local authority lookup obtained via special license was used to match participants to LAs. To obtain an indicator value per LA, responses were averaged across participants from each LA.

Lifelong learning

We use secure access data from the Labour Force Survey to produce this indicator. For each local authority, the denominator is the number of respondents over 16 who have completed full-time education (based on variable EDAGE not being missing). The numerator is the number of *those* respondents who reported at least one of the following:

1. That an apprenticeship is part of their main job (APPSAM=1 or APPSAM=2)

2. That they have taken in part in a job-related training or education programme in the last four weeks (ED4WK=1)
3. That they have done a learning activity not related to work in the last four weeks (including working or studying towards a qualification, other taught classes, and self-learning) (LEARN4WK=1).

Unwillingly out of work

We subtract the number employed from the number economically active to get the number of people who are 'economically active and unemployed'.

For the numerator, we add together 'economically inactive and want job' and 'economically active and unemployed'. For the denominator, we add together 'economically active' and 'economically inactive and want job'.

For some LAs, the 'economically inactive but want a job' value is missing due to small Ns. We estimate these values by creating a linear regression model using the data for available LAs.

Good jobs

We use secure access data from the Labour Force Survey to create this indicator, combined with end user license data from the Family Resources Survey.

The first step is to create a good jobs *for employees* indicator. For that, for each local authority, the denominator is the number of people who said that their main economic activity was as an employee (INECAC05=01). The numerator was the number of *these* people who met the following criteria:

1. Had a permanent job (JOBTYPE=1) or reported not wanting a permanent job (WHYTMP6=4).
2. Worked 49 hours or less per week (TTUSHR<49).
3. Worked full-time or worked part-time because they did not want a full-time job or because they were a student (FTPTW !=2 AND FTPTW != 3; note that if no reason was given for working part-time, we also assumed that the respondent did not want a full-time job).
4. Earned the 2020/21 living wage, as defined by the Living Wage Foundation (HOURPAY >= 9.50). For those working in London (REGWKR=8 or 9 or 11), the London living wage was used as the threshold (HOURPAY >=10.85).

To estimate the proportion of self-employed people who had good jobs, we used the Family Resources Survey to determine the percentage of full-time self-employed people (EMPSTATI=3) who earned the living wage, again as defined by the Living Wage Foundation. We used their weekly total gross income (SEINCAM2 + INEARNNS) and divided it by an average working week of 35 hours, to estimate an hourly rate. Again, for London, the higher London threshold was used to determine whether someone was earning the living wage. But in this case, region of residence (GVTREGNO) was used as opposed to workplace region. Note that because of the smaller numbers of people who were self-employed (the total N for the whole of England was 1262), the percentage of self-employed who earned the living wage was calculated at the regional level rather than LA level.

The final good jobs indicator was calculated by combining the proportion of employed who had good jobs with the proportion of self-employed who had good jobs. The denominator was the total number of economically active within a LA (i.e. employees plus self-employed plus unemployed).

Percentage with low income

We first calculate 70% of the UK median income as a threshold. For each LA we estimate a logarithmic best-fit line for the relationship between the income and the percentile. We then use the best fit line to estimate what percentile the threshold lies at.

Local business

We divide the number of enterprises by the number of local units to obtain the ratio.

Organisation membership

The variable 'f_org' from Wave 6 of the USS was used to produce this indicator. This variable captures whether a participant is a member of one of the following organisations:

The organisation types included are as follows: Political party, Trade Unions, environmental group, parents'/School Assoc, tenants/residents group, religious/church org, voluntary services grp, pensioners group/org, scouts/guides org, professional org, other community group, social/working men club, sports club, WI/Townswomen's Guild, Women's Group/Fem Org, other.

The USS data was weighted using weights provided within the dataset. A local authority lookup obtained via special license was used to match participants to LAs. The 'f_org' variable was recoded to produce a binary variable indicating whether a participant is a member of at least one organisation or not. For each LA, the number of participants that are a member of at least one organisation was calculated as a percentage of the total number of participants per LA.

Participation in heritage

We combine the following indicators from the RSA heritage index:

% of local authority population visiting heritage site at least 3 times in last 12 months,

% of local authority population visiting museum or gallery at least once in last 12 months,

% of local authority population visiting industrial heritage site in last 12 months,

% of local authority population visiting historic park or garden in last 12 months.

