Before We Begin

- I will use the terms "subnational" and "regional" interchangeably through the presentation to refer to different spatial areas including, for example:

  - the four UK nations

  - the 12 ITL1 regions (formerly NUTS1)

  - **smaller areas such as local authorities, constituencies and super output areas.**

- These recommendations are preliminary so **feedback is welcome.**

Improving Subnational Indicators

- Previous ESCoE funded work

  - A Framework for Interregional Trade Data Collection and Estimation – published as ESCoE Technical Report in Dec 2021

  - A Framework for the Production of Supply and Use and Input Output Tables for the Four Nations – to be resubmitted to ESCoE in Spring 2022 for publication

- Scoping study for the Development of a Suite of Subnational Socioeconomic Indicators for the UK

  - Complements GSS subnational data strategy with a similar target audience: producers and users of subnational statistics

  - Rather than focussing on categories of indicators (health, housing, education etc.), considers the challenges associated with *building profiles of local areas across the four nations*

  - Discusses challenges, opportunities and trade-offs and provides a series of recommendations

The Need for Subnational Indicators

The impacts of EU exit and the coronavirus on UK trade in goods

An analysis of UK trade in goods in the context of the ongoing coronavirus (COVID-19) pandemic and the end of the EU transition period on 31 December 2020.

Scottish Government
Riaghaltas na h-Alba
gov.scot

Llywodraeth Cymru
Welsh Government

HM Government

Independent Review of UK Economic Statistics

Professor Sir Charles Bean

March 2016

Review of Statistics for Economic Policymaking

Final Report to the Chancellor of the Exchequer, the Governor of the Bank of England and the National Statistician

Office for National Statistics

Government Statistical Service   About us   Guidance   Learning and development

HoPs

GSS > Policy and guidance hub > GSS subnational data strategy

GSS subnational data strategy

Levelling Up the United Kingdom: missions and metrics

Technical Annex

HC 604   February 2022

NISRA
Northern Ireland Statistics and Research Agency
Gníomhaireacht Thuaisceart Éireann um Staitisticí agus Taighde

Christopher Allsopp
March 2004

Coronavirus (COVID-19)

Latest data and analysis on coronavirus (COVID-19) in the UK and its effect on the economy and society.

UNIVERSITY of STRATHCLYDE
FRASER OF ALLANDER INSTITUTE

The Need for Subnational Indicators

- Reducing regional disparities and 'levelling up' the regions is a key priority

  - £4.8 billion Levelling Up Fund announced alongside the UK Budget in Mar 2021

  - Additional £220 million introduced through the Community Renewal Fund

  - Levelling Up White Paper published in Feb 2022 with **Technical Annex on Metrics**

- GSS subnational data strategy released in Dec 2021

  - **Ambition 1: Produce more timely, granular and harmonised subnational statistics**

  - **Ambition 3: Improve the dissemination of subnational statistics**

- Need for better subnational data **goes back decades**: see Allsopp (2004), Bean (2016)

- Subnational indicators should not only meet today's needs but future needs

Purpose of Such a Suite

1. Identification of the overarching characteristics and dynamics of a given region

2. Identification of inequalities within and between different regions of the UK

3. Assessment of the relative needs of different regions → crucial when allocating funding

4. Identification of the appropriate policy levers and reforms required to reduce inequalities

5. Evaluation of the efficacy of policies implemented and their impact on socioeconomic outcomes

Recommendations

1. How Timely Should the Indicators Be?

2. Which Levels of Geographical Granularity Are Required?

3. Do the Indicators Need to be Comparable Across the Four Nations?

4. Which Indicators Should be Included in the Suite?

5. How Can Measurement Issues, Comparability Issues and Data Gaps be Minimised?

6. How Should the Data be Disseminated?

How Timely Should the Indicators Be?

Indicator Timeliness

- Recent academic and policy literature emphasises need for high-frequency indicators

- Partly driven by the UK's withdrawal from the EU and pandemic

- But timeliness of the indicators should be aligned with the purpose of the suite...

- ...And there is a trade-off between timeliness and granularity, given sample sizes required

- When examining socioeconomic outcomes/structural issues, low frequency data is fit for purpose

- **Recommend baseline frequency of suite is annual – suitable for skills, education, health, poverty etc.**

- **Subset of indicators should be available at quarterly or monthly frequency – cost of living, labour market, claimant count**

Which Levels of Geographical Granularity Are Required?

