



SIPHER Inclusive Economy Indicator Set: Technical Paper

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Inclusive Economy Indicators

*Revised to address subsequent indicator changes made due to data availability and reliability issues, with particular thanks to Andreas Hoehn and Hugh Rice for providing further technical detail on indicator construction

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Background

The Systems Science in Public Health and Health Economics Research - [SIPHER Consortium](#) is a major investment by the [UK Prevention Research Partnership \(UKPRP\)](#). It is a partnership between scientists across seven universities, four government partners at local, regional and national level, and multiple practice partner organisations. SIPHER seeks to support a shift from 'health policy' to 'healthy public policy', by understanding how public policies in spheres such as the economy, welfare, housing, education and employment impact on health and health inequalities. Drawing on participatory systems mapping and evidence synthesis, SIPHER is developing system models and decision support tools for use in public policy settings.

A key topic of interest for SIPHER is the relationship between inclusive economy policies and wider health outcomes and inequalities. To address this topic, the consortium has developed a set of inclusive economy indicators for use in SIPHER's modelling work. While the SIPHER Inclusive Economy (IE) Indicators have been selected for specific purposes (discussed below) it is hoped that they will be useful to others concerned with understanding, promoting, and monitoring the development of more inclusive economies. This paper therefore aims to support their wider use by describing the indicator set, data sources and limitations, and explaining the rationale and process for indicator selection.

- Find our resource at the Open Science Foundation - [SIPHER Inclusive Economy Data Set](#)
- A technical summary of SIPHER Inclusive Economy Data Set - and the other indicators that have been developed within the consortium can be found in our online [SIPHER product Guide](#).
- Further information including a shorter summary note of this report can be found on our website – www.SIPHER.ac.uk.

Purposes, Boundaries and Criteria

The purpose of SIPHER's Inclusive Economy Indicators

SIPHER's inclusive economy indicators are designed for use in statistical and computational modelling of the complex relationships between economic inclusion and health and wellbeing, at both individual and societal levels.

We aim to capture a) the **extent of economic inclusion** in places (local authorities, Combined Authorities, and other subnational policy geographies), relative to each other, at a given point in time and b) **change in economic inclusion** over time.

Within SIPHER, understanding of aggregate place-level data is combined with understanding of individual-level data, via the construction of a synthetic population dataset, which will be made open access for use by other researchers. The combination of aggregate and individual indicators enables an understanding of the relationships between the kinds of aggregate indicators that policy organisations typically access and use, and what this looks like for groups of individuals, households and small areas, which cannot usually be made visible with publicly available data.

Our use of the term 'Inclusive Economy'

Given SIPHER's purposes, we adopt a particular understanding of 'inclusive economy' which is:

- concerned with economic **inclusion** rather than inclusive growth. In other words, whilst acknowledging that there are important questions about the relationships between economic growth and inclusion, we are not explicitly exploring them through the selected indicators. Instead, we are interested in the relationship between the extent and nature of inclusion on the one hand, and health and wellbeing outcomes on the other. We do not therefore include measures of economic size or growth.
- limited to **economic inclusion**. In other words, we are not including broader outcomes (such as health, wellbeing or environmental sustainability) in our core understanding of an inclusive **economy**. We have developed other sets of indicators for health and wellbeing, in order to understand relationships between these and our core measures of economic inclusion. Read our *Choosing the SIPHER health indicators* report at www.SIPHER.ac.uk

Criteria

For SIPHER's purposes we established some key criteria for selecting the **aggregate** indicators. As far as possible, these should be:

- Meaningful to decision makers (capturing a recognisable, relevant aspect of inclusive economies);
- Possible to estimate at local authority (LA) level (for LA analysis and as a building block for larger geographies);
- Capable of analysis over time (a consistent time series), both historic and updateable;
- Accessible i.e., published, free and not requiring an application process, to enable use by non-specialists where possible and in order to be useable in future, beyond SIPHER's initial work.

Further, given the use of indicators in models and decision tools, the overall indicator set needs to be relatively small, adequately capturing the inclusive economy concept without being overly abundant and complex. Preferably, aggregate-level indicators should be capable of being matched by an indicator of the same concept at individual level (using survey data) and tied into the Synthetic Data.

Identifying Candidate Indicators

Identifying Domains/Dimensions of Inclusive Economies

Our first step was to identify domains/dimensions of inclusive economies for which indicators should be sought. To do this, we collated and compared existing indicator sets (as of early 2021), both from SIPHER's policy partners and wider organisations. Download [Existing Indicator Sets Workbook](#) at [SIPHER website](#). This exercise allowed us to identify how some of the common dimensions of inclusive economies had featured in previous indicator sets¹ and how they had been measured. The common dimensions included characteristics of

¹ The domains are drawn from the documents of our policy partners and from eight existing indicator sets: JRF Inclusive Growth Monitor, Grant Thornton Vibrant Economy Index, PWC-DEMOS Good Growth for Cities, Oxfam Humankind Index, Brookings Institution Inclusive Economy Indicators, Centre for Thriving Places Thriving Places Index (formerly Happy City), CPP Community Index, London Prosperity Board Prosperity Index

people (human capital) and places (access to services); participation in employment and the quality of employment. More traditional indicators of the economy (its size, shape, dynamism) had also been included in some of these indicator sets and are listed in Appendix 1. As mentioned above, traditional measures of the size of the economy were not included in SIPHER's core approach to defining an inclusive economy but there was interest in exploring further how measures of an inclusive economy were, or were not, associated with these measures.