We standardised the raw values by transforming them to z-scores, then we take the average of the four z-scores.

Neighbourhood trust,

The variable 'f_nbrcoh3' from the local neighbourhood module of Wave 6 of the USS was used to produce this indicator. This variable captures agreement with the statement "People in this

neighbourhood can be trusted". The USS data was weighted using weights provided within the dataset. A local authority lookup obtained via special license was used to match participants to local authorities. To calculate an indicator value per LA, the number of participants who responded 'agree' or 'strongly agree' was taken as a percentage of the total number of participants per LA.

Social Fragmentation Index

(Change in calculation since TPI 2020)

The Social Fragmentation Index was developed by Professor Peter Congdon in 1996 to study the predictors of suicide. We calculated it at the local level using the following percentages drawn from the Annual Population Survey secure access data:

- percentage of 1-person households (HHTYPE6=1)
- percentage of people renting privately (LLORD =5 or 6 or 7)
- percentage of people who have moved to their current address within the last year (RESTME=1)
- percentage of people who are not living as a couple (MARCHK1 != 1 AND LIV12W != 1).

Each percentage is transformed into a z-score using means and standard deviations at the Local Authority level. The four components are then averaged to create the Index. This time we have coded the Index such that high values indicate low social fragmentation.

Sustainability

Renewable electricity generation

Starting from the total generation in MWh, we calculate the per capita value (KWh per person) for each local authority by multiplying the total generation by 1000 and dividing by the population. We then take the log of the per capita value.

Housing energy efficiency

The sum of the lodgements with Energy Performance Certificate (EPC) ratings of A, B and C was calculated as a percentage of the total newly registered lodgements on the EPC register.

Land use change

We use data obtained from Planning Statistics which required the signing of an End User License Agreement. We calculate the net loss of non-developed land as a proportion of total green non-developed land, and multiply this by 100.

Equality

Income Inequality

We calculate the ratio of the 80th percentile of weekly earnings to the 20th percentile of weekly earnings. For local authorities where the 80th percentile is not available, we use the available percentiles to estimate the 80th percentile using an exponential function.

Social mobility enabled by the education system

We use data from the Government's Social Mobility Index. We combine 10 indicators that form the index:

- % of children eligible for free school meals (FSM) achieving a 'good level of development' at the end of Early Years Foundation Stage
- % of children eligible for FSM attending a primary school rated 'outstanding' or 'good' by Ofsted
- % of children eligible for FSM attending a secondary school rated 'outstanding' or 'good' by Ofsted
- % of children eligible for FSM achieving at least the expected level in reading, writing and maths at the end of Key Stage (KS) 2
- Average attainment 8 score per pupil for children eligible for FSM
- % of young people eligible for FSM that are not in education, employment or training (positive destination) after completing KS4
- Average points score per entry for young people eligible for FSM at age 15 taking A-level or equivalent qualifications
- % of young people eligible for FSM at age 15 achieving 2 or more A-levels or equivalent qualifications by the age of 19
- % of young people eligible for FSM at age 15 entering higher education at a selective university (most selective third by UCAS tariff scores) by the age of 19
- % of 19 year olds in 2016 qualified to level 3 by home Local Authority District (LAD) at academic age 15 (for those eligible for Free School Meals and in the state sector in England at academic age 15).

Nine of the indicators are given as z-scores. We transform the 10th indicator, '% of 19 year olds in 2016 qualified to level 3 by home Local Authority District (LAD) at academic age 15', into a z-score. Then we take the average of the 10 z-scores.

Indicators subject to simple calculations

One of three types of simple calculation have been used for selected indicators.

1. An average is taken of available data for females and males to obtain a figure for both sexes:

- Health Inequality
 - Life Expectancy
2. The available data is divided by the most appropriate local authority population figure in order to give a rate per capita or per thousand population:
- Car Traffic
 - Traffic Accidents
 - Subjective Disability
 - Apprenticeship Starts
 - Energy Consumption
 - Household Waste (TPI 2021 only)
 - Household Recycling (TPI 2021 only)
3. Two or more data points are combined in order to obtain the correct indicator value:
- Housing Energy Efficiency
 - Volunteering in Sport
 - Subjective Health

Further information

If you have any further questions about the indicator calculations, please contact Centre for Thriving Places via hello@centreforthrivingplaces.org.

For further information about the Thriving Places Wales, please visit www.thrivingplaces.wales.