UK Geographies and Users' Needs

- To examine *socioeconomic* statistics need to focus on small area geographies (< ITL3 formerly NUTS3)

- Devolved administrations: support policymaking in their respective nation

  - Subnational indicators designed to reflect specificity of their nation and support devolved policymaking

  - Indicators designed to align with their unique administrative geographies

- UK government departments including ONS: support policymaking across the UK

  - Greater emphasis is placed on the comparability of data across the four nations

  - Assess the relative needs of different areas of the UK - crucial for allocation of LUF and CRF

  - Loss of specificity

- Reconciling these two different sets of needs is key

UK Geographies and Users' Needs

	2011 Travel to Work Areas	Local Authorities	Constituencies	Small Area Geographies Based on 2011 Census
Scotland	45	32	59 (Westminster) 73 (Scot. Parliament)	Data zones: 6976 zones Intermediate zones: 1279
Wales	18	22	40	Lower SOAs: 1909 Middle SOAs: 410
Northern Ireland	10	11*	18	SOAs: 890 Small areas: 4,537
England	149	333	533	Lower SOAs: 32,844 Middle SOAs: 6,791
Cross-border	6	NA	NA	NA
Total	228	398	650 or 664	NA

*In NI there are 11 local government districts.

UK Geographies and Users' Needs

- We recommend that the baseline granularity for the suite of indicators is at **the Local Authority (LA)** level for Scotland, Wales and England and at the **Local Government District (LGD)** level for Northern Ireland

- Northern Irish case - we also recommend that **issues around the construction of historical time series** are investigated since in 2015 the LGDs were reduced from 26 to 11.

- While LAs may provide a useful starting point, there can still be **considerable variation in socioeconomic outcomes**, for example, poverty and health → all indicators should also be available at a lower geographical level which is still relevant within a devolved context → "building block" approach may provide a way forward

Do the Indicators Need to be Comparable Across the Four Nations?

Do Indicators Need to be Comparable?

- Recommend suite includes a subset of indicators which are comparable across four nations.

- The remaining indicators should be equivalent (i.e. attempt to capture the same characteristic) but not necessarily comparable.

- Where an indicator is included for England, the same indicator should only be omitted for the devolved nations under exceptional circumstances.

- Should be cautious in terms of terminology: may be drawn into labelling indicators which are comparable as "headline" indicators while noncomparable indicators are "supporting" indicators

- However, in this case, "headline" indicators may not be the "best" or most representative of a specific characteristic

Which Indicators Should be Included in the Suite?

International Practise: The Canadian Case

- Each of Canada's *10 Provinces and 3 Territories* regularly produce their own *economic* indicators

- Common indicators include:

  - **Population Trends**: Births, Deaths, Migration (international and interprovincial)

  - **Labour Market**: Employment, Unemployment, Participation Rate, Average Earnings and Salaries

  - **Inflation and Consumer Spending**: CPI (broken down by basket items), Retail and Wholesale sales, New Motor Vehicles Sales

  - **GDP:** Nominal and Real (broken down by industry)

  - **Business**: Retail and Wholesale Trade, International Trade, Farm Cash Receipts, Manufacturing (sales and shipments)

  - **Housing**: Housing Starts, Building Permits

Towards a Socioeconomic Suite

We considered:

- Key Economic Indicators

- Labour Markets

- Skills, Education and Social Mobility

- Income and Poverty

- Housing

- Health

- Demography and Rurality

- Other Indicators

Key Economic Indicators

- **Economic Activity**

  - Small area GVA estimates now produced by ONS

  - LSOA data used as building block to derive bigger geographical areas

  - Comparisons can still be tricky...LSOA and MSOA should not be directly compared; GVA per head inappropriate way to compare areas with high net in- or out-commuting

- **Inflation -** area of ongoing development but sample sizes are a major barrier

- **Trade** - very important from an economic perspective (see Davidson and Spowage, 2021) but less critical in a socioeconomic suite and not required at the same level of granularity

- **All other indicators considered from a socioeconomic perspective**

Labour Markets

- **Productivity**

  - GVA per job/hour worked

- **Labour supply**

  - Employment, unemployment, economic inactivity, employment by occupation, payrolled employees

- **Labour Demand and Business demographics**

  - Employee jobs by industry, job vacancies

  - Enterprises births/deaths, no. of active enterprises, enterprise survival rates, high growth enterprises, business count