Table 1: Synthesis of key domains from example indicator sets.

Domain	The kinds of things covered by the domain	Example measures
HUMAN CAPITAL	The human potential to create economic value	Education levels. Adult qualification and skill levels. High level skills and high-level occupations. Sufficient skills to live a good life. Lifelong learning. Transitions through education.
CONNECTIVITY	The extent to which people are enabled to participate in the economy and the economy taps the potential of all its people	Transport Digital inclusion
AGGREGATE/AVERAGE INCOME	The extent to which the economy generates money for households.	Average income. Income growth. Consumption.
LIVING COSTS	The extent to which people can afford to live a decent life	Housing affordability. Fuel poverty. Food security Financial stress. Not keeping up with bills. Overall, how the household is managing financially.
ECONOMIC SECURITY/RESILIENCE (household level)	Whether households have the capacity to build their economic futures (?)	Savings. Access to financial services. Digital inclusion. Having secure source of income, proxied by change in probability of becoming unemployed. Government spending on social protection. Feeling secure about the future.

INCOME DISTRIBUTION	How the value created in the economy is shared between households. Whether there are people who are exceptionally badly off. (Wealth is occasionally included as well as income))	Poverty. Deprivation. % in bottom and quintiles of national income distribution. Households below minimum income. Income inequality. Upward social mobility. Wealth inequality.
EMPLOYMENT	Participation in the (paid) economy by residents of a place	Employment rate. Probability of being in work.
LABOUR MARKET EXCLUSION	Involuntary exclusion from the opportunity to participate in the (paid) economy	Unemployment rate. Economic inactivity rate. Workless households. Long term unemployment. NEETS. Precarity (can also be a quality of work indicator)
FAIR PAY	Whether workers are adequately and equitably remunerated for their labour (can be seen as a measure of the share of economic value that workers get)	Percentage below the Real Living Wage. Pay gaps (gender, ethnicity, disability)
WORK/LIFE BALANCE	Whether work enables or constrains a decent life	People working long hours. Average working week (as proxy for people being able to sustain good relationships) Commuting time to work. Satisfaction with work life balance.
PARTICIPATION	Sometimes whether people are able to influence economic decisions at the macro level. Sometimes whether they are able to participate in the economy on an equitable basis (e.g. worker representation, freedom from workplace discrimination)	Voice and accountability. Political inclusion. Choice, control and freedom from discrimination.
ACCESS TO PUBLIC GOODS AND SERVICES	An extension, perhaps of the idea of economic resilience and security and of living costs. The extent to which the state supports equitable economic participation and the capability to live a decent life.	Self-assessment of whether neighbourhood has 'good amenities'. Access to public goods and services.

From Table 1 we identified **two central economic outcome domains** of inclusive economies which corresponded to the core elements commonly identified in definitions of inclusive growth (Box 1).

These were:

- **widespread and equitable participation in economic activity;**
- the **benefits of economic activity** being widely shared.

Box 1: Some well-known definitions of inclusive growth

Royal Society for Arts (RSA)

"broad-based growth that enables the widest range of people and places to contribute to economic success, and to benefit from it too."

- page 7, RSA (2016) [Inclusive Growth Commission: Emerging Findings](#), September 2016

Scottish Government

"growth that combines increased prosperity with greater equity; that creates opportunities for all; and distributes the dividends of increased prosperity fairly"

- page 6, [Scottish Government \(2022\) What is Inclusive Growth and what does it look like?](#)

Organisation for Economic Co-operation and Development - OECD

"growth that is distributed fairly across society and creates opportunities for all"

- <https://www.oecd.org/inclusive-growth/>

We also identified a **broader set of domains** which were **sometimes positioned as the outcomes of inclusive economies (the ultimate ends) and sometimes as enablers of economic inclusion.**

These included:

- Education and skills;
- Access to public services;
- Connectivity;
- Structures and systems that enable inclusion (e.g., decision-making).

As noted above we excluded health and wellbeing, environmental sustainability and aspects of economic growth/dynamism not connected to economic inclusion.

Table 2 shows these broad domains and common sub-domains or dimensions identified from the existing indicator sets.

Table 2: Domains and sub-domains/dimensions to form basis of indicator framework.

