

“Satellite towns  
shouldn’t be left  
behind by regional  
growth...”

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## TALK OF THE TOWN

Charlie Cadywould  
Ally Paget

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First published in 2015  
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*Unit 1, Lloyds Wharf, 2-3 Mill Street*  
*London, SE1 2BD, UK*

ISBN 9978-1-909037-97-7  
Series design by Modern Activity  
Typeset by Modern Activity

Set in Gotham Rounded  
and Baskerville 10



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### Acknowledgements

The authors would like to thank 4Children for their generous support of this research – and in particular Helen Berresford, Jessica Southgate and John Davies, whose guidance throughout has been indispensable.

We are indebted to Dr Richard Norrie, without whose statistical expertise this research would not have been possible. Likewise, our sincere thanks go to Alex Krasodonski-Jones for creating the graphs and infographics associated with this report, and – as ever – to Sophie Gaston and Laura Kent for overseeing the publication and launch process. Finally, we are grateful to Theo Bass, Jasmiina Kauriola and Catrin Thomas for their excellent research support. Any errors or omissions remain the authors' own.

Charlie Cadywould  
Ally Paget  
December 2015

# Key findings at a glance

## Overall performance

- *Three in five English towns are falling behind their neighbouring city.*
- *Of the 42 English towns in our sample, the majority (26) score worse than their neighbouring city on our measure of overall socioeconomic performance, and 16 outperform their comparator city.*
- *Castleford, Kirkby and Shoreham-by-Sea fall behind their neighbouring cities (Leeds, Liverpool and Brighton & Hove) by the largest amount.*
- *West Bridgford, Beverley and Sutton Coldfield outperform their neighbouring cities (Nottingham, Hull and Birmingham) by the biggest margin.*
- *When measuring absolute socioeconomic performance, towns are more likely to fare either especially badly or especially well; cities tend to fall in the middle range.*

## Performance by region

- *Towns in the North and South are most likely to be overtaken by their neighbouring cities.*
- *There is a 'North–South divide' in overall performance, affecting both towns and cities. While towns in the South underperform their comparator city from a high base of socioeconomic performance in absolute terms, towns in the North underperform from a low base.*



## Key findings at a glance

- *Midlands towns are the best performers compared with their neighbouring cities.* On average, towns in the East Midlands significantly outperform their comparator cities, with those in the West Midlands outperforming to a lesser extent.

Although they could not be included in our overall performance index, we compared the performance of towns and neighbouring cities in Wales, Scotland and Northern Ireland across indicators available in each nation. We found the following:

- *The four Welsh and the four Scottish towns we looked at underperform their neighbouring cities on most available measures.*
- *In Northern Ireland, Castlereagh and Newtown Abbey outperform Belfast on every measure available.*

## Performance on different indicators

- *Towns tend to fall behind on the measures most closely associated with socioeconomic performance – including self-reported good health and levels of qualification.*
- *Overall, towns outperform their neighbouring cities on the majority of individual measures, but this is not enough to bridge the gap in performance.* Of the 30 indicators that make up our socioeconomic performance index, on average towns actually outperform on 22, including employment levels, life expectancy, child development for under-5s, electoral turnout, and number of small- and medium-sized enterprises (SMEs), underperforming on only eight indicators.
- *Life expectancy is higher in towns.* Except in the North West, towns enjoy a higher rate of life expectancy than their neighbouring cities.
- *Towns tend to have lower rates of childhood obesity, but higher rates of adult obesity.*

# 1 Introduction

The idea that much-needed economic growth will be secured at the regional level enjoys widespread, cross-party consensus. Yet a growing body of evidence suggests that while resources are ploughed into UK cities, the ‘satellite’ towns which surround them may not reap the benefits. Some evidence points to towns being marginalised – missing out, for example, on investments such as the planned high-speed railway HS2.<sup>1</sup> Where towns reach the headlines, it is all too often for the wrong reasons, either as the sites of specific incidents or crimes, or in connection with a host of poor social and economic outcomes, ranging from poor quality housing, to high levels of unemployment, to higher-than-expected rates of teenage pregnancy and ‘family breakdown’.<sup>2</sup> At the same time, there have been sporadic suggestions of relatively *better* performance in some towns. For instance, data collected as part of the new ‘life satisfaction’ measure of the Office for National Statistics (ONS) has shown larger rural or market towns to be the ‘happiest’ places to live in the UK – more so than either smaller towns or villages, or larger cities.

The aim of this report is to contribute to a better understanding of the distinct place towns occupy (or should occupy) in the move to improve social and economic outcomes. To this end, we have directly compared – for the first time – how UK towns are faring, compared with their neighbouring cities, across a range of domains from health to housing and the built environment.

## Methodology

We selected 21 of the largest cities by population across England, and identified two ‘satellite’ towns for each, deciding on satellites according to their proximity to the city and their population size (favouring those that were nearer and bigger).

Based on data drawn from the 2011 census and other ONS sources, we built an overall index of socioeconomic performance. (A detailed methodology explaining how our index of socioeconomic performance was calculated is provided in appendix 3.)

Our index contained 30 indicators, grouped under the following ‘domain’ headings:

- commerce
- crime
- education and skills
- employment
- health
- household characteristics
- housing
- political participation
- public health and wellbeing
- transport

We used the index to compare the performance of each satellite town with that of its neighbouring city. This allowed us to assess where in the country, and on what domains, satellite towns tend to outperform or underperform their comparator cities.

## Findings

Across the 42 towns included in our study, 26 fall short of their comparator city on our overall measure of socioeconomic performance, while 16 fare better. The towns most significantly underperforming against their comparator cities are Castleford (Leeds), Kirkby (Liverpool) and Shoreham-by-Sea (Brighton & Hove), while those outperforming most are West Bridgford (Nottingham), Beverley (Hull) and Sutton Coldfield (Birmingham).

Figure 1a shows all 42 towns ranked by their performance relative to their comparator city, from highest (‘most overperforming’) to lowest (‘most underperforming’). Figure 1b gives the same information, but ordered by city; this permits easy comparison between two satellite towns of the same city.

Figure 1a **English towns included in our study ordered by performance relative to neighbouring city**

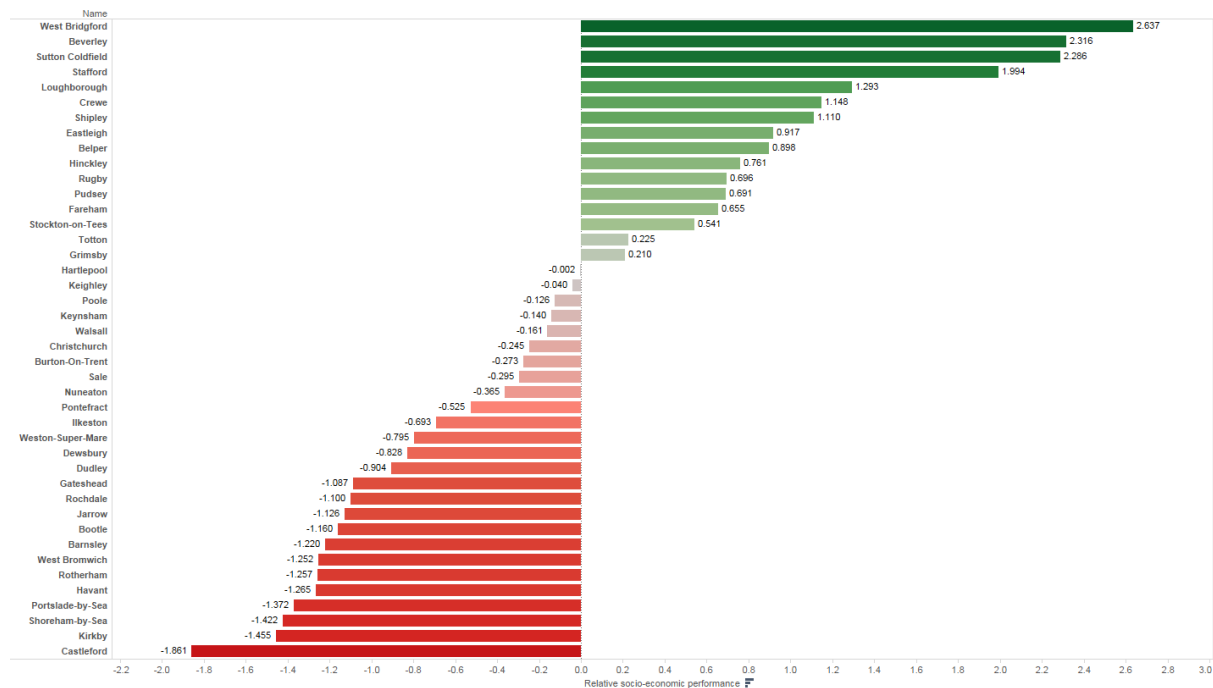
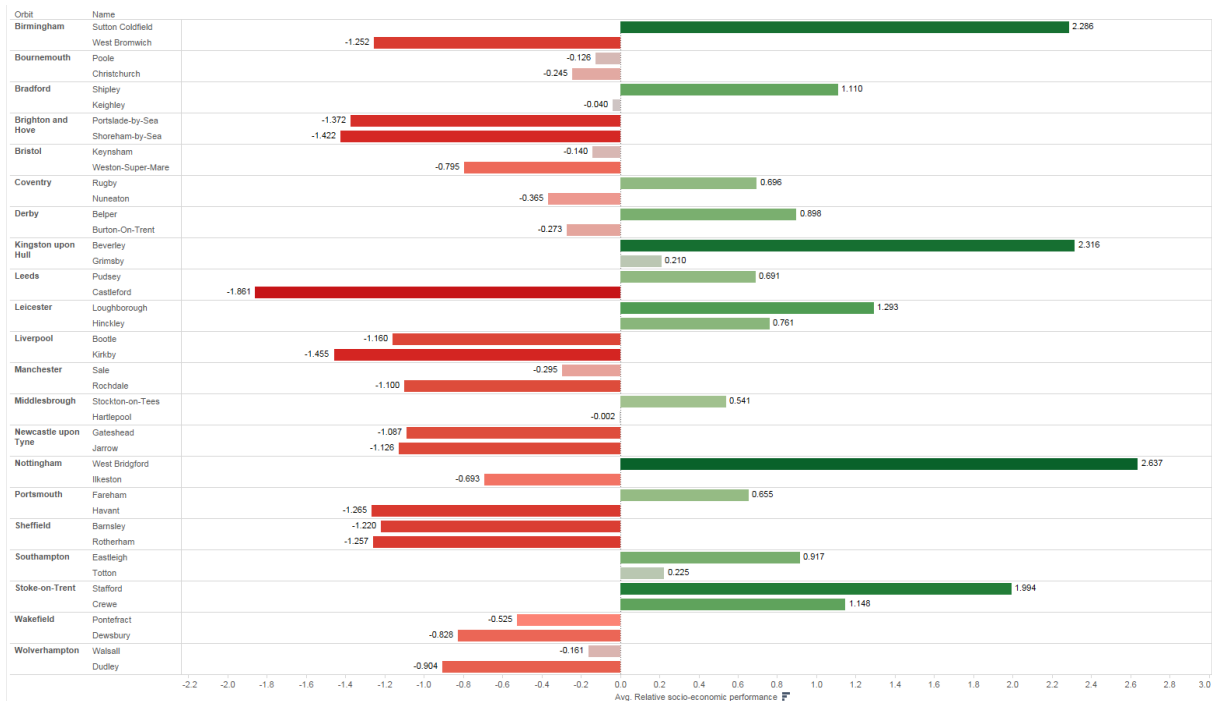


Figure 1b **English towns included in our study ordered by performance relative to neighbouring city, and by city**

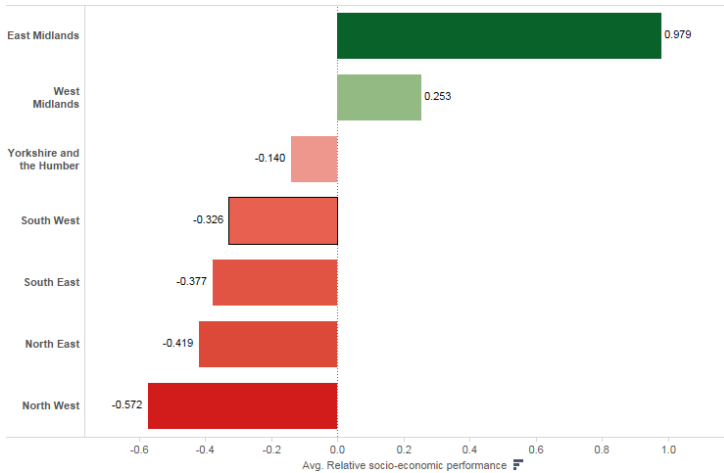


Dividing the data by region (figure 2), it becomes clear that, on average, towns in the East Midlands are the only ones to significantly outperform their comparator cities on the overall measure of socioeconomic performance, with towns in the West Midlands outperforming to a lesser extent. Everywhere else, the performance of towns is overtaken by their comparator cities; those in the North West perform substantially less well, with towns in the North East, Yorkshire & Humber, South East and South West all underperforming, though to a lesser extent.

The reader should note that creating regional averages has the effect of masking significant differences between towns within the same region. By the same token, towns which are outliers are apt to skew the regional average in one or other direction. This is a particular risk given the relatively small sample of towns and cities in our analysis. Wherever we present regional averages, the following should be borne in mind:

- While, on average, towns in the West Midlands slightly outperform their comparator cities, in fact five out of the eight West Midlands towns included in our analysis underperform their neighbouring city. The strong relative performance of Stafford (Stoke) and Sutton Coldfield (Birmingham), and to a lesser extent Rugby (Coventry), affects the average value.
- In the South East, towns are on average underperforming their cities. However, three out of the six towns – Fareham (Portsmouth) and Eastleigh and Totton (Southampton) actually outperform their cities, while Portslade-by-Sea and Shoreham-by-Sea (Brighton & Hove) and Havant (Portsmouth) underperform quite significantly.
- In Yorkshire & Humber, on average towns are underperforming their comparator cities, and a majority of towns in the region follow that trend. However, four of the ten towns included in our analysis – Grimsby and Beverley (Hull), Pudsey (Leeds) and Shipley (Bradford) are outperforming their cities. Beverley is a particularly strong outlier, considerably outperforming its comparator city.

Figure 2 **Average relative performance of English towns in this study by region**

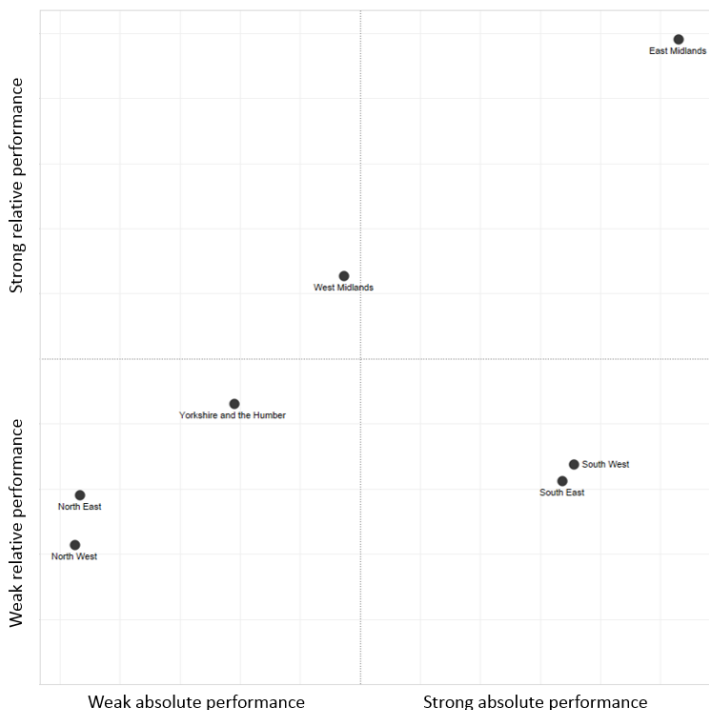


It is important to note the stark difference between the overall socioeconomic contexts in the North and South – the so-called ‘North–South divide’. Overall, as one would expect, there is moderate correlation<sup>3</sup> between a town’s absolute performance and that of its comparator city. In other words, it is generally true that where a city ranks highly for absolute socioeconomic performance on our index, its satellite town does as well. Absolute performance is strongly influenced by region. So, while towns in both regions are underperforming relative to their cities, those in the North are doing so from a low base of absolute socioeconomic performance on our index, and those in the South are doing so from a higher base.

We can illustrate this by plotting the average relative performance of towns in each region against their average absolute performance (see figure 3). Towns in the South occupy the bottom right quadrant because they have on average a high absolute performance and a low relative performance; compared with the rest of the country, they are socioeconomically

competitive, but compared with their neighbouring cities they are not. Towns in the East Midlands rank highest for both relative and absolute performance, while those in the North West rank lowest.

Figure 3 **Average relative and average absolute performance of towns in this study compared by region**

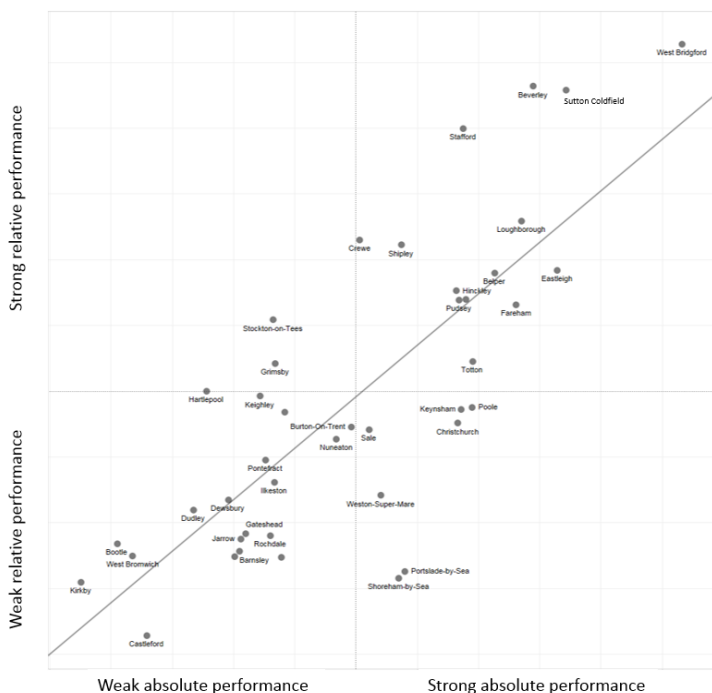


We also can also compare absolute and relative performance across all towns in our sample – as in figure 4, which shows a strong correlation. Hence, it is generally true that a town with a high absolute performance will perform highly relative to its city, and a town with a low absolute performance will perform poorly relative to its city. As noted above, towns in the South do not conform to



this trend. This is seen in figure 4, where Portslade-by-Sea and Shoreham-by-Sea are marked as outliers. These towns have a high absolute but a low relative performance – in other words they are disproportionately behind their neighbouring city, Brighton & Hove.

Figure 4 **Comparison of relative and absolute performance scores of towns in this study**



Because towns and cities are compared in our index on the same measures, it is possible to include *all 63 units* – all 42 towns and all 21 cities – in a single ranking for their absolute socioeconomic performance. Tables 1 and 2 present the top and bottom performing units, in absolute terms.

Table 1 The top five performing units

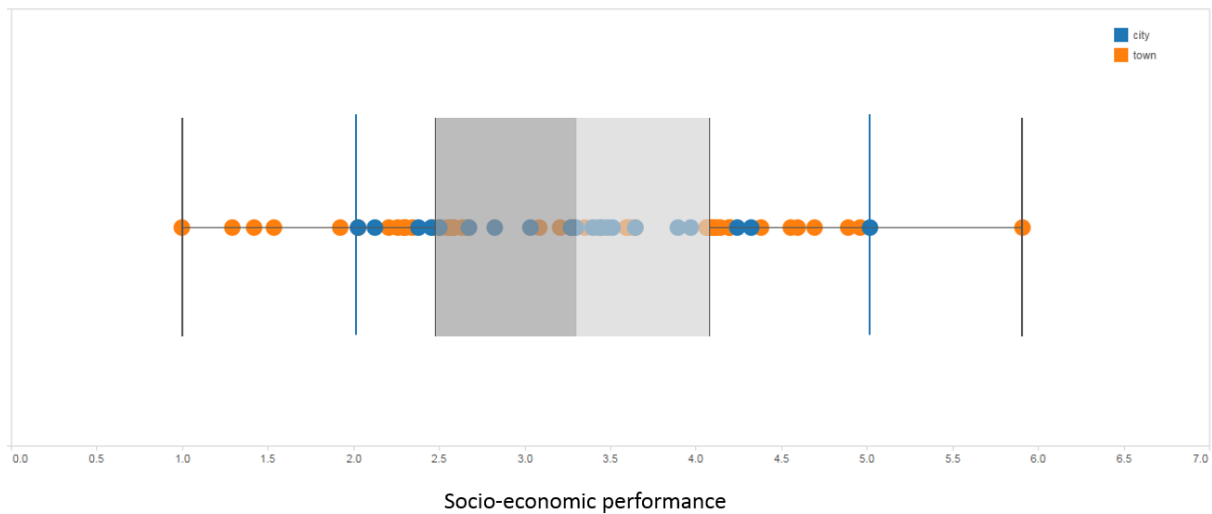
Rank	Name	Comparator unit (city or satellite town)	Region	Type of unit
1 (highest)	West Bridgford	Nottingham	East Midlands	town
2	Brighton & Hove	Portslade-by-Sea, Shoreham-by-Sea	South East	city
3	Sutton Coldfield	Birmingham	West Midlands	town
4	Eastleigh	Southampton	South East	town
5	Beverley	Hull	Yorkshire & Humber	town

Table 2 The bottom five performing units

Rank	Name	Comparator unit (city or satellite town)	Region	Type of unit
59	Dudley	Wolverhampton	West Midlands	Town
60	Castleford	Leeds	Yorkshire & Humber	Town
61	West Bromwich	Birmingham	West Midlands	Town
62	Bootle	Liverpool	North West	Town
63 (lowest)	Kirkby	Liverpool	North West	Town

Notably, only one city features in the top or bottom five performing units – Brighton & Hove. This conforms to a general trend; when all 63 units are ranked for socioeconomic performance, cities are concentrated in the middle range while towns are more likely to occupy either extreme. Just seven of the 21 cities fall outside the interquartile range (middle two quartiles), compared with more than half (25) of the 42 towns. This is illustrated in figure 5.

Figure 5 **Box and whisker plot of socioeconomic performance of towns and cities in this study with quartiles**



## 2 Analysis of individual variables

### Method

The data we have collected allow us to compare satellite towns and their neighbouring cities according to their performance on a range of 30 individual indicators, which we grouped under the following domains:

- commerce
- crime
- education and skills
- employment
- health
- household characteristics
- housing
- political participation
- public health and wellbeing
- transport

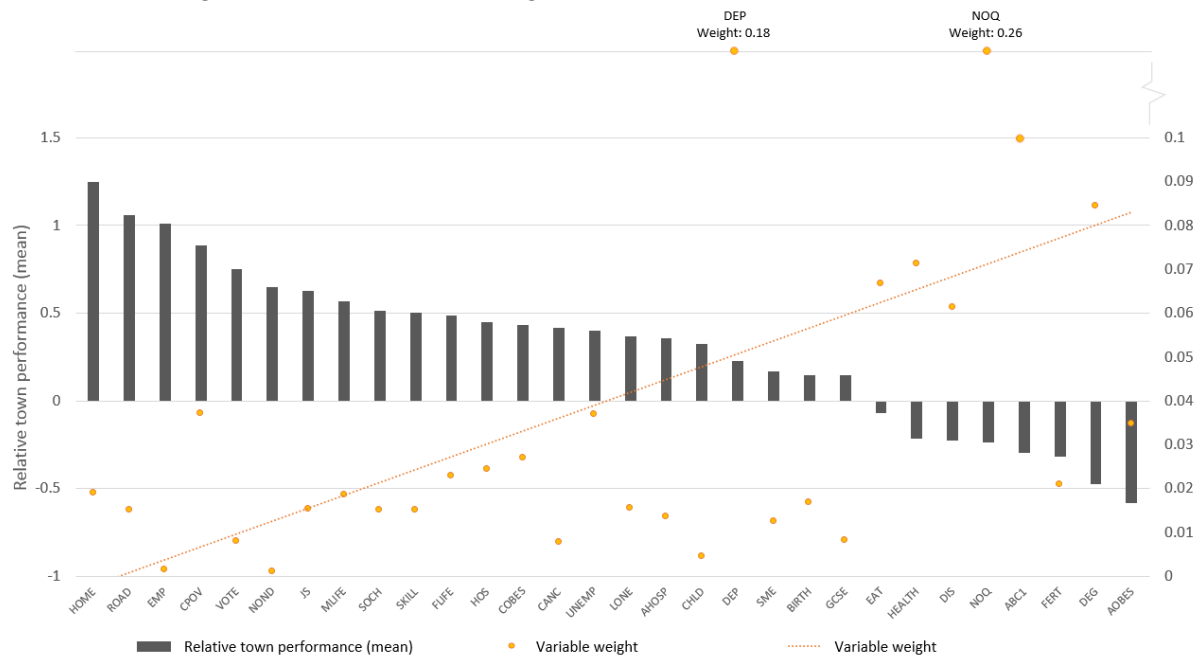
Full details of the indicators used are provided in appendix 2. In the analysis below, these data are presented in the form of standardised scores, which allow for a comparison between variables. For some variables – as with unemployment, for example – a higher score is associated with *poorer* socio-economic performance. Where that is the case, scores are presented in reverse. Thus, all positive scores indicate towns' overperformance relative to their cities, and all negative scores indicate underperformance.

### Detailed findings

On average, towns in fact outperform their comparator cities on 22 of the 30 indicators that make up our index and underperform on 8.

This appears slightly counter-intuitive, because we know that, overall in our index, towns are *underperforming* relative to their neighbouring cities. The reason for this is that the indicators in our index are not all given the same weight; the weighting varies according to how strongly a given indicator is associated with a town or city's overall socioeconomic performance. The method used to determine the weights is known as factor analysis (also used to create government official indices of deprivation<sup>4</sup>), and is described in full in appendix 3. Figure 6 illustrates the weight given to different variables in our model, alongside the average relative performance of towns (their performance compared with their neighbouring city). We can see a tendency for towns to underperform on indicators that carry more weight – in particular, on healthy eating, self-reported good health, disability, degree level qualifications and the proportion of people without a degree.

Figure 6 **Average relative performance of towns in this study and strength of indicator (variable) weight\***



\* See table 3 for the key to variables

Table 3 **Key to variables**

Abbreviation	Description	Abbreviation	Description
ABC1	Social grade A, B or C1 households (%)	GCSE	Five good GCSEs (%)
AHOSP	Alcohol-related hospital admissions incidence	HEALTH	Self-define as in good health (%)
AOBES	Adult obesity rate (%)	HOME	Home ownership rates (%)
BIRTH	New-borns with low birth weight (%)	HOS	Emergency hospital admissions incidence
CANC	Cancer incidence	JS	Jobseekers per capita
CHLD	Good educational development at age 5 (%)	LONE	Lone parent households (%)
COBES	Childhood obesity rate at year 6 (%)	MLIFE	Male life expectancy
CPOV	Child poverty rate (%)	NOND	Area of land for non-domestic buildings (%)
DEG	Degree level qualification (%)	NOQ	No qualifications (%)
DEP	Deprived households (%)	ROAD	Area of land for roads (%)
DIS	Disability or long-term health problem (%)	SKILL	Skill and training deprivation index
EAT	Healthy eaters (%)	SME	SMEs per capita
EMP	Employment rate (%)	SOCH	Social renting rates (%)
FERT	Fertility (births per 1000)	UNEMP	Unemployment rate (%)
FLIFE	Female life expectancy	VOTE	Turnout at 2015 general election (%)

Among variables measuring education and skills, towns tend to have a smaller proportion of residents with a degree level qualification or higher, and a larger proportion with no qualifications, compared with their neighbouring cities (both classified as ‘underperformance’, and thus given a negative ‘average relative town performance’ score). However, they tend to outperform their cities with low levels of overall skill deprivation as measured in the Government’s multiple deprivation index, and high levels of educational development among children at age 5.

Towns tend to outperform their comparator cities on all three employment measures: on average, they have significantly higher rates of employment, lower rates of unemployment, and fewer jobseekers per capita. However, towns in the North East and North West buck the trend with, on average, a higher unemployment rate and (in the North East) a higher proportion of jobseekers per capita.

Related, towns have on average higher rates of home ownership and lower proportions of social renters, both of which are strongly associated with overall socioeconomic performance (thus shown as carrying more strength in figure 6).

Similarly, towns enjoy on average higher life expectancies for both men and women than their comparator cities, and lower levels of emergency hospital admissions and incidence of cancer. However, on average they have a smaller proportion of residents in good health, and a slightly higher proportion with a disability. Fertility rates also tend to be higher in towns than in their comparator cities. While towns tend to have lower rates of childhood obesity than their comparator cities, they have higher rates of adult obesity and score worse for self-reported healthy eating.

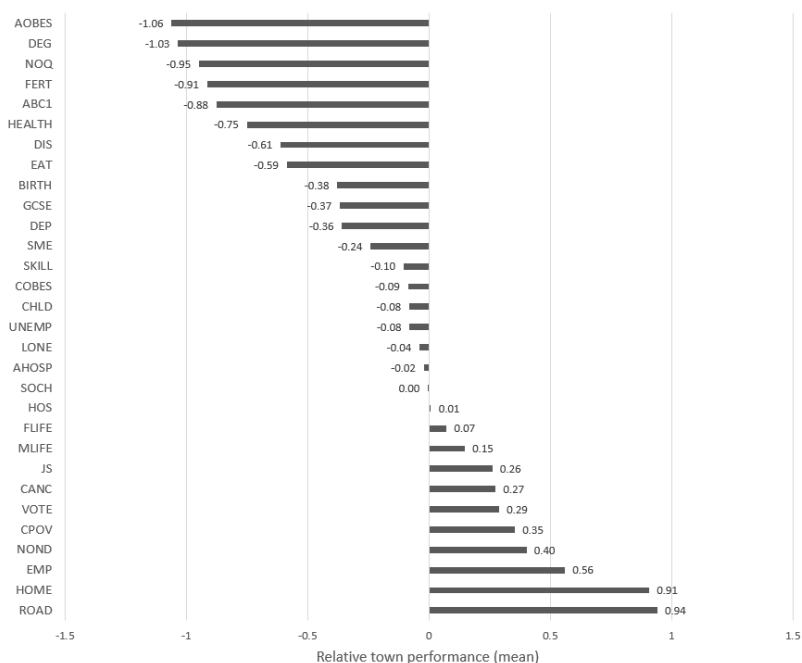
Despite having a smaller proportion of households in the top socioeconomic categories (A, B and C1), child poverty rates and overall household deprivation tend to be lower in towns than in their comparator cities.

Towns also tend to have higher election turnout rates than their comparator cities, and more SMEs per capita.



In order to better understand which variables contribute to towns' underperformance relative to their cities, we isolated just those 26 towns that underperform their comparator cities overall (see figure 7). Once again, qualification levels (percentage with no qualifications and percentage with degree level qualifications), household characteristics (percentage of ABC1 households and levels of household deprivation) and health indicators (adult obesity rates, percentage of people in good health, and percentage with a disability) figured prominently.

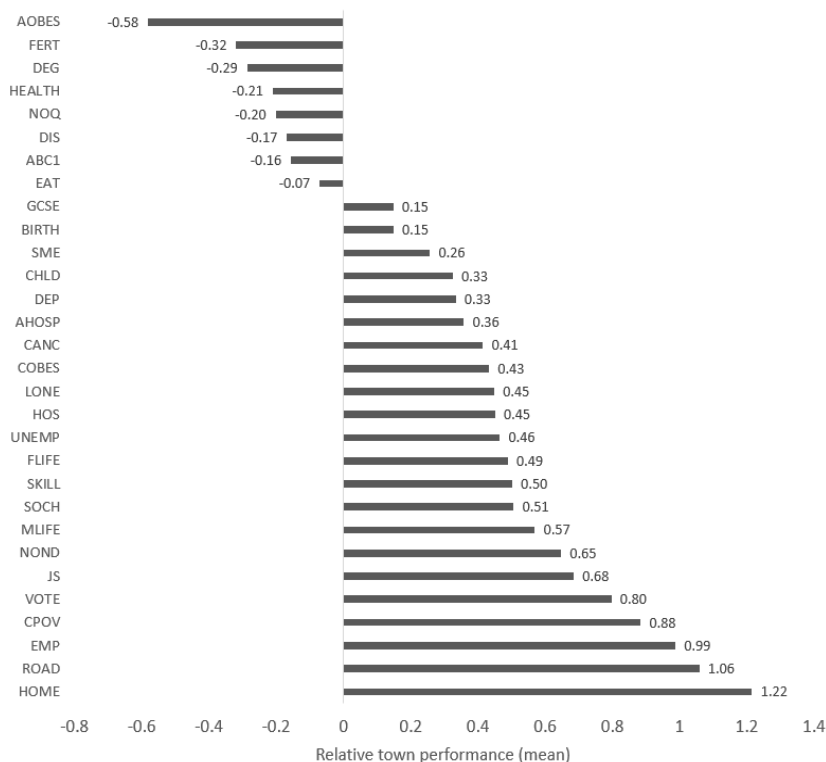
Figure 7 **Average relative performance for towns in this study underperforming overall\***



\* See table 3 for the key to variables

When we look at just the 16 towns that outperform their comparator city, the more important contributing indicators include levels of child poverty, male and female life expectancy, jobseekers per capita and unemployment (figure 8).

Figure 8 **Average relative performance for towns in this study overperforming overall\***



\* See table 3 for the key to variables

Household deprivation appears to be an important 'swing' variable:

- It is strongly linked to our measure of socioeconomic performance.
- Towns that underperform against their city overall tend to underperform on this measure.
- Outperforming towns tend to outperform on this measure.

## Regional findings

We calculated an average relative performance score of all towns in each of the seven English regions included in our analysis. Here, we present this regional comparison for different domains of indicators (see figures 9–15). For variable descriptions, please refer to table 3 above.

Similarly to the overall performance index, towns in the East Midlands outperform their comparator cities significantly on all education and skill measures, along with the West Midlands on a lesser scale. Towns in the North West are underperforming on all measures of education and skill except educational development at age 5. The South East is the only region in which towns underperform their comparator cities on this measure.

Towns in the East Midlands (and West Midlands to a lesser extent) are on average outperforming their comparator cities on all health variables. Southern towns are outperforming their comparator cities on both male and female life expectancy. Northern towns, particularly towns in the North West, underperform on most health measures. Fertility (births per 1000), which is associated with negative overall socioeconomic performance, is considerably higher in towns in the North West and South East than comparator cities, and considerably lower in towns in the East Midlands than their comparators.

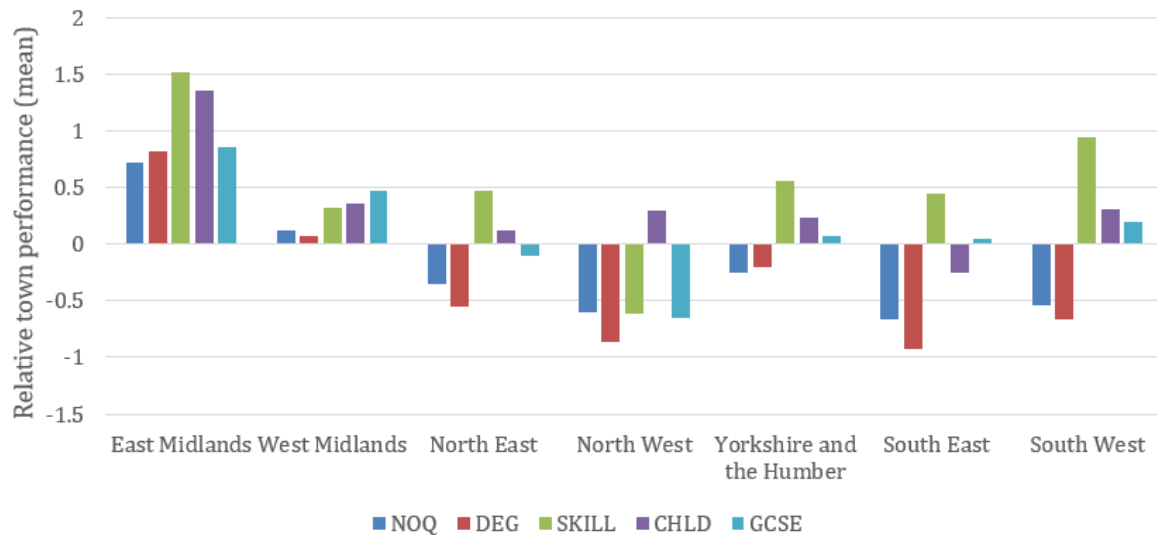
On housing, we see again that East Midlands towns are significantly outperforming their cities, although this time they are accompanied by towns in several other regions. Home ownership rates are higher in towns across all regions. Social renting rates are lower in towns in all regions except the North East (indicated by

a positive score because social renting is associated with poor socioeconomic performance). On average, towns in all regions outperform their comparator cities on employment indicators, except the North East and North West, which underperform on unemployment (unemployment is higher). Towns in the North East also underperform on the number of jobseekers per capita (with a higher proportion of jobseekers).

Towns in regions outside the Midlands tend to underperform their comparator cities on most public health and wellbeing indicators. Adult obesity rates are higher in most towns (outside the Midlands), and (except in the Midlands and South West) a smaller proportion of adults eat at least five portions of fruit and vegetables per day in towns compared with their comparator cities. Childhood obesity rates are generally better in cities in most regions, except in the North East. The North West is the only region where alcohol-related hospital admissions are higher in towns than cities.

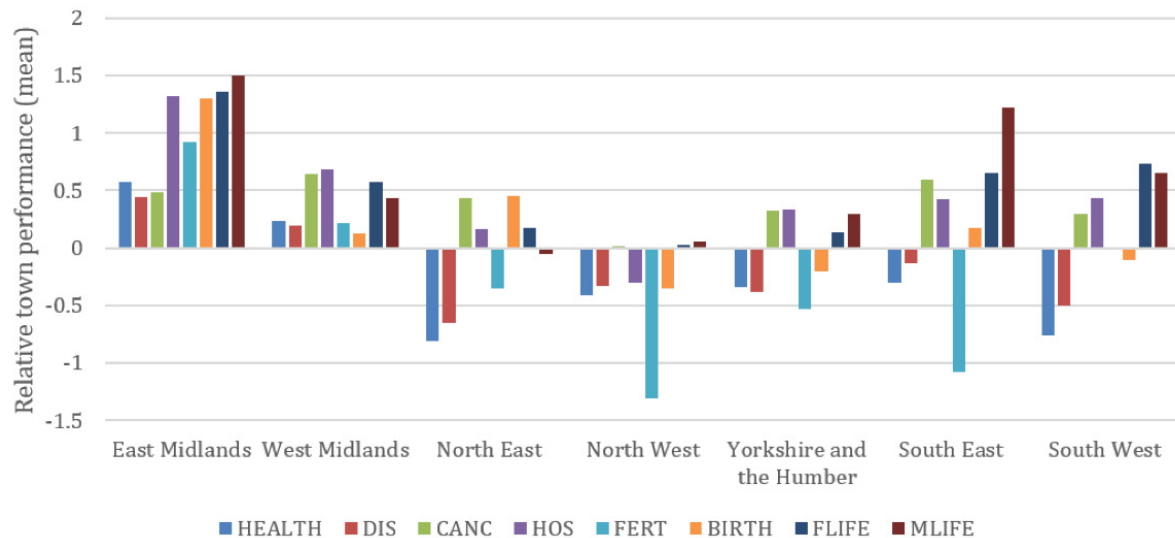
Four other categories of variables were entered into the factor analysis: political participation, built environment, commerce and transport. The former consists of just one input variable: turnout at the last general election. The latter three consisted of multiple variables, but in each case only one loaded onto the factor measuring socioeconomic performance. Outside the North East and North West, towns are outperforming cities on all four of these 'miscellaneous' variables. General election turnout was significantly higher in East Midlands towns than their comparator cities, while the percentage area of roads is much higher in South West towns than their comparators. Towns in the North East and North West had fewer SMEs per capita and a higher proportion of non-domestic buildings (associated with negative overall performance) than comparator cities.

Figure 9 **Average relative performance of towns in this study by region: education**



Key: NOQ - no qualifications (%); DEG - degree level qualification (%); SKILL - skill and training deprivation index; CHLD - good educational development at age 5 (%); GCSE - five good GCSEs (%)

Figure 10 **Average relative performance of towns in this study by region: health**



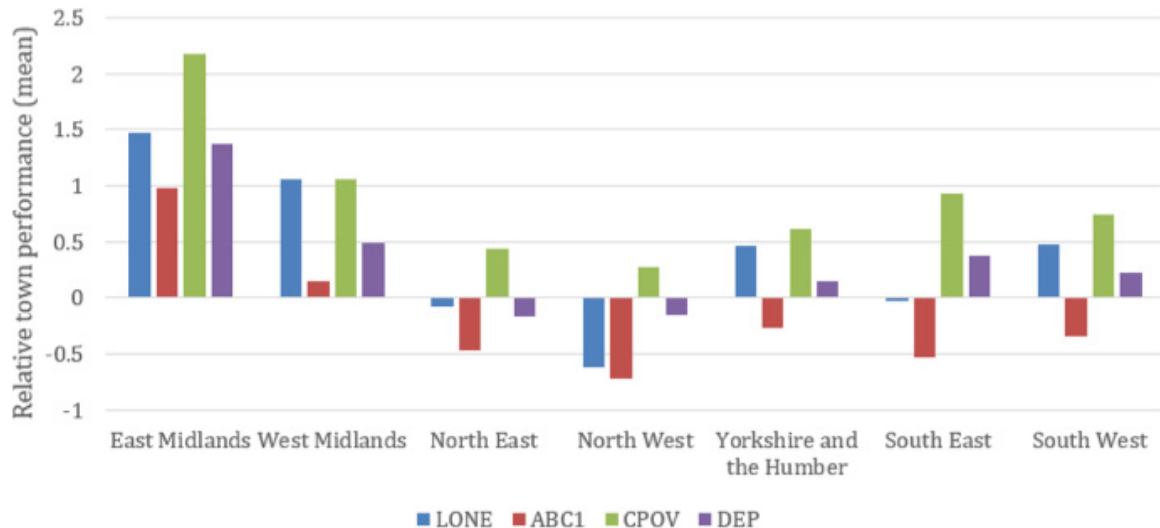
Key: HEALTH - self-define as in good health (%); DIS - disability or long-term health problem (%); CANC - cancer incidence; HOS - emergency hospital admissions incidence; FERT - fertility (births per 1000); BIRTH - new-borns with low birth weight (%); FLIFE - female life expectancy; MLIFE - male life expectancy

Figure 11 **Average relative performance of towns  
in this study by region: housing**



Key: HOME – home ownership rates (%); SOCH – social renting rates (%)

Figure 12 **Average relative performance of towns  
in this study by region: household characteristics**



Key: LONE – lone parent households (%); ABC1 – social grade A, B or C1 households (%);  
CPOV – child poverty rate (%); DEP – deprived households (%)



Figure 13 **Average relative performance of towns in this study by region: employment**



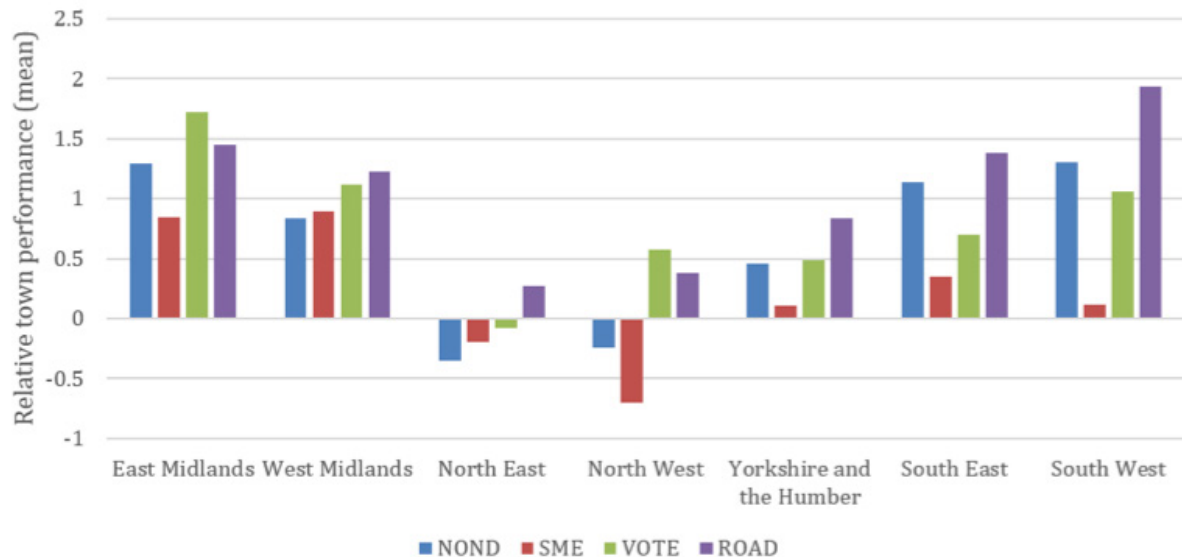
Key: EMP – employment rate (%); UNEMP – unemployment rate (%);  
JS – jobseekers per capita

Figure 14 **Average relative performance of towns  
in this study by region: public health and wellbeing**



Key: AHOSP – alcohol-related hospital admissions incidence; AOBES – adult obesity rate (%);  
EAT – healthy eaters (%); COBES – childhood obesity rate at year 6 (%)

Figure 15 **Average relative performance of towns in this study by region:  
built environment, commerce and political participation**



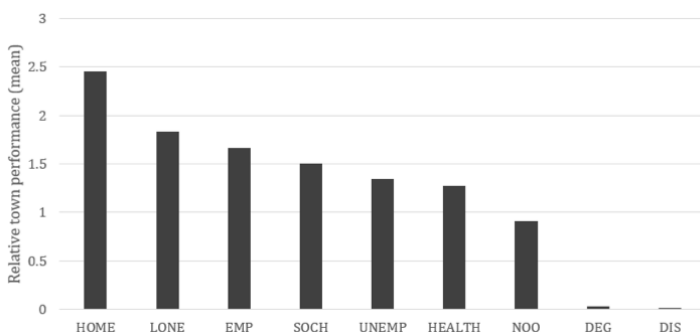
Key: NOND – area of land for non-domestic buildings (%); SME – SMEs per capita;  
VOTE – turnout at 2015 general election (%); ROAD – area of land for roads (%)

## Relative performance in the devolved nations

Most of the data used to create the overall socioeconomic performance index are unavailable at the required level for towns and cities in Scotland, Wales and Northern Ireland. Where such data are available, they are not comparable with the data for English towns and cities. Therefore, although they are not included in the index, we are able to present the relative performance of towns in Northern Ireland, Wales and Scotland to their neighbouring cities on a particular set of representative indicators for each nation. Our findings are presented in figures 16–18.

First (figure 16), we can see that the two Northern Irish towns included in our analysis (Castlereagh and Newtownabbey) outperform Belfast, their comparator, on every measure available.

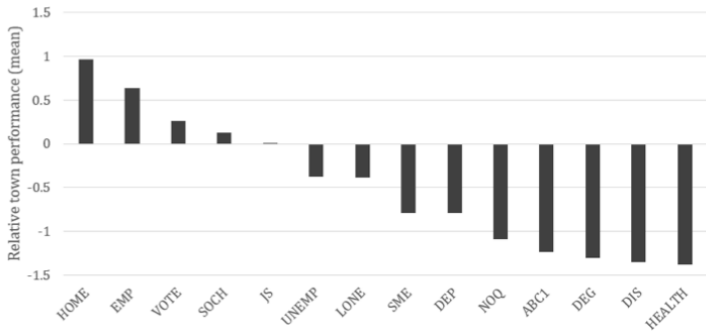
Figure 16 **Average relative performance of towns in this study compared with their neighbouring cities in Northern Ireland\***



\* See table 3 for the key to variables

In Wales, however, towns are underperforming their comparator cities on most measures. They underperform most strongly on health, education and household characteristics measures, while outperforming slightly on election turnout and housing measures, such as home ownership and social renting. The figures also show that Welsh towns overperform on employment (higher employment), but underperform on unemployment (higher unemployment).

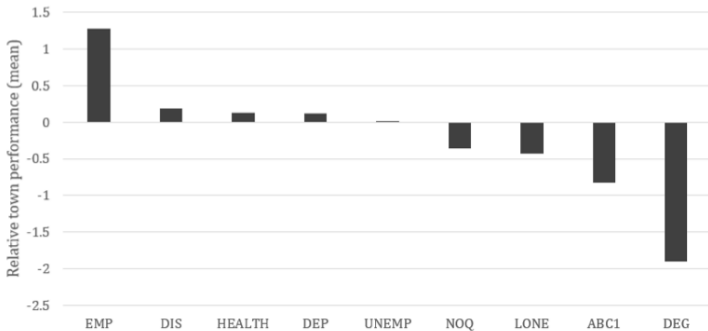
Figure 17 **Average relative performance of towns in our study compared with their neighbouring cities in Wales\***



\* See table 3 for the key to variables

In Scotland, towns are underperforming their comparator cities on most education and household characteristics. The only measure on which they significantly outperform their comparator cities is employment rates. By contrast with Wales, however, Scottish towns slightly outperform their comparator cities on health measures.

Figure 18 **Average relative performance of towns in this study compared with their neighbouring cities in Scotland\***



\* See table 3 for the key to variables

### 3 Conclusion

On average and across the board, England's satellite towns fall behind their neighbouring cities in socioeconomic terms. Three in five of the towns in our sample of 42 are performing worse than their comparator city. Our analysis suggests this is driven by how they score on a relatively small number of indicators that appear to be most strongly associated with overall socioeconomic performance – factors such as self-reported good health, healthy eating, proportion of people educated to degree level, and proportion of people with no qualification.

At the same time, there are indications of towns outperforming cities on a variety of measures. Of the 30 indicators that make up our index, on average towns actually outperform on 22 that are less strongly correlated with overall socioeconomic performance, including employment levels, life expectancy, child development for under 5s, electoral turnout and number of SMEs.

Our findings suggest there is considerable regional variation. Towns which underperform compared with their nearby cities are concentrated in the North East and North West, and to a lesser extent the South East and South West, while those in the East Midlands in particular appear to be faring better than their neighbouring cities.

The focus of this report has been on towns' performance relative to cities, but this cannot, of course, be divorced from the context of absolute socioeconomic performance. Our index allows us to compare performance across all 63 units – 42 towns and 21 cities – in our sample. Looking at the spectrum of absolute performance, cities tend to be concentrated in the middle, while towns are more likely to be at one or other extreme – especially high-performing, or especially low-performing. Furthermore, there is a clear 'North–South divide';

regardless of their relative performance, both towns and cities in the South begin from a higher baseline than their northern counterparts.

Generally speaking, where cities are doing well in absolute terms, so are their towns. Likewise, where towns are doing well in absolute terms, they also tend to be doing well relative to their neighbouring city. However, there are some notable exceptions – again, along regional lines. Shoreham-by-Sea and Portslade-by-Sea in the South East have a high absolute performance, but a low relative one; in other words, they fare disproportionately worse than their neighbouring cities.

This report represents, to our knowledge, the first attempt to quantify the performance of towns and cities relative to one another. It is necessarily tentative; the study suggests correlation and not causation, and it poses more questions than answers. Our findings have outlined the domains in which satellite towns are apt to be left behind by cities or to outstrip them, but more research is needed to understand the dynamics of how and why this might be so. Potential further lines of inquiry suggested by this research include the following subjects:

- *Employment:* According to our index, towns appear to outstrip their neighbouring cities on employment measures. Why might this be? What can this relationship tell us about where people tend to live and where they tend to work, and what are the consequences for investment in infrastructure that gets people from A to B?
- *Educational attainment:* Our findings indicate that towns perform better than their neighbouring cities for children's development at age 5, but worse on all measures of educational attainment. What might account for this 'drop-off' in educational outcomes over time?

- *Risk factors and protective factors:* Our concern has been to give an overall picture of the *status quo* – of towns' absolute performance, and of how they are currently faring relative to their neighbouring cities. But for policymakers seeking to bridge the performance gap it will be necessary to identify the risk factors that lead to, and the success factors that protect against, towns' underperformance. A more detailed interrogation of the characteristics of the best- and worst-performing towns in our sample would be a firm starting point.

We hope to have made the case, in this short report, for the value of considering towns as distinct entities – with their own challenges, but also their own assets – in the drive to improve social and economic outcomes across Britain.



# Appendix 1 Regions, cities and satellite towns

Tables 4–7 list the regions, cities and satellite towns used in this study.

Table 4      **Cities and satellite towns used in this study in England (by region)**

Region	City	Towns
North East	Middlesbrough	Hartlepool Stockton-on-Tees
	Newcastle upon Tyne	Gateshead Jarrow
North West	Liverpool	Bootle Kirkby
	Manchester	Sale Rochdale
	Stoke*	Crewe
Yorkshire & Humber	Bradford	Keighley Shipley
	Hull	Beverley Grimsby
	Leeds	Pudsey Castleford
	Sheffield	Barnsley Rotherham
	Wakefield	Dewsbury Pontefract
East Midlands	Leicester	Hinckley Loughborough
	Nottingham	Ilkeston West Bridgford
	Derby*	Belper
West Midlands	Birmingham	West Bromwich Sutton Coldfield
	Coventry	Nuneaton Rugby
	Derby	Burton-on-Trent
	Stoke	Stafford
	Wolverhampton	Walsall Dudley
South East	Brighton & Hove	Portslade-by-Sea Shoreham-by-Sea
	Portsmouth	Fareham Havant
	Southampton	Eastleigh Totton
South West	Bristol	Keynsham Weston-super-Mare

\* Two cities in the sample (Derby and Stoke) have their neighbouring towns in two different regions. These cities appear in the table twice.

Table 5      **Cities and satellite towns used in this study in Northern Ireland**

Belfast	Castlereagh Newtownabbey
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Table 6      **Cities and satellite towns used in this study in Wales**

Cardiff	Barry Caerphilly
Swansea	Port Talbot Neath

Table 7      **Cities and satellite towns used in this study in Scotland**

Edinburgh	Livingston Musselburgh
Glasgow	East Kilbride Paisley

# Appendix 2 Indicators used in the index of socioeconomic performance

Table 8 shows the range of sources we used to provide the underlying data for our analysis, which were the most recent data available at the appropriate geographic level.

Table 8 Sources and indicators used to provide the data for this study

Category	Variable	Data source	Original geography <sup>a</sup>	Year(s)	Notes	Aggregation method	Link
Public health and wellbeing	Adult obesity	Health England	MSOA	2006–2008	Percentage of population aged 16+ with a body mass index of 30 or more		<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Public health and wellbeing	Alcohol hospitalisations	Health England	MSOA	2008–2013	Standardised admissions ratio: observed admissions divided by expected admissions	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Public health and wellbeing	Binge drinking	Health England	MSOA	2007–2008	Modelled estimates of the percentage of the adult population that binge drink (8 or more units for men, 6 or more units for women) on the heaviest drinking day in the previous seven days	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Transport	Bus availability	Department of Transport	LSAO	2013	Number of buses offering a service to nearest centre of employment per 10,000 people	Summation	<a href="http://tinyurl.com/z8nqao">http://tinyurl.com/z8nqao</a>
Health	Cancer incidences	Health England	MSOA	2007–2011	Standardised cancer incidence ratio: observed incidence divided by expected incidence		<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Education and skills	Child development	Health England	MSOA	2011–2012	Percentage of children with a good level of development: 78 points across all Early Years Foundation Stage Profile scales (including a minimum number in particular areas of learning development) at the end of the academic year in which they turn 5		<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Household characteristics	Child poverty	Health England	MSOA	2010	Children living in income-deprived households defined as either receiving IS, JSA-IB or PC <sup>b</sup> , or WTC or CTC <sup>c</sup> , with an equivalised income below 60 per cent of the national median prior to housing costs	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Public health and wellbeing	Childhood obesity	Health England	MSOA	2010–2013	Percentage of year 6 (age 10–11) children who are obese	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Crime	Crime deprivation	Indices of Multiple Deprivation	LSOA	2010	Index measuring rate of recorded crimes inclusive of violence, burglary, theft, and criminal damage.	Population weighted average	<a href="https://data.gov.uk/dataset/indices-of-multiple-deprivation-2010-crime-rank">https://data.gov.uk/dataset/indices-of-multiple-deprivation-2010-crime-rank</a>
Health	Deaths from cancer	Health England	MSOA	2008–2012	Deaths from all cancers (classified by underlying cause of death recorded as International Classification of Diseases codes C00–C97) observed divided by expected (standardised mortality ratio)		<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Education and skills	Degree qualifications	Census	BUASD	2011	Percentage of the adult population with a degree level qualification or higher		<a href="http://www.nomisweb.co.uk/census/2011/qs501ew">www.nomisweb.co.uk/census/2011/qs501ew</a>
Health	Disability	Census	BUASD	2011	Percentage of the population with a disability or long-term health problem that limits a person's daily activities, and has lasted, or is expected to last, at least 12 months including problems that are related to old age		<a href="http://www.nomisweb.co.uk/census/2011/qs303ew">www.nomisweb.co.uk/census/2011/qs303ew</a>
Built environment	Domestic buildings	Neighbourhood statistics	MSOA	2005	Percentage area of land for domestic buildings	Summation	<a href="http://www.neighbourhood.statistics.gov.uk/">www.neighbourhood.statistics.gov.uk/</a>
Health	Emergency hospital admissions	Health England	MSOA	2008–2013	Indirectly age standardised ratio of emergency hospital admissions (defined as those which are 'unpredictable and as short notice because of clinical need'); observed divided by expected	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Employment	Employment	Census	BUASD	2011	Percentage of population unemployed		<a href="https://www.nomisweb.co.uk/census/2011/qs601ew">https://www.nomisweb.co.uk/census/2011/qs601ew</a>
Health	Female life expectancy	Health England	MSOA	2008–2012	Male life expectancy at birth, carried out using the South East England Public Health Observatory Life Expectancy (Sephole) calculator	Population weighted average	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Health	Fertility	Health England	MSOA	2008–2012	Total births per 1000 with birth date between 1 Jan 2008 and 31 Dec 2012 per 1000 females aged 15–44 (5-year aggregated population)	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Built environment	Gardens	Neighbourhood statistics	MSOA	2005	Percentage area of land for gardens	Summation	<a href="http://tinyurl.com/hjfus5j">http://tinyurl.com/hjfus5j</a>
Education and skills	GCSE attainment	Health England	MSOA	2011–2012	Percentage of pupils achieving five or more GCSEs with grades A*–C (including English and maths) or equivalent	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Health	Good health	Census	BUASD	2011	Percentage of population who describe themselves as in either very good or good health		<a href="http://www.nomisweb.co.uk/census/2011/qs302ew">www.nomisweb.co.uk/census/2011/qs302ew</a>
Built environment	Green spaces	Neighbourhood statistics	MSOA	2005	Percentage area of land for public green spaces	Summation	<a href="http://tinyurl.com/h6g3egt">http://tinyurl.com/h6g3egt</a>
Health	Healthy eating	Health England	MSOA	2006–2008	Estimated percentage of the population aged 16+ that eat healthily (defined as consuming five or more portions of fruit or vegetables per day where a portion of fruit or vegetables is an 80g serving)	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Housing	Home ownership	Census	BUASD	2011	Percentage of households who own their home		<a href="http://www.nomisweb.co.uk/census/2011/data_finder">www.nomisweb.co.uk/census/2011/data_finder</a>
Household characteristics	Household deprivation	Census	BUASD	2011	Percentage of households that are deprived, defined as meeting at least one of the following criteria:  - <i>employment</i> : any member of a household not a full-time student is either unemployed or long-term sick  - <i>education</i> : no person in the household has at least level 2 education and no person aged 16–18 is a full-time student  - <i>health and disability</i> : any person in the household has general health 'bad or very bad' or has a long-term health problem  - <i>housing</i> : household's accommodation is either overcrowded, with an occupancy rating –1 or less, or is in a shared dwelling, or has no central heating		<a href="http://www.nomisweb.co.uk/census/2011/qs119ew">www.nomisweb.co.uk/census/2011/qs119ew</a>
Household characteristics	Houses without central heating	Census	BUASD	2011	Percentage of households with no central heating		<a href="http://www.nomisweb.co.uk/census/2011/qs415ew">www.nomisweb.co.uk/census/2011/qs415ew</a>
Employment	Jobseekers	Nomis	LSOA	2015	Percentage of population claiming Jobseeker's Allowance	Summation	<a href="http://tinyurl.com/he5dwz2">http://tinyurl.com/he5dwz2</a>
Employment	Job vacancies	Nomis	MSOA	2012	Number of jobcentre vacancies per 10,000 population	Summation	<a href="http://tinyurl.com/h7xovr">http://tinyurl.com/h7xovr</a>
Commerce	Large enterprises	Nomis	MSOA	2015	Number of large enterprises (249+ employees) per capita	Population weighted average	<a href="http://tinyurl.com/zbfeggb">http://tinyurl.com/zbfeggb</a>
Household characteristics	Lone parent households	Census	BUASD	2011	Percentage of households with a lone parent		<a href="http://www.nomisweb.co.uk/census/2011/ks105ew">www.nomisweb.co.uk/census/2011/ks105ew</a>
Health	Low birth weights	Health England	MSOA	2008–2012	Female life expectancy at birth, carried out using the Sephole calculator	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Health	Male life expectancy	Health England	MSOA	2008–2012	Male life expectancy at birth, carried out using the Sephole calculator	Population weighted average	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Education and skills	No qualifications	Census	BUASD	2011	Percentage of population aged 16+ with no qualifications to at least level 1		<a href="http://www.nomisweb.co.uk/census/2011/qs501ew">www.nomisweb.co.uk/census/2011/qs501ew</a>
Built environment	Non-domestic buildings	Neighbourhood statistics	MSOA	2005	Percentage area of land for non-domestic buildings	Summation	<a href="http://www.neighbourhood.statistics.gov.uk/">www.neighbourhood.statistics.gov.uk/</a>
Household characteristics	Overcrowding	census	BUASD	2011	Percentage of households deemed to be overcrowded, with not enough bedrooms for each individual or couple		<a href="http://www.nomisweb.co.uk/census/2011/qs412ew">www.nomisweb.co.uk/census/2011/qs412ew</a>
Transport	Railway	Neighbourhood statistics	MSOA	2005	Percentage area of land for railways	Summation	<a href="http://www.neighbourhood.statistics.gov.uk/">www.neighbourhood.statistics.gov.uk/</a>
Transport	Roads	Neighbourhood statistics	MSOA	2005	Percentage area of land for roads	Summation	<a href="http://www.neighbourhood.statistics.gov.uk/">www.neighbourhood.statistics.gov.uk/</a>
Public health and wellbeing	Self-harming	Health England	MSOA	2008–2013	Standardised admissions ratio: observed admissions divided by expected admissions	Summation	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>
Household characteristics	Share of ABCIs	Census	BUASD	2011	Percentage of households in social demographic group A, B or C1		
Education and skills	Skill deprivation	Indices of Multiple Deprivation	LSOA	2015	Skills and training deprivation index, measuring the lack of attainment and skills in the local population into two sub-domains, relating to children and young people and to adult skills	Population weighted average	<a href="https://www.gov.uk/government/collections/english-indices-of-deprivation">https://www.gov.uk/government/collections/english-indices-of-deprivation</a>
Commerce	SMEs	Nomis	MSOA	2015	Number of SMEs (with 0–249 employees) per capita	Population weighted average	<a href="http://tinyurl.com/zbfeggb">http://tinyurl.com/zbfeggb</a>
Housing	Social renting	Census	BUASD	2011	Percentage of households in social rented accommodation		<a href="http://www.nomisweb.co.uk/census/2011/data_finder">www.nomisweb.co.uk/census/2011/data_finder</a>
Transport	Time to work	Department of Transport	LSOA	2013	Average minutes to nearest centre of work by bus or foot	Average	<a href="http://tinyurl.com/z8nqao">http://tinyurl.com/z8nqao</a>
Employment	Unemployment	Census	BUASD	2011	Percentage of population unemployed		<a href="http://tinyurl.com/gpgpoxr">http://tinyurl.com/gpgpoxr</a>
Political participation	Voter turnout	British electoral commission	Output area	2015	Average voter turnout within output areas that make up constituencies calculated: mean then taken as estimate of turnout within each output area and then aggregated up to BUASD level	Summation	<a href="http://tinyurl.com/osn2lnl">http://tinyurl.com/osn2lnl</a>
Public health and wellbeing	Young smokers	Health England	MSOA	2009–2012	Percentage of people aged 16–17 who smoke	Population weighted average	<a href="http://localhealth.org.uk/#!en;v=map4">http://localhealth.org.uk/#!en;v=map4</a>

<sup>a</sup> ONS categories: MSOA – middle layer super-output areas; LSOA – lower layer super-output areas; BUASD – built-up area subdivisions

<sup>b</sup> IS – Income Support; JSA-IB – Income-based Jobseeker's Allowance; PC – Pension Credit

<sup>c</sup> WTC – Working Tax Credit; CTC – Child Tax Credit

## Appendix 3 Technical methodology

### Town and city selection

We included 26 cities in our analysis, which represented a broad sweep of England's regions, as well as Scotland, Wales and Northern Ireland. London was not included as a result of its unique status, and the amount of social research that has already gone into measuring London's performance and that of its suburbs. It should be noted that two of these cities (Middlesbrough and Bournemouth) do not in fact have city status, but are large built-up areas with other – still relatively large – towns close by. Both recently applied for city status, but lost out to Chelmsford, Perth and St Asaph.<sup>5</sup> Once these 26 cities were chosen, satellite towns were selected on the basis of their proximity to one of the cities and their population size, with closer and more populous towns preferred.

Unfortunately, there were significant amounts of missing data for towns and cities we had chosen in Scotland, Wales and Northern Ireland, so we were unable to assign them overall performance scores. Instead, where available, scores on individual measures have been reported.

### Variables

In order to measure the performance of the towns we considered of substantial interest as well as their comparator cities, we constructed an empirically devised index. In summary, we identified relevant indicators and then sorted them using a method called factor analysis, choosing which variables belonged together and which did not. This allowed us to produce an index of town and city performance.

Next, we identified a further series of indicators that covered a broad range of areas that we reasonably believed to be potentially reflective of town and city performance:

- commerce
- crime
- education and skills
- employment
- health
- household characteristics
- housing
- political participation
- public health and wellbeing
- transport

The full relevant variables are listed in full in table 8 in appendix 2.

The variables were sourced from a variety of datasets. They are measured at built-up area subdivision (BUASD) level. This is an official ONS geography that covers villages, towns and cities and allows comparisons to be made between people living in built-up areas and those living elsewhere.<sup>6</sup>

Data taken from the census of 2011 are available directly at BUASD level. Other variables are available at either middle super-output area (MSOA) or lower super-output area (LSOA) level and have had to have been aggregated up to BUASD level.

The smallest geographical level in the ONS lexicon of geographies is the output area (OA). All larger geographies are simple aggregations of OAs within their boundaries – the fit is exact. MSOAs and LSOAs are aggregates of OAs with up to a population of 15,000 and 3000 respectively. However, they do not nest exactly within BUASDs as OAs do. Thus, those variables based on aggregations at these levels are estimates of BUASDs rather than exact measurements because some areas are included within the boundaries that should not be there; equally some spaces have been cut out. Given the difficulty in getting data at town level, we are happy with this sacrifice and in any case do not believe the measurement error to be so

strong as to threaten the validity of our research design. Full details of the different measurements are presented in table 8 in appendix 2.

The next step was to reduce the number of variables in the data set in order to try and find underlying dimensions on which we could build our appraisal of town and city performance. We attempted to find so-called latent variables – variables which cannot be measured directly but have to be measured through other variables. We used a statistical method called factor analysis in order to do this.

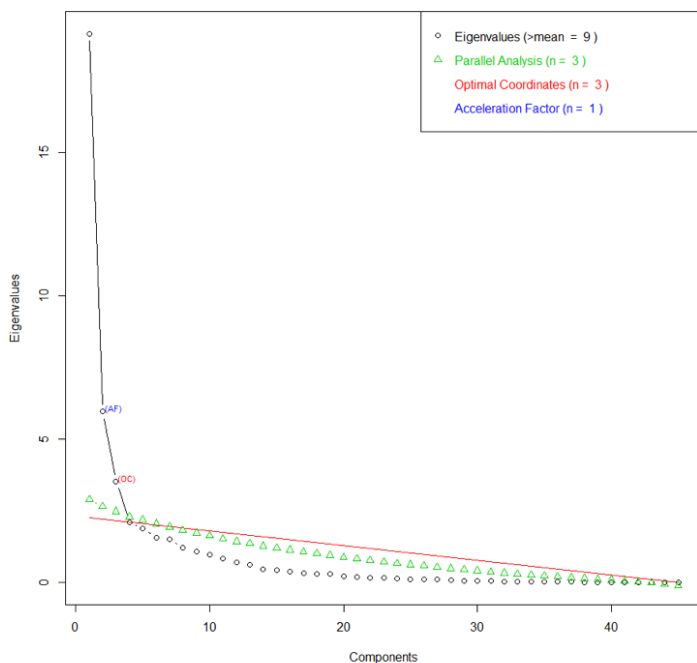
There are many varieties of factor analysis; we used the most simple – exploratory factor analysis – here. It is employed when researchers have no clear theory of how to measure the concept they are interested in. The model looks for patterns of inter-correlations among the variables identified a priori and how they are tied to the latent variables, also known as factors, which underlie the data. The researchers then interpret the factors to try and determine what it is they are measuring based on an appraisal of the variables that load onto the factors.

The first thing to do is to determine how many factors there are lying behind all the variables in our dataset. This is commonly done through a series of empirical tests.<sup>7</sup> There are four that we shall concern ourselves with:

- Scree test: graphs the eigenvalues (variances) of each potential factor; the number of factors is determined by looking at the graph and trying to locate the ‘elbow’ of the curve – that point where there is a break or hinge. The idea is ‘that a few major factors will account for the most variance, resulting in a “cliff”, followed by a shallow “scree” depicting the consistently small and relatively shallow error variance described by minor factors’.<sup>8</sup>
- Parallel analysis: creates a parallel dataset that is randomly generated and then compares the real data to this. The number of factors returned is the number of factors that are greater than the mean eigenvalue generated from the random data.

- Optimal co-ordinate: attempts to provide a more exact quantification of the scree test. This method measures the gradients associated with the eigenvalues and their preceding coordinates.
- Acceleration factor: attempts to locate the point where the slope of the curve of the eigenvalues changes most abruptly and thus identify the beginnings of the scree.

Figure 19 **Non-geographical solutions to a scree test**



- Looking at the scree plot shown in figure 19, three factors stand out as being above the elbow. Parallel analysis and optimal coordinates give us a three-factor solution while the acceleration factor tells us there is one. Parallel analysis is the more accurate method of establishing the number of factors while the acceleration factor method is liable to under-extract.<sup>9</sup> Thus, we conclude that there are three factors underlying the data structure.

An exploratory factor analysis model was thus fitted to the data using maximum likelihood estimation. A promax rotation to the initial factor solution was applied to allow for the factors to be inter-correlated. Results are presented in table 9. The numbers in columns for each factor are called factor loadings and are to be interpreted like regression coefficients with a unitary increase in the variable in question being associated with an increase in the unobserved factor by the amount of the factor loading. All factor loadings less than 0.3 or greater than -0.3 are deemed to be insubstantial and thus suppressed in table 8. Note that as we had incomplete data, the analysis was restricted to English towns and cities only ( $n = 63$ ). Uniqueness scores represent the extent to which each variable does not want to load onto any factor.

Looking at the three factors, factor 1 stands out as it accounts for the most variance. If we look at the variables that are loading onto it, it is clear that this factor can be interpreted as measuring socioeconomic performance. It encompasses a wide range of variables reflecting economic outcomes (eg employment, share of ABC1s, jobseekers) as well as health (eg life expectancy, good health), education (eg no qualifications, skill deprivation) and political participation (eg voter turnout). The variables with the strongest loadings onto factor 2 tend to be related to things like infrastructure (eg domestic buildings, green spaces, homeownership). Variables loading on to factor 3 tend to reflect health (eg binge drinking, cancer incidences, young smokers).

Table 9 Exploratory factor analysis – promax rotation

	Factor 1	Factor 2	Factor 3	Uniqueness
Adult obesity	0.72	−0.58		0.32
Alcohol hospitalisations	0.73			0.25
Binge drinking			0.76	0.39
Bus availability		−0.49		0.76
Cancer incidences	0.48		0.66	0.25
Child development	−0.53			0.66
Child poverty	0.76	0.46		0.06
Childhood obesity	0.84			0.19
Crime deprivation		0.37		0.86
Deaths from cancer		−0.34	0.44	0.71
Degree qualifications	−0.93	0.39		0.13
Disability	0.88			0.15
Domestic buildings		0.72		0.44
Emergency hospital admissions	0.81			0.20
Employment	−0.57	−0.48		0.33
Female life expectancy	−0.81			0.19
Fertility	0.66		−0.53	0.36
Gardens		0.55		0.69
GCSE attainment	−0.60			0.65
Good health	−0.93	0.31		0.14
Green spaces		−0.61		0.53
Healthy eating	−0.94			0.14
Home ownership	−0.47	−0.67		0.13
Household deprivation	0.96			0.04
Houses without central heating		0.34	−0.35	0.75
Jobseekers	0.77			0.28
Job vacancies				0.98
Large enterprises		0.37		0.85



Table 9 continued

**Exploratory factor analysis – promax rotation**

	<b>Factor 1</b>	<b>Factor 2</b>	<b>Factor 3</b>	<b>Uniqueness</b>
Lone parent households	0.77			0.30
Low birth weights	0.68		-0.49	0.28
Male life expectancy	-0.76	-0.35		0.16
No qualifications	1.00	-0.30		0.04
Non-domestic buildings	0.51	0.52		0.35
Overcrowding		0.85		0.27
Railway				0.95
Roads	0.31	0.72		0.26
Self-harming				0.90
Share of ABC1s	-0.96			0.11
Skill deprivation	0.78			0.33
SMEs	-0.73			0.46
Social renting	0.75			0.25
Time to work		-0.41		0.81
Unemployment	0.86			0.15
Voter turnout	-0.65			0.50
Young smokers			0.84	0.20
SS loadings	17.52	6.03	3.21	
Proportion variance	0.39	0.13	0.07	
Cumulative variance	0.39	0.52	0.60	

Since factor 1 is both accounting for the most variance and tapping into such a wide array of indicators so strongly reflective of socioeconomic performance, we took this as the basis on which to build our measure of the performance of towns and cities.

Factor scores for each town and city are then predicted as part of our post-factor analysis. These provide for each town and city a score on each factor. Put simply in order to get our index, the different measures that loaded onto factor 1 are summed together but weighted using weights derived from the strength of their factor loadings. This is done using the regression method. The resulting variable is standardised with a mean of 0 and a standard deviation of 1.

The index of performance was then reverse coded so that its positive pole represented higher performance. It ranges from 1 to 5.91.

In order to measure how towns were doing relative to their comparator cities, the scores for each town had the scores from their comparator city subtracted from them.

### Individual variable analysis

To compare towns and cities according to individual variables, we created standardised scores for each variable, based on standard deviation units (z-scores). The z-score of each town's comparator city was then subtracted from that of the town. This allows for a comparison between variables, as well as between towns and cities.

Where a variable's factor loading is positive (associated with poor socioeconomic performance), these relative z-scores were then multiplied by -1 to reverse the sign. This creates a 'normative' relative score, where positive scores indicate that the town is 'outperforming' its comparator city. Thus, for example, a positive score on the 'unemployment' variable indicates that a town has a lower unemployment rate than its comparator city. Means of these scores are then calculated at a regional and national level to compare the relative performance of towns overall. Where no factor loading is reported in the promax rotation, that variable is removed from this section of the analysis.

# Notes

- 1 'HS2 "losers" revealed as report shows potential impact', BBC News, 19 Oct 2013, [www.bbc.co.uk/news/uk-24589652](http://www.bbc.co.uk/news/uk-24589652) (accessed 12 Mar 2015)
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Beyond all doubt, England's regions will be key in securing much-needed economic growth. Yet a growing body of evidence suggests that while resources are ploughed into UK cities, the 'satellite' towns which surround them may not reap the benefits. Some evidence points to towns being marginalised – missing out, for example, on investments such as the planned high-speed railway HS2.

In *Talk of the Town*, we provide a deeper understanding of the distinct place towns occupy (or should occupy) in regional and national growth. Through a new index of socio-economic performance, this report for the first time directly compares how towns are faring relative to their neighbouring cities, across a range of domains from health to housing and the built environment.

Our findings demonstrate that on average, England's satellite towns are falling behind their neighbouring cities. However, the analysis also reveals considerable regional variation, and strong performance on many individual measures.

Overall, we argue that there is value in considering towns as distinct entities – with their own challenges, but also their own assets – in the drive to improve social and economic outcomes across Britain.

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ISBN 9978-1-909037-97-7 £10

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