

Unleashing the potential of the UK's cities

Core City profiles

September 12, 2024



center for
inclusive growth

Introduction

This document is an extension of the RSA's UK Urban Futures (UKUF) Commission report *Unleashing the potential of the UK's cities*, released in September 2023.¹ As part of the UKUF Commission, the RSA and the Mastercard Center for Inclusive Growth partnered to explore how data available at the city level, including proprietary data such as that used in the Mastercard Inclusive Growth Score, can provide additional insights into the spatial strengths and potential of some of the UK's Core Cities, across economic, social and natural systems capital.

The scope of this project did not allow for harmonising the datasets of all of the UK's countries. Differences across these datasets mean we have focused only on the English and Welsh Core Cities. We aim to redress this limitation in future work. The cities we focus on in this report are therefore:

- Birmingham Page 6
- Bristol Page 12
- Cardiff..... Page 18
- Leeds..... Page 22
- Liverpool Page 28
- Manchester Page 34
- Newcastle Page 40
- Nottingham Page 46
- Sheffield..... Page 52

We publish the present document as a supplementary resource for those living, working and studying in these cities. For each city, we provide a quantification of its three capitals across various metrics, detailed below. In addition, we provide each city's population density across its Lower layer Super Output Areas (LSOAs) as well as the ways in which the city can be defined geographically.

The 'Three Capitals' framework

*Unleashing the Potential of the UK's Cities*¹ used the lens of a nested set of three systems – economic, social and natural – through which to assess prosperity (see Box 1.2, page 19). It also focused on stocks of capital in each system, to capture the capacity of each system to generate flows of goods and services both now and in the future. We use this organising framework when presenting spatial distributions of individual metrics below.

¹ [Unleashing the Potential of the UK's Cities: Report of the UK Urban Futures Commission.](#)



Economy			
Metric	Values	Source	Type
Income deprivation	1-10, where 1 is the most deprived 10% of LSOAs and 10 is the least deprived 10% of LSOAs	English Indices of Deprivation (2019) ²	Flow
Economic Inclusion	0-100, where higher values are better	Mastercard Inclusive Growth ³	Stock
Economic capital stock metrics	£billions (capital stock)/ £k per capita (capital stock per capita)	Brandily et al. (2022) ⁴	Stock
Society			
Metric	Values	Source	Type
Education, skills and training deprivation	1-10, where 1 is the most deprived 10% of LSOAs and 10 is the least deprived 10% of LSOAs	English Indices of Deprivation (2019) ²	Stock
Health deprivation	1-10, where 1 is the most deprived 10% of LSOAs and 10 is the least deprived 10% of LSOAs	English Indices of Deprivation (2019) ²	Flow
Community Inclusion	0-100, where higher values are better	Mastercard Inclusive Growth ³	Stock
Nature			
Metric	Values	Source	Type
Access to green space	% of urban LSOAs with green space an average of less than or equal to 500m away (approximately a 6 minute walk for an adult)	ONS Access to public green space ⁵	Stock
Air quality	1-10, where 1 is the most deprived 10% of LSOAs and 10 is the least deprived 10% of LSOAs	English Indices of Deprivation (2019) ²	Stock

While it is useful to assess each type of capital in its own right, there is good reason to believe they are interdependent, with changes in one domain influencing the others. In future, we plan to account for these interdependencies as well as further develop our methodology for measuring economy, society, and nature.

² [English indices of deprivation 2019.](#)

³ [The Inclusive Growth Score™.](#)

⁴ [Brandily, P. et al. Bridging the Gap: What Would It Take to Narrow the UK's Productivity Disparities? \(2022\)..](#)

⁵ [Access to gardens and public green space in Great Britain – Office for National Statistics.](#)

Inclusive Growth Score

The Inclusive Growth Score is provided by Mastercard's Center for Inclusive Growth. It is a public-access web platform designed to enable users to learn about inclusion and growth and to determine how policy, investments, or other actions in local areas impact them.³ It is composed of three pillars: Place, Economy and Community. In this document we focus on Economic and Community Inclusion.

The metrics underlying Economic Inclusion are:

- Commercial diversity
- Small business representation
- Minority worker representation

The metrics underlying Community Inclusion are:

- Community wellbeing index
- Public green space
- Education accessibility
- Access to healthcare services

For more information see the [Inclusive Growth Score Methodology](#)⁶.

Defining a city

For all analyses, we use the Primary Urban Area (PUA) definition of the city because it allows for comparisons between cities (see page 29 in the UKUF report¹ for other city definitions; for more information on PUAs, see the Centre for Cities report⁷). For illustrative purposes, in the 'Boundaries' section of each city, we visualise multiple ways the city might be defined. A disambiguation of the acronyms used in these plots is provided below, in ascending order of geographic extent.

Acronym	Meaning
LA	Local authority
PUA	Primary Urban Area
TTWA	Travel to work area
CA	Combined Authority

⁶ [Inclusive Growth Score Methodology](#)

⁷ [The Changing Geography of the UK Economy: A Review of the Primary Urban Area Definition, 2015.](#)

Local Authority

Local authorities are administrative entities responsible for services in a defined area.^{8,9} There are five types:

- County councils
- District councils
- Unitary authorities
- Metropolitan districts
- London boroughs

Primary Urban Area

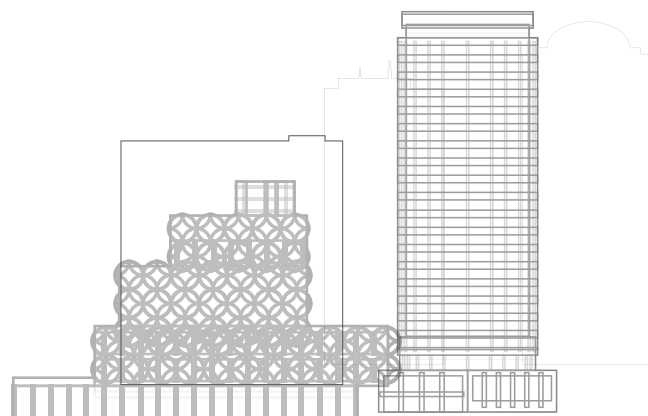
A Primary Urban Area (PUA) represents the “built-up” area of a city, encompassing the majority of business, commercial and residential activity in a city. Following the Center for Cities, we approximate PUAs by aggregating their constituent Local Authorities on a nearest-fit basis (see the full list of PUAs and their constituents [here](#)).

Travel to Work Area

Travel To Work Areas (TTWAs) are geographies that approximate labour market areas; they are designed to represent areas in which people both live and work. They are useful for exploring local labour markets.¹⁰

Combined Authority

A combined authority is a legal body consisting of two or more councils, which work together across council boundaries. This enables more ambitious planning, making use of devolved powers from national government.¹¹



8 [What is local government?](#) Local Government Association.

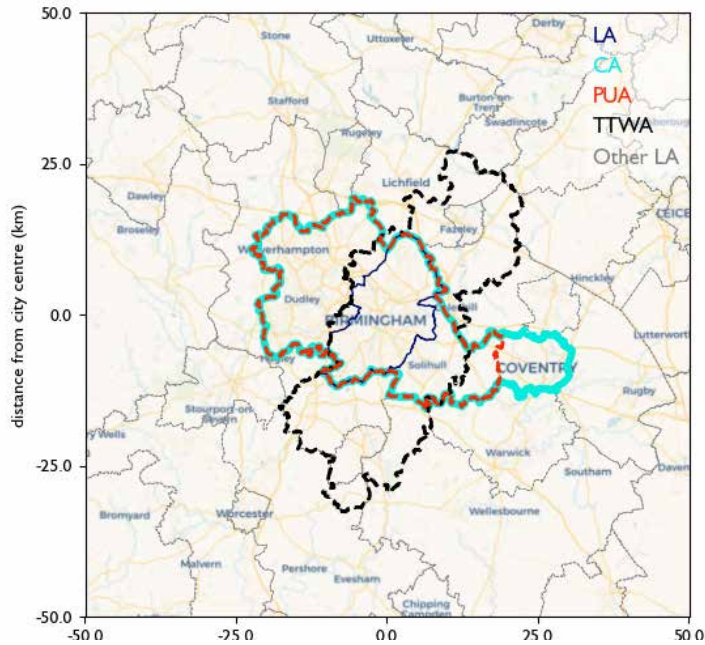
9 [Local government structure and elections \(2023\)](#).

10 [Travel to work area analysis in Great Britain – Office for National Statistics](#).

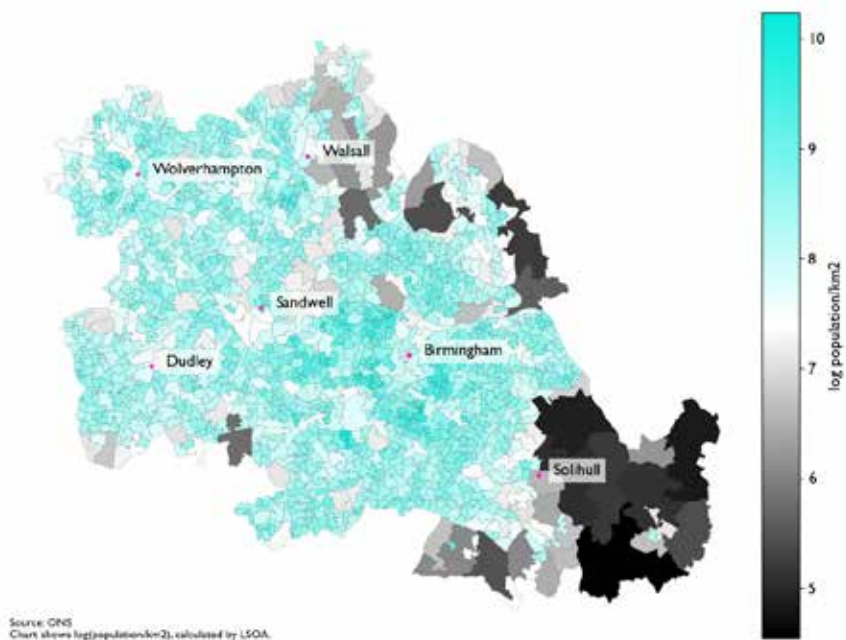
11 [Combined authorities](#) | Local Government Association.

Birmingham

Boundaries



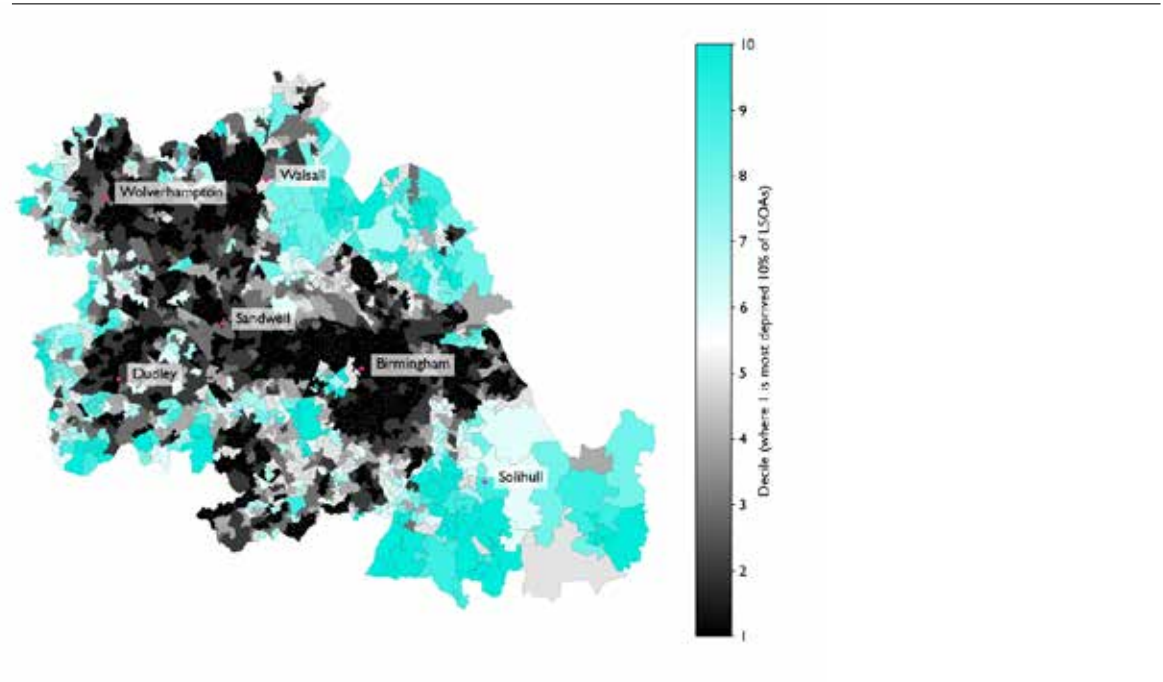
Population density



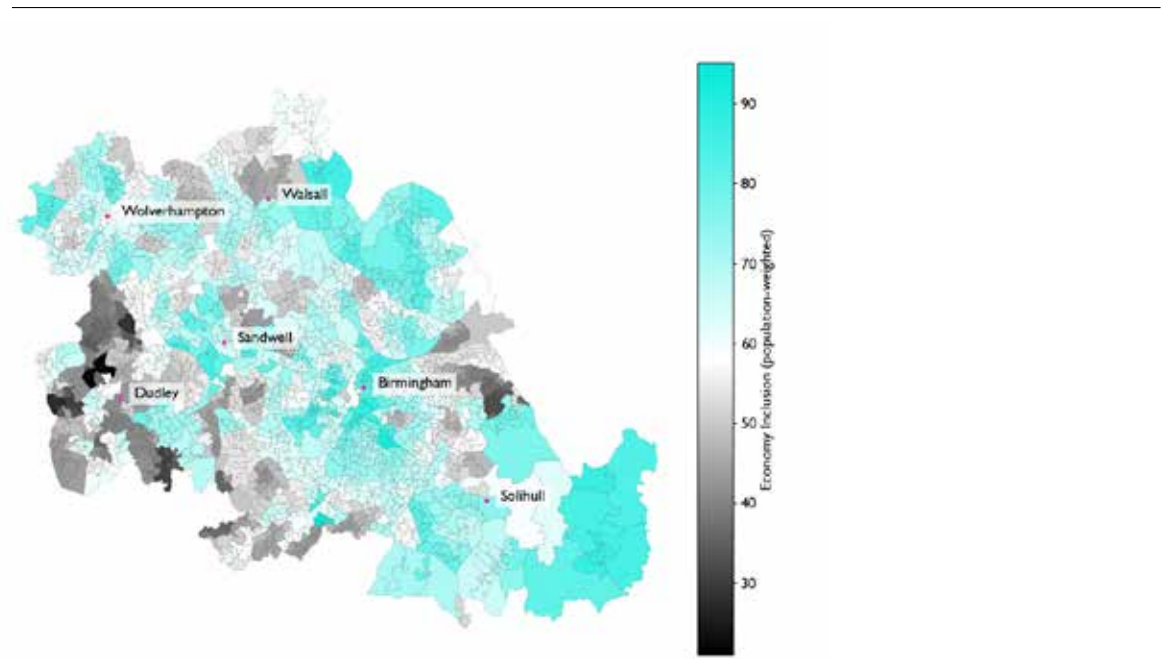
Economy

Much of the urban centres in the Birmingham PUA fall within the lowest income deciles. At the same time, these areas tend to score highly in terms of Economic Inclusion.

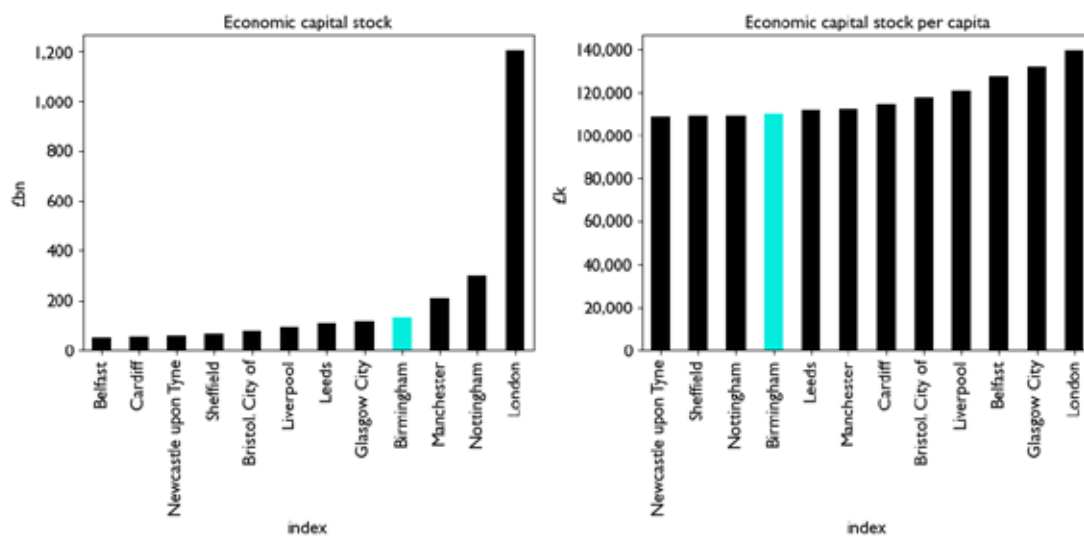
Income deprivation



Economic Inclusion



Economic capital stock



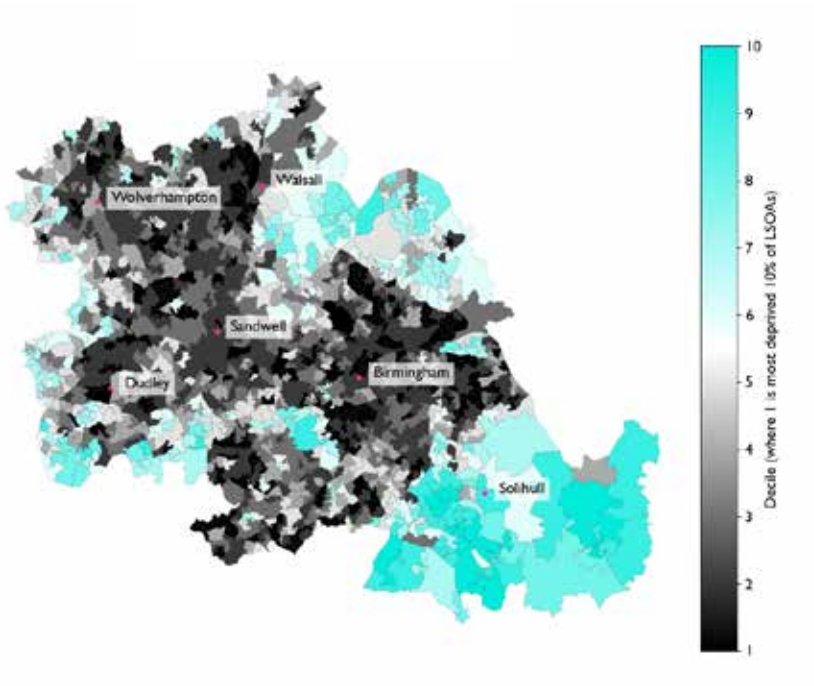
Society

There are high levels of education deprivation in urban centres, and high levels of health deprivation in and around urban centres. Some parts of the PUA (Birmingham, Sandwell, and Wolverhampton) score highly on Community Inclusion, while others do not (Dudley, Walsall, Solihull).

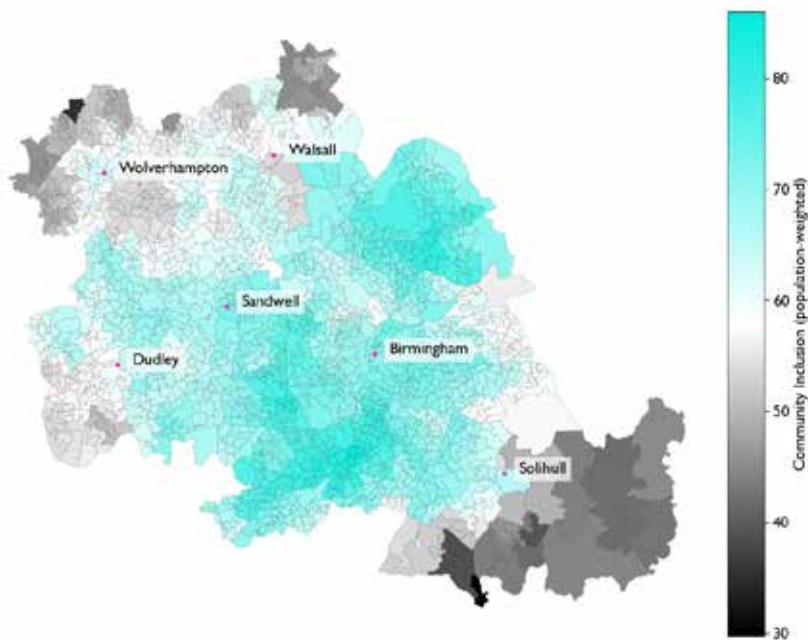
Education, skills and training deprivation



Health deprivation and disability



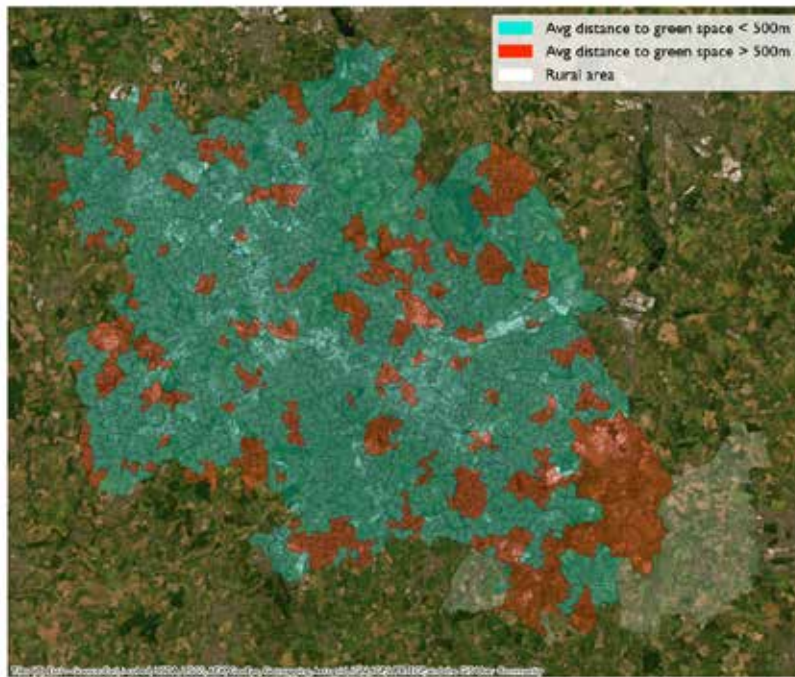
Community Inclusion



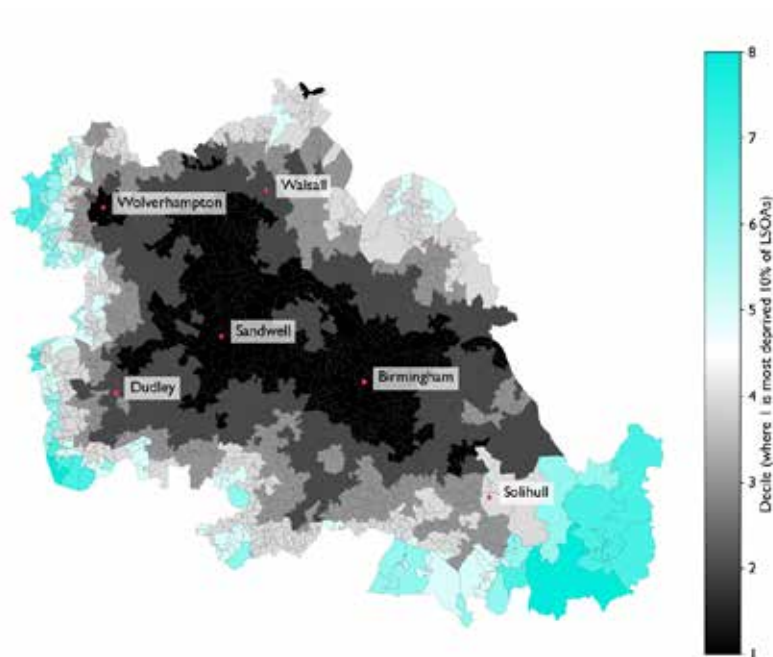
Nature

80% of urban LSOAs in Birmingham have access to green space within 500m. This is the lowest out of the cities we consider. Air quality across much of the PUA is generally poor.