Type	Domain	Sub-domains/dimensions
Economic outcomes	Participation in economic activity	Employment Exclusion from employment
	Benefits of economic activity being widely shared	Inequality Poverty Affordability/costs of living Work/life balance Quality of work
Wider outcomes/enablers	Education and skills	
	Access to public services	
	Connectivity	Physical connectivity Digital connectivity
	Structures and systems enabling inclusion	Economic structures/systems e.g., access to finance, local procurement Inclusion in wider decision-making processes

This draft list of domains was shared for consultation within SIPHER (including policy partners), and with an expert advisory group, as the first step of an iterative process of consultation and indicator development and testing. Feedback confirmed that the domains captured the essence of inclusive economies and thus satisfied the criteria of being meaningful and relevant. Quality of work was emphasised as being particularly important, including pay and non-pay aspects. Aspects of housing and environment/place were emphasised in the ‘public services’ domain. The concept of ‘community wealth building’ (reflected in ownership of community assets of community benefits from business and public sector procurement) was identified as a dimension of particular interest with the ‘structures and systems enabling inclusion’ domain. Finally, it should be acknowledged that some consultees were concerned that the size of the economy (and growth) was being considered separately from the inclusive economy.

We also shared the draft list of domains with SIPHER’s three Community Panels in interactive workshops, where we sought to explain how the indicators would be used, as well as eliciting feedback on the choice of indicators. Rather than a technical or policy perspective, our Community Panels scrutinise SIPHER’s work from the point of view of community members with experiential knowledge of health inequalities. The Community Panels were broadly in agreement with other consultees: for example, they strongly emphasised the complexity and importance of ‘quality of work’. Feedback from the Community Panels emphasised the importance of being able to explore outcomes within the domains and any differences across different parts of the population, for example, ethnic inequalities in outcomes. There was particular support from the Panels for the inclusion of an indicator to capture Child Poverty.

Identification of Potential Indicators within Domains

Our next step was to identify specific indicators within each domain.

We had already identified some commonly used measures for many of the domains from our review of existing datasets (see section on ‘Identifying candidate indicators’ above).

We excluded indicators that were only occasionally used (or were experimental) or which appeared to come from an international data source. This produced a longlist of candidate indicators as well as some domains/dimensions where there was no common measure (Table 3).

Table 3: Domains and sub-domains/dimensions (amended following consultation) with list of candidate indicators.

Type	Domain	Sub-domains/dimensions	Commonly used measures
Economic outcomes	Participation in economic activity	Employment	Employment rate
		Exclusion from employment	Unemployment rate Long term unemployment rate Economic inactivity rate
	Benefits of economic activity being widely shared	Inequality	Wealth inequality and income inequality (Gini coefficient or 80/20 ratio)
		Poverty	Households with incomes below 60% median Children in low income households Claimants of means-tested benefits
		Affordability/costs of living	Ratio of housing costs to earnings/income Measures of savings or financial security
		Work/life balance	% people working long hours Time spent commuting to work
		Decent pay*	Percentage of workers paid below the level of the Real Living Wage
		Quality of work	No commonly used measure
Wider outcomes/ enablers	Education and skills		Levels of skills in adult population (various ages) School attainment
	Access to public services		No common measure. Some use of satisfaction surveys and quality ratings for schools/childcare
	Connectivity	Physical connectivity Digital connectivity	No commonly used measure Households with access to broadband
	Structures and systems enabling inclusion	Community wealth building* Inclusion in wider decision-making processes	No commonly used measures Voting in elections

Notes:

*Decent pay added separately from 'quality of work' following consultation. *Community wealth separately identified following consultation.

Housing affordability covered in costs of living, but aspects of housing quality not included since this is a topic to be explored more fully in future SIPHER modelling.

Further consultation, including with specialist organisations and researchers suggested that:

- Some sub-domains/definitions needed better definition (for example a separation of wealth and income inequality).
- Some choices could be made about which commonly used indicators best captured the domain or dimension of interest for SIPHER's purposes. For example, we preferred to measure qualification levels in the young adult population than the whole working age population as this is more susceptible to policy intervention. Policy partners emphasised a focus on child poverty.
- Some commonly used indicators are poor proxies for the concept (for example voting in elections as a proxy for inclusion in decision-making and households with access to broadband as a measure of digital inclusion), but nevertheless the domain was considered sufficiently important to retain. However, in the case of work/life balance, the only available indicators were judged to risk distorting the concept (since they are likely to capture voluntary work/leisure time/pay trade-offs).
- In one area with an identified gap (physical connectivity) a new indicator is now available and could be included, whereas in another 'gap' area (community wealth building) no adequate indicators could be found.
- In relation to access to public services and quality of work, various options were explored by policy partners and the research team (see Table 5 for further detail), subject to data access and availability.