- **Skills Mismatch, Shortage or Gaps**

  - Overqualification, skills shortage vacancies, skills gap by occupation

Labour Markets – Future Development

- Many labour market statistics are published at a local level and could be included directly into the suite

- Some require further development

  - Skills mismatch, shortages or gaps - some data does exists but needs to adapted to be included in suite of indicators

  - Business Demography by Region and SIC - Current business demography indicators based on the IDBR, are published at either a regional or SIC 2007 level, but not both

Skills, Education and Social Mobility

- Each nation has its own distinct education policy and system → obtaining education indicators that are comparable or even similar across the four nations is highly challenging

- **Skills:** NVQ4+, No qualifications

- Social Mobility Commission (2017) builds social mobility index for by considering the following:

  - **Early years:** Nursery quality, early years attainment

  - **School:** Primary school quality and attainment, secondary school quality and attainment

  - **Youth:** Positive destinations after KS4, average A level or equivalent points score, A-levels or equivalent by 19

- Levelling Up White Paper also emphasises the importance of capturing different stages of education

- Important decision on whether to focus on the entire population or only children and youth from disadvantaged backgrounds

Education – Future Development

- School inspection reports as well as other individual school level data provide a rich opportunity to develop detailed datasets on education in local areas

- This will require considerable collaboration between the ONS and Devolved Administrations (DAs)

- Augmenting this data with proxies of disadvantage will facilitate analysis of social mobility – traditionally free school meal eligibility has been used to do this but differences across the four nations would likely make comparisons infeasible

Income and Poverty

- Key to 'levelling up' and social policy are indicators that reflect earnings, income, benefits and poverty

- Annual Survey of Hours and Earnings: earnings data at low geographical level

- HMRC Pay as you Earn Real Time Indicators: of high frequency data on employees and pay

- Data on claimant count and spending on debit and credit cards captures short-term trends during crises

- **Income:** Gross disposable household Income, Annual household income

- **Earnings:** Average weekly earnings, Earning by place of residence/work and gender, pay

- **Out of work benefits:** Claimants by demographic

- **Poverty:** Absolute and relative child poverty, fuel poverty, food security, absolute and relative poverty of working-age adults and pensioners, percentage of households in poverty → most uneven coverage in terms of regularity and granularity

Poverty – Future Development

- Most poverty indicators at ITL1 level with child poverty most developed

- Income-based measures of poverty for smaller geographical areas is problematic due to small size of family resource survey

- Could be supplemented with other data such as the Households below average income (HBAI) statistics. Although this is not publicly available lower than ITL1 geography

- Other poverty indicators needed:

  - **In work poverty –** Low pay and zero-hour contracts motivate the need for an indicator to determine how this impacts poverty

  - **Fuel Poverty –** data available for English constituencies but different definitions across nations of UK

  - **Food security –** recently introduced but higher granularity is needed as only available at ITL1

  - **Household type in poverty –** Needed for targeted approach to combat poverty

Housing

- Wide variety of primary data sources which include HM Land Registry for England and Wales, Registers of Scotland and HMRC Stamp Duty Land Tax

- For England, Scotland and Wales the most data is at the Local Authority level or lower

- Large proportion of NI data only available at ITL1

- Differentiating between private and social housing is important

- Homelessness also a key factor but different definitions across nations

- **Property:** Average house price by type, volume of sales, housing advances and borrowing

- **Social housing:** No of dwellings, average rent

- **Private renting:** No of dwellings, average rent

- **Homelessness:** Count of homelessness

Health

- Health is devolved but indicators across the four nations capture similar concepts

- Generally, indicators are available at the local authority level

- Some indicators (such as well-being) have been included to reflect the levelling up white paper

- **Healthy Life expectancy**

- **Under 75 mortality**: all causes, from cancer, from heart disease

- **Infant mortality:** infant, neonatal, perinatal mortality rates

- **Behaviours:** overweight/obesity in adults, alcohol hospital admissions, smoking mortality, drug misuse

- **Wellbeing and mental health:** Life satisfaction, worthwhile, happiness, anxiety

Demography and Rurality

- Indicators relating to population, demographic change and rurality are growing increasingly important

- Urban areas may differ considerably from rural areas and tackling regional inequalities in these two types of areas may require different approaches

- Need for regeneration and improved transport connectivity are key but data on transport connectivity lacking for the DAs