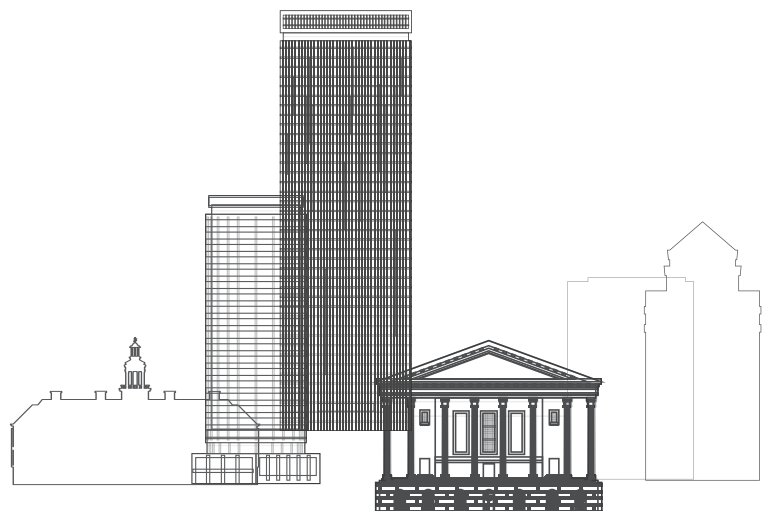
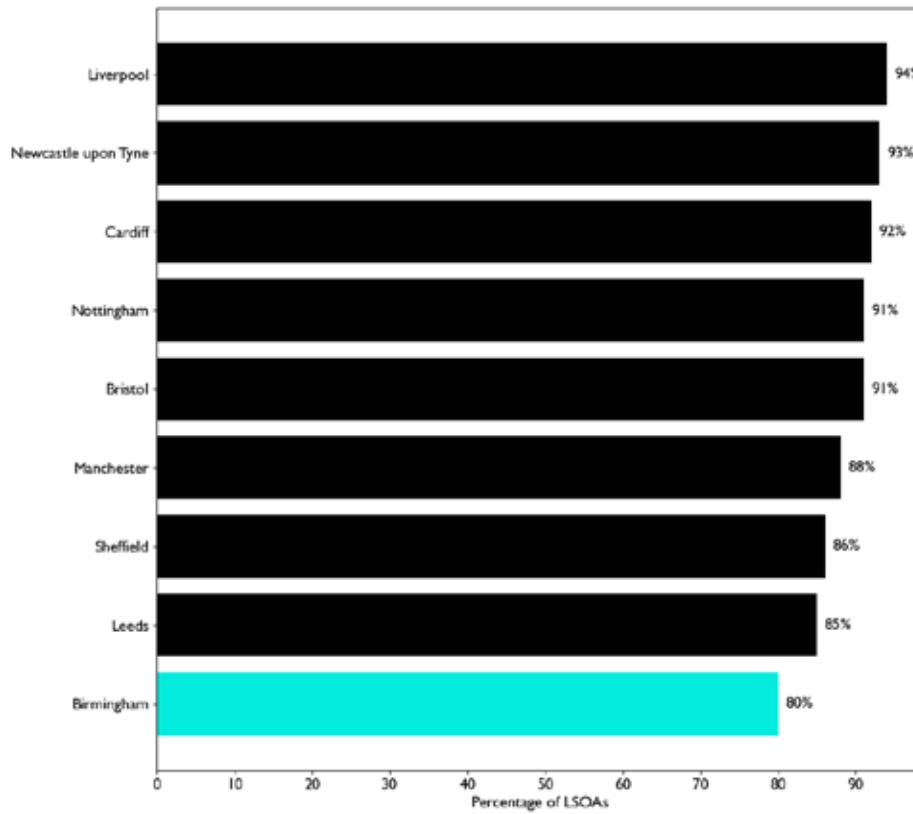
Access to green space



Air quality deprivation

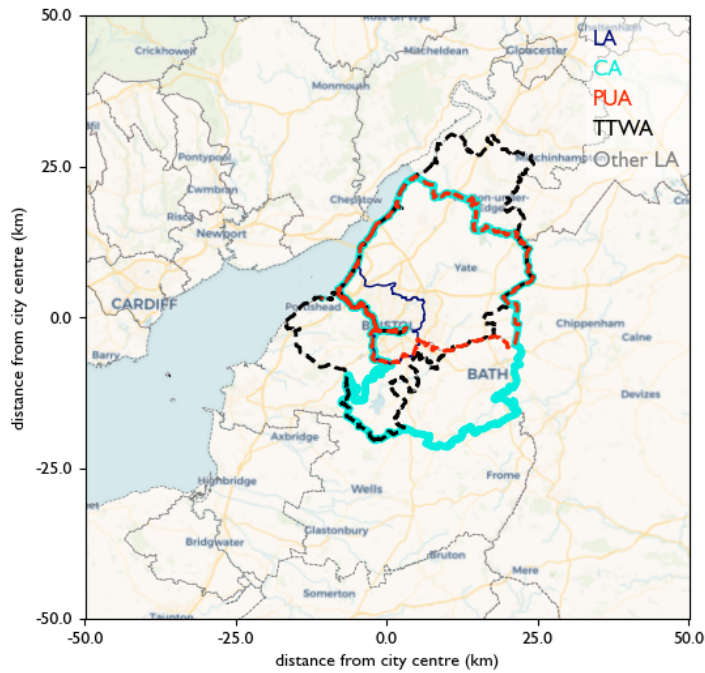


Access to green space: City comparison



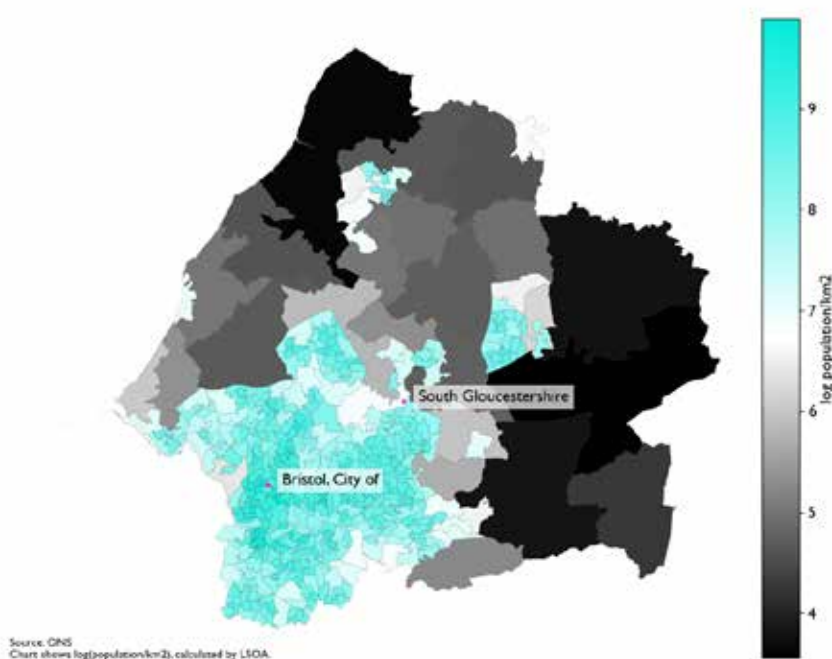
Bristol

Boundaries



Sources: ONS, Carto, OpenStreetMap.

Population density

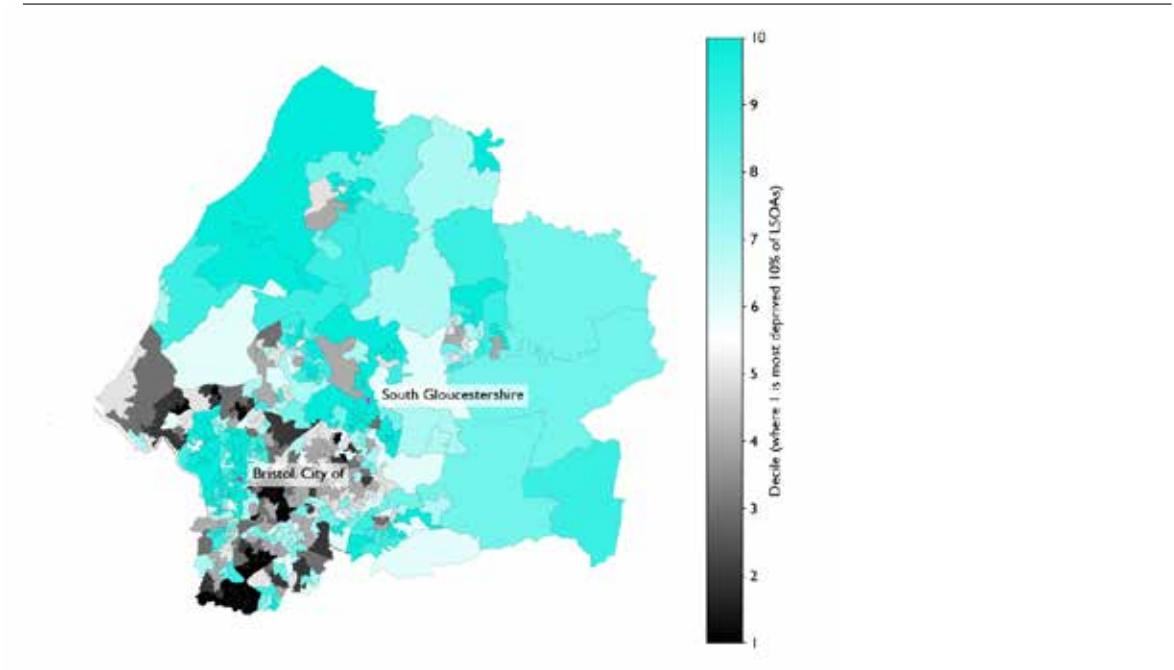


Source: ONS
Chart shows log(population/km²), calculated by LSOA.

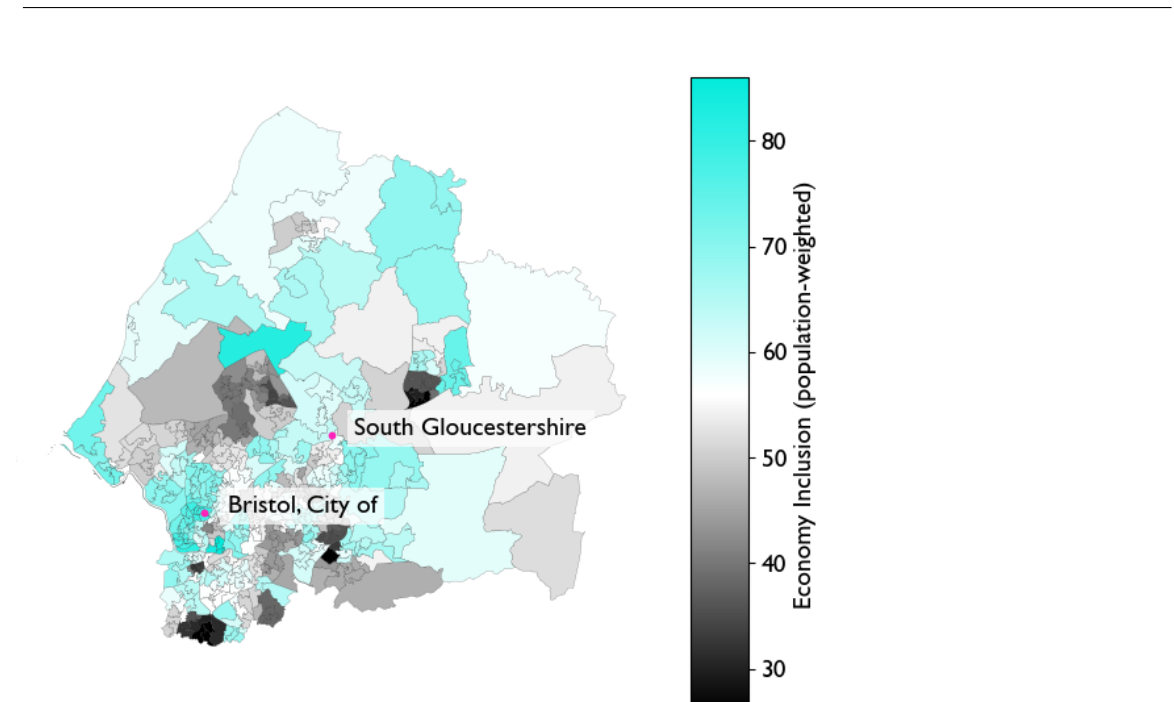
Economy

Much of the Bristol PUA scores highly both in terms of income deprivation and Economic Inclusion. Income deprivation and Economic Inclusion appear to be related, such that areas with low deprivation also score better in terms Economic Inclusion, while areas of high deprivation score worse on Economic Inclusion.

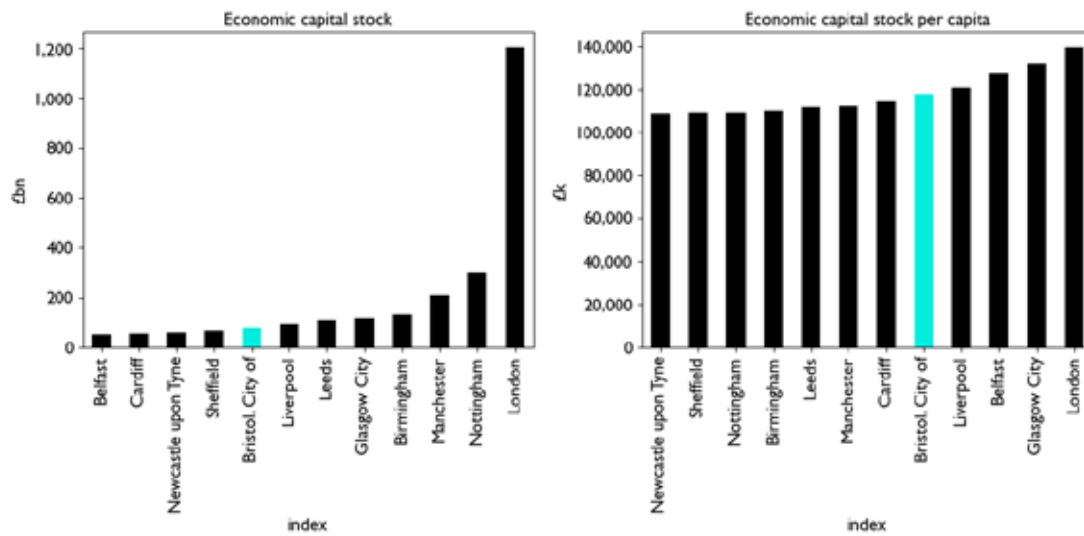
Income deprivation



Economic Inclusion



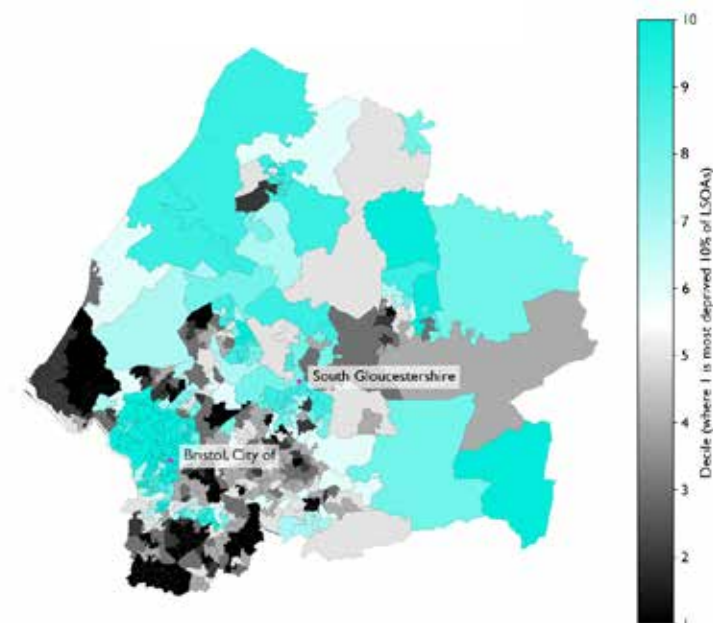
Economic capital stock



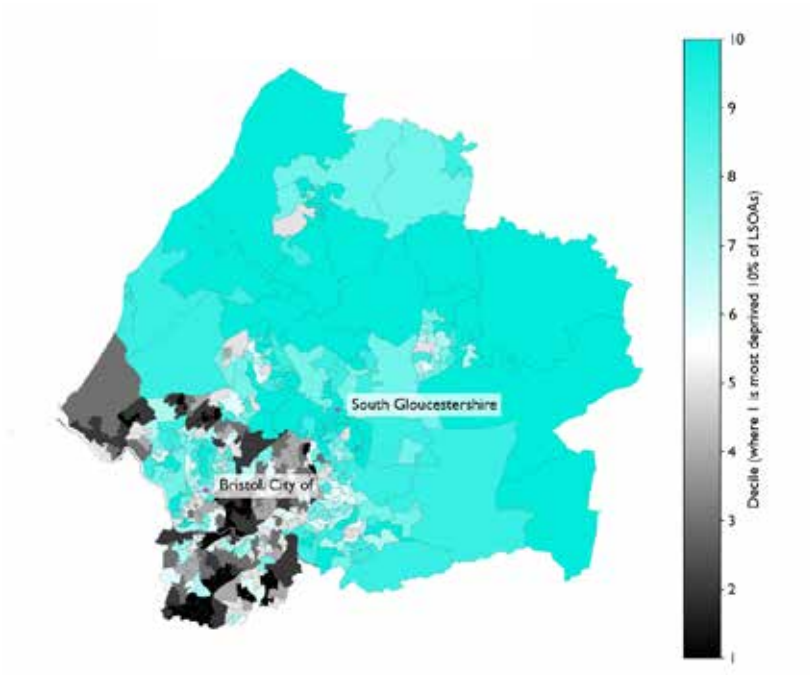
Society

There are clear pockets of education and health deprivation in a band around the centre of Bristol, although Community Inclusion tends to be good in these areas. In contrast, areas around South Gloucestershire score low on Community Inclusion, and these areas on the whole tend to be rural areas.

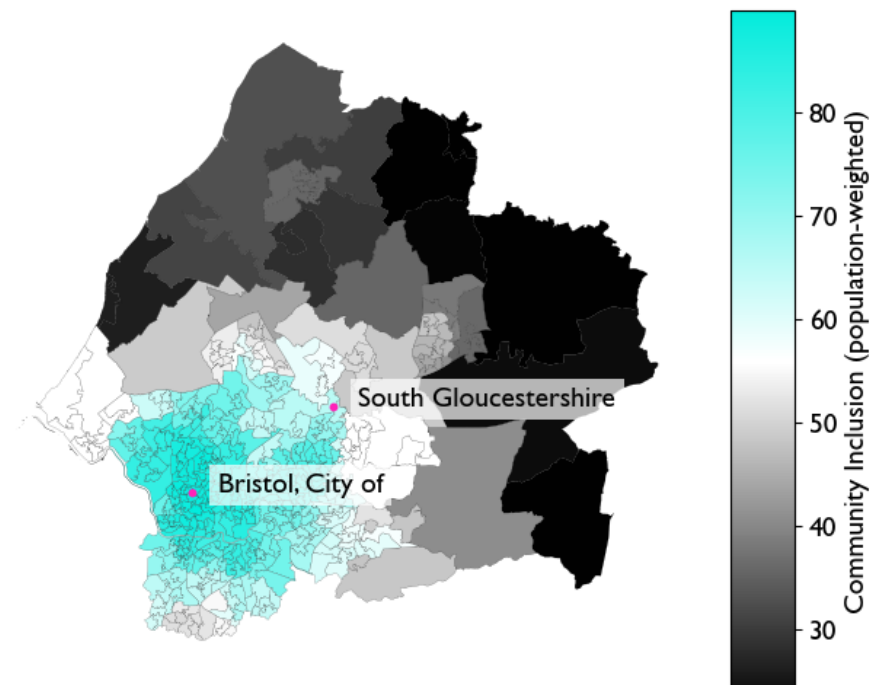
Education, skills and training deprivation



Health deprivation and disability



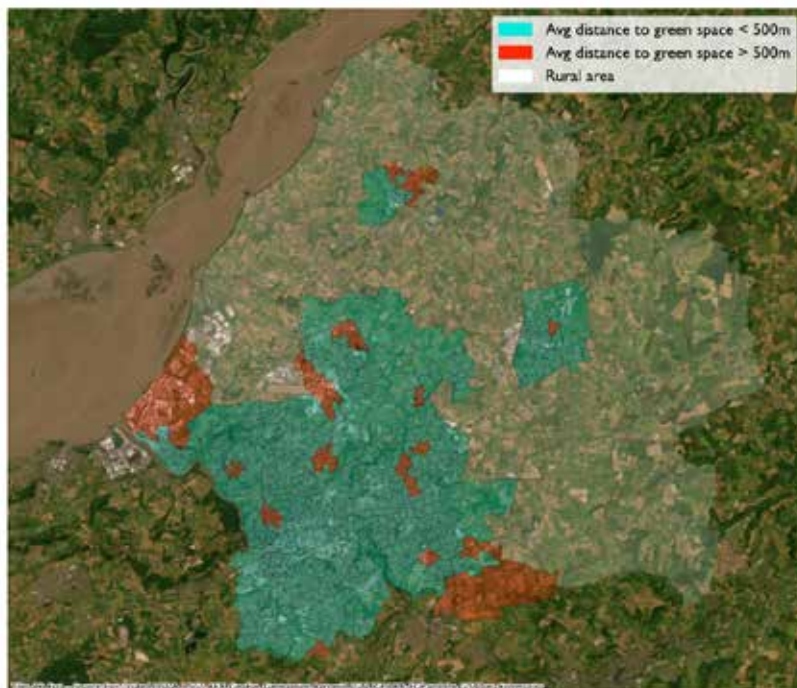
Community Inclusion



Nature

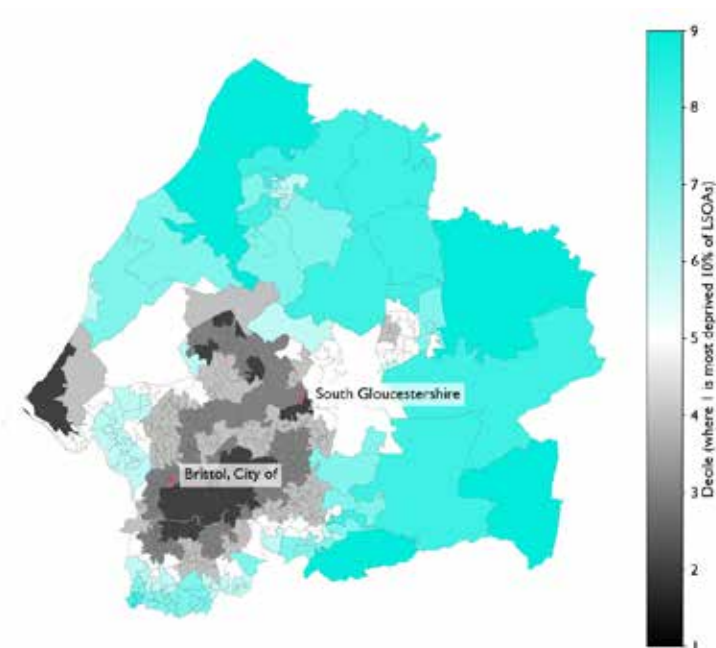
91% of urban LSOAs in the Bristol PUA have good access to green space. In addition, a large proportion of the PUA is rural. Central urban areas have lower air quality, but none of these areas are in the bottom decile.