Table 4: Candidate indicator list after consultation on indicators

Type	Domain	Sub-domains/dimensions	Candidate indicator
Economic outcomes	Participation in economic activity	Employment	Employment rate
		Exclusion from employment	A combination of long term unemployment and economic inactivity due to ill health/disability
	Benefits of economic activity being widely shared	Wealth Inequality	House price inequality (ratio)
		Earnings inequality (as proxy for income inequality)	Weekly FT earnings inequality (ratio)
		Poverty	Children in low income households
		Affordability/costs of living	Measure of savings or financial security Measures of housing affordability
		Decent pay	Percentage of workers paid below the Real Living Wage
		Quality of work, or job security as a sub-dimension of quality of work	Contract type, and other options to be considered
Wider outcomes/enablers	Education and skills		Levels of skills in young adult population 20-49
	Access to public services		Various survey and quality measures considered
	Connectivity	Physical connectivity	Public transport accessibility (based on distance to stop, frequency and reliability)
		Digital connectivity	Consumer Data Research Centre (CDRC) Internet User Classification (IUC) data:
Structures and systems enabling inclusion	Inclusion in wider decision-making processes	Voter turnout in local elections.	

Scrutiny of data sources and availability

The final stage was to review the list of candidate indicators against SIPHER's criteria for usability in our modelling work. i.e., to find indicators that were:

- Available and meaningful at the LA level (for LA analysis and as a building block for larger geographies);
- Capable of analysis over time (a consistent time series), both historic and updateable;
- Accessible i.e., published, free and not requiring an application process to enable use by non-specialists where possible, to enable continued use beyond SIPHER's initial work.

This stage of work led to the elimination of indicators of access to public services and financial security. It was also not possible to identify a satisfactory overall measure of job quality, so the decision was made to focus on a sub-dimension – job-security. Furthermore, it was decided that the concept of job security would be measured through a proxy measure of job permanence because estimating more nuanced measures of job security required access to survey microdata. Table 5 provides an overview of the decisions at this stage.

Table 5: Options and decisions made following final scrutiny round.

Sub-domain	Main options considered	Decision	Considerations -notes, limitations
Job security/ precarity – an aspect of job quality	<p>Share of workers in non-permanent work. Also, various permutations: excluding those who did not want permanent; adding those on permanent zero hour contracts, or in involuntary part-time work)</p> <p>Share of those employed in temporary employment, agency work, or low-paid self-employed (based on EHRC approach). Low paid self-employed defined as all those in caring, leisure and other service occupations, process, plant and machine operative occupations, or elementary occupations, such as cleaners or kitchen and catering assistants.</p> <p>Share of people in insecure work as defined by the Living Wage Foundation (which includes assessment of those on variable hours and low paid self-employment)</p> <p>Share of people on 'desired contracts' as in ONS Job Quality index</p> <p>How often people have to work at short notice</p>	<p>Job insecurity shown to be a core work-related stressor (with impacts on mental and physical health)</p> <p>Decision to use 'share of employees in permanent work' as indicator of job security due to data access and resource constraints.</p> <p>Note that the measure is not proposed as an adequate overall measure of job quality</p>	<p>Selected indicator is a partial measure of job insecurity. Insecurity in work is multi-dimensional. While contract-based measures are commonly used in assessments of security the issue is that they conflate permanence with security and neglect insecurity of those who are on permanent short hours contracts and/or with little notice of when working</p> <p>People can be considered as voluntarily 'insecure' based on contract measure i.e., they are asked whether have accepted non-permanent contract because couldn't find permanent contract or for other reasons. Some contract based measures focus just on those considered involuntarily insecure</p>

Sub-domain	Main options considered	Decision	Considerations -notes, limitations
Job security/ precarity – an aspect of job quality - <i>continued</i>	Alternative approach would be to look at employer practices more directly: e.g., high turnover of employees, might indicate insufficient care for employees		<p>Self-employed are excluded from many approaches to estimating insecurity</p> <p>Some subjective measures are available in micro data – e.g., self-assessed likelihood of losing job in next 12 months but local area based estimates have not been produced</p> <p>Many indicators of ‘good work’ not available at sub-regional level, e.g., many indicators in the CIPD Good Work Index</p> <p>More nuanced indicators are not publicly available and local estimates would need to be derived from (secure) microdata OR requested from ONS. Estimates may be unreliable at LA-level, particularly for more rural/lower population areas</p> <p>The selected indicator does not cover hours insecurity – i.e. those who experience short notice changes to their working hours, and covers employees, not self-employed people</p>

Sub-domain	Main options considered	Decision	Considerations -notes, limitations
Quality of public services	<p>Satisfaction with public services (e.g. Scottish Household Survey)</p> <p>Childcare sufficiency (places per 100 children), based on LA childcare assessments</p> <p>Quality of provision based on inspection data</p> <p>The Survey of Childcare and Early Years providers (for England) covers key areas of interest e.g. staff:child ratios, workforce qualifications and pay</p>	Unable to identify an appropriate indicator. There are different views on what quality means in relation to public services – e.g. consistency, accessibility, coverage, user views	<p>Reported satisfaction measures available, e.g. for those using care services. Require careful interpretation – e.g. are we just interested in reported satisfaction of those using services, what about those who don't (why don't they use the service?)</p> <p>Though childcare quality links to an inclusive economy focus on inclusion in the economy (for parents), unable to identify a local area-based measure of quality, rather than sufficiency.</p> <p>Childcare sufficiency assessments are undertaken at local-level but differ between nations.</p> <p>Inspection data considered too partial</p> <p>No local data available from Survey of Childcare and Early Years providers</p>
Financial security	<p>Percentage of households with savings of £1500 or more</p> <p>Whether households have financial assets that can cover an employment income shock lasting 3 months</p> <p>Whether households can afford an unexpected expense</p> <p>Debt to income ratios</p>	Unable to identify an indicator that could describe share of people/households with a small safety net to cushion them against income shocks, (i.e. as opposed to those currently experiencing debt, behind with bills etc)	<p>No local data on savings.</p> <p>Regional measures are available E.g. households with £1,500 (FRS data) or analysis of the extent to which households have financial assets that can cover an employment income shock lasting 3 months (WAS data)</p> <p>Experimental measure based on Wealth and Assets Survey assesses capability to manage loss of employment - doesn't cover households where no one is employed or self-employed</p>

Addition of individual-level indicators

Further work was undertaken to align the indicators, optimised to be useable at local authority level, with the synthetic population dataset. This involved identifying variables within the Understanding Society dataset and/or attaching variables to individuals based on their geographic location within the synthetic dataset. This provides insight into the spatial distribution of the inclusive economy at Lower Super Output Area level in England and Wales, and Data Zone level in Scotland. A table specifying this alignment can be seen at Appendix 2.

The final SIPHER Inclusive Economy indicator set

The SIPHER inclusive economy indicator set is an updated set of indicators designed to support the measurement and monitoring of inclusive economies at the place level, and links to individual outcomes.

Table 6 Final set of domains used in the indicator set

Economic outcomes	Wider outcomes and enablers
Participation in paid employment	Whether people are gaining the skills and qualifications to enable economic participation and success
Involuntary exclusion from the labour market	Digital exclusion
Wealth inequality	Physical connectivity
Earnings inequality	Housing affordability
Poverty	Cost of living ²
Decent pay (or, The extent to which paid labour provides remuneration adequate for a basic standard of living)	Inclusion in decision-making
Job security/precarity – an aspect of job quality	

The final set of indicators are described in more detail in Table 7. The first part of the table (7A) describes the construction, selection criteria and sources for the seven economic outcomes, whilst the second part (7B) of the table provides the same details for the six indicators that were selected as proxy measures of the wider outcomes and enablers of an inclusive economy.

² In our final set, the cost of living indicator is included as an enabler rather than an outcome as it was considered to be as a factor in broader outcomes of interest like savings and household financial security

Conclusions and Limitations

The indicator development process highlights three difficulties that continue to hamper measurement of inclusive economies:

- Lack of data to measure some concepts considered central to the idea of inclusive economies, but not to more traditional ways of understanding economic success. Examples include community wealth, inclusion in decision-making, digital inclusion, work-life balance.
- Lack of reliable data for some key indicators at the local authority level. This applies particularly to indicators around wealth and financial security where questions are asked in surveys but sample sizes do not support sub-regional analysis, especially of change over time.
- Limited access to some data sources, with lengthy application process or a requirement for physical access to secure data settings, which can be prohibitive to research teams in policy and academic settings.

Further investment in local data collection, analysis and access is needed in order to support more nuanced and accurate monitoring and modelling of inclusive local economies and their relationships to other social and health outcomes.

TABLE 7A: Inclusive Economy Indicators - Economic outcomes

	Sub-domain	Indicator decision	Rationale	Indicator data source and derivation	Considerations -notes, limitations
1	Participation in paid employment	Percentage of working-age people (16-64) who are employed, for local authorities (from APS)	Provides indication of overall level of participation in paid employment for working-age population, covering employees and self-employed	NOMIS (Annual Population Survey) https://www.nomisweb.co.uk/reports/lmp/la/contents.aspx	Demand from partners/community panel members for disaggregation of the data for key characteristics where sample sizes permit (e.g. gender, ethnicity, disability) Higher employment rates indicate areas where a greater share of the population is able to participate in economic activity
2	Involuntary exclusion from the labour market	Share of working-age people (16-64) who are inactive due to ill health or disability (from APS) Note: the original indicator of exclusion that was adopted by the task and finish group was a combined measure of the long-term unemployed AND those inactive due to ill health or disability. However, the long-term unemployment estimates were judged to be unreliable and excluded during data assembly	Provides insight into the degree to which more marginalised and disadvantaged potential workers are/aren't included in the formal economy.	NOMIS (Annual Population Survey). A combination of data on the long-term unemployed from table "Labour Supply" and Long-term sick, from the table "Economic Activity"	Rather than a counterpart to the employment rate, this tells us about the involuntary exclusion of a more disadvantaged segment of the population. Higher shares indicate an area where more people are excluded from the labour market due to ill-health or disability.