- **Population:** 16-64 population**,** density per km^2,median age, future population estimates (England only)

- **Migration:** international inflow and outflow, internal inflow and outflow,

- **Rurality:** UK rural-urban classification, average travel to work time, percentage of workers travelling by car

Early Warning Indicators

- UK has gone through major structural changes over the past years which have negatively impacted the economy

- Some regions have seen larger effects than other

- Advantageous to include early warning indicators linked to a region's preparedness for future events

  - **Climate change risk –** Foremost issue that will negatively impact the UK economy over the next generation. Extreme weather events more likely

    - Indicator would account for regions geography, topography, available emergency services, transports, among other factors

  - **Future epidemic risk -** Possibility of future pandemics and epidemics. Subnational suite should include indicator for preparedness and account for the different types of jobs in a region

# Composite Indicators

- In addition to individual indicator, subnational suite could include composite indicators

- **Composite indicators**

  - Composite indices of economic activity are regularly produced using dynamic factor models (DFMs).

  - DFMs summarise information from several variables into one index using data-based weights

  - DFMs could also be used to produce annual indices of economic activity, performance and prioritisation for small areas across the UK

- **Similarity index**

  - Key component of any subnational suite of indicators would be to include a comparison index between areas

- **UK index of multiple deprivation**

How Can Measurement Issues, Comparability Issues and Data Gaps be Minimised?

Key Challenges in Measurement

- For business surveys, businesses are sampled from the interdepartmental business register (IDBR).

- Business data is collected from Great Britain **or** Northern Ireland Reporting Units (RUs).

- Can apportion activity to Local Units (LUs) to obtain, say, "Welsh" exports using an indicator variable e.g. employment shares.

- LUs may also have different industrial classification to RUs.

- Could instead ask GB RUs to provide information on the activity of their English, Welsh and Scottish LUs as in Scotland's Global Connections Survey and Wales' Trade Survey for Wales.
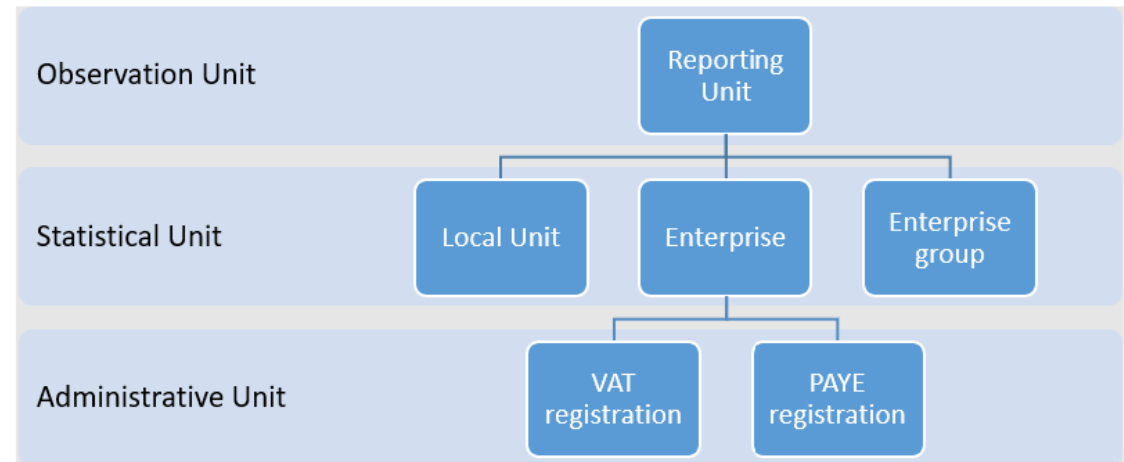
Adapted from: ONS

Key Challenges in Measurement

- A range of household surveys across the four nations are used to collect economic and labour market data

- This includes but is not limited to the:

  - Living Cost and Food Survey

  - Family Resource Survey

  - Labour Force Survey and Annual Population Survey

  - Scottish Household Survey

  - National Survey for Wales

  - NI Continuous Household Survey

- Sample sizes are often a key barrier to producing subnational statistics

Key Challenges in Comparability

When comparing data across the four nations a comparability challenges can arise from:

- Different definitions of key concepts e.g. fuel poverty, rurality

- Different policy focus e.g. early years attainment vs early years attainment among the disadvantaged

- Devolution of specific policy areas leading to different systems e.g. education, housing, health

- Different data collection strategies e.g. UK wide survey vs devolved surveys

Minimising Measurement Issues

- Issues relating to apportionment warrant further investigation. In some cases:

  - May be advantageous to ask GB RUs to report on the activity of their regional LUs.