Access to green space

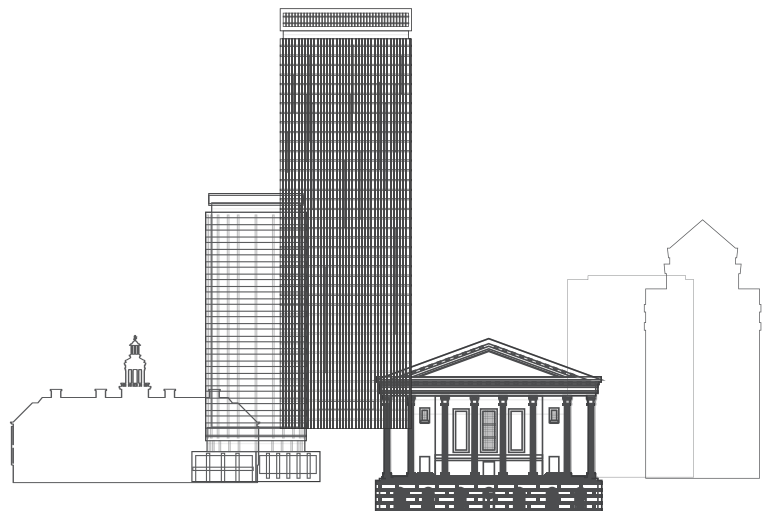
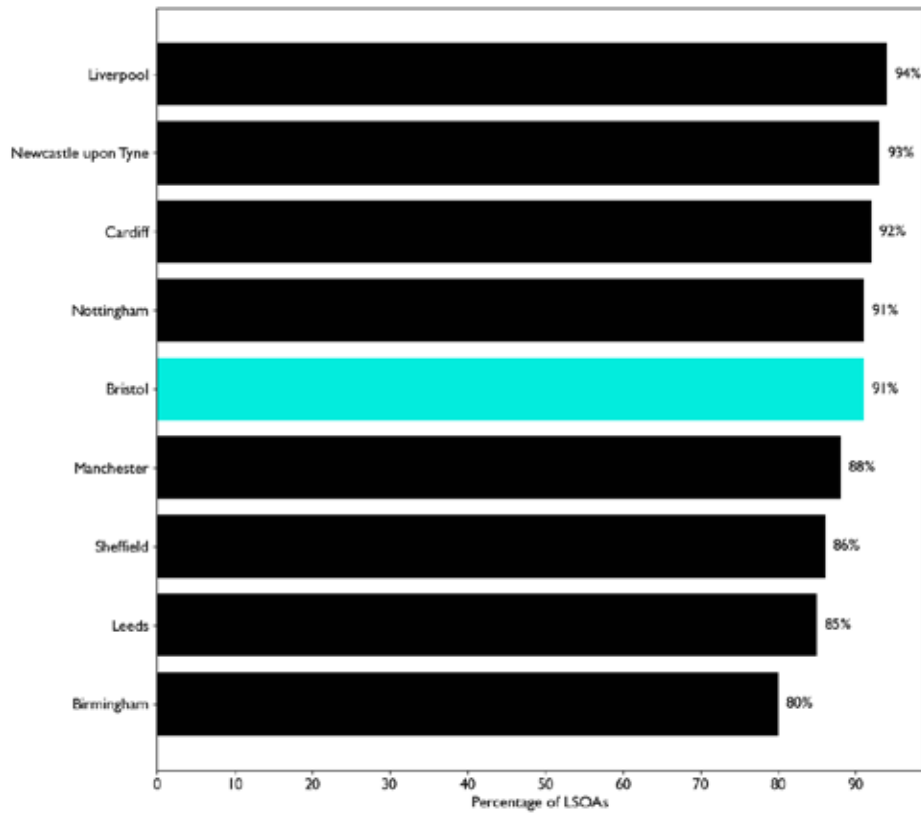


Note: Rural areas are excluded from the access calculation.

Air quality deprivation

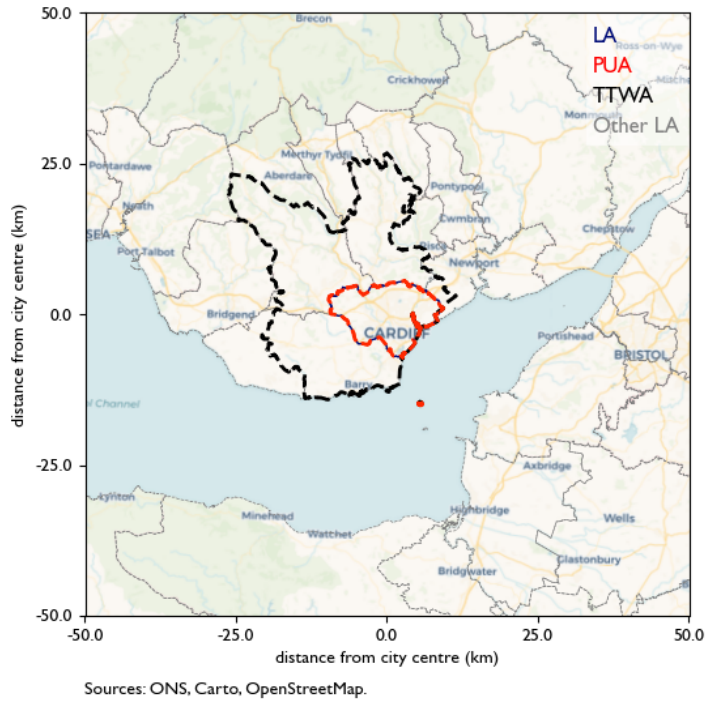


Access to green space: City comparison

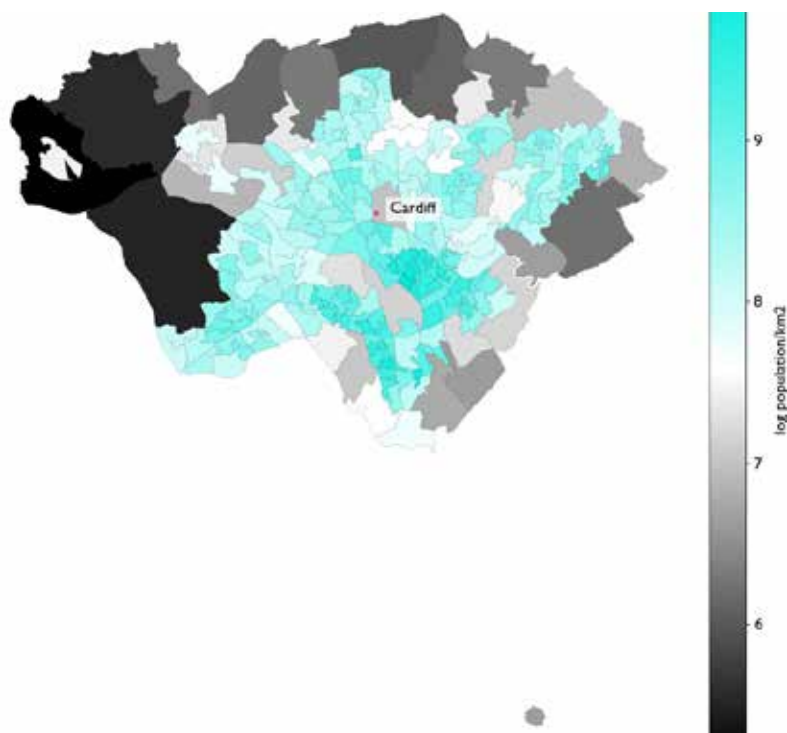


Cardiff

Boundaries



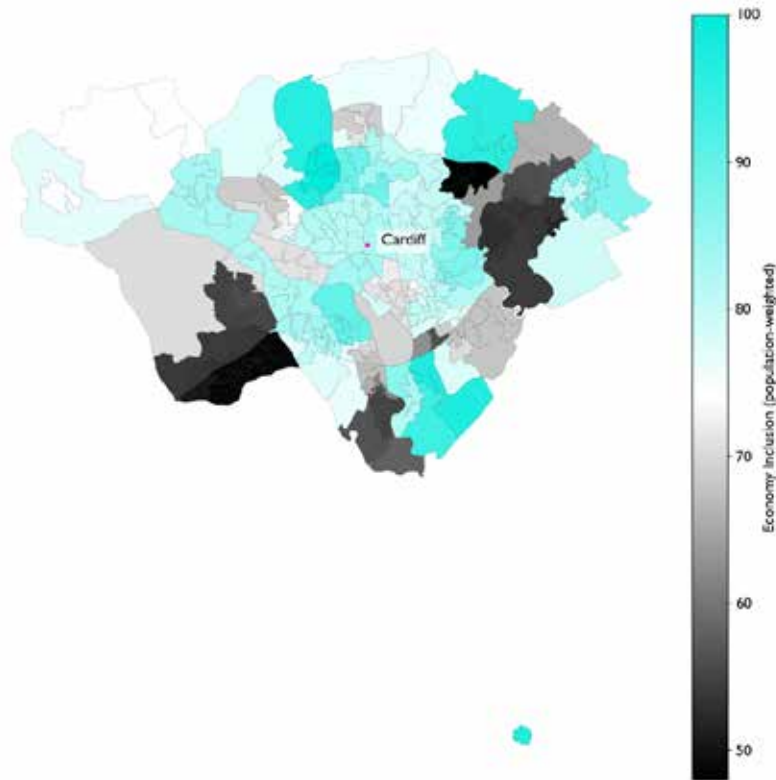
Population density



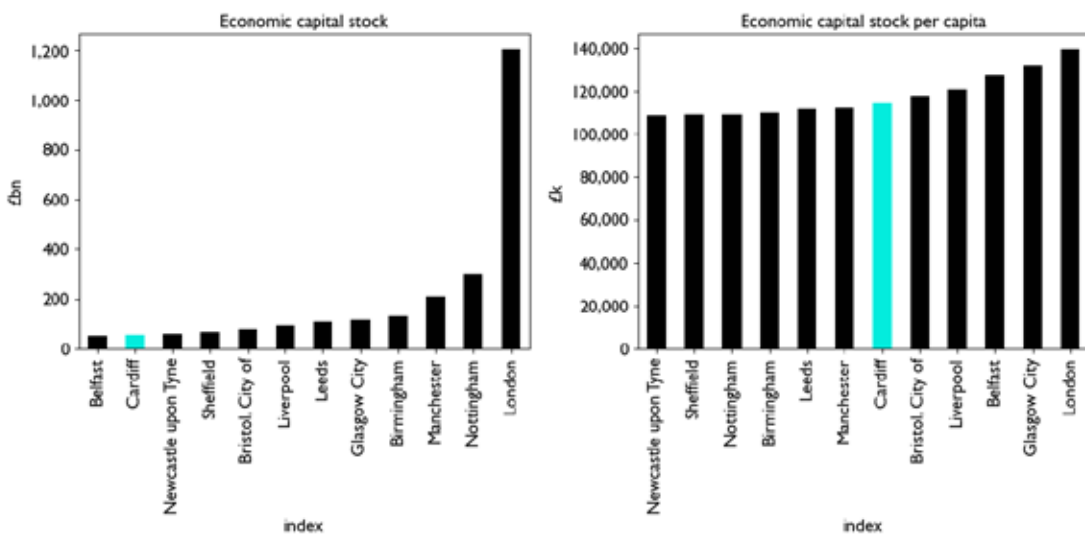
Economy

Cardiff has many areas with high levels of Economic Inclusion, with scores ranging from 50 to 100. Although it has the second-lowest capital stock of the Core Cities, it is the sixth-highest when the size of the population is taken into account.

Economic Inclusion



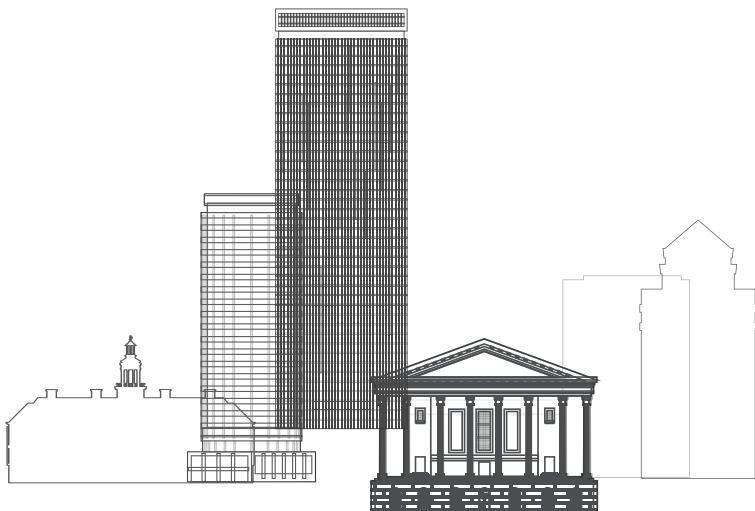
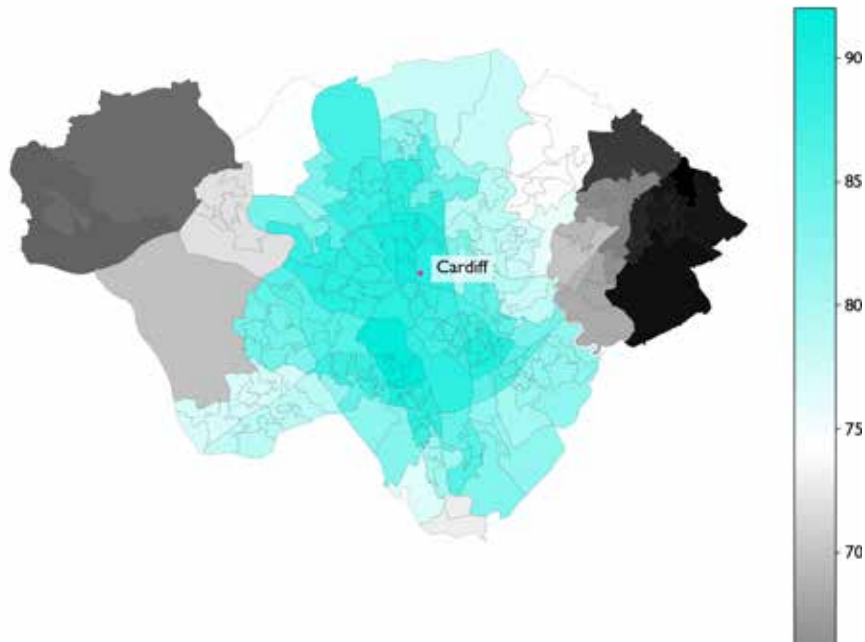
Economic capital stock



Society

Cardiff's range for Community Inclusion, similar to Economic Inclusion, is high and narrow, with most areas scoring above 75.

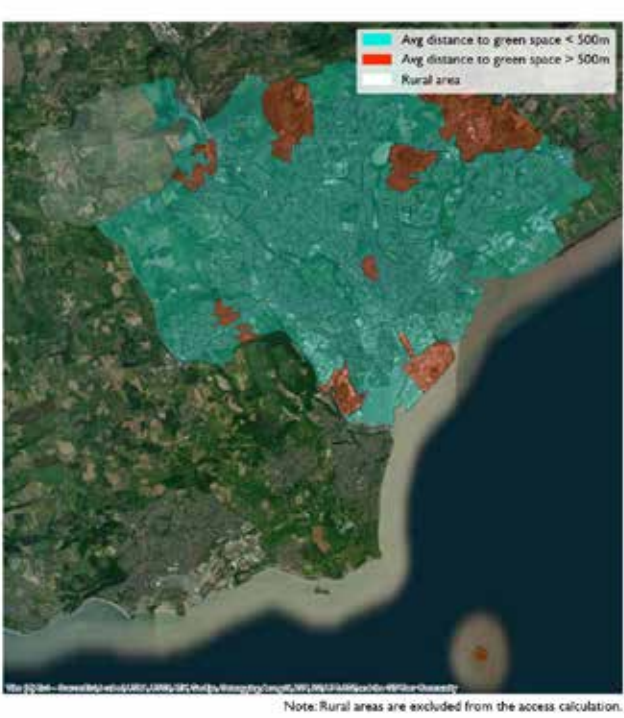
Community Inclusion



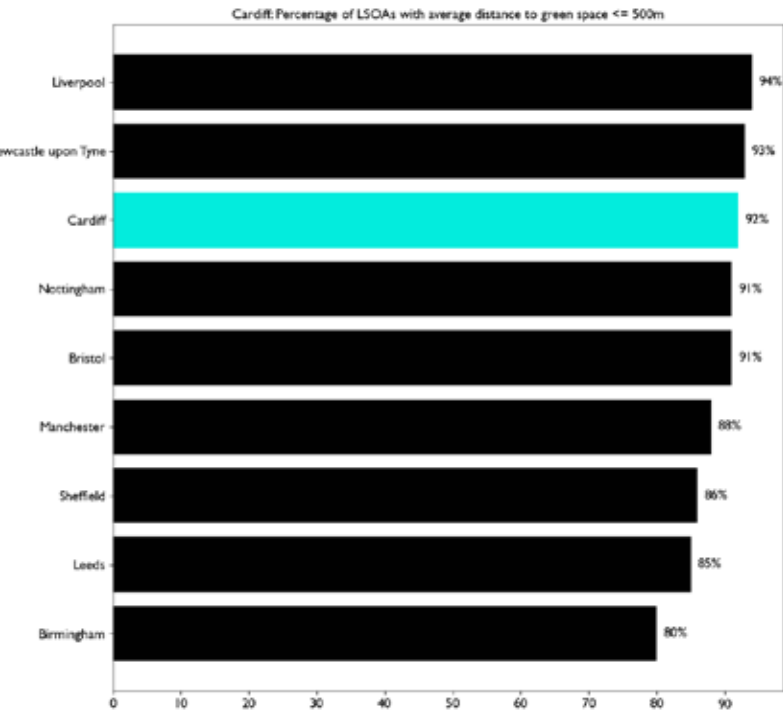
Nature

92% of the PUA's urban LSOAs have good access to green space. This makes Cardiff the third-highest scorer on access to green space of the cities we consider.

Access to green space

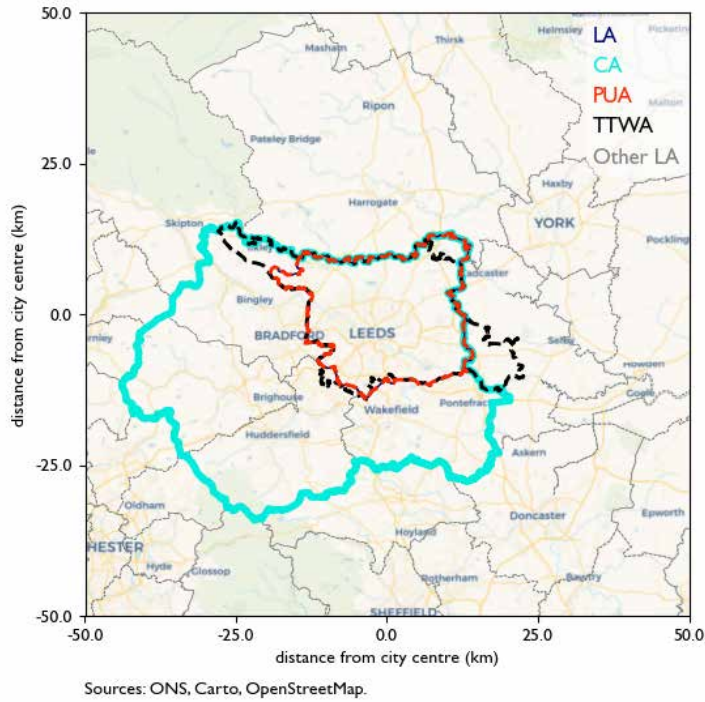


Access to green space: City comparison

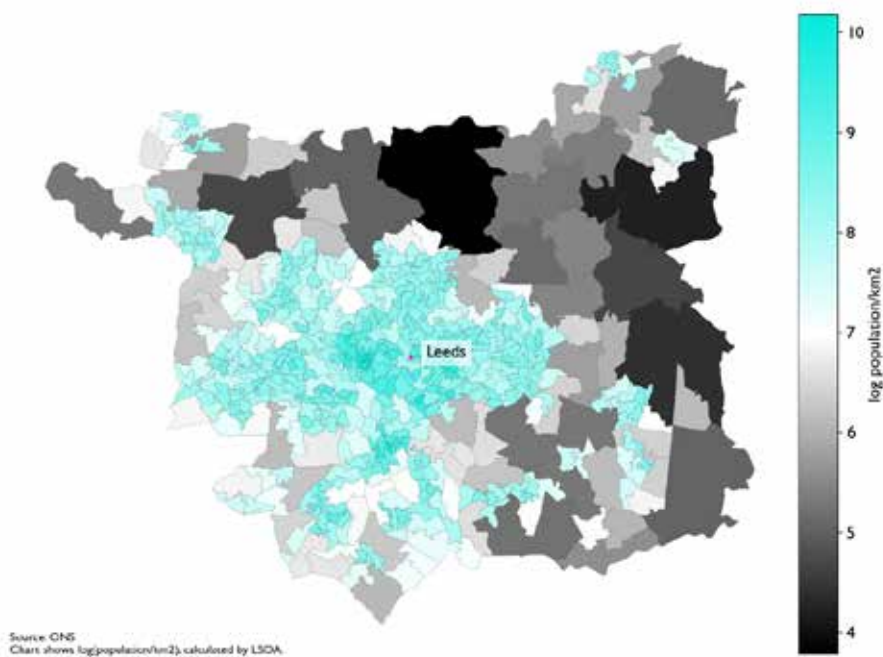


Leeds

Boundaries



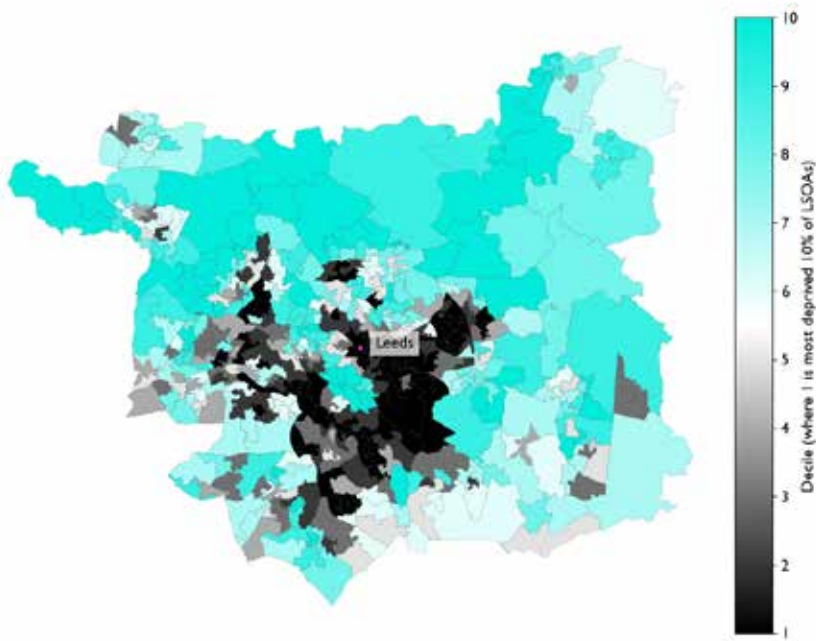
Population density



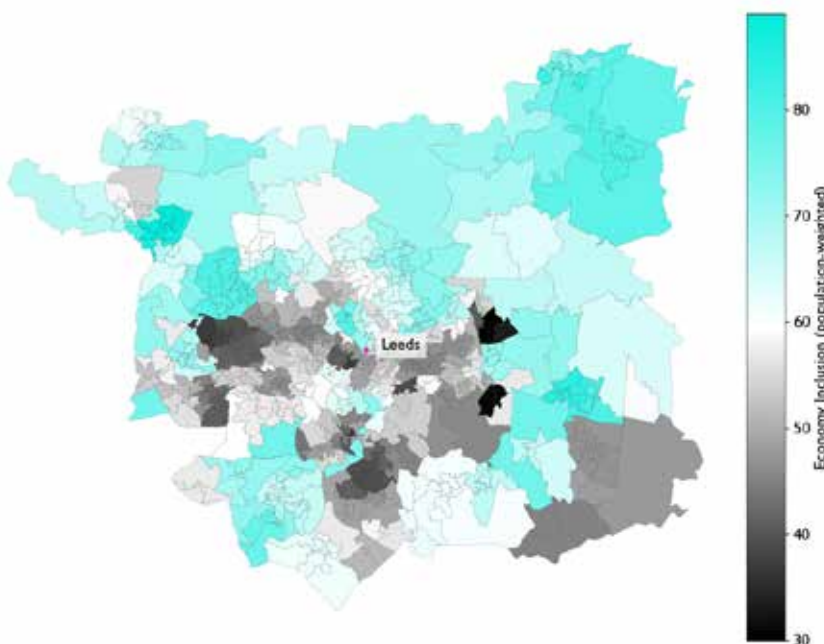
Economy

There are areas of high income deprivation near the centre of Leeds. Although there is some correlation apparent, the patterns of Economic Inclusion do not match those of deprivation perfectly, with some areas of high deprivation scoring high on Inclusion.

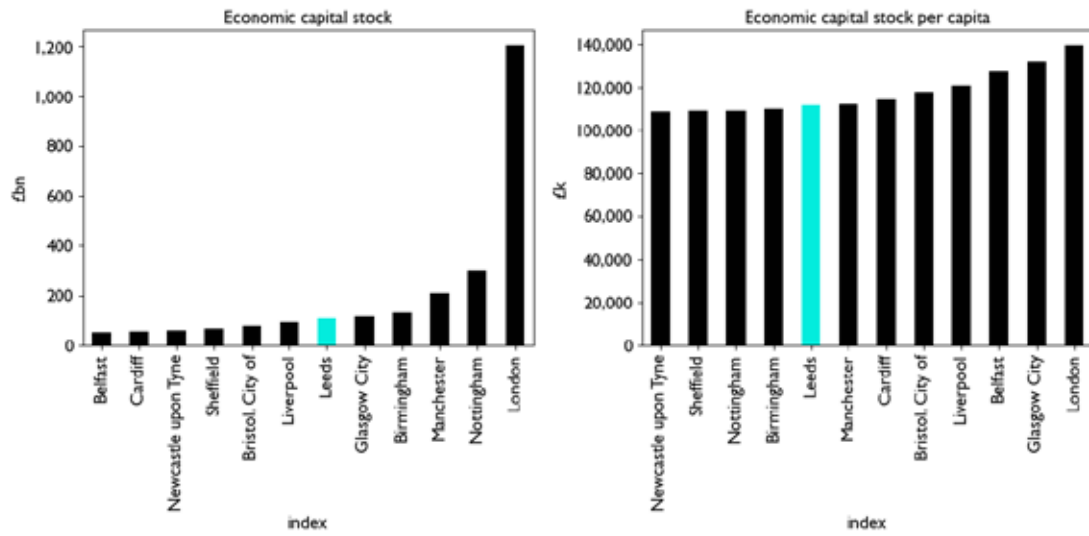
Income deprivation



Economic Inclusion



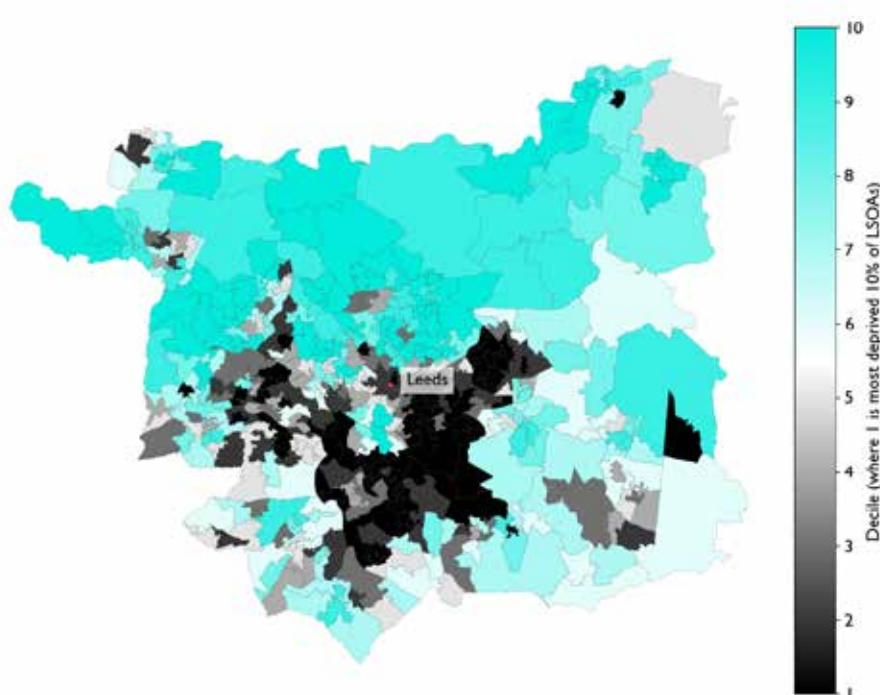
Economic capital stock



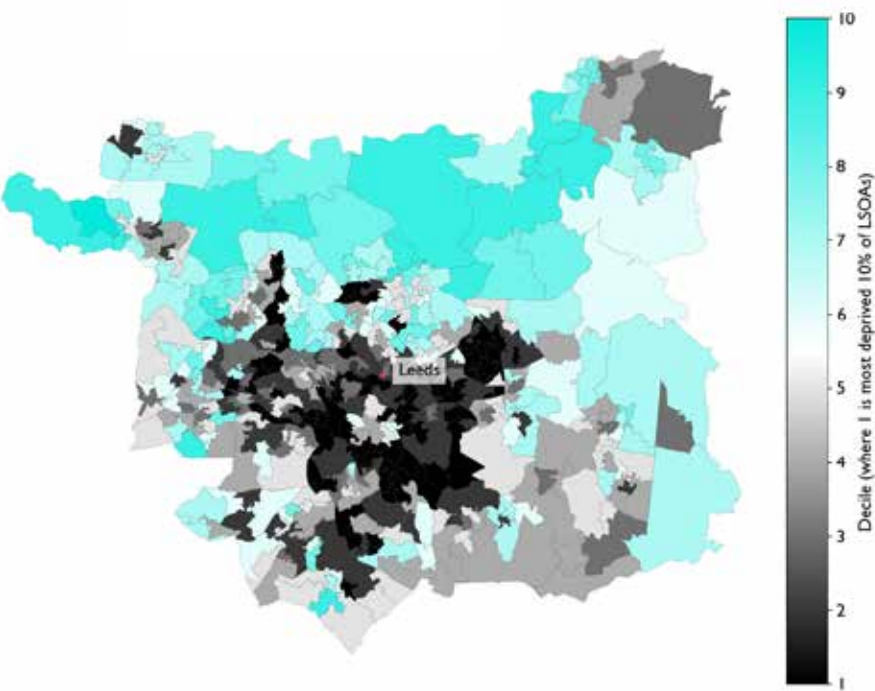
Society

Patterns of education deprivation map closely to income deprivation, while a larger proportion of LSOAs in the south of the PUA suffer from high health deprivation. In contrast, these areas tend to score highly on Community Inclusion.

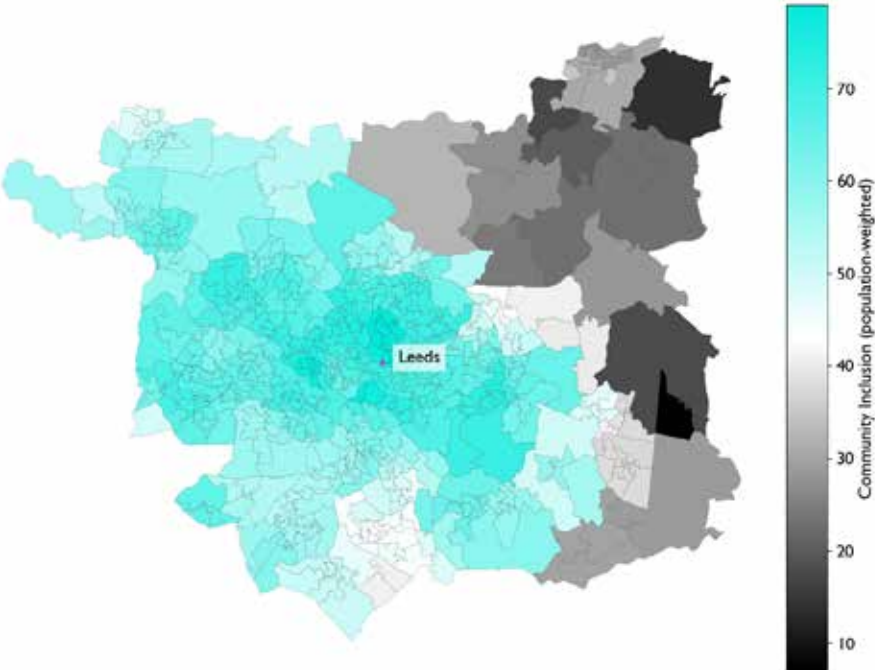
Education, skills and training deprivation



Health deprivation and disability



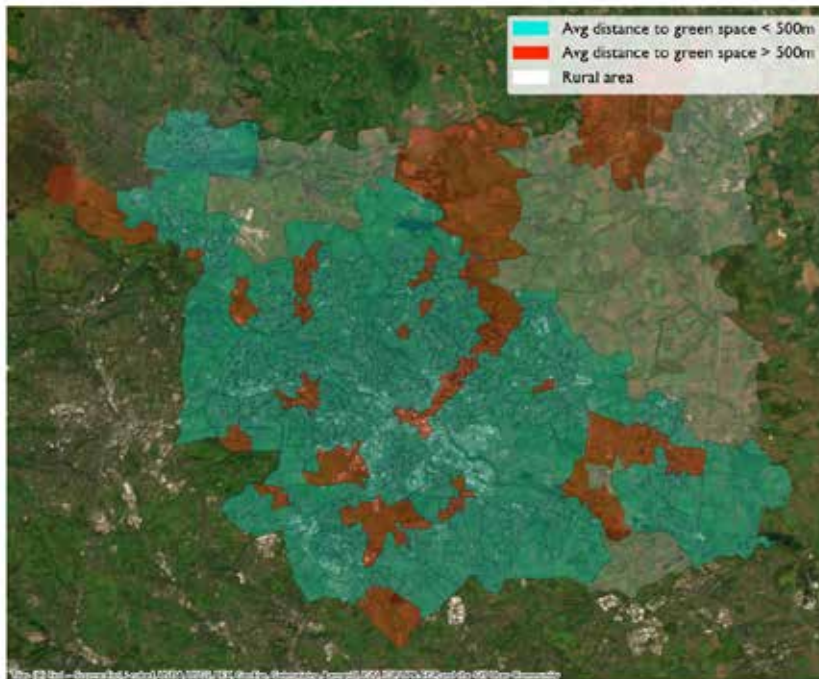
Community Inclusion



Nature

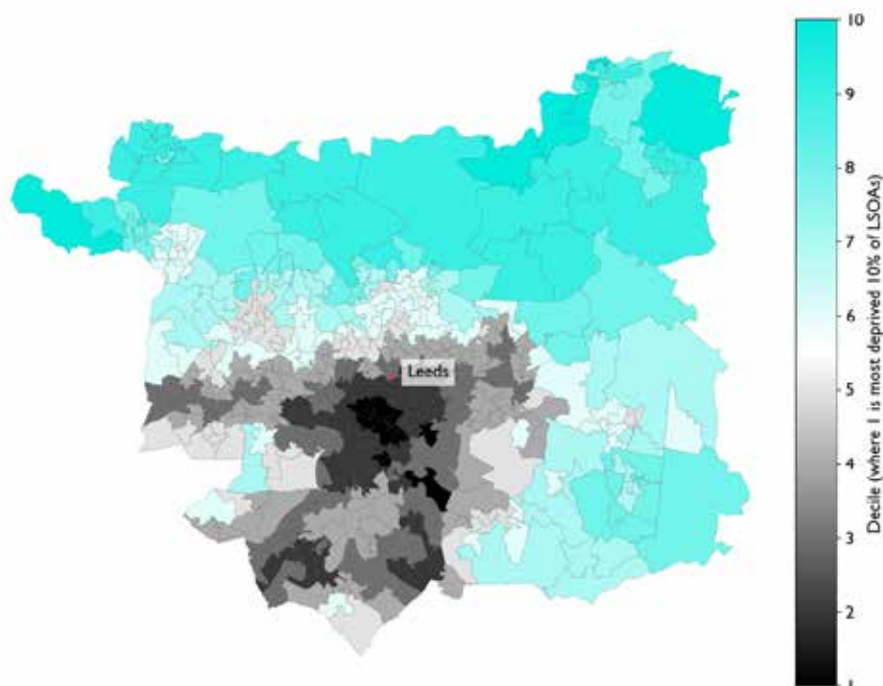
Much of the PUA is classified as rural, and there is a band around the north and east of the area scoring well on air quality. 85% of urban areas have good access to green space.

Access to green space

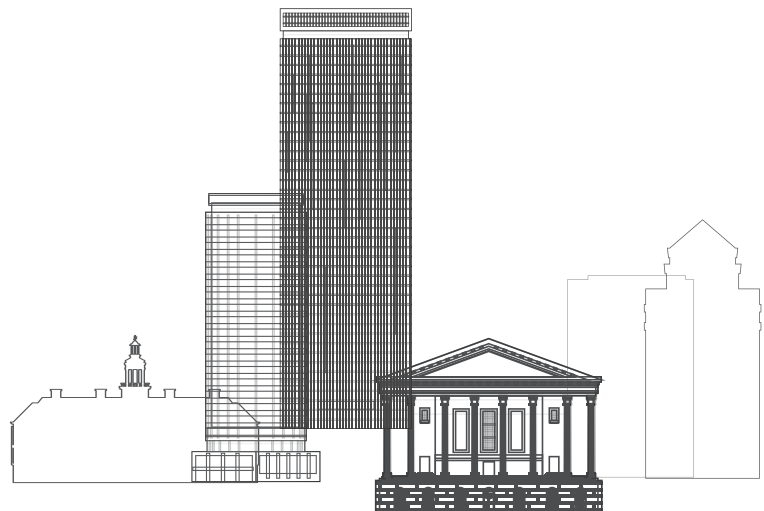
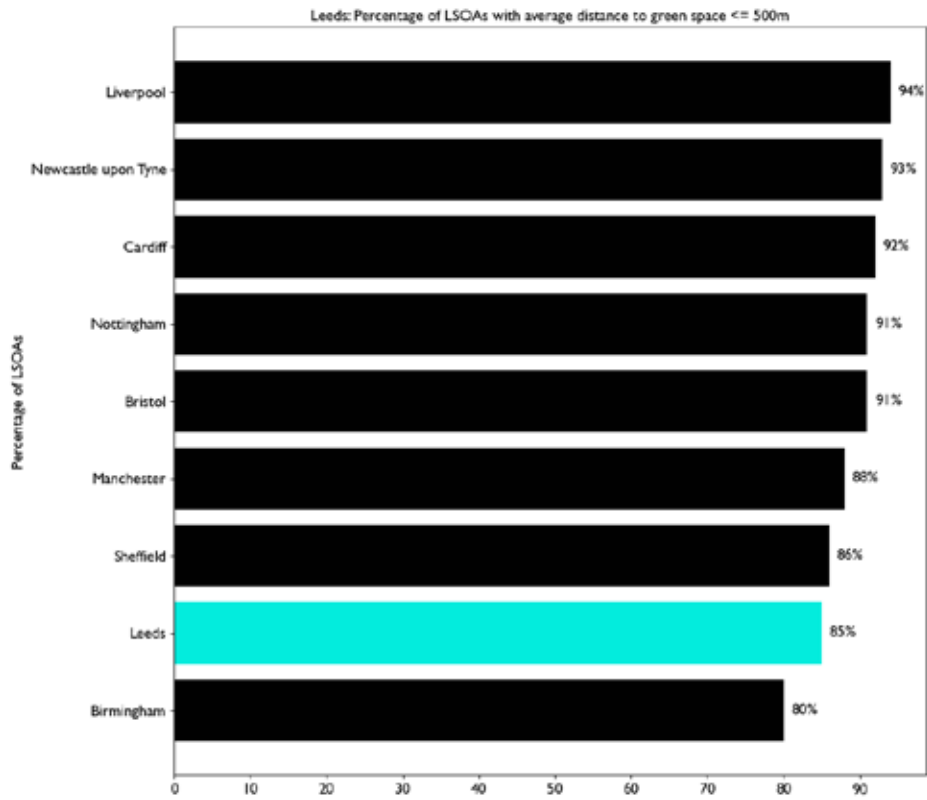


Note: Rural areas are excluded from the access calculation.

Air quality deprivation

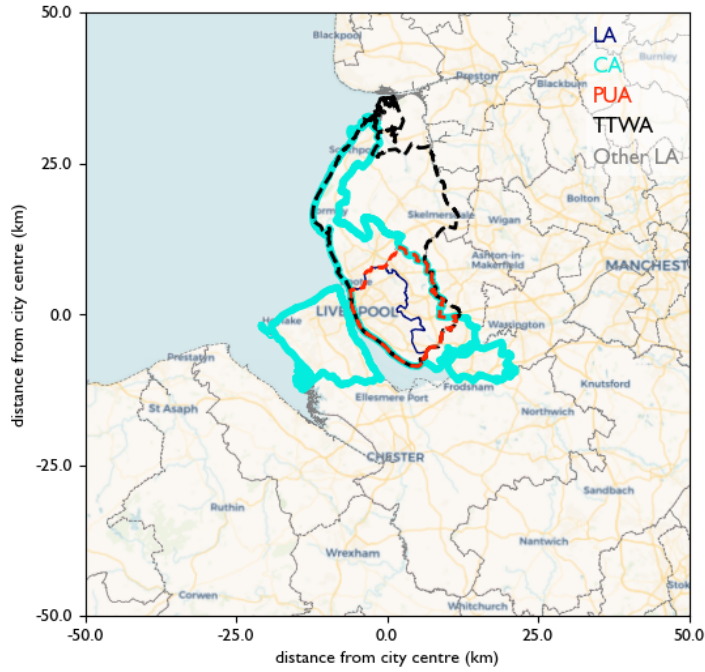


Access to green space: City comparison



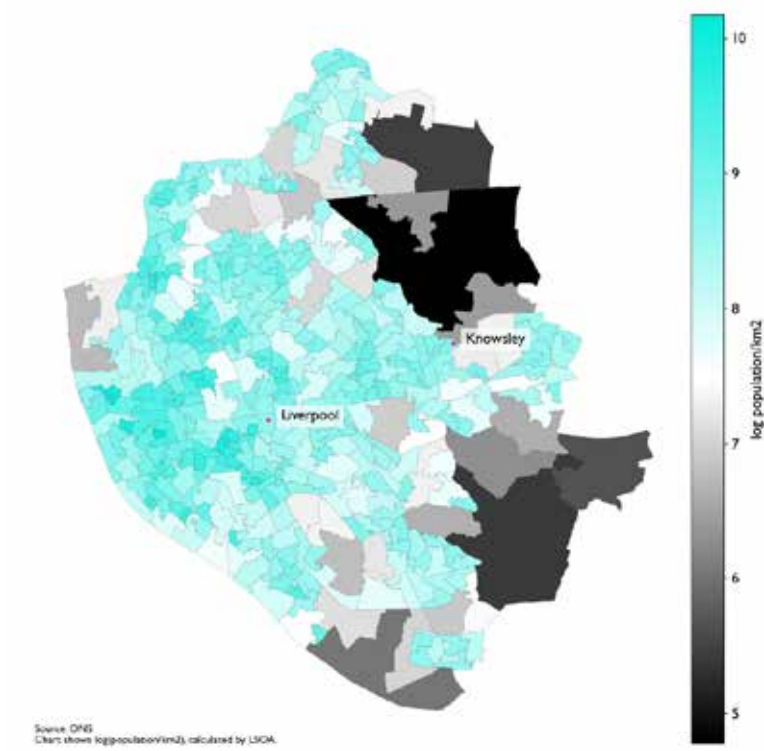
Liverpool

Boundaries



Sources: ONS, Carto, OpenStreetMap.

Population density

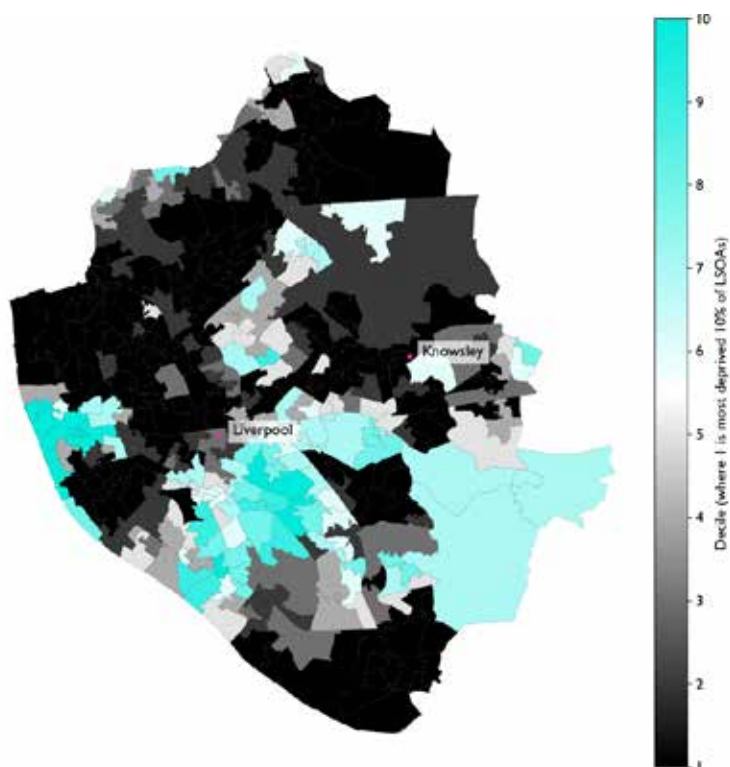


Source: ONS
Chart shows log(population/km²), calculated by LSQA.

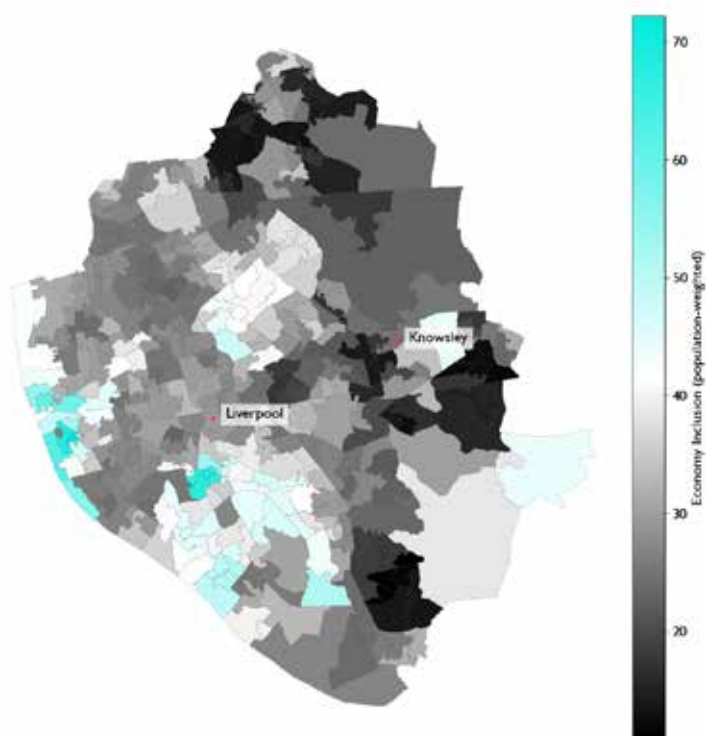
Economy

There are many areas in Liverpool with high income deprivation and low Economic Inclusion scores.

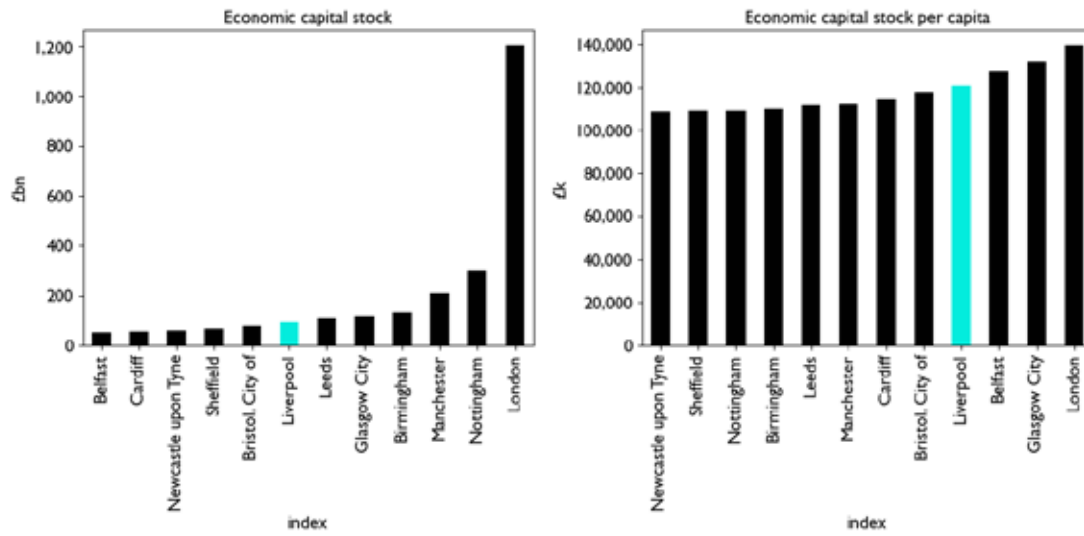
Income deprivation



Economic Inclusion



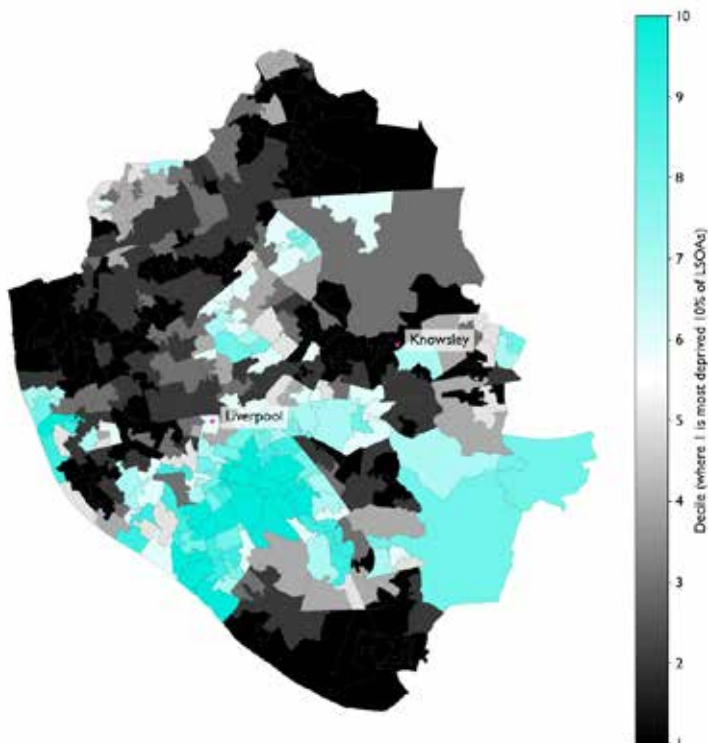
Economic capital stock



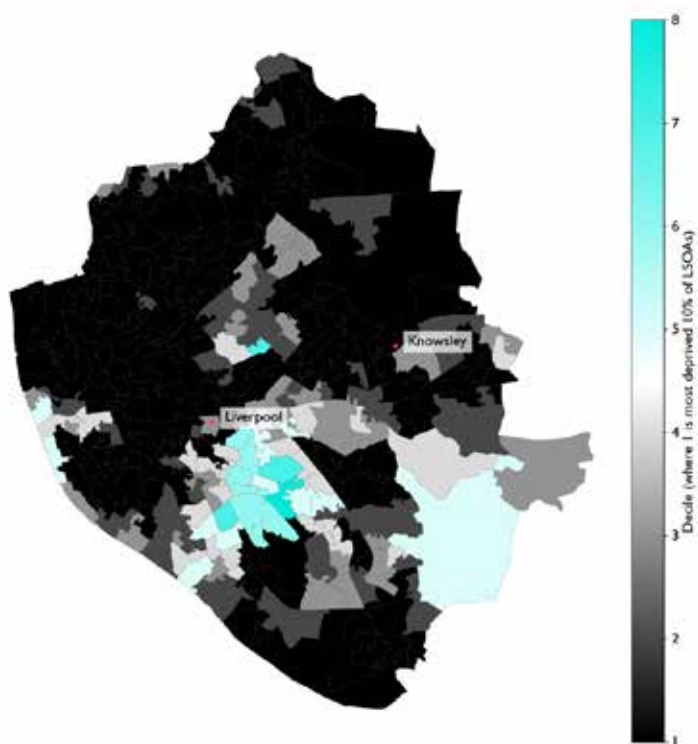
Society

Education deprivation maps closely onto income deprivation, and health deprivation is even more widespread, with only a handful of LSOAs in central areas in the 5th decile or higher. Community Inclusion scores are high across almost all of the Liverpool Local Authority but lower in more peripheral areas like Knowsley.

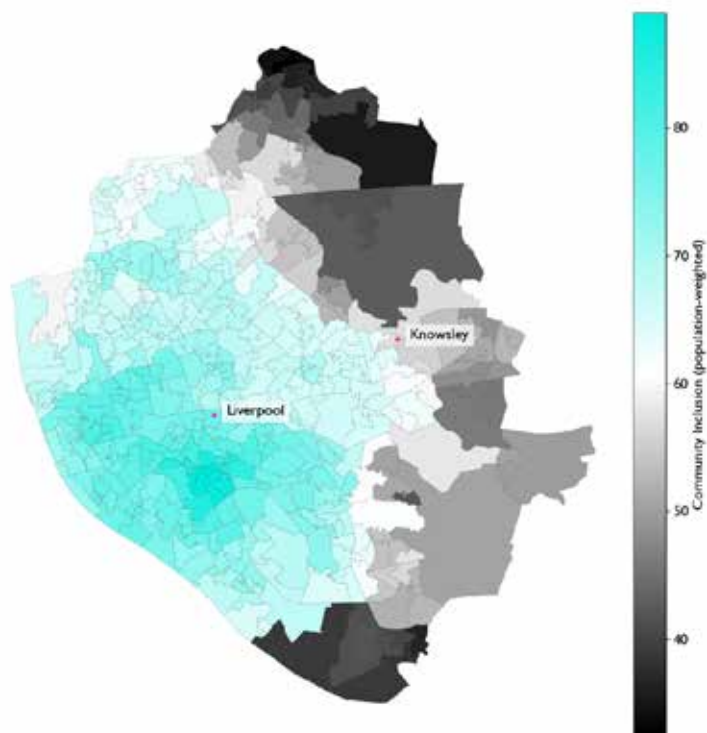
Education, skills and training deprivation



Health deprivation and disability



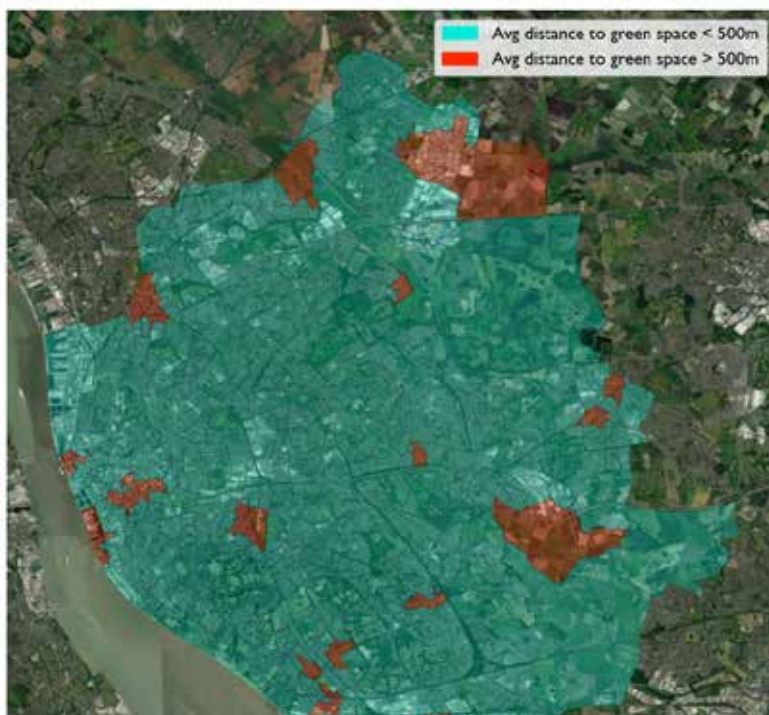
Community Inclusion



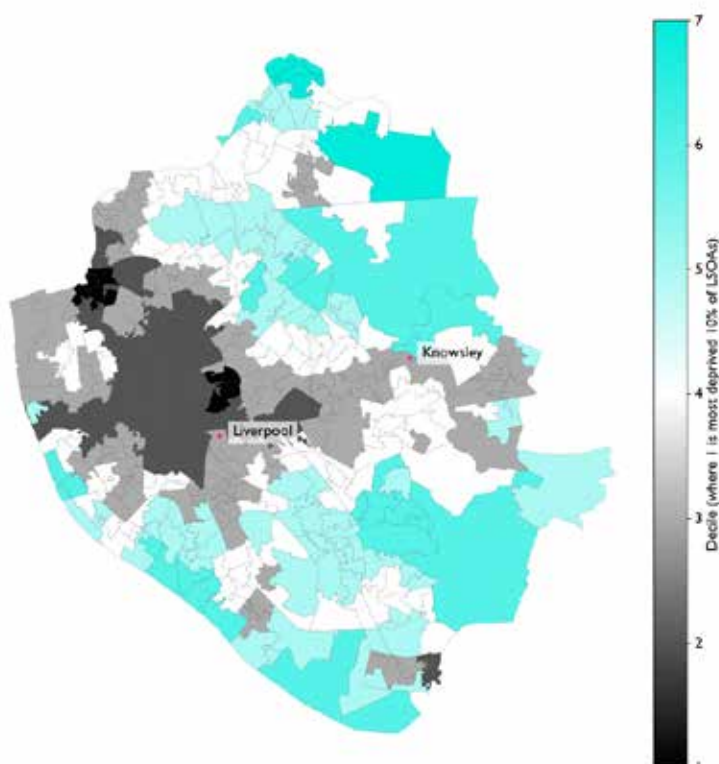
Nature

94% of urban LSOAs have good access to green space, and areas of very low air quality are restricted to central and north-west parts of the PUA. Liverpool has the highest percentage of LSOAs with good access to green space out of the cities we consider.

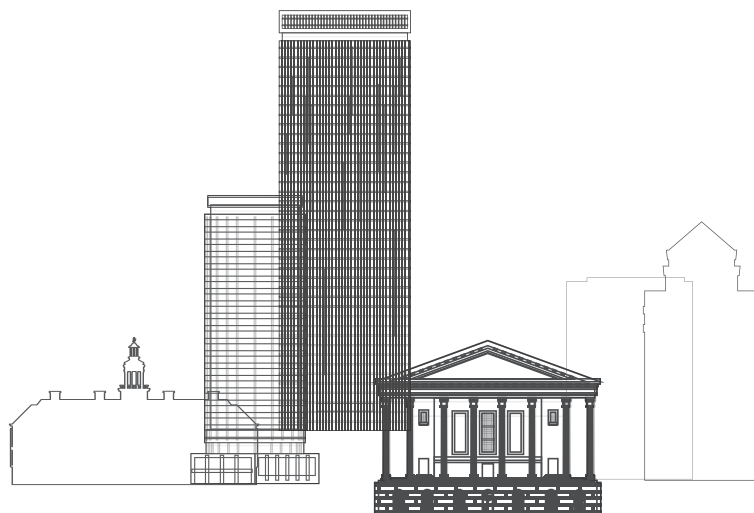
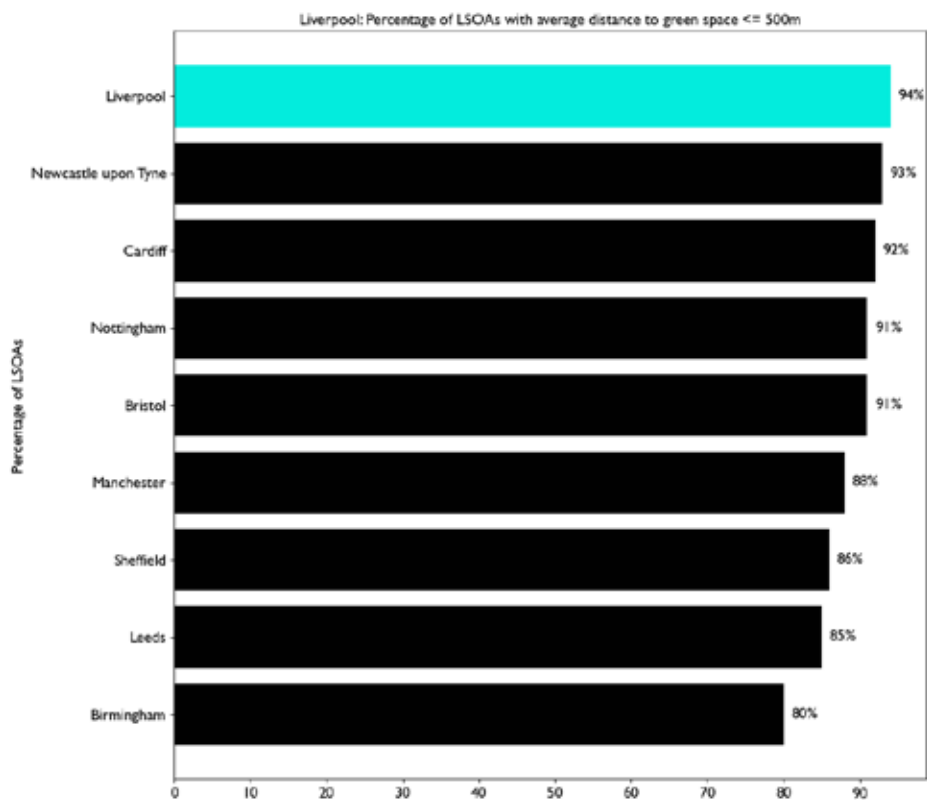
Access to green space



Air quality deprivation

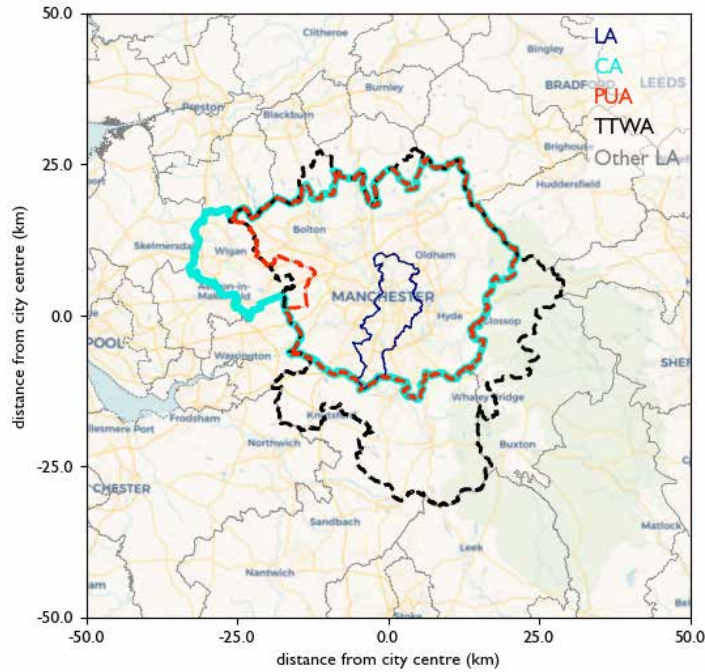


Access to green space: City comparison



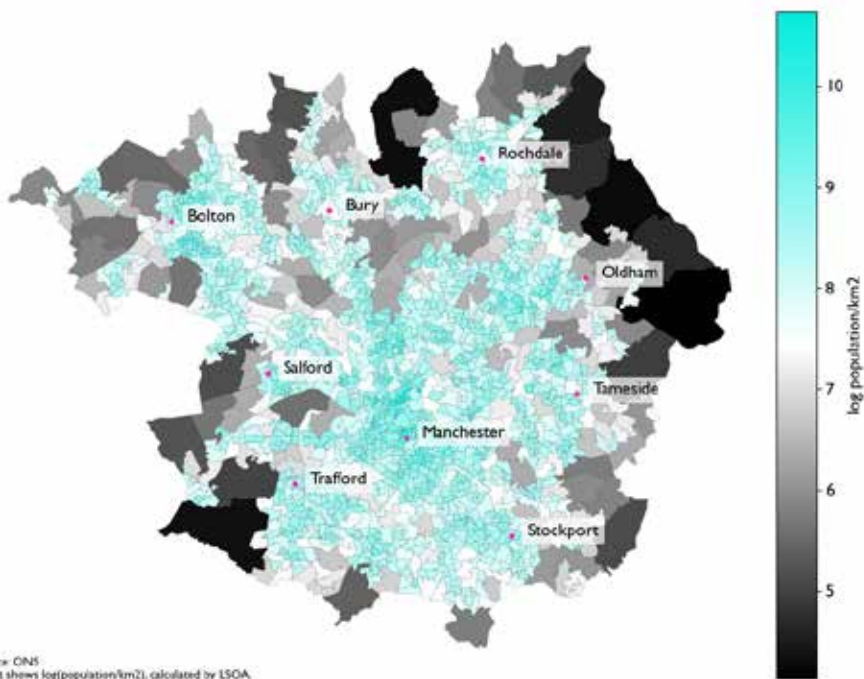
Manchester

Boundaries



Sources: ONS, Carto, OpenStreetMap.

Population density

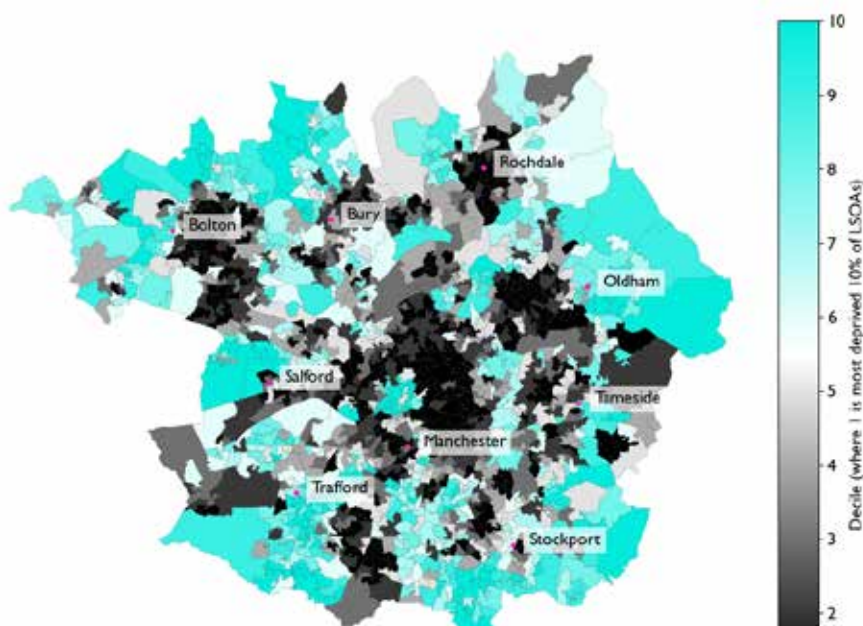


Source: ONS
Chart shows $\log(\text{population}/\text{km}^2)$, calculated by LSOA.

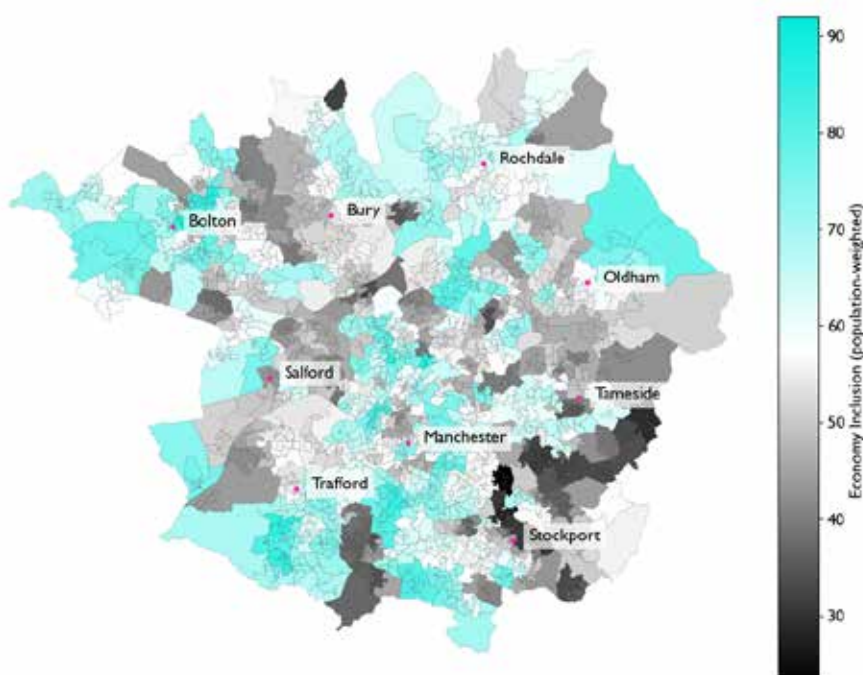
Economy

The economic landscape of Manchester is a patchwork, with pockets of low deprivation interspersed with areas of higher deprivation across much of the PUA. To varying extents, Economic Inclusion follows an inverse pattern; areas of high income deprivation score higher on Economic Inclusion, and vice versa. Manchester has the third-highest economic capital stock of the Core Cities, but per capita it falls to seventh-highest.

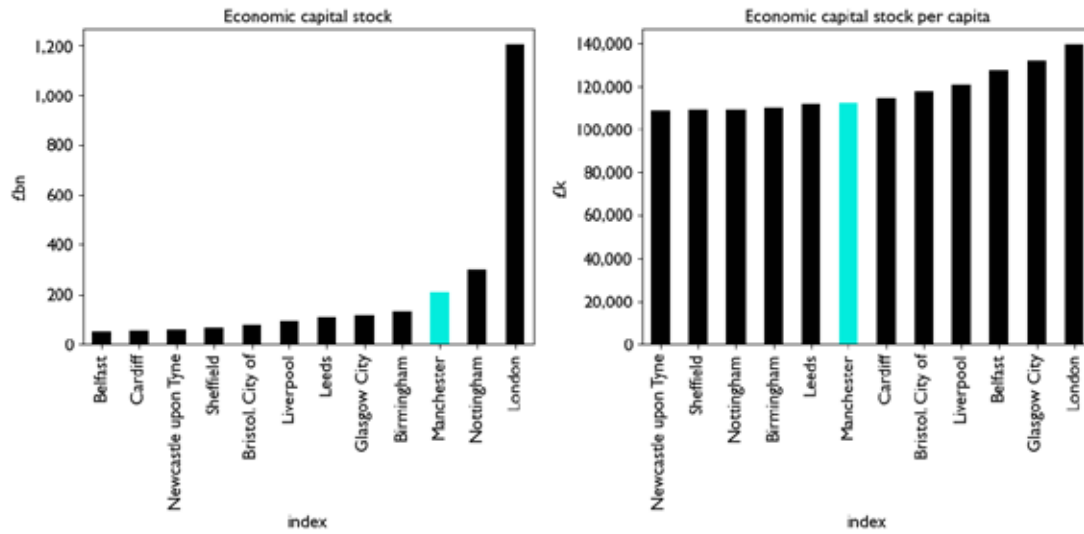
Income deprivation



Economic Inclusion



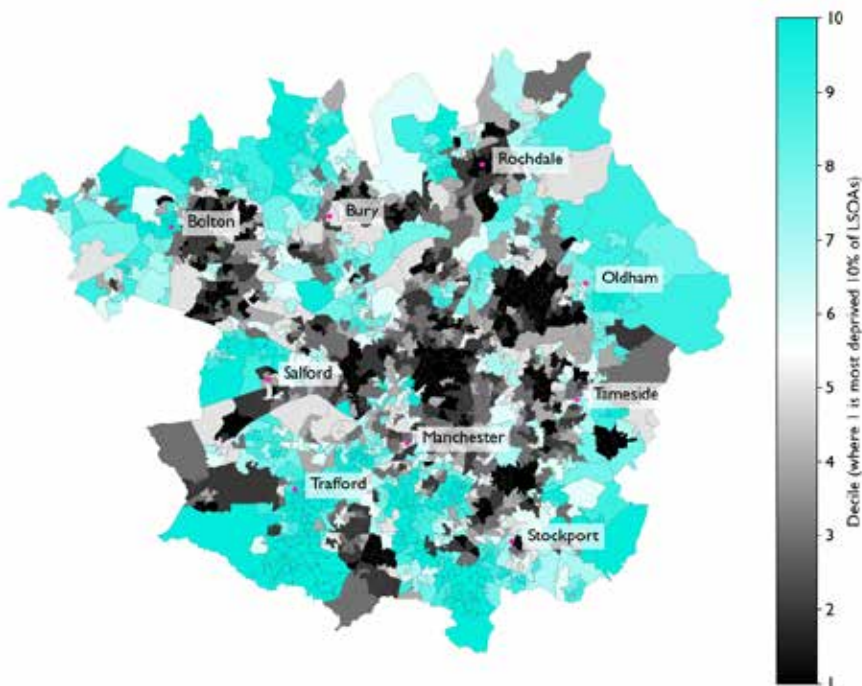
Economic capital stock



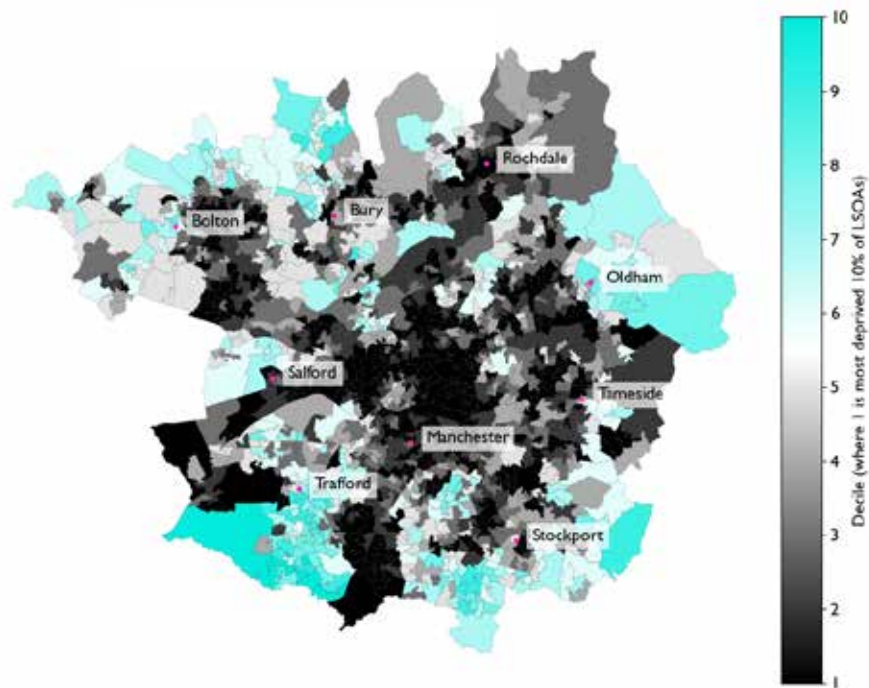
Society

Education deprivation follows a similar pattern to income deprivation, while high health deprivation is more widely distributed across the PUA. Community Inclusion is high in the Manchester Local Authority and decreases with distance from the urban centre.

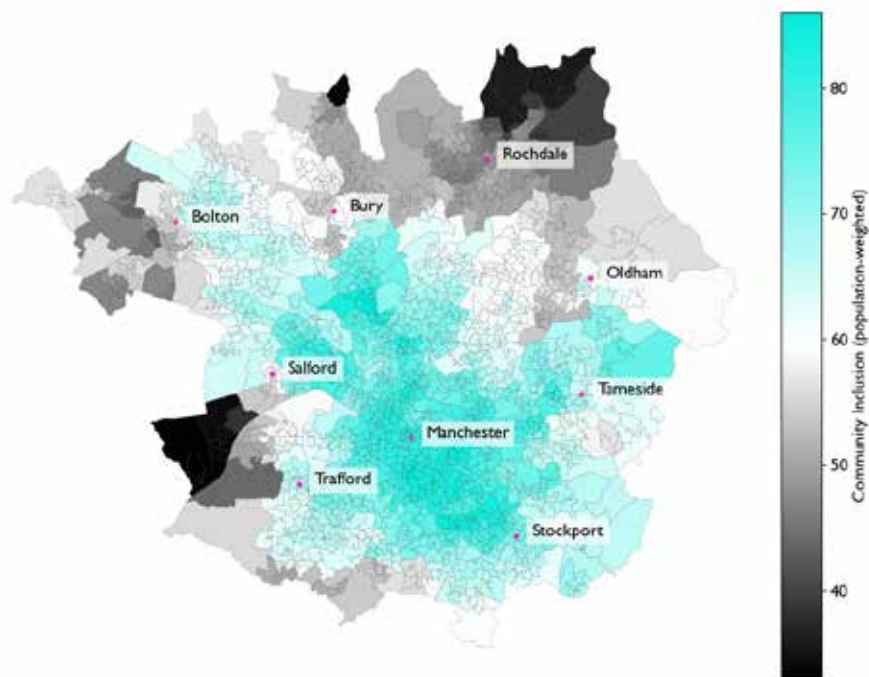
Education, skills and training deprivation



Health deprivation and disability



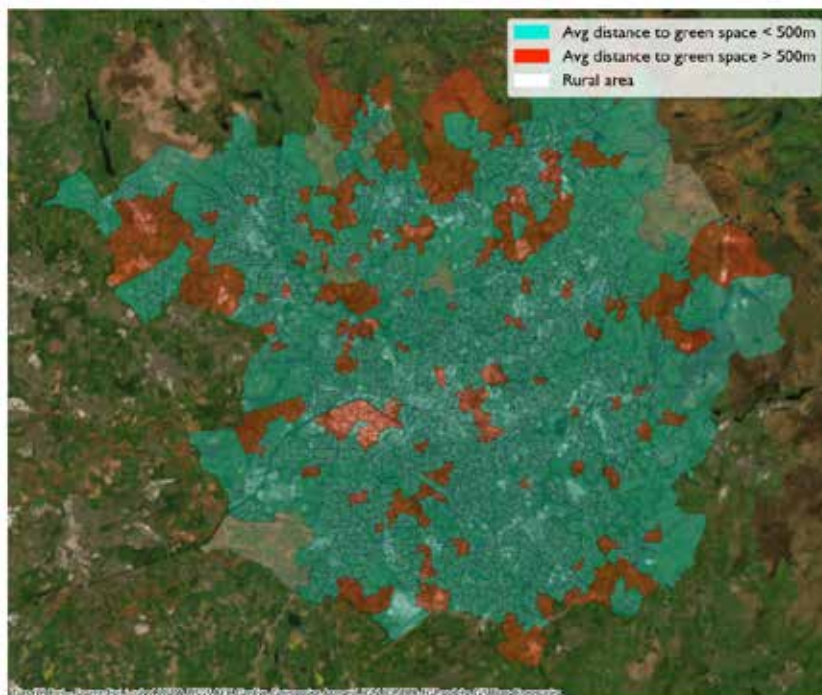
Community Inclusion



Nature

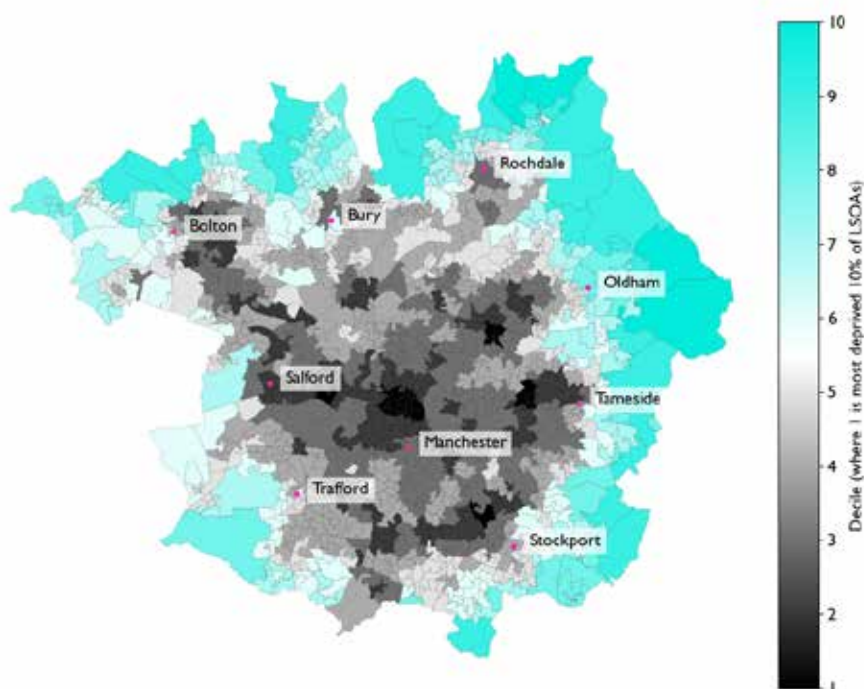
88% of urban LSOAs have good access to green space. However, air quality for much of the PUA is medium to low; only the outer LSOAs score well on air quality.

Access to green space

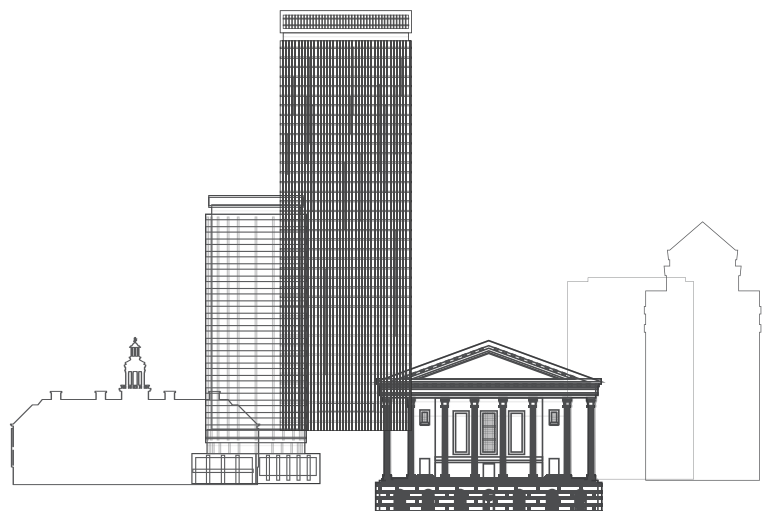
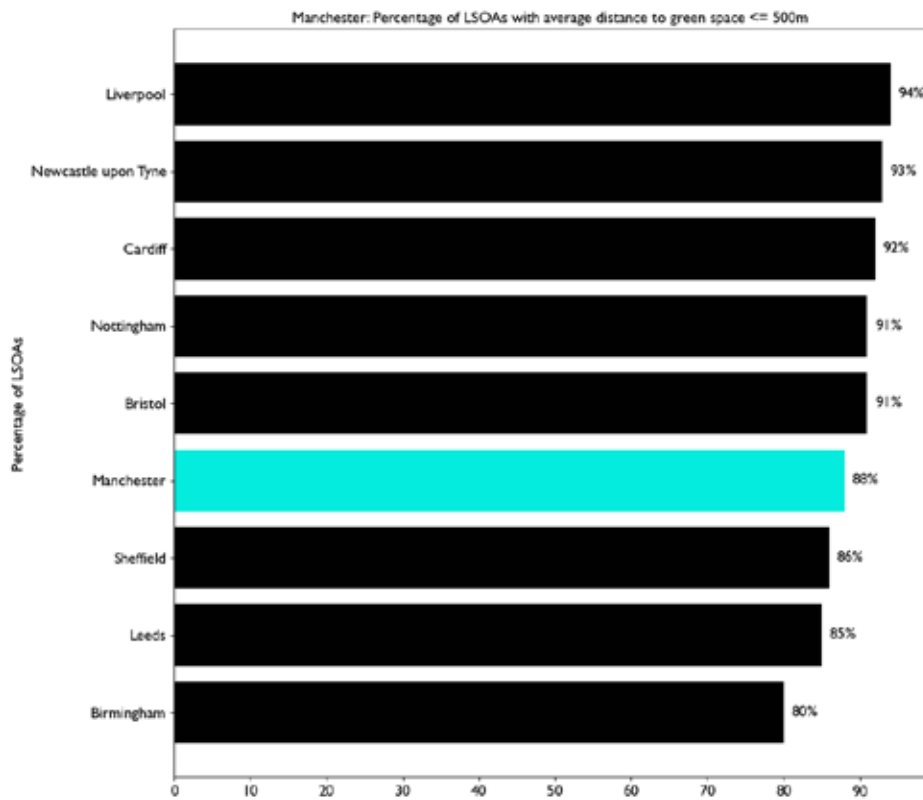


Note: Rural areas are excluded from the access calculation.

Air quality deprivation

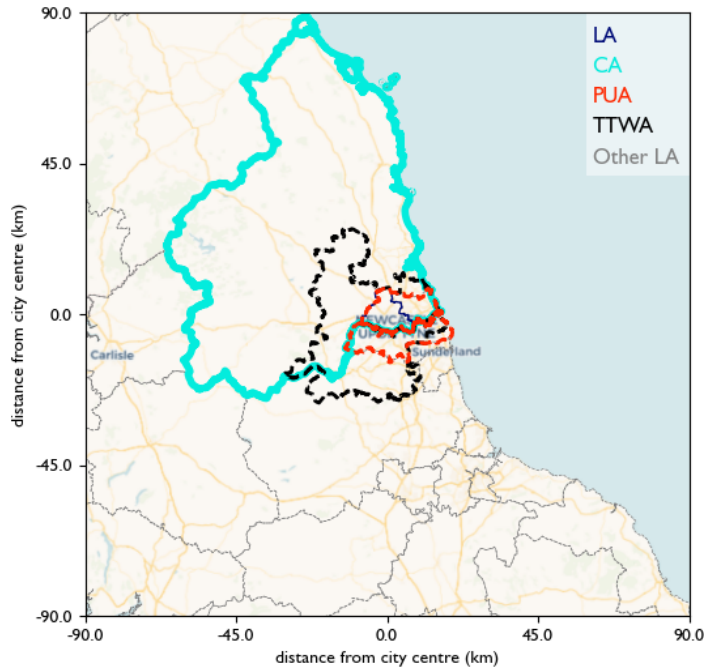


Access to green space: City comparison



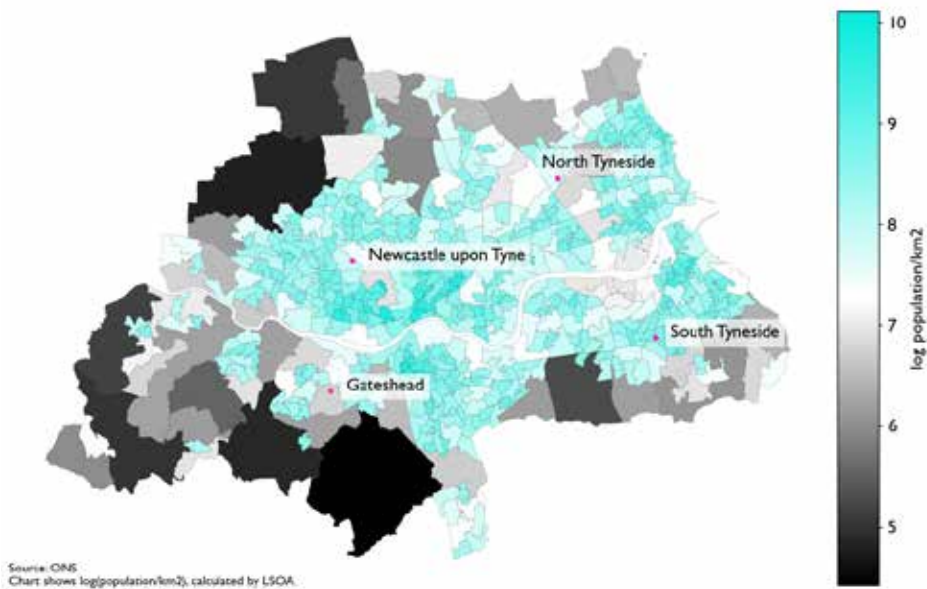
Newcastle upon Tyne

Boundaries



Sources: ONS, Carto, OpenStreetMap.

Population density



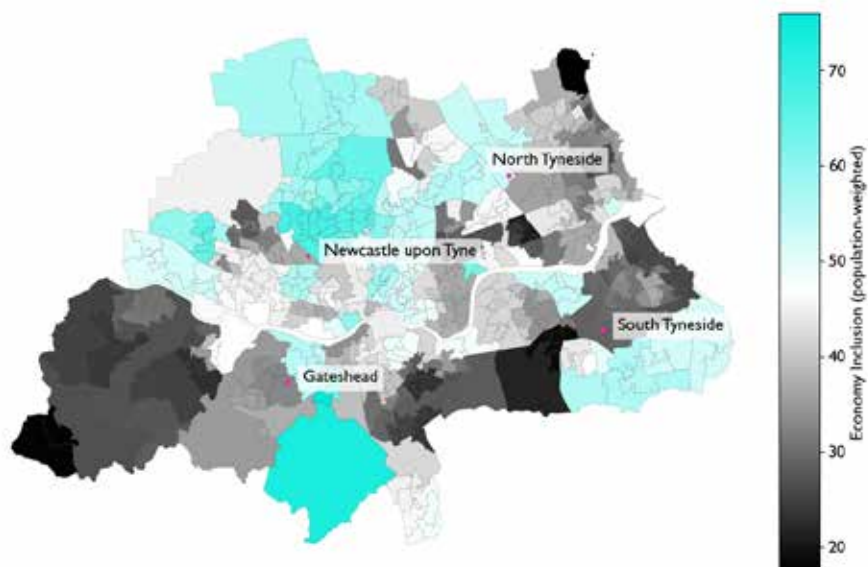
Economy

In Newcastle, income deprivation and Economic Inclusion have similar profiles to one another; generally, income deprivation is higher and Economic Inclusion is lower in more central urban areas.

Income deprivation

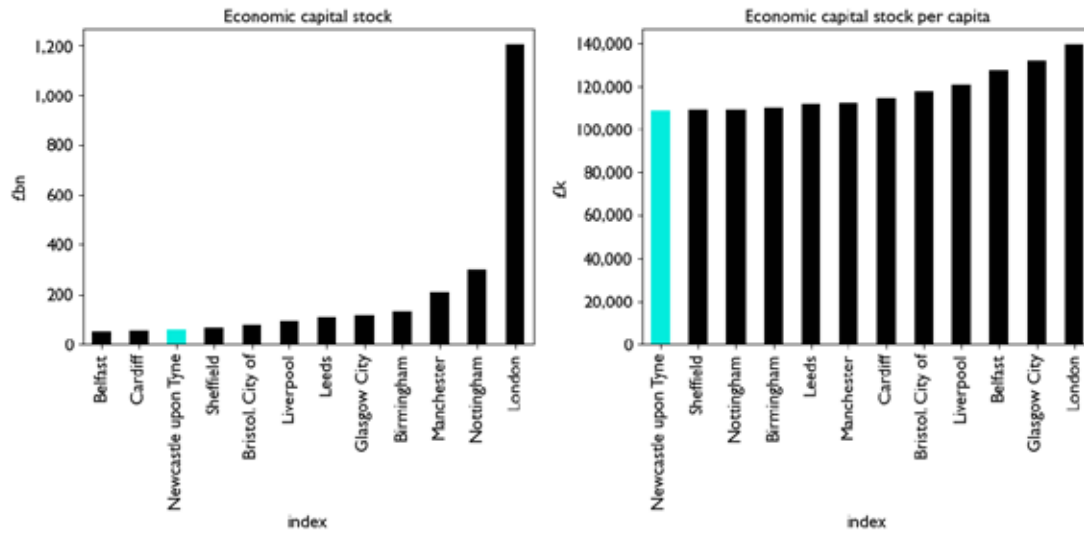


Economic Inclusion



Newcastle upon Tyne

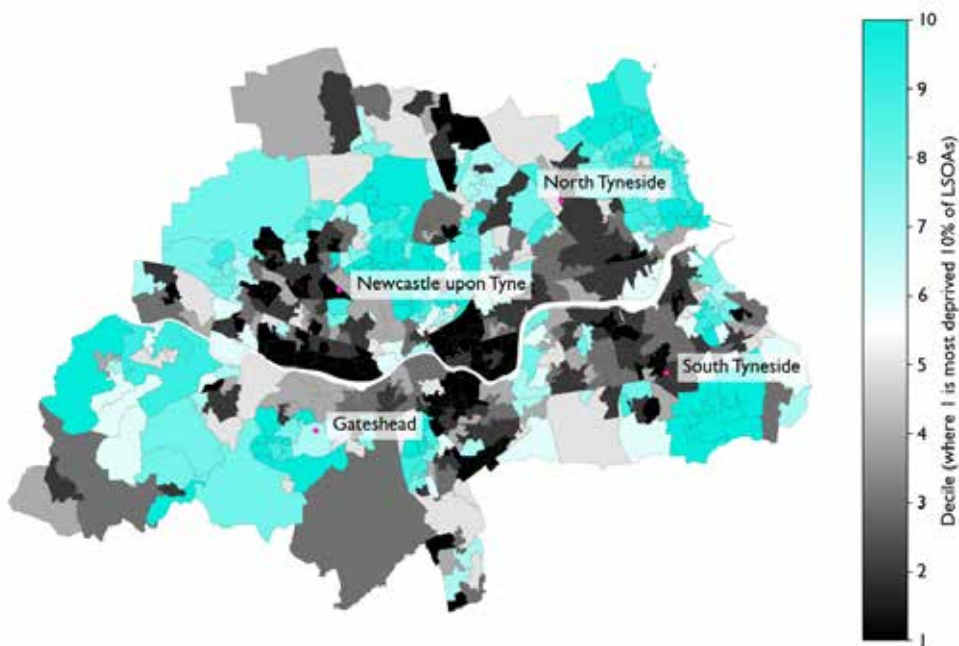
Economic capital stock



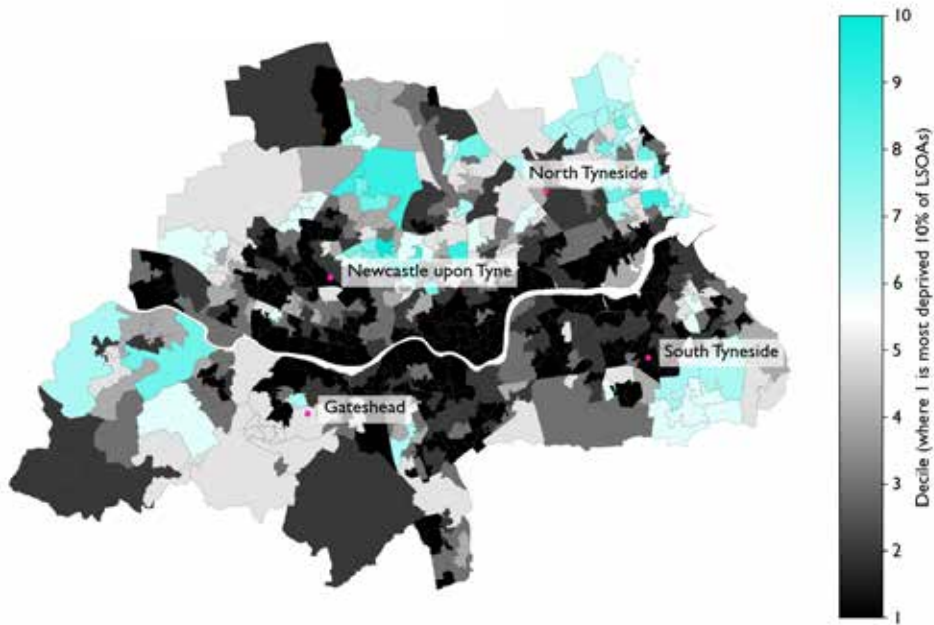
Society

Education deprivation tends to be higher in central areas and lower in peripheral areas. There are many areas with high health deprivation, especially in areas close to the river both north and south. In contrast, Community Inclusion is medium to high in all urban centres in the PUA, particularly in the areas around Newcastle upon Tyne.

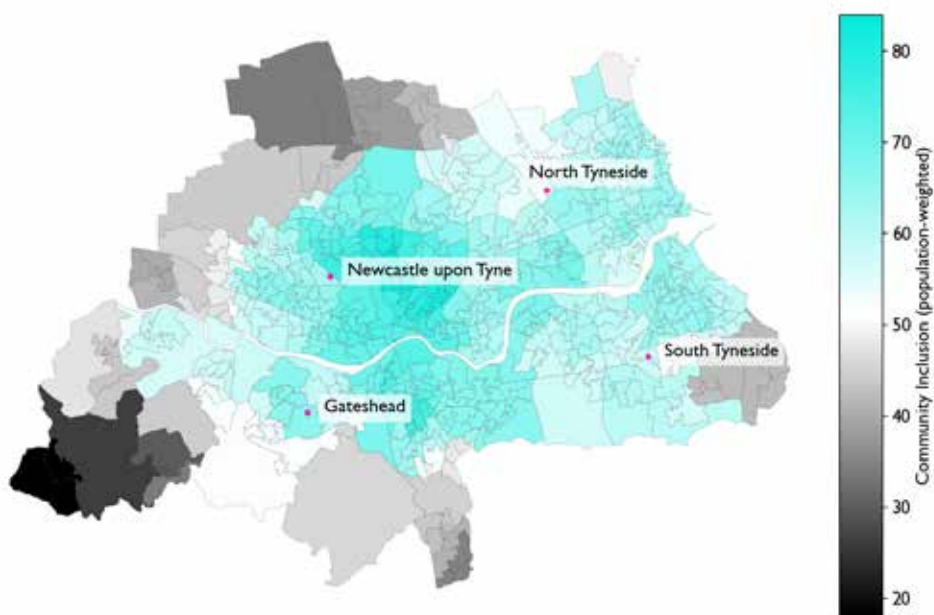
Education, skills and training deprivation



Health deprivation and disability



Community Inclusion

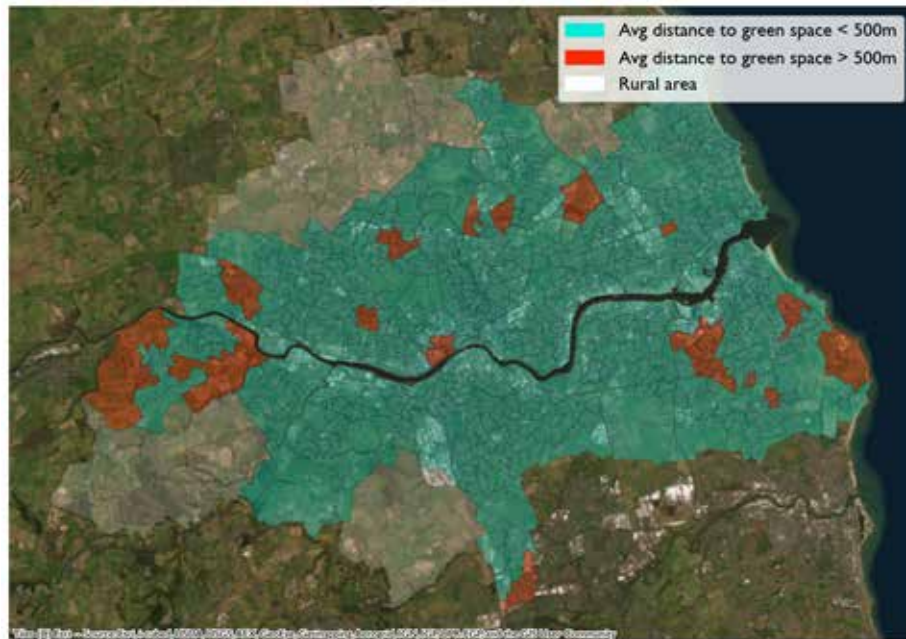


Newcastle upon Tyne

Nature

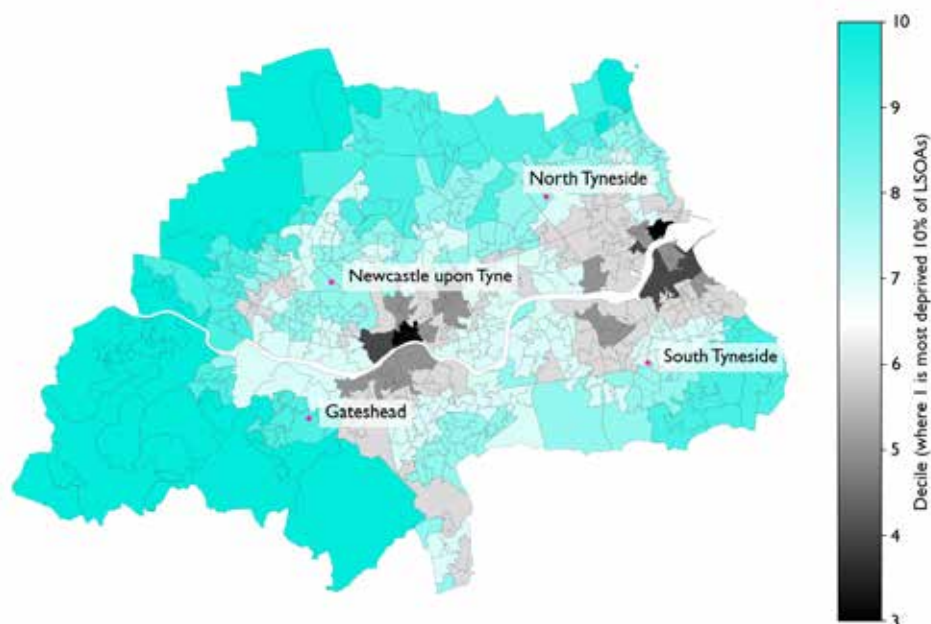
93% of urban LSOAs have good access to green space. This is the second highest percentage of the cities we consider. Newcastle is distinct insofar as the vast majority of areas score well on air quality; only a handful of LSOAs fall below the 5th decile.

Access to green space

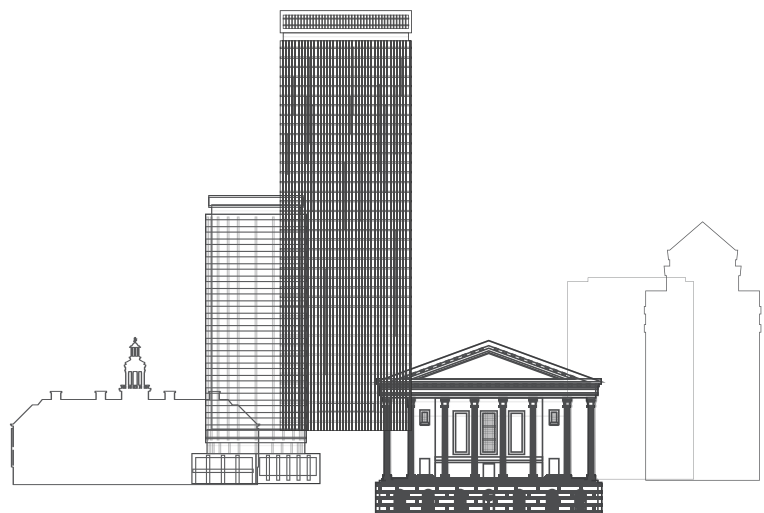
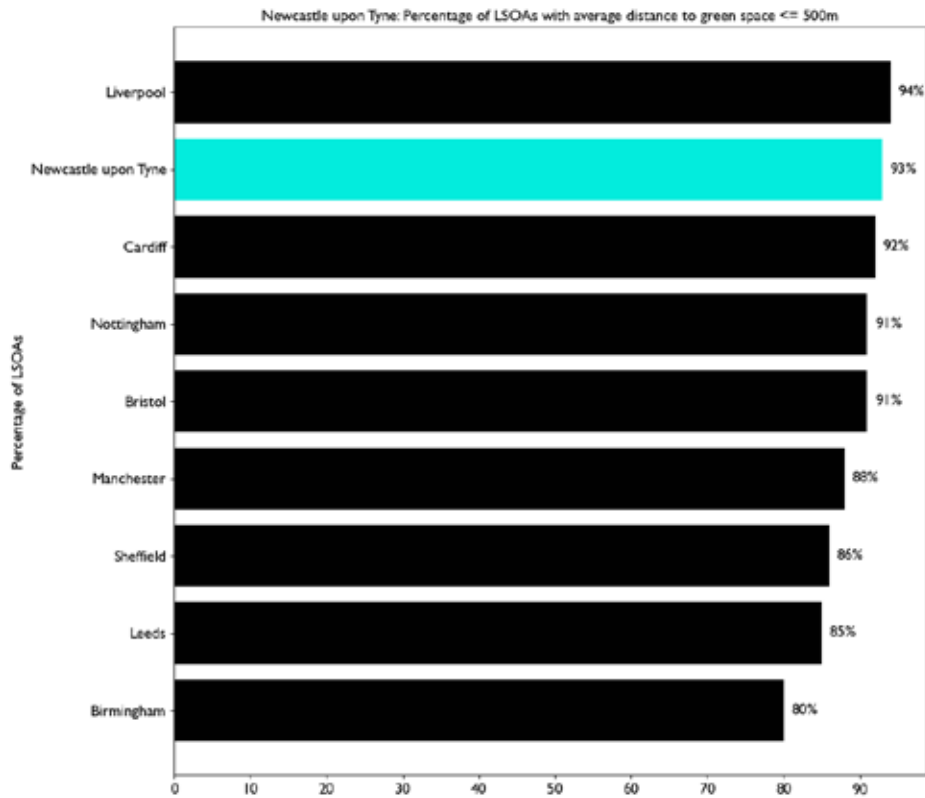


Note: Rural areas are excluded from the access calculation.

Air quality deprivation

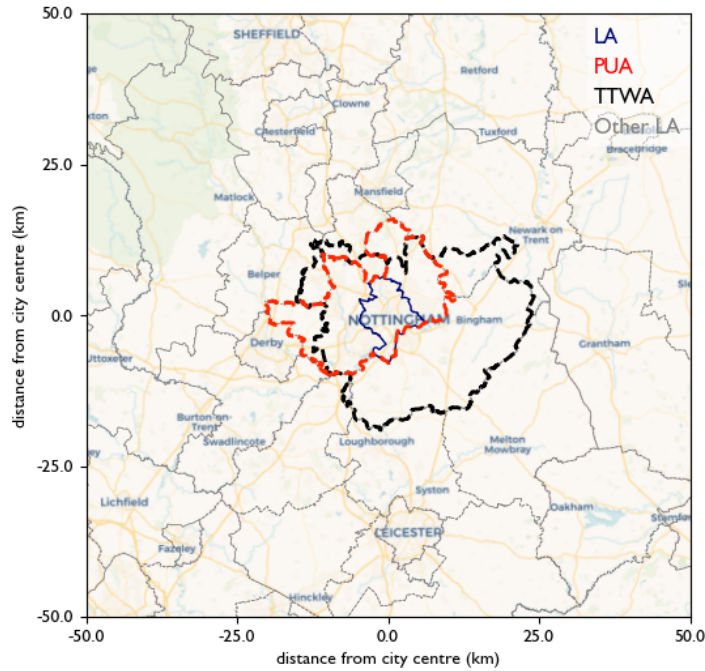


Access to green space: City comparison



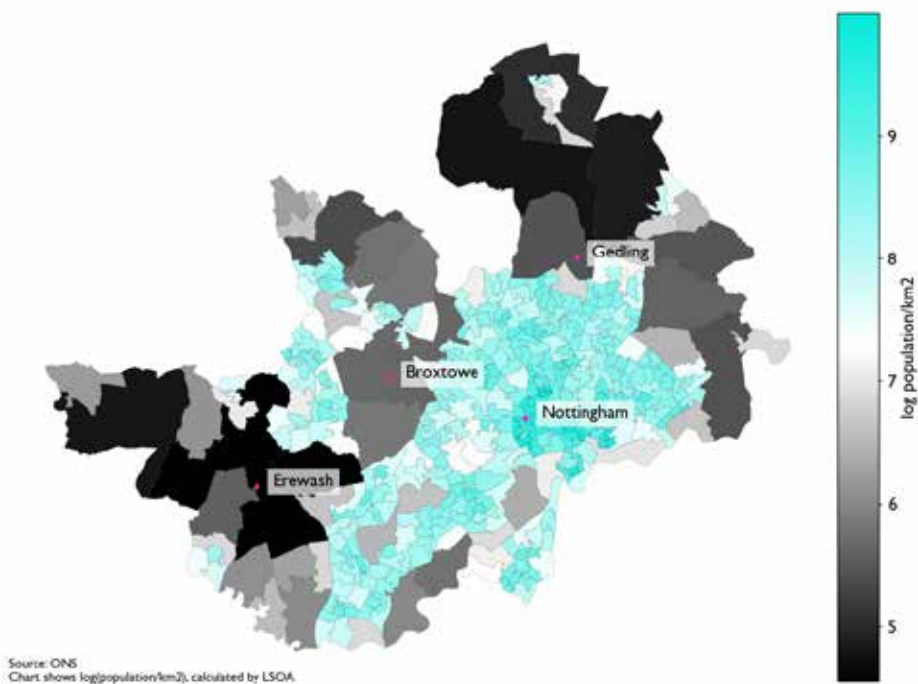
Nottingham

Boundaries



Sources: ONS, Carto, OpenStreetMap.

Population density

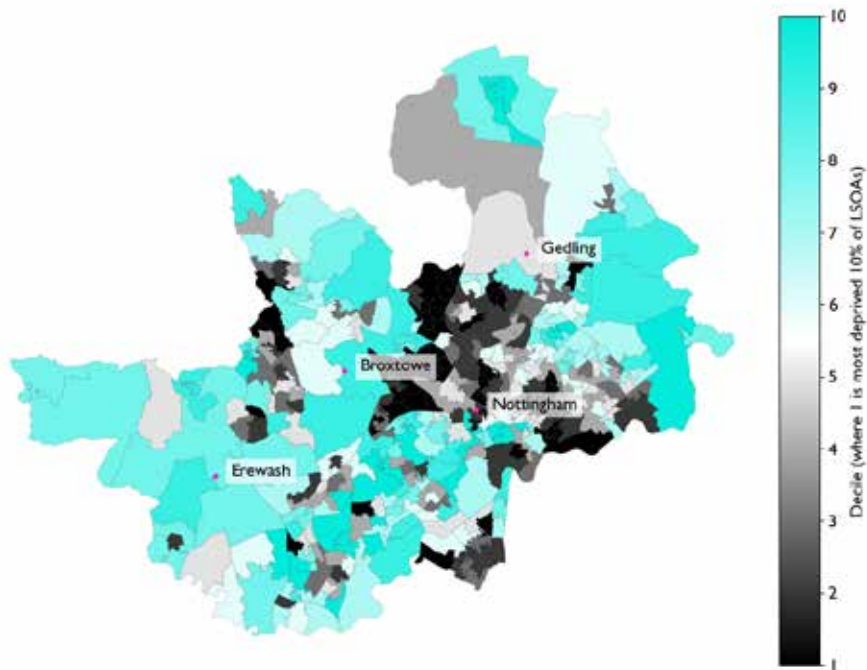


Source: ONS
Chart shows log(population/km²), calculated by LSOA.

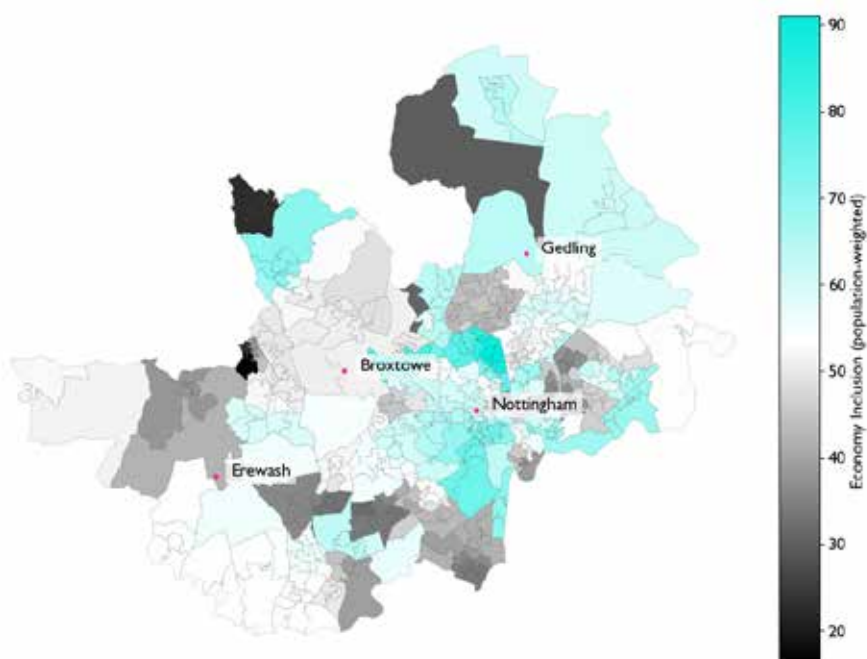
Economy

There is high income deprivation in central areas of Nottingham and in small pockets across the PUA. Much of the PUA consists of areas with medium Economic Inclusion, with higher levels in and around the centre of Nottingham. Nottingham has the second-highest economic capital stock of the Core Cities, but is third-lowest when its population is taken into account.

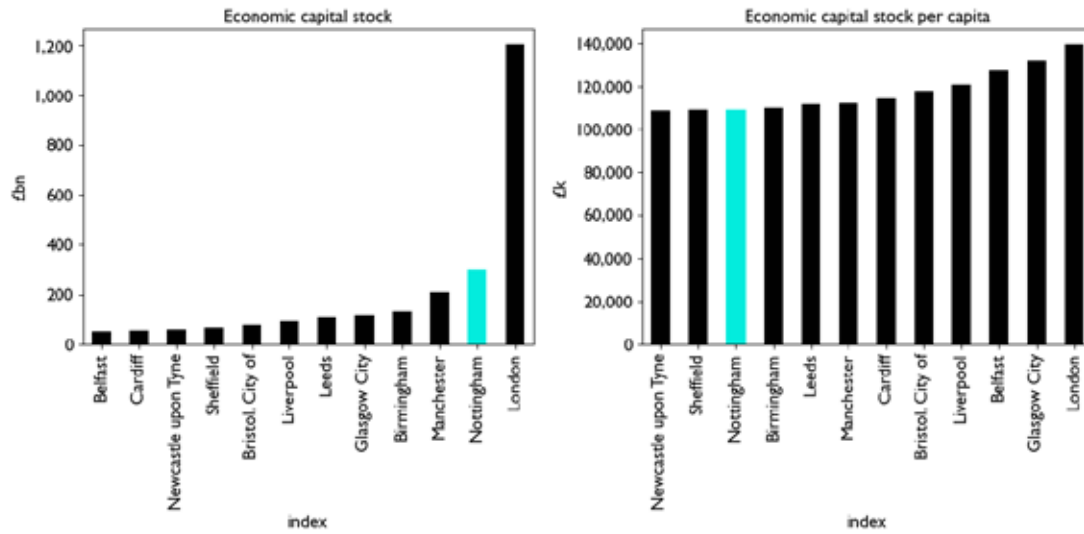
Income deprivation



Economic Inclusion



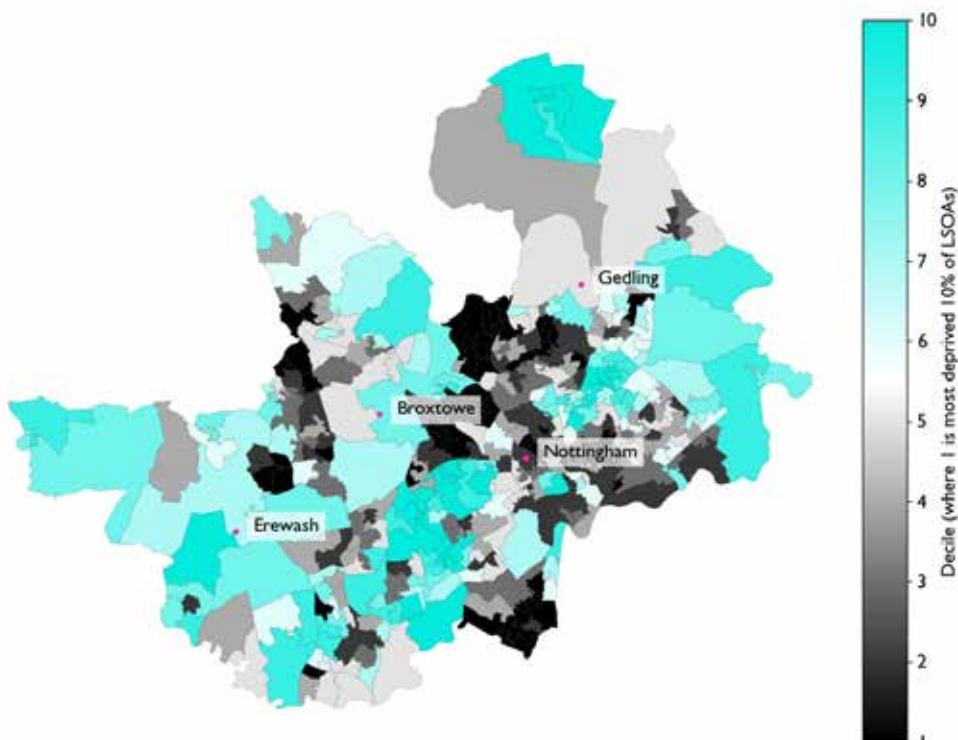
Economic capital stock



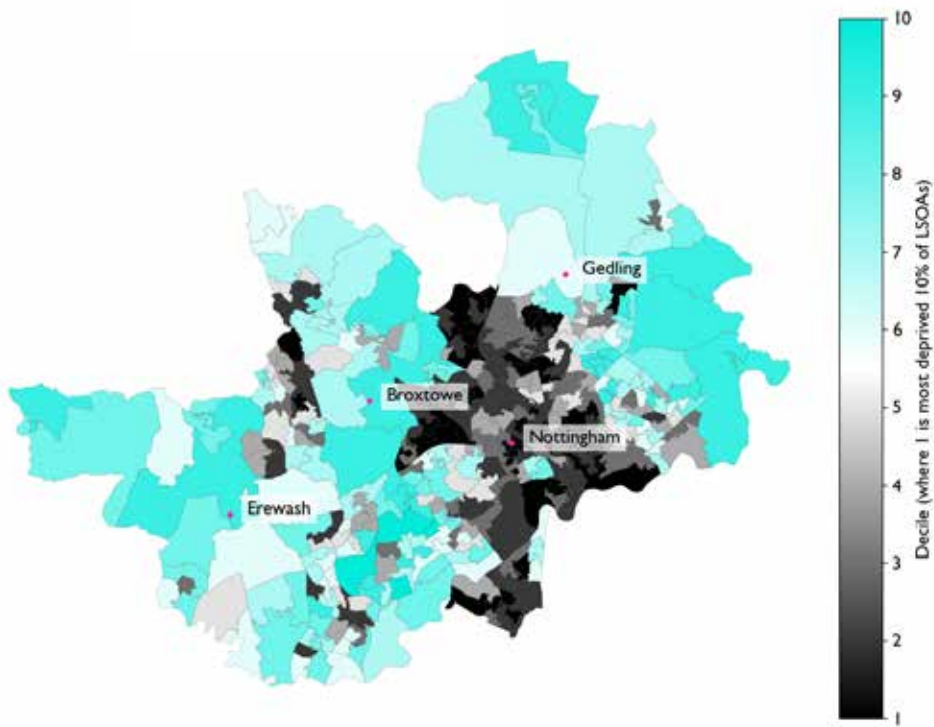
Society

Both education and health deprivation follow similar patterns to income deprivation, tending to concentrate in and around the centre of Nottingham. Community Inclusion is medium to high across most of the PUA, though areas around Gedling and Erewash score slightly lower.

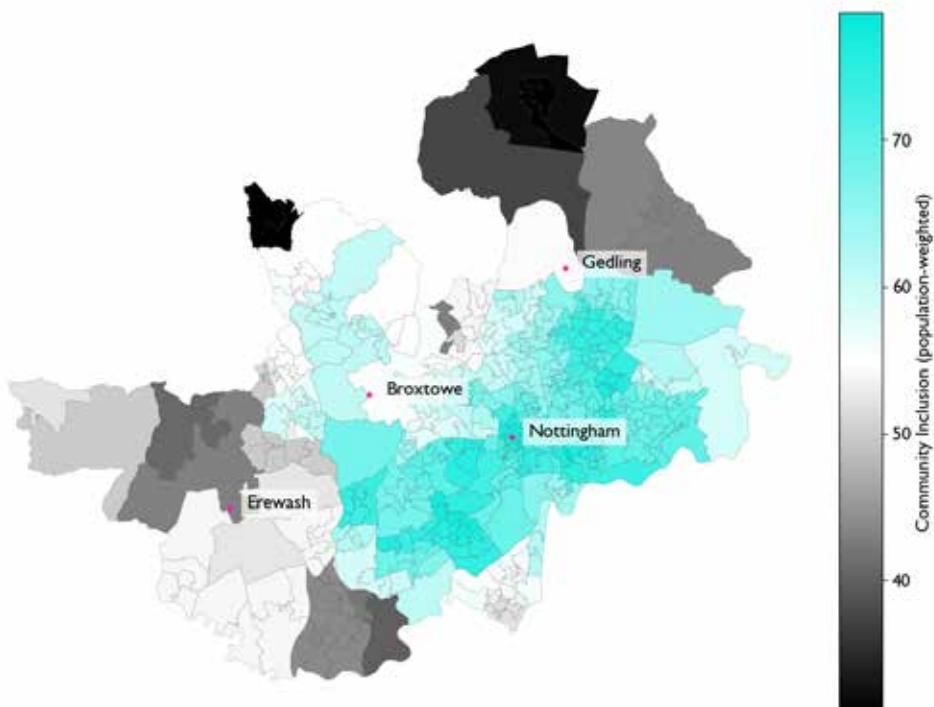
Education, skills and training deprivation



Health deprivation and disability



Community Inclusion



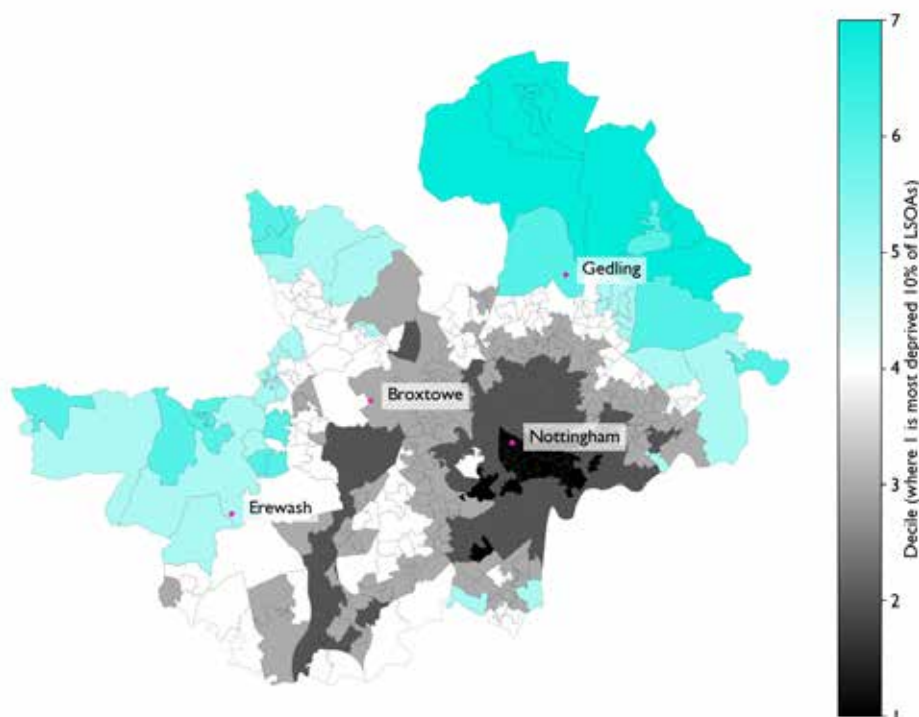
Nature

91% of urban LSOAs have good access to green space. Air quality is medium to poor in most LSOAs, with better air quality in peripheral areas.

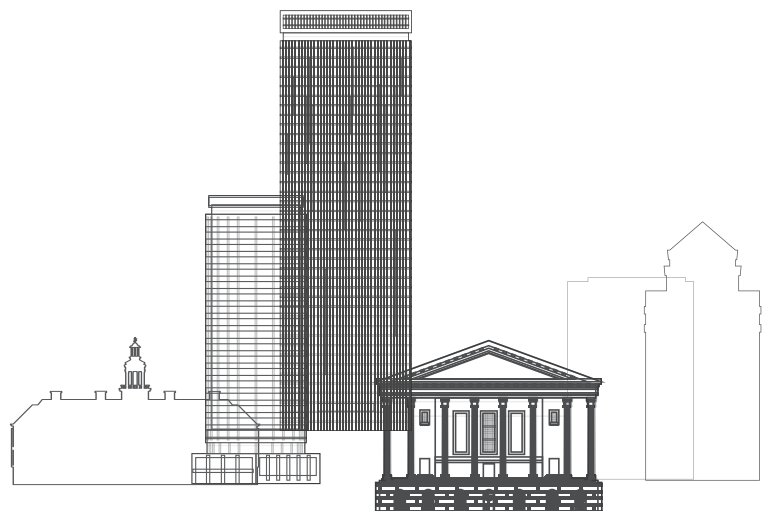
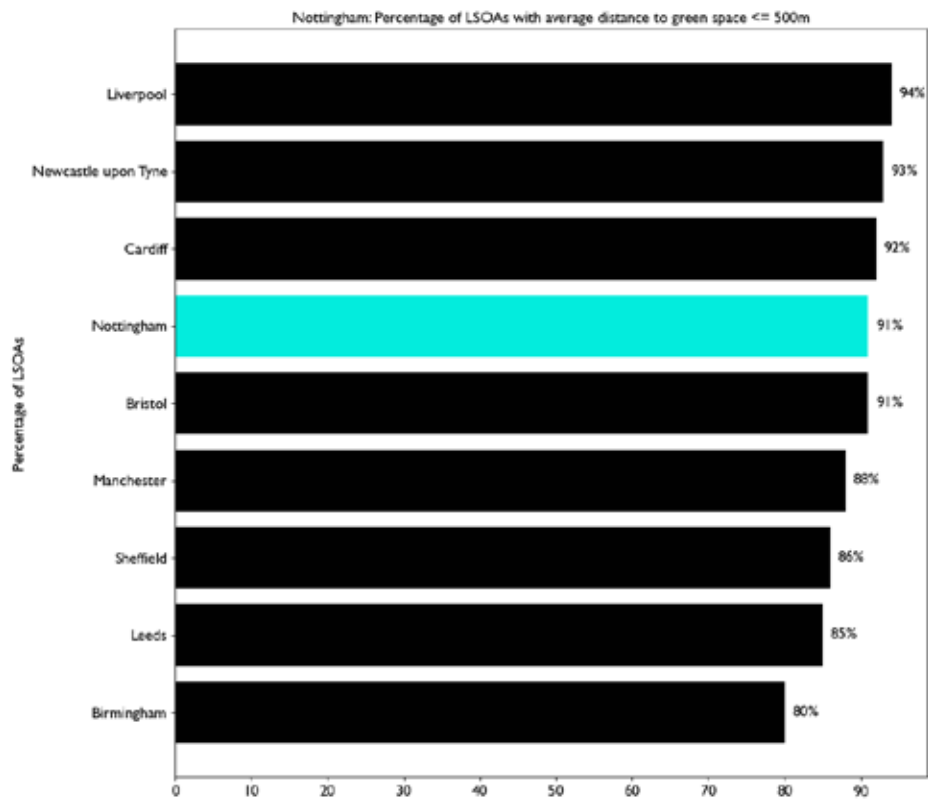
Access to green space



Air quality deprivation

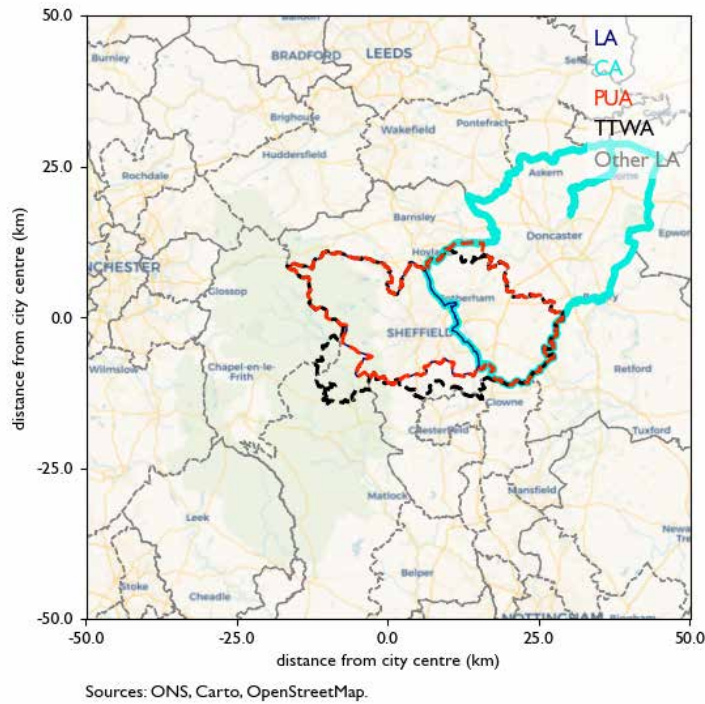


Access to green space: City comparison

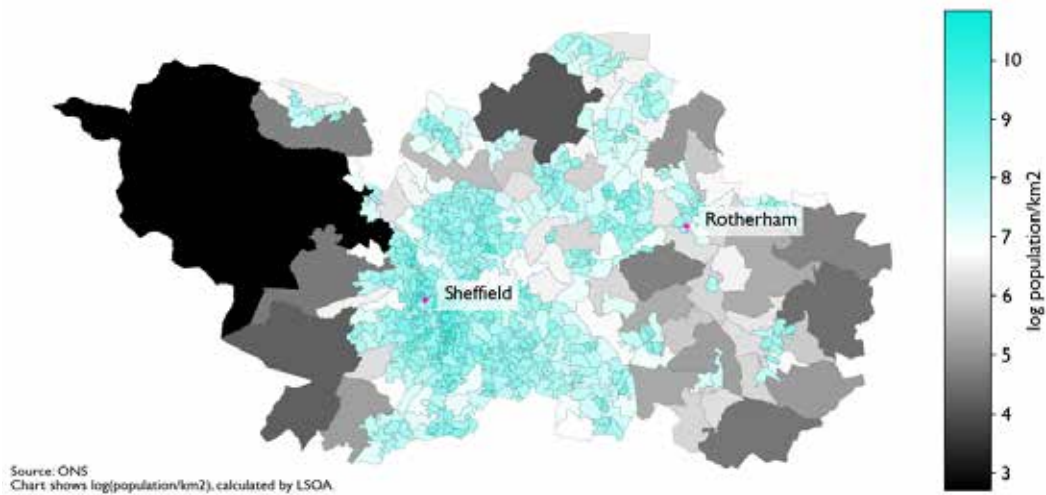


Sheffield

Boundaries



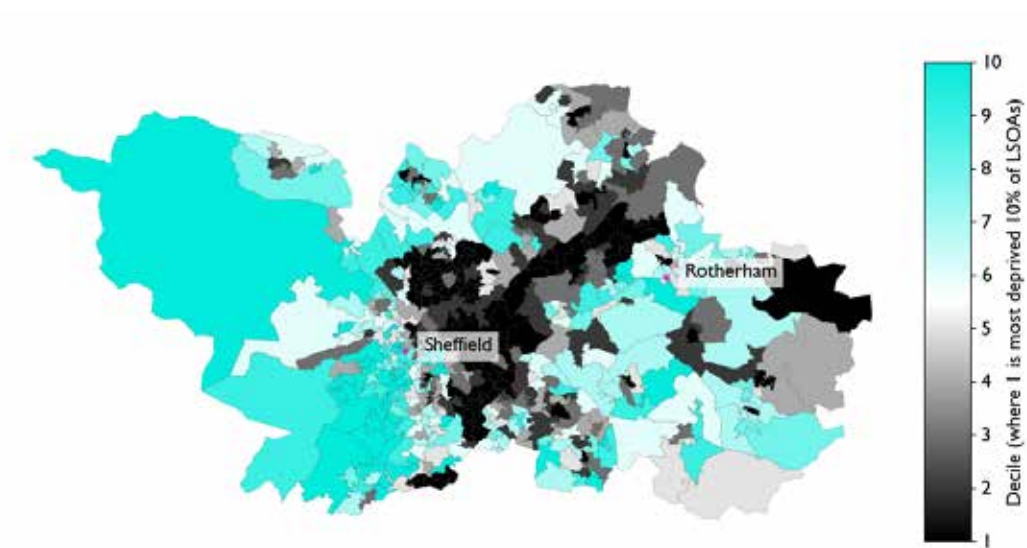
Population density



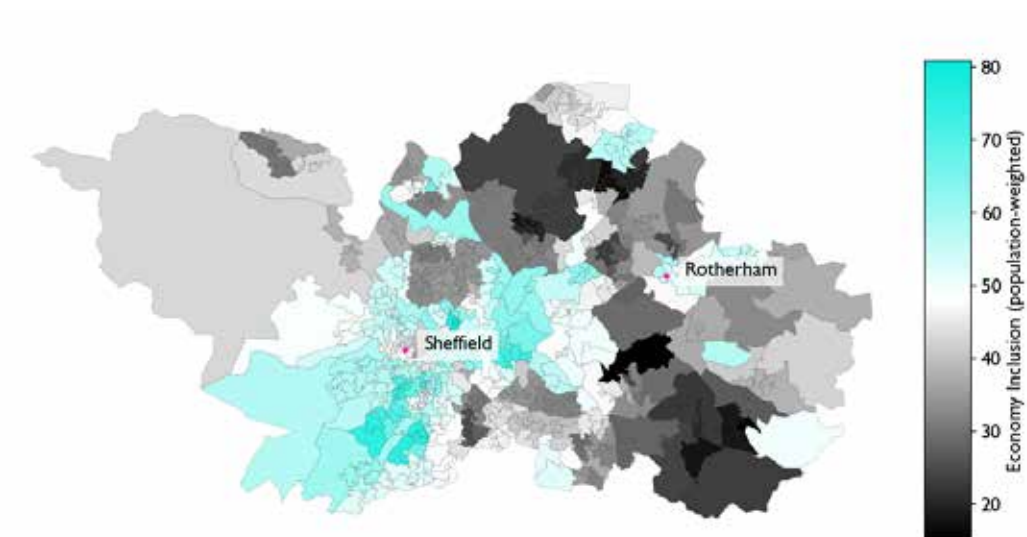
Economy

The centre of Sheffield has high income deprivation, and this level of deprivation spreads north-east along the Lower Don Valley toward the M1 motorway and the urban centre of Rotherham. Low levels of income deprivation are evident in the west of Sheffield. There are some areas of good Economic Inclusion toward the centre of Sheffield, though much of the PUA has medium to low scores on this metric.

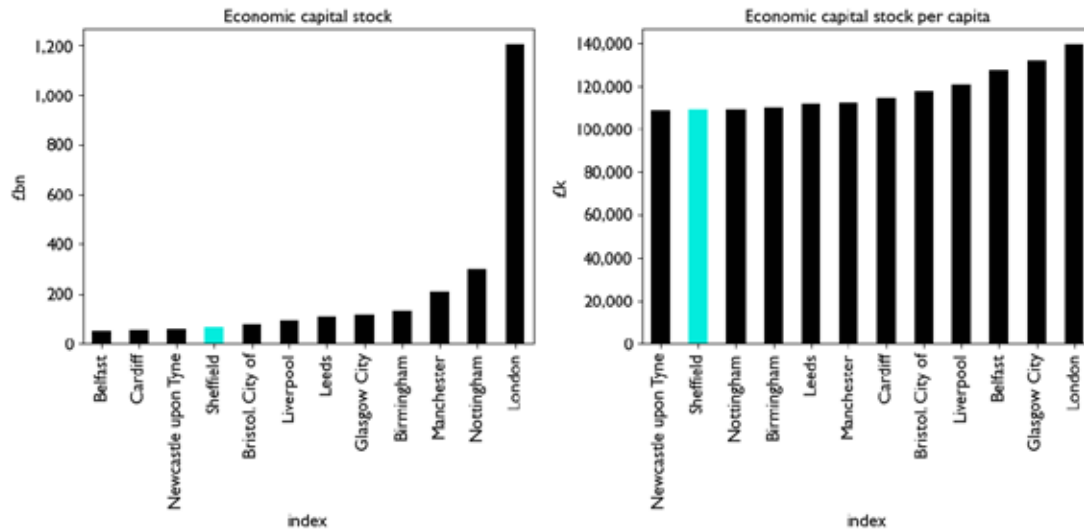
Income deprivation



Economic Inclusion



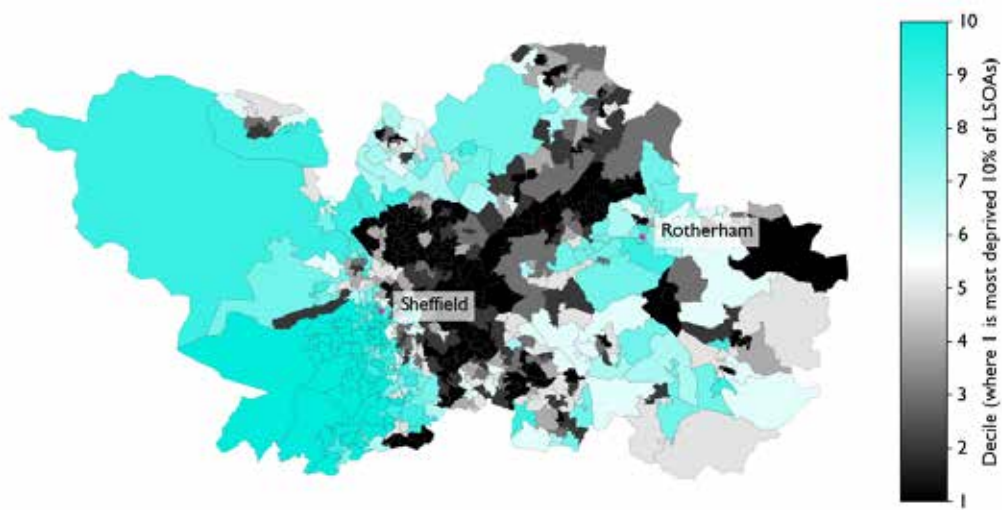
Economic capital stock



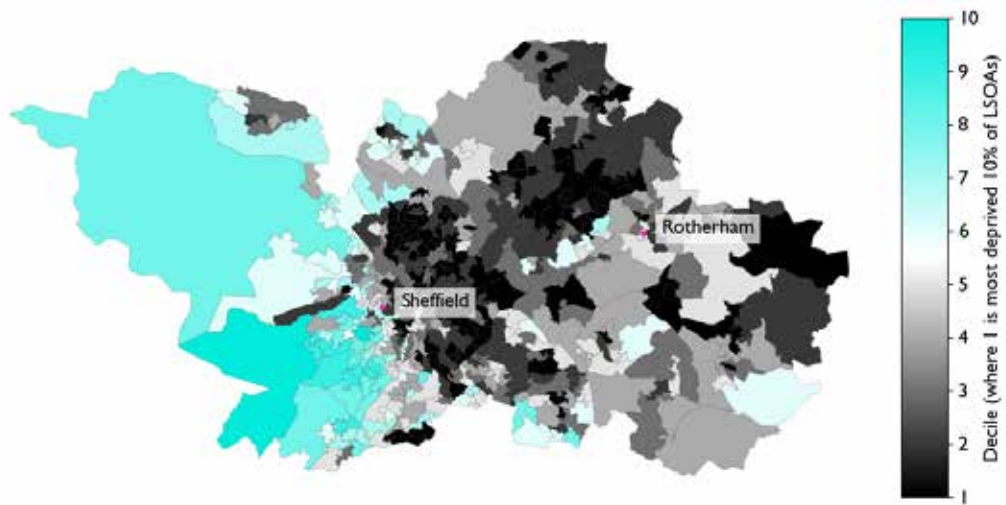
Society

Education deprivation follows a similar pattern to income deprivation, with high deprivation concentrated in central Sheffield spreading north-east toward the MI and Rotherham. Health deprivation in the area follows a similar pattern, but high levels of health deprivation are far more widespread and cover much of the Rotherham Local Authority. In terms of Community Inclusion, there is a clear separation between the Sheffield and Rotherham Local Authorities, with high scores across the Sheffield Local Authority and lower scores across Rotherham.

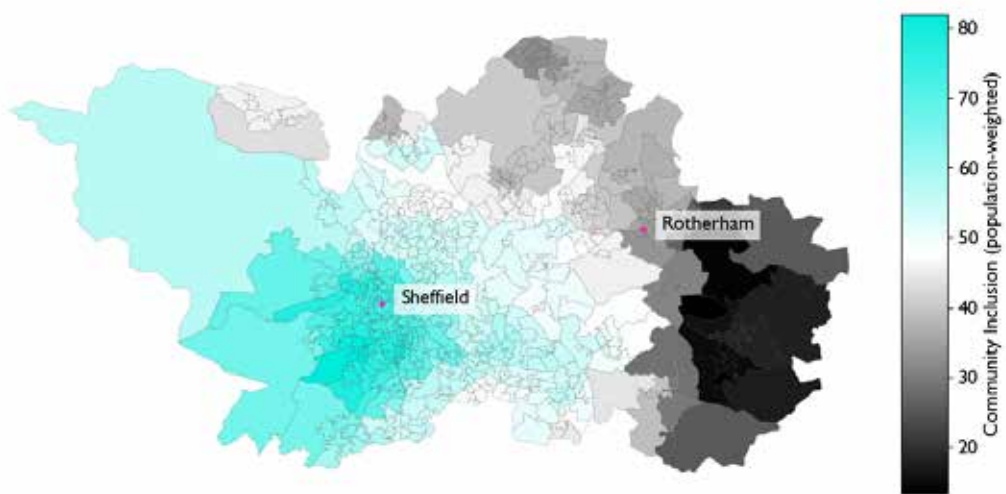
Education, skills and training deprivation



Health deprivation and disability



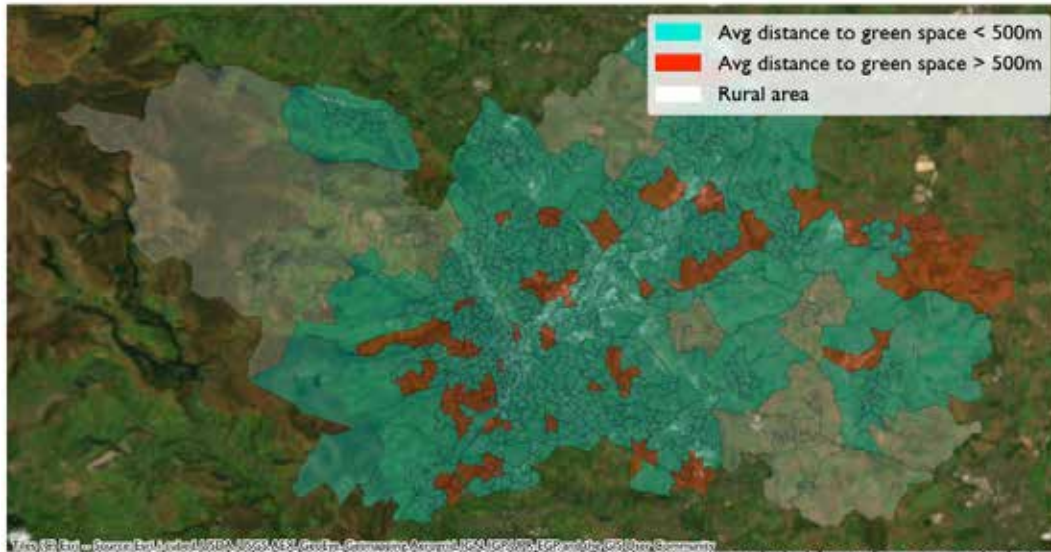
Community Inclusion



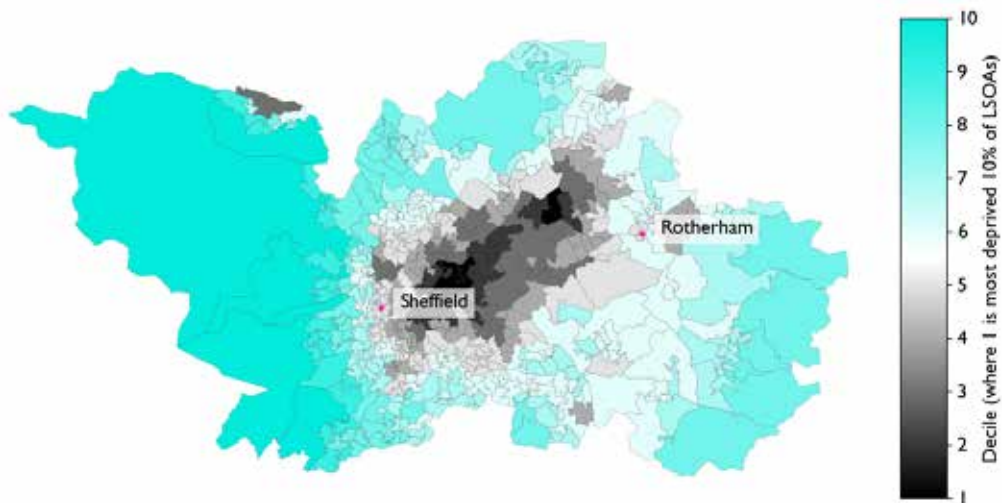
Nature

86% of urban LSOAs in the PUA have good access to green space. Much of the peripheral areas of the PUA enjoy good air quality, but the urban centres and the Lower Don Valley area (an area of high industrial activity) have poor air quality.

Access to green space



Air quality deprivation



Access to green space: City comparison