3	Wealth inequality	Ratio of median house prices in least expensive wards to median in most expensive (ONS estimates)	<p>Important to include a measure, however imperfect, of wealth inequality as wealth is even more unequally divided than income</p> <p>Provides insight into inequalities across a local authority area</p>	<p>House price statistics for small areas in England and Wales https://www.ons.gov.uk/peoplepopulationandcommunity/housing/bulletins/housepricestatisticsforsmallareas/yearendingdecember2020</p>	<p>This is a flow measure (dependent on transactions in the given year(s)). Higher scoring areas will have a greater difference in house prices between the highest and lowest wards Only a partial measure of wealth, does not cover things like savings, pensions and other personal assets</p> <p>Other measures of wealth not available below regional level</p> <p>A higher ratio indicates an area with less equal house prices across wards</p>
4	Earnings inequality	Ratio of weekly earnings for residents in full-time work, comparing 80th and 20th percentiles within the local authority area (ASHE)	<p>Income rather than earnings inequality would have been the preferred measure but this provides an indication for those in full-time work</p>	<p>Annual Survey of Hours and Earnings (ASHE) Table 8 https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/placeofresidencebylocalauthorityashetable8</p>	<p>Does not include the self-employed, or those working part-time hours</p> <p>Other ratios of inequality, e.g. 90:10, would also be of interest as well as how the upper and lower end of the distribution relates to the median</p> <p>A higher ratio indicates that there is less equality of earnings between residents in full-time work within the local authority area</p>
5	Poverty	Percentage of children living in low income households (based on national relative threshold, After Housing Costs) (modelled estimates for local authorities)	<p>An inclusive economy should be one where no child grows up in poverty, regardless of whether parents are working</p> <p>Child poverty is a key measure that is in use among policy partners</p>	<p>End Child Poverty Campaign http://www.endchildpoverty.org.uk/child-poverty-in-your-area-201415-201819/</p>	<p>As with other poverty rates, national policy decisions (e.g. over tax and benefits) likely to be a strong driver of this indicator</p> <p>A higher rate of child poverty indicates an area where the benefits of economic activity are not being widely shared</p>

6	Decent pay (or, The extent to which paid labour provides remuneration adequate for a basic standard of living)	Proportion of employee jobs that are paid below the Living Wage (as defined by the Living Wage Foundation) (source: data request from ONS)	Selected indicator is well supported. The Living Wage rate is set with reference to the amount that people need to achieve a basic standard of living (i.e. MIS)	Annual Survey of Hours and Earnings (ASHE) Data requested as ad hoc analysis through ONS	<p>Living Wage rates are calculated with reference to a full-time working week and on assumption that people are claiming all eligible benefits, childcare vouchers etc</p> <p>Indicator can look very different depending on whether calculated on resident or workplace basis</p> <p>Higher rate/score likely to be better, i.e. that the benefits of economic activity are being shared more widely</p>
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7	Job security/ precarity	Share of employees on a permanent contract (APS)	<p>Job insecurity shown to be a core work-related stressor (with impacts on mental and physical health)</p> <p>For now we have opted for a simple proxy indicator of job security due to data access and resource constraints. Note that the measure is not proposed as an adequate overall measure of job quality</p>	<p>Annual Population Survey https://www.nomisweb.co.uk/query/construct/summary.asp?menuopt=200&subcomp=</p>	<p>Many indicators of 'good work' not available at sub-regional level, e.g. many indicators in the CIPD Good Work Index</p> <p>Insecurity in work can be multi-dimensional, the selected indicator is a partial measure of job insecurity. While contract-based measures are commonly used in assessments of security, they tend to conflate permanence with security, neglecting the insecurity of those who are on permanent short hours contracts and/or with little notice of when working</p> <p>Self-employed are excluded from many approaches to estimating insecurity</p> <p>Some subjective measures are available in micro data – e.g. self-assessed likelihood of losing job in next 12 months but local area based estimates have not been produced</p> <p>Estimates may be unreliable at LA-level, particularly for more rural/lower population areas</p> <p>Higher rate/score likely to be better</p>
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TABLE 7B: Inclusive Economy Indicators - Wider Outcomes/Enablers

	Sub-domain	Indicator decision	Rationale	Indicator data source and derivation	Considerations -notes, limitations
1	Whether people are gaining the skills and qualifications to enable economic participation and success	Percentage of adults aged 20-49 with a Level 2 or higher NVQ qualification	Instead of focussing on young people, young adults selected in order to consider outcomes from current education system for core early working age, including whether basic qualifications achieved through early employment experiences	NOMIS (Annual Population Survey) https://www.nomisweb.co.uk/query/construct/summary.asp?mode=construct&version=0&dataset=17	Higher rate/score likely to be better
2	Digital exclusion	Proportion of individuals who are classified as a) e-withdrawn or b) passive and uncommitted internet users or c) settled offline communities. Assessment of engagement with digital is based on the Internet User Classification (IUC).	Access to internet considered vital to enable inclusion in economy Access considered to be a priority over measures of quality and nature of digital connectivity The Internet User Classification is built across a number of domains: e.g. broadband speed, internet frequency, access method, engagement with online shopping. So using the classification should capture different forms of engagement with digital.	Assessment of engagement with digital is based on the Internet User Classification (IUC) Consumer Data Research Centre (CDRC) Internet User Classification (IUC) data: https://data.cdrc.ac.uk/dataset/internet-user-classification	Having access does not mean that people are or have the skills to use the internet Time series data not available – latest release 2018. Where time-series analysis is conducted based on the indicators, the value of this indicator is assumed to be constant through the period 2017-2021 Lower rate/score likely to be better

3	Physical connectivity	<p>Public transport accessibility measure</p> <p>Proportion of LSOAs/DZs within the local authority area that are among the 50% most accessible LSOAs/DZs for each devolved nation, based on the approach used for that nation (Scotland, Wales and England considered separately; for England LSOAs were split 56%/44% owing to differences in the metric used)</p>	Public transport preferred over general connectivity and infrastructure improvements	<p>The Scottish and Welsh measures relate to access to buses, whilst the English measure relates more generally to public transport overall.</p> <p>In Scotland the measure is based on the Access to Bus Indicator (SABI), which gives a score for the accessibility of bus services in each data zone https://statistics.gov.scot/data/bus-accessibility</p> <p>SABI is presented as decile values (i.e. a score of 1-10) that have been ordered such that the lower deciles represent those LSOAs below the median value for accessibility, and the higher deciles above it</p> <p>In Wales the measure (WABI) is very similar to that for Scotland. Data were supplied by Mitchel Langford and Gary Higgs at University of South Wales (see https://wiserd.ac.uk/blog/dep-rived-areas-hit-hardest-by-changes-in-access-to-bus-services-during-the-pandemic/). For WABI the accessibility scores for all LSOAs take a</p>	<p>Context is important – and the indicator may look very different in rural compared to urban areas</p> <p>The measures are different for Scotland and England</p> <p>The data is available for one time point only. Where time-series analysis is conducted based on the IE indicators, the value of this indicator is assumed to be constant through the period 2017-2021</p>
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				<p>value roughly between 0 and 100 such that those above or below the median value are defined as more/less accessible.</p> <p>In England the measure relates to the proportion of LSOAs within the LA which score 0-1 on access to local services. LSOAs are allocated a score from 0 to 7 based on journey time (where 0 is best, 7 is worst). This is a count of the “Number of services (out of seven) [e.g. “large employment centres” and “GP surgeries”] with a mean journey time by public transport longer than the national average”, such that lower values represent better accessibility. The grouping of values into “more accessible” and “less accessible” categories that produces the nearest to a 50-50 split (as is straightforward for the Wales and Scotland metrics) is into [0,1] (44% of all values) for more accessible and [2,3,4,5,6,7] (56%) for less accessible. https://www.nao.org.uk/other/transport-accessibility-to-local-services-a-journey-time-tool/</p>	
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4	Housing affordability	Ratio of median house prices to median gross annual earnings (for residents)	Provides an indication of the relationship between what people earn and housing costs	ONS Housing affordability in England and Wales https://www.ons.gov.uk/peoplepopulationandcommunity/housing/bulletins/housingaffordabilityinenglandandwales/2020	Higher indicates greater imbalance between house prices and earnings
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5	Cost of Living ³	<p>Proportion of households in the local authority area that are defined as fuel poor, according to national definition</p> <p>Note that due to inconsistencies between the Scottish and English measures of fuel poverty and changes in definitions over time, an alternative indicator describing food insecurity was added for use in SIPHER’s clustering analysis.</p> <p>This measure describes the proportion of people who feel worried about food (“How worried, if at all, are you currently about getting the food you need?”)</p>	<p>Low Income High Costs indicator defines fuel poverty as the combination of facing high costs and having a low income.</p> <p>Reflects concern that “different households have an unequal ability to convert cash into warmth and other energy needs”</p> <p>Under the Low Income Low Energy Efficiency metric, households are considered fuel poor if 1) living in a property with a relatively poor energy efficiency rating (bands D, E, F or G) and 2) the household’s disposable income would be below the poverty line after housing costs and energy needs have been met</p>	<p>Proportion of households fuel poor for local authorities</p> <p>In England, fuel poverty was calculated using the Low Income High Costs metric between 2010 and 2018, and since 2019 this has been replaced by the Low Income Low Energy Efficiency metric. For Scotland, we have average rates for local authorities for the period 2017-2019</p> <p>Sub-regional fuel poverty data (England)</p> <p>https://www.gov.uk/government/collections/fuel-poverty-sub-regional-statistics</p> <p>For Scotland, local authority fuel poverty rates are estimated from the Scottish House Conditions Survey</p> <p>https://www.gov.scot/publications/scottish-house-condition-survey-local-authority-analysis-2017-2019/documents/</p> <p>For the food insecurity measure: the proportion of people who feel worried about food (“How worried, if at all, are you currently</p>	<p>Only a partial measure of costs of living</p> <p>Note that fuel poverty is defined differently in Scotland and England and there was no data available for Wales</p> <p>Discontinuities in the measure will limit assessment of change over time. In England, fuel poverty was calculated using the Low Income High Costs metric between 2010 and 2018, and since 2019 this has been replaced by the Low Income Low Energy Efficiency metric.</p> <p>For Scotland, we have average rates for local authorities for the period 2017-2019, not time series data</p> <p>---</p> <p>Notes for food insecurity measure:</p> <p>Food insecurity measures for local authorities are computed using small area estimation based on predictors identified by a nationally representative survey (n= ~4,000). The metric reports the proportion of individuals who feel worried about food</p> <p>Higher means a larger proportion of fuel poor households or larger proportion of people worried about food insecurity</p> <p>The modelled estimates relate to data collected at one time point (2021). Where time-series analysis is conducted based on the IE indicators,</p>
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				<p>about getting the food you need?" (very worried and fairly worried are used to define insecurity))</p> <p>Data source: https://shefuni.maps.arcgis.com/apps/insant/interactivelegend/index.html?appid=8be0cd9e18904c258afd3c959d6fc4d7 https://www.sheffield.ac.uk/news/new-map-shows-where-millions-uk-residents-struggle-access-food</p>	<p>the value of this indicator is assumed to be constant through the period</p>
6	Inclusion in decision-making	Voter turnout in local elections	<p>Selected due to lack of better option. Limited administrative or standard survey data on participation. Could be explored further in terms of ad hoc, specific data on participation within partner areas</p>	<p>Electoral Commission Results and turnout at local elections, e.g. data for May 2018 for England can be accessed here https://www.electoralcommission.org.uk/who-we-are-and-what-we-do/elections-and-referendums/past-elections-and-referendums/england-local-council-elections/results-and-turnout-2018-may-england-local-elections</p>	<p>Measure is limited as we are conceptually more interested in the nature (deliberative, participatory) and level of participation in decision making</p> <p>Voting in local elections will be driven by a range of national and local factors (including new rules about voter ID)</p> <p>Local elections also take place at different times between areas so will not be consistent data for same time point across LAs in UK. Data values may be rolled, with the election date closest to each year used</p>

³ In our final set, the cost of living indicator is included as an enabler rather than an outcome as it was considered to be a factor in broader outcomes of interest like savings and household financial security

Appendix 1. Example measures of the size, shape and dynamism of the economy from the indicator review

Domain	The kinds of things covered by the domain	Example measures
SIZE of ECONOMY	The scale of economic activity and the value produced.	Output (eg GDP per capita). Aggregate wages/earnings. Number of businesses. Number of jobs.
SHAPE of ECONOMY	The kinds of economic activity that go on. Sometimes this domain captures the capacity of the economy to generate overall value (e.g. high value sectors). Sometimes it captures economic diversity (also a resilience indicator) Sometimes it captures capacity for local value creation. We might want to include some but not all.	Employment in different sectors. Sectoral balance (manufacturing share). Large businesses. Foreign owned businesses. Knowledge driven employment. Informal economy. Local Business. Local value creation.
DYNAMISM OF ECONOMY	Potential of economy to continue to thrive	Patents granted. Knowledge workers. R and D. Business formation rate/new business density. Labour productivity. High tech exports.
ECONOMIC RESILIENCE (OVERALL ECONOMY/BUSINESSES)	Similar to above but emphasising more the way economic activity is facilitated	Population size. Ease of doing business. Access to banking, borrowing, insurance. Product diversification. Digital infrastructure.

Appendix 2. Translation of the Inclusive Economy Indicators to the individual level synthetic dataset

Sub-domain	Understanding society variable (links to showcase)	Variable name (or note)	Datafile	Waves available
ECONOMIC OUTCOMES				
Level of employment participation	employ	In paid employment	indall, indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Involuntary exclusion from the labour market	jbstat	Current labour force status	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Wealth Inequality	N/A	Borrows the spatial distribution specified in aggregate data	N/A	N/A
Earnings inequality	fimnlabgrs_dv	Total monthly labour income gross	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Poverty	fihhmnlabnet_dv	Total net household labour income: month before interview	hhresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
The extent to which paid labour provides remuneration adequate for a basic standard of living	fimnlabgrs_dv	Total monthly labour income gross	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
	jbhrs	No. of hours normally worked per week	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
	basrate	Basic pay hourly rate	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Job security/precarity – an aspect of job quality	jbterm1	Current job: permanent or temporary	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
	jbterm2	Type of non-permanent job	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
WIDER OUTCOME/ENABLER INDICATOR SET				
Whether people are gaining the skills and qualifications to enable economic participation and success	qfhigh	Highest qualification	indresp	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
Digital connectivity/inclusion	N/A	Borrows the spatial distribution specified in aggregate data	N/A	N/A
Physical connectivity	N/A	Borrows the spatial distribution specified in aggregate data	N/A	N/A

Housing affordability	N/A	Borrows the spatial distribution specified in aggregate data	N/A	N/A
Costs of Living	hheat	Keep accommodation warm enough	hhresp	1, 2, 4, 6, 8, 9, 10, 11
Inclusion in decision-making	vote7	Voted in last general election	indresp	2, 7, 8, 9, 10, 11

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Academic Partners



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