  - May also be advantageous to classify RU according to dominant activity across regional LUs.

- Issues around sample sizes can be minimised if ONS and DAs collaboratively identify:

  - Areas in which a sample boost would be mutually beneficial

  - When surveys deployed by the ONS and DAs can be harmonised (or include a subset of harmonised questions)

- Where definitions or the policy focus differs across the four nations, can break down characteristics and seek to capture constituent parts e.g. rather than using a proxy for rurality collect data on: (i) population density and (ii) transport connectivity

Initial Reflections on Key Regional Data Gaps

1. Consumer prices

2. Working-age adults and pensioners in poverty

3. Skills shortages and mismatch

4. Educational quality, attainment and positive destinations

5. Transport connectivity

6. Business demography by industry

Minimising Key Regional Data Gaps

1. Consumer prices → sample sizes pose a considerable challenge but a boost is planned for NI

2. Working-age adults and pensioners in poverty → not produced for small areas

3. Skills shortages and mismatch → some statistics produced by the four nations but requires standardisation

4. Educational quality, attainment and positive destinations → data is available at the individual school level but considerable collaboration required with the devolved administrations

5. Transport connectivity → uneven coverage across the UK

6. Business demography by industry → data available by region, a breakdown by region and industry would provide valuable information on labour demand

Data used to capture different dimensions of indices of multiple deprivation across the four nations should also be explored.

How Should the Data be Disseminated?

Dissemination

- The majority of subnational statistics are published according to category (e.g. housing, health, labour market) rather than geographical area.

- Exception is NOMIS which provides ONS labour market statistics for area profiles.

- We recommend that this service is publicised more widely and that extensions to the service are considered:
  - Statistics on small areas in NI.
  - Statistics on devolved constituencies.

- Ultimately, NOMIS (or the explore subnational statistics service) could provide area profiles on a wide range of indicators.

- Should consider how to guide users so that comparisons across areas are only made where appropriate.

Summary
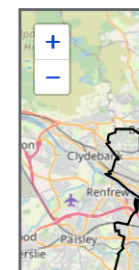
1. How Timely Should the Indicators Be?

   - *Annual with a subset at a higher frequency*

2. Which Levels of Geographical Granularity Are Required?

   - *Local authority and local government district BUT this can mask considerable variation in large local authorities*

   - *Lower level geographies which are meaningful in a devolved context should also be considered*

3. Which Indicators Should be Included in the Suite?

   - *Economic, Labour Market, Education and Social Mobility, Income and Poverty, Housing, Health, Demography and Rurality*

4. Do the Indicators Need to be Comparable Across the Four Nations?

   - *A subset should be comparable with others equivalent*

   - *Exert caution when referring to comparable "headline" and remaining "supporting" indicators*

Summary

5.   How Can Measurement Issues, Comparability Issues and Data Gaps be Minimised?

- *Issues around apportionment and disaggregation need to be considered*

- *Identify areas in which the ONS and DAs can collaborate to boost and harmonise surveys*

- *Capture constituent parts where definitions differ*

- *Key data gaps: CPI; skills mismatch; education; poverty; transport connectivity; business demography*

6.   How Should the Data be Disseminated?

- *NOMIS illustrates the usefulness of local area profiles*

- *Should guide users to make valid comparisons*

Thank you for listening

Happy to take questions and feedback.

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Appendix

UK data landscape

Nation	ITL-1	ITL-2	ITL-3
England	Government office regions (GORs)*	Counties/groups of counties	Counties/groups of unitary authorities
Scotland	Scotland	Combination of council areas, local enterprise companies (LECs) and parts thereof	Combination of council areas, LECs and parts thereof
Wales	Wales	Groups of unitary authorities	Groups of unitary authorities
Northern Ireland	Northern Ireland	Northern Ireland	Groups of district council areas

LAU, Level	1	2
England	Local authority districts/unitary authorities	Electoral wards/divisions
Scotland	Combination of council areas, LECs and parts thereof	Electoral wards, or, rarely, parts thereof
Wales	Unitary authorities	Electoral wards
Northern Ireland	District council areas	Electoral wards
UK Total	388	c. 10,000