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An exploration based on Longitudinal Education Outcomes (LEO) data

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Briefing Note 010

November 2019

CENTRE for ECONOMIC PERFORMANCE

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Published by:
Centre for Vocational Educational Research
London School of Economics & Political Science
Houghton Street
London WC2A 2AE

Inequality in education and labour market participation of young people across English localities: An exploration based on Longitudinal Education Outcomes (LEO) data

Janine Boshoff*, Jamie Moore[&] and Stefan Speckesser*‡

This draft: 15 November 2019
Submitted to the CVER Briefing Note Series

Abstract:

Currently, 792,000 16-24-year olds in the UK – 11.5% of the age group – are Not in Education, Employment or Training (NEET), but not much is known about how this differs by local area. In this Briefing Note, we provide comprehensive statistics on NEET rates as well as transition rates from NEET back into education and employment for 150 small areas in England ("Upper Tier Local Authorities"), exploiting new administrative data linking all education and labour market activities at individual level.

When looking at certain groups, such as those eligible for Free School Meals (FSM) during secondary school or people with low-level qualifications, we find wider variation of NEET rates across English localities than suggested by region-level analysis. Shown mostly in maps, local variations of both NEET rates and rates of positive transitions out of NEET reveal substantial geographical inequality in young people's opportunities.

In our view, the place-based patterns of inequality suggest area-specific support for young people and greater efforts to ensure that fewer individuals leave school with very low levels of educational attainment.

Keywords: Education, Employment or Training; Inequality; England; Small geographies

JEL codes: I24; J18; R10

Acknowledgements: We would like to thank Matthew Bursnall, University of Sheffield, for the processing of the Longitudinal Employment Outcomes data for this project. Comments and suggestions by Ben Gadsby and Sandra McNally are gratefully acknowledged. We would like to thank the Department for Education (DfE) and Impetus for the funding to carry out this work and the DfE for access to the linked data under data share agreement DR170721.04.

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Executive summary

Background

Although numbers have been decreasing for several years now, there are still 792,000 16-24-year olds in the UK – 11.5% of the population of that age – Not in Education, Employment or Training (NEET) in 2019. Statistics regularly published by the Department for Education (DfE) for the 16-18-year olds show that NEET rates are much lower for the youngest group, but also provide evidence on substantive local variation in NEET rates. Outside of DfE's NEET statistics, and with Labour Force Survey (LFS) data too small to investigate local patterns of education and employment participation of young people, we currently do not know much about the inequality in education and labour market participation of the 18-24-year olds across the localities of England.

Aim

Against this background, our Briefing Note aims to provide a thorough description on this issue in small geographical areas ("Upper Tier Local Authorities") based on linked administrative data from English education and employment registers. Specifically, we provide a full set of statistics on NEETs and transition rates from a NEET status back into education and employment for the 20-24-year olds – using the most recent data available – in these areas[1].

Empirical research design

Our empirical analysis exploits "Big Data" – the universe of all young people in England completing their secondary school education between 2007 and 2012, about 3.6 million young people. These cohorts were selected because they are of the age range 18-24 in the recent years, for which we can observe both education and employment outcomes with available data.

We then use National Pupil Data, Individualised Learner Records, data supplied by the Higher Education Statistics Agency (HESA) and earnings from income tax records provided by HMRC linked at individual level ("Longitudinal Education Outcomes", LEO) to understand what proportion of young people find themselves in a NEET status, what social or geographic characteristics are associated with being NEET, and how many young people leave NEET to "positive" destinations (work or education).

Findings

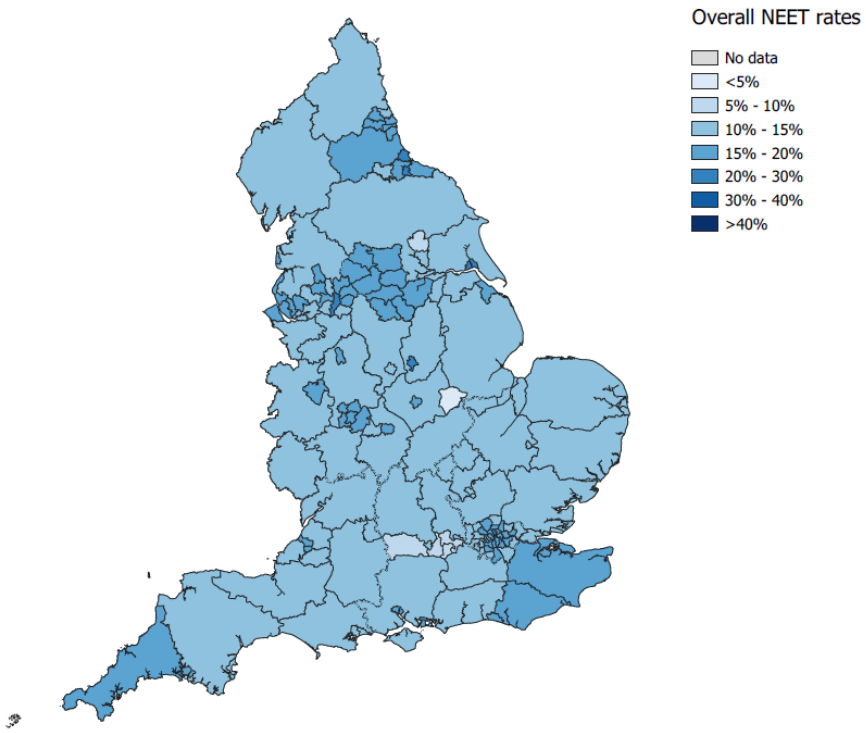
While headline figures are very similar to Labour Force Survey statistics, our exploration finds extraordinary variation in the NEET rates across England, especially when looking at particular groups of young people. Shown mostly in maps here, both NEET rates and rates

[1] This restriction to the 20-24 year results from constraints with the available data ending in 2017/18. While we cover the full range of 18-24 year olds in various cohorts of school leavers, reporting NEET rates for a full population of 18-24 year olds would have only been possible when restricting data to an earlier year, for example 2014/15, see Table A.1 in the Appendix. As rates are very similar for those in age range 18-20, we decided in favour of the most recent year rather than the full coverage of the age range.

of Re-Entry into Education, Employment and Training (REEET) provide evidence on the great inequalities in young people's opportunities, which are resulting from the locality they live in.

Figure A below shows the overall NEET rates for each of the Local Authorities. This map shows NEET rates of more than twenty percent in Middlesbrough, Manchester, Nottingham, Kingston upon Hull, Islington and Hartlepool. Most of the urban areas, including London and the South East, have relatively higher NEET rates between 15% and 20%, while the more rural areas tend to have slightly lower NEET rates closer to 10%, with some exceptions (Reading, Kingston). The lowest NEET rates of less than 10% were found in York and some of the areas south-west of London (Windsor and Maidenhead, West Berkshire, Wokingham, Bracknell Forest), but also in Rutland.

Figure A: NEET rates in local areas



Source: NPD, ILR, HESA and LEO for the 2007/08- 2011/12 school leavers (by age 20-24)

In a series of further maps, we show how education success and family circumstances are key drivers of NEET rates in all Local Authorities, but no straightforward pattern seems to emerge. However, there are some communalities:

- Inner City areas have higher NEET rates, but since there is a smaller gap between NEET rates of disadvantaged and non-disadvantaged young people, these areas are characterised by lower inequality.
- Outside larger urban areas (Greater London and commuter belt, Manchester, Birmingham, but also e.g. Milton Keynes and Hull), rural areas also show lower variation in NEET rates by levels of qualification, e.g. Cornwall, Leicestershire, Herefordshire, Shropshire, Devon and North Yorkshire, Calderdale, Gloucestershire

and East Riding of Yorkshire, while having overall average or below NEET rates. Within this group, differences by family disadvantage are higher in the North than in the South and West.

Some conclusions

There are three main conclusions from the descriptions to improve support for young people at the school-to-work transition and to reduce the number of NEETs:

- **Education**: Reducing the number of low attainers is likely to create the most substantive reduction of NEETs in local areas.
- **Family disadvantage:** There is less inequality by family background in the more affluent and more densely populated southern areas.
- **Targeting**: There are some Local Authorities that are more successful in re-engaging young people with very low skills compared to those with a Level 2 qualification. This unusual pattern suggests particular barriers in these areas that need to be investigated.

The different place-based patterns of inequality for young people from disadvantaged families and for those NEETs of different levels of educational attainment suggest that there is no obvious intervention to reduce inequality in young peoples' opportunities. Instead, programmes will need to tackle the particular inequalities that exist in the different localities across England with specific interventions. In the light of this, it may make sense to introduce more flexibility in how policies can be implemented in the local context and at the same time to create consistent monitoring across areas to see what works to improve the situation.

1. Introduction

Motivation and aims of this research

Although numbers have been decreasing for several years now, there are still 792,000 16-24-year olds in the UK – 11.5% of the population of that age – Not in Education, Employment or Training (NEET) in 2019[2]. About 40% are unemployed job seekers, while the others, not looking for work for many different reasons, can be classified "economically inactive".

Statistics regularly published by the Department for Education (DfE) for the 16-18-year olds suggest that NEET rates are much lower for 16- and 17-year olds (3.2% and 4.3%) than for 18-year olds (11.1%), not least because the education leaving age was increased from 16 to 18 years some time ago[3]. However, the DfE's Local Authority data also show extensive variation of NEET around 1% and 2% in the South East and London[4], 2-4% in many Northern regions and as much as 5% in areas such as Newcastle, Hull and parts of Yorkshire and the North East.

This local variation is the main motivation for producing this Briefing Note. Moreover, with DfE statistics only covering the 16- to 18-year olds and the Labour Force Survey (LFS) too small to investigate local patterns of education and employment participation of all young people, we currently do not know much about the inequality in education and labour market participation of 18-24-year olds across local authority areas in England. However, we know from earlier work that a significant number of young people are found to be NEET in young adulthood and that this is influenced by education success, family circumstances and where people live.

The objective of this Briefing Note is to provide a thorough description on this issue for 20-24-year-olds in small geographical areas ("Upper Tier Local Authorities") based on linked administrative data from English education and employment registers[5]. Our note expands earlier experimental statistics published jointly with the charity Impetus (Impetus 2019a), which offers support programmes for NEETs. Specifically, this paper here provides a full set of statistics on NEETs and transition rates from a NEET status back into education and employment for small local areas.

[2] Based on estimates of the UK Labour Force Survey, see Office for National Statistics (2019)
[3] Department for Education (2019b)
[4] Excluding those without a known status.
[5] This restriction to the 20-24 year results from constraints with the available data ending in 2017/18. While we cover the full range of 18-24 year olds in various cohorts of school leavers, reporting NEET rates for a full population of 18-24 year olds would have only been possible when restricting data to an earlier year, for example 2014/15, see Table A.1 in the Appendix. As rates are very similar for those in age range 18-20, we decided in favour of the most recent year rather than the full coverage of the age range.

While headline figures are very similar to LFS statistics, our exploration finds extraordinary variation in NEET rates across England, especially when looking at particular groups of young people. Shown mostly in maps here, both NEET rates and rates of Re-Entry into Education, Employment and Training (REEET) provide evidence of great inequalities in young people's opportunities, which are resulting from the locality they live in.

Some communalities from the data description suggest that improvements in the situation could be achieved by focusing support on young people from disadvantaged families. However, the very different place-based patterns of inequality suggest that there is no obvious single intervention to reduce inequality in young people opportunities. It may make sense to introduce more flexibility in how policies can be implemented in the local context while at the same time creating consistent monitoring to discern what works to improve the situation.

Policy context

As we discussed in an earlier working paper, the UK's relatively high youth unemployment and its rapid increase after the 2008 recession[6] compared to other European countries exposed the structural weaknesses of the institutions affecting the employment and labour market situation of young people in our country (Hadjivassiliou et al., 2015). The key factor is the traditionally low participation of young people in post-compulsory education, see Barham (2009), which is still one of the lowest in Europe (79%, see CVER 2015). Compared to this, most young people continue (part-time) education until age 19 or 20 in countries with extensive apprenticeship systems (e.g. 93% of the 15-19-year olds in Germany). However, this finding only describes the broad national picture.

Within the country, variation is likely to be substantial, even though institutional arrangements affecting education and labour market participation should create (to an extent) comparable opportunities for young people across England. Further examples of such policies are active labour market policy programme for young unemployed jobseekers and wage policies, like the National Minimum Wage. In reality, however, policy is implemented locally by organisations with some degree of autonomy, which is likely to result in more dissimilarity of young people's labour market and education outcomes.

To some extent, variation in policy implementation is desirable, e.g. to respond to requirements of the local labour markets, in particular in vocational education. However, variation in local opportunities for young people also likely results from differences in policy effectiveness, i.e. an "implementation gap". In such cases, national policy is not being supported comprehensively to be effective in the specific context. There is a lack of knowledge of "what works for whom and in what circumstances" and a wide absence of knowledge of how to design and deliver successful policy, see e.g. Baron (2018). With a great deal of youth policy delivered by the Local Authorities, the lack of coherent practice,

[6] Eurostat (2019) shows an average youth unemployment ratio in the UK of 6.4% in 2018 for the population under the age of 25, which is much lower than in the years after the recession of 2008 (12.2% in 2011). In the years 2010-2012, only Spain, Greece, Croatia and Ireland had higher unemployment ratios, and even the much lower recent percentage is more than twice what is the ratio in Germany (3.1%).

absence of proper monitoring and locally very different resources of the services are likely to result in a wide variation of outcomes for young people.

This discussion is by way of background to the wide variation in NEET that we observe across areas, although any causal analysis would have to be the subject of analytical and deeper research.

Outline of this note

The rest of this note is structured as follows: First, we describe briefly how administrative data are used to explore the employment and labour market situation of young people (Section 2). In the empirical part (Section 3), we describe the overall variation of NEET rates, differences in NEET rates by education attainment and how much higher they are for young people from poor families. After that, we present the percentage of young people who re-enter employment or education within a year, which provide evidence for great persistence in the NEET status. Finally, we undertake a cluster analysis of the different dimensions of local area NEET rates – overall NEET proportions, relative influence of poverty and low education on the NEET status and re-engagement in education and work – to understand communalities and differences. Section 4 concludes.

2. Data and Methodology

Population of interest

Our empirical analysis is based on the universe of all young people in England completing their secondary school education between 2007 and 2012, about 3.6 million young people. The basic selection are people having completed General Certificates of Secondary Education (GCSEs)/Key Stage 4 of the national curriculum (KS4). The cohorts were selected because they are of the age range 18-24 in the recent years, for which we can observe both education and employment outcomes with available data.

To obtain full information about the employment and education activity of these young people, we link all available administrative data at individual level. These are the National Pupil Data (NPD), Individualised Learner Records data (ILR), which cover further education registers that record post-16 education outside schools and universities, information on university enrolment provided by Higher Education Statistical Agency (HESA) and tax records sourced from Her Majesty's Revenue and Customs (HMRC).

Outcome tracking

To track individuals in these data, we start with the National Pupil Data (NPD) of KS4 leavers between 2007 and 2012. These data are then linked to further National Pupil Data which covers the period in which they are aged between 16 and 18. During this time, most people complete "Key Stage 5" (KS5) and acquire the entry qualifications to higher education ("Level 3"). Students can achieve this by following either an academic (A-levels) or vocational track, which prepare them for both employment and tertiary education.

Then, the NPD data are linked with the Individualised Learner Record (ILR) register to collect information on each of the aims the student is enrolled in during post-16 education outside of schools and universities, i.e. mainly further education colleges. This enables us to capture any further participation and achievement in education, including low level vocational or general education, but also tertiary education taken outside of universities.

Third, we link the data to the register of students in universities. These data are supplied by the Higher Education Statistics Agency (HESA) and contain full records of higher education participation and outcomes.

Finally, we use linked information about annual earnings from income tax records provided by HMRC. These data include both earnings from employment and self-employment. Linked to education register data at individual level, these "Longitudinal Education Outcomes" (LEO) data have become available recently and provide detailed data on all taxable earnings for people living in the UK from the age of sixteen onwards.

We use these data in combination to understand what proportion of young people find themselves not in employment, education or training (NEET), what social or geographic characteristics are associated with being NEET, and how many young people leave NEET to "positive" destinations (work or education)[7].

3. Results

Regional variation of NEET rates

The NEET rates described in the following section are based on the cohort of the 20-24-year olds, i.e. the young people leaving secondary school between 2008 and 2012, who can be observed until June 2017, the latest available point in time with both employment and education data. In our analysis, NEETs are young people, who have been out of education, employment or training for at least three consecutive months up to and including June 2017. NEET rates relate this group to the population of young people found in the National Pupil Data of these cohort of school leavers.

NEET rates are relatively high for young people in their early twenties compared to the published statistics from the LFS, but fairly similar when exploring the data for the

[7] In order to retain confidentiality, results were rounded to the nearest 10, or where we report Local Authority figures, to the nearest 5. We also implement suppression rules to avoid disclosure of individuals or small groups. This implies that percentages of less than 0.5 % are not shown (e.g. replaced with "-" with a note to say the % is negligible). Where the numerator is five or fewer or the denominator was 10 or fewer, values in original data were suppressed. If only one cell requires cell suppression, we suppress at least one other component cell (the next smallest) to avoid calculation of suppressed values from the totals. In this case the next smallest number less than 20 is also suppressed. In addition, in the data shown below, we only report percentages without post-comma digits.

particular age group.[8] Looking into the regional variation, the NEET rate is highest in the North-East (17% of the 20-24 year olds), but overall, the indicator shows little variation around the 15% mark across England (Table 1).

Table 1: NEET rates in June 2017, 20-24-year olds, by regions

Government office regions in England	NEET rate
East Midlands	14%
East of England	14%
London	16%
North East	17%
North West	16%
South East	14%
South West	14%
West Midlands	15%
Yorkshire & the Humber	16%
England	15%

Source: NPD, ILR, HESA and LEO for the 2007/08- 2011/12 school leavers (by age 20-24)

As NPD data captures information about family disadvantage based on Free School Meal (FSM) eligibility during secondary education, we can show how rates correlate with this measure of disadvantage. We find that NEET rates at regional and national levels are higher for young people from a disadvantaged background compared to their better-off peers throughout England (Table 2). However, there is considerable regional variation in this association. For example, almost a third of all young people in this age range with family poverty are NEETs in the North East, and more than one quarter in all other areas. London – while having one of the highest NEET rates for non-disadvantaged young people – shows a smaller gap between those from poor and non-poor family backgrounds.

[8] Based on the data from the Labour Force Survey (LFS) for the three quarters April to June, we find a slightly smaller NEET rate for 20-24-year olds (14.2%), which is likely to be caused by the HMRC employment data ending in March 2017, i.e. slightly earlier than for education outcomes observed until June 2017, see also Impetus (2019b) for another comparison with LFS data.

Table 2: Comparison of NEET rates for disadvantaged and non-disadvantaged youth

Government office regions in England	Disadvantaged NEET rate	Non-disadvantaged NEET rate	Gap
East Midlands	27%	12%	15%
East of England	25%	12%	13%
London	21%	14%	7%
North East	32%	14%	18%
North West	28%	13%	15%
South East	26%	13%	13%
South West	26%	12%	14%
West Midlands	27%	13%	14%
Yorkshire and The Humber	30%	14%	16%
England	26%	13%	13%

Source: NPD, ILR, HESA and LEO for the 2007/08- 2011/12 school leavers (by age 20-24)

As was discussed extensively in the Impetus (2019a) report, there is wide variation in NEET rates for groups of young people having achieved lower or higher levels of education. Using the information from NPD, ILR and HESA data, we can show NEET rates by groups of people with their highest qualification at age 18, i.e. whether they achieved A-Levels or equivalent Level 3 vocational qualifications, have GCSE or vocational Level 2 qualifications or lower Level 1 education. Table 3 shows this variation at regional and England levels, showing generally three to four times higher NEET rates for those with qualifications below GCSE Level, compared to young people having A-Levels or equivalent vocational qualifications. While there is some variation across the regions, i.e. NEET rates of young people with low qualifications ranging from 26% in the South West to 34% in the North East, the overall pattern is the same everywhere, and the variation gets smaller for the groups with higher attainment levels.

Both disadvantage and low educational outcomes have a combined impact on the probability of being NEET, and the attainment gap is itself resulting from family disadvantage. Department for Education (DfE) statistics show an attainment gap as early as age 5[9], which widens over the years of compulsory schooling. By age 16 (when students sit their GCSEs), disadvantaged pupils are 28 percentage points[10] less likely to secure passes in maths and English. This "double disadvantage" has been extensively discussed in the Impetus (2019a) report, and – once the effect of disadvantage on educational attainment

[9] Department for Education (2018)
[10] Department for Education (2019a)

is taken account of, young people from disadvantaged backgrounds are 50% more likely to be NEET compared to their better off peers.

Table 3: NEET rates by highest level of education

Government office regions in England	Level 1 NEET rate	Level 2 NEET rate	Level 3 NEET rate
East Midlands	28%	14%	7%
East of England	27%	14%	7%
London	30%	18%	9%
North East	34%	16%	8%
North West	32%	16%	8%
South East	28%	15%	8%
South West	26%	14%	8%
West Midlands	30%	15%	8%
Yorkshire and The Humber	31%	15%	8%
England	30%	15%	7%

Source: NPD, ILR, HESA and LEO for the 2007/08- 2011/12 school leavers (by age 20-24)

Local area inequality

The large size of the administrative data allows us to show NEET statistics for the 20-24-year olds at the level of small geographical areas. This shows a great degree of inequality between young people from disadvantaged households and others, depending on where they live. We focus on the 150 Upper Tier Local Authorities in England, for which we observe large enough groups of school leavers in the five cohorts to provide the key statistics of interest at local level.[11] Due to the complexity of these statistics, we visualise the data in an accessible manner in concise maps.[12]

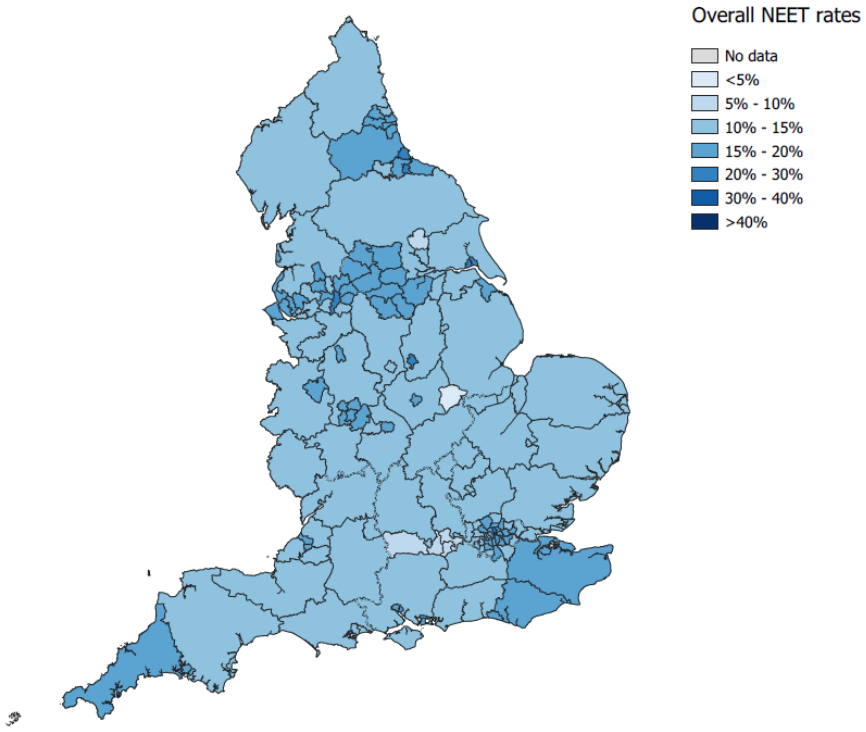
Figure 1 shows the overall NEET rates for each of the Local Authorities. This map shows NEET rates of more than twenty percent in Middlesbrough, Manchester, Nottingham, Kingston upon Hull, Islington and Hartlepool. Most of the urban areas, including London and the South East, have relatively higher NEET rates between 15% and 20%, while the more rural areas tend to have slightly lower NEET rates closer to 10%, with some exceptions (Reading, Kingston). The lowest NEET rates of less than 10% were found in York

[11] Given the detailed nature and confidentiality of the data involved, some suppressions were required where there were few observations or where numbers could be inferred from supplementary sources.

[12] This process made use of a shapefile for the Local Authority (LA) areas within England in the QGIS software, which was then merged to the NEET statistics at this level of aggregation as derived from NPD, ILR, HESA and HMRC data.

and some of the areas south-west of London (Windsor and Maidenhead, West Berkshire, Wokingham, Bracknell Forest), but also in Rutland.

Figure 1: NEET rates in local areas



Source: NPD, ILR, HESA and LEO for the 2007/08- 2011/12 school leavers (by age 20-24)

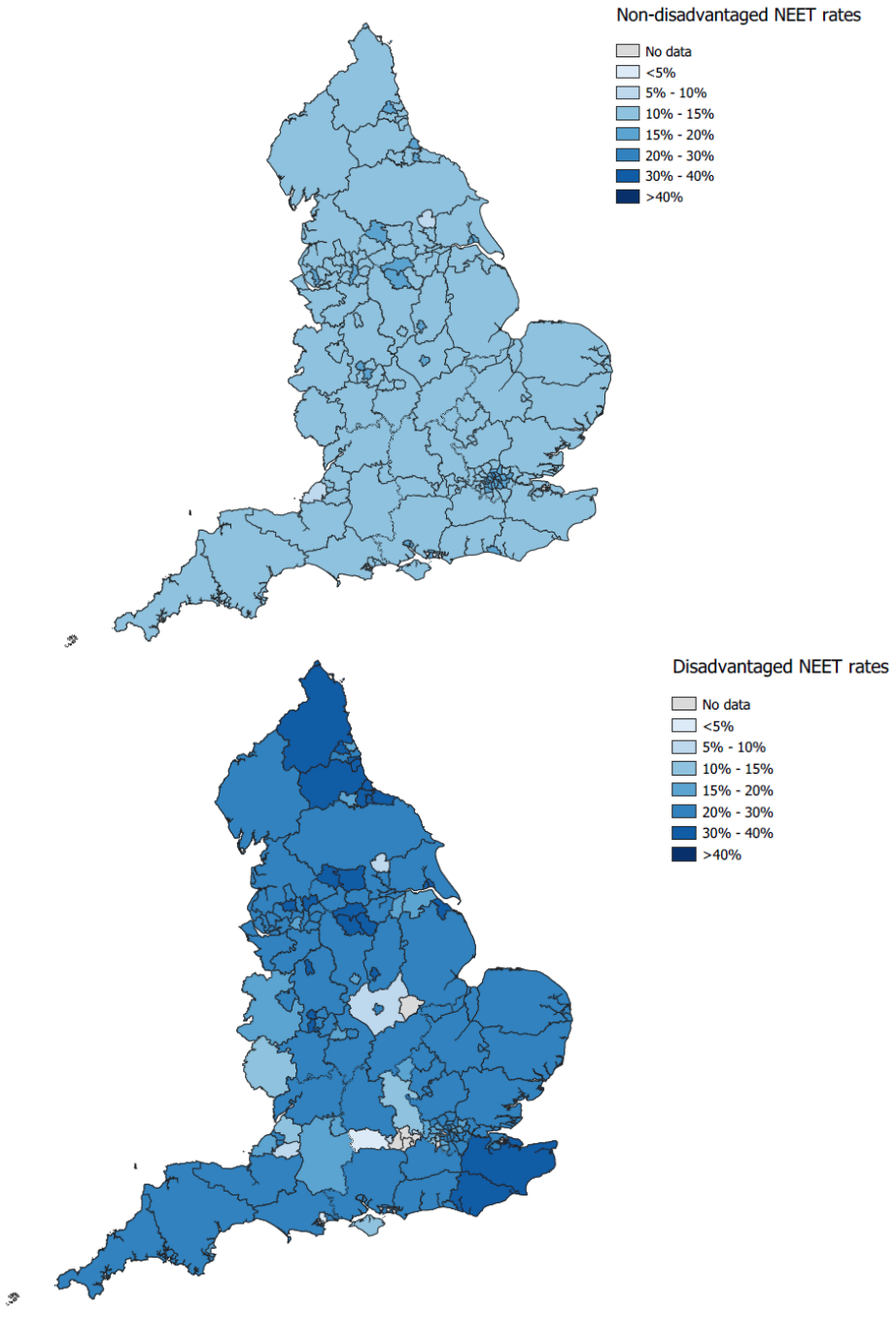
Figure 2 shows NEET rates for young people having a disadvantaged family background (based on Free School Meal eligibility in secondary school) and others. While median NEET rates are 24% for young people from disadvantaged families across the Local Authorities, non-disadvantaged youth have a median NEET rate of 13%.

Within the areas showing the highest NEET rates of 30% and more for those with a disadvantaged background[13], there are both areas with a high average NEET rate like Hull and those with a comparatively lower average NEET rate such as Kent (where the average NEET rate is 16%) or Northumberland (15%). Disadvantaged young people are over-represented among NEETs in most areas, except for some of the areas with a low average NEET rates (Slough, Bath and North East Somerset, Leicestershire, Reading, Kensington and Chelsea, Poole, West Berkshire, Bracknell Forest). The widest difference in NEET rates between those poor households and others (as defined by Free School Meals) are found in Wigan (non-disadvantaged: 12%/disadvantaged: 29%), Cumbria (11% versus 28%), County Durham (14% versus 35%), Stockton-on-Tees (13% versus 32%) and Worcestershire (12% versus 29%). There is less inequality in London, especially in Inner London, where rates differ only by few percentage points (Camden, Newham, Hackney) or not at all (Islington).

[13] County Durham, Kingston upon Hull, City of, North East Lincolnshire, Hartlepool, Sunderland, Sheffield, Nottingham, Middlesbrough, Rotherham, Stockton-on-Tees, Leeds, Kent, Wolverhampton, Newcastle upon Tyne, Redcar and Cleveland, East Sussex, Rochdale, Barnsley, Bradford, Dudley, Northumberland, Stoke-on-Trent, Bolton

Overall NEET rates and those for non-disadvantaged young people tend to be higher in London, but equally balanced NEET rates can also be found in areas with a low average NEET rate such as Buckinghamshire or Wiltshire.

Figure 2: NEET rates for disadvantaged and non-disadvantaged young people

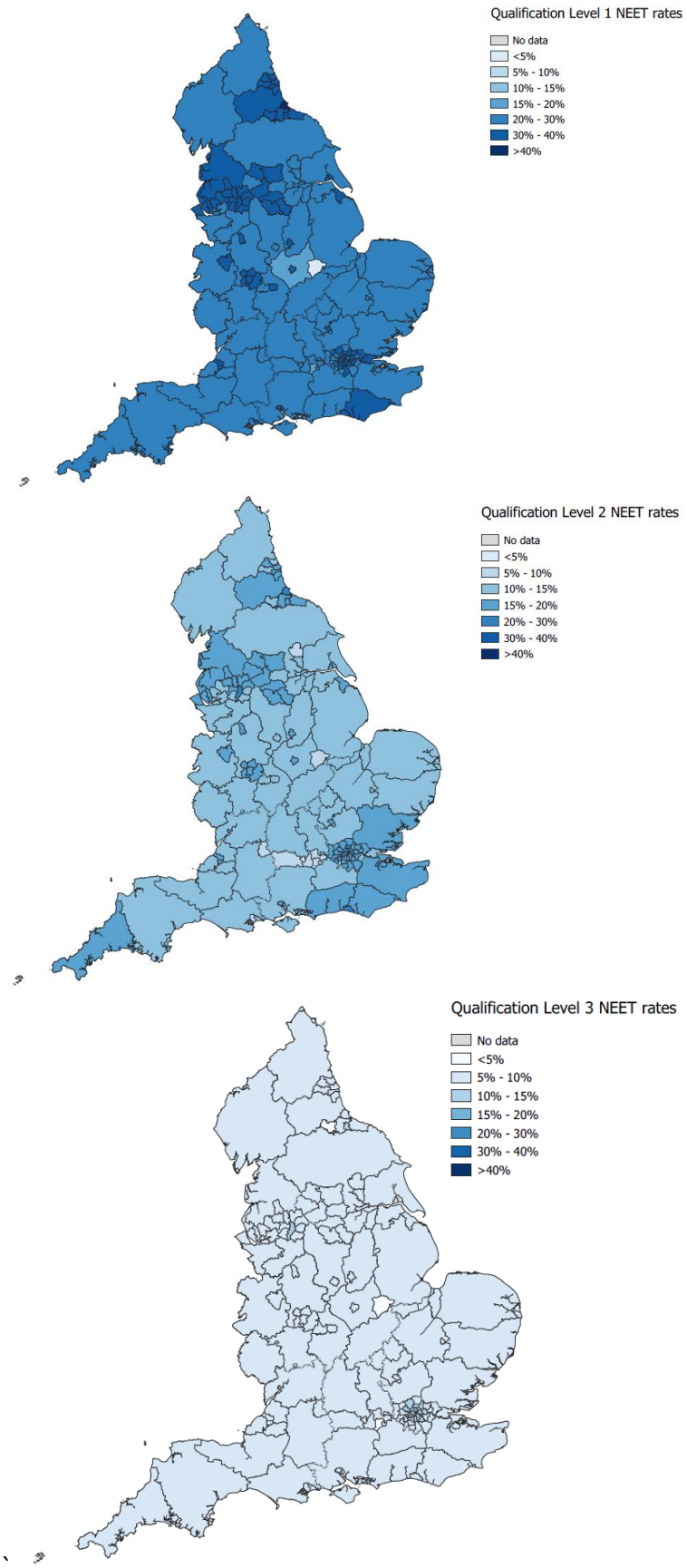


Source: NPD, ILR, HESA and LEO for the 2007/08- 2011/12 school leavers (by age 20-24)

Comparing NEET rates based on qualification levels illustrates the pattern shown in Table 3 above: young people with low qualifications (Level 1) have much higher NEET rates than their better-qualified peers. Young people with Level 2 qualifications have a median NEET rate of 15%, which is half that of their peers that only hold a Level 1 qualification. However, as shown by the map in Figure 3, there are notable differences across local areas:

1) For **young people with low qualifications** (Level 1), we find that
    a. 75 out of 141 Local Authorities have a NEET rate of 30% and more.
    b. 35% or more of 20-24 years olds are NEETs in Hartlepool, Middlesbrough, Stockton-on-Tees, Manchester, Sunderland, Redcar and Cleveland, Rochdale, Blackburn with Darwen, Sheffield and Hammersmith and Fulham.
    c. Except for the very small county of Rutland, there are only two other Local Authorities (Leicestershire, and Bracknell Forest) with NEET rates of less than 20% for those with low qualifications.
    d. 85% of all counties have NEET rates of young people with low qualifications of more than 25%.
2) For the group of **young people with intermediate levels of education** (i.e. GCSE or equivalent), we found that:
    a. There are seven Local Authorities with NEET rates of more than 20% (Haringey, Westminster, Brighton and Hove, Manchester, Islington, Hartlepool, Blackpool).
    b. In areas with overall lowest NEET rates, we find NEET rates of less than 10% for this group (Swindon, York, Windsor and Maidenhead, Wokingham, West Berkshire, Poole, Bracknell Forest, Rutland, Reading).
3) For people of the **group with highest level of qualifications** (i.e. A-Levels and equivalent or better), we find
    a. NEET rates of 10% and above in (mostly Inner) London (Westminster, Islington, Wandsworth, Haringey, Hackney, Barnet, Camden, Waltham Forest, Southwark, Lambeth, Lewisham, Brent, Newham), Manchester and Middlesbrough.
    b. Very low NEET rates of six percent and below in the affluent areas of the South East with overall low rates (West Berkshire, Wokingham, Peterborough, Slough, Reading, Bracknell Forest).

Figure 3: NEET rates by Level of qualification at age 18



Source: NPD, ILR, HESA and LEO for the 2007/08- 2011/12 school leavers (by age 20-24)

No straightforward pattern seems to emerge from these maps. However, there are some communalities, which are worth noting:

- Inner City areas have higher average NEET rates, but lower inequality between people from poor and non-poor family backgrounds (according to the Free School Meal measure).
- Large predominantly rural areas show lower variation in NEET rates by level of qualification, (e.g. Cornwall, Leicestershire, Herefordshire, Shropshire, Devon and North Yorkshire, Calderdale, