

Carstairs Deprivation Index for Sheffield Output Areas, 2011

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Introduction

We calculated Carstairs Index at Output Area for Sheffield to facilitate spatial analysis of socioeconomic deprivation at smaller scales than is possible using the Index of Multiple Deprivation. The data were created for use in the Improving Well-being through Urban Nature project, which looked at the relationships between urban greenspace and health, especially mental health and well-being, using a variety of quantitative, qualitative and interventional methods, and using the English city of Sheffield as a case study.

Methodology

We followed Paul Norman's described methodology for 2001 data (https://census.ukdataservice.ac.uk/media/215841/Calculating_2001_deprivation.pdf) and Ben Wheeler's methodology for calculating the index from 2011 census data at LSOA scale (<http://reshare.ukdataservice.ac.uk/851497/>). In short, the index uses four variables derived from census data: proportion of adult male unemployment (as a proportion of economically active males), proportion households that are overcrowded (more than one person per room), proportion of households with no car/van ownership, and proportion of residents living in households with a head of household in an unskilled or low skilled occupation (referred to as low social class). Each variable is z-scored (mean-centred and divided by standard deviation), and the z-scores are summed to give the index.

Data sources

All data were obtained from Nomis (<https://www.nomisweb.co.uk/census/2011>). Table and variable references are given below.

The following tables and columns were used:

Variable	Table	Columns & operations
Male unemployment	KS602UK – Economic activity – Males	Economically active: Unemployed / Economically active
Overcrowded households	QS409EW – Persons per room – Households	(Persons per Room: Over 1.0 and up to 1.5 persons per room + Persons per Room: Over 1.5 persons per room) / Persons per Room: All categories: Number of persons per room in household

No car ownership	QS416EW – Car or van availability	Cars: No cars or vans in household / Cars: All categories: Car or van availability
Low skill occupation	QS607EW – NS-SeC	(NS-SeC: L11.2 Lower technical process operative occupations + NS-SeC: L12.2 Semi-routine service occupations + NS-SeC: L12.4 Semi-routine operative occupations + NS-SeC: L12.5 Semi-routine agricultural occupations + NS-SeC: L12.7 Semi-routine childcare occupations + NS-SeC: L13.1 Routine sales and service occupations + NS-SeC: L13.2 Routine production occupations + NS-SeC: L13.4 Routine operative occupations + NS-SeC: L13.5 Routine agricultural occupations) / NS-SeC: All categories: NS-SeC

Funding

This work was carried out as part of the Improving Well-being through Urban Nature project, a three year research project awarded £1.3m by the Natural Environment Research Council's Valuing Nature Programme. It aimed to find out more about how Sheffield's natural environment can improve the health and wellbeing of the city's residents, and especially those with disproportionately high levels of poor health. See www.iwun.uk.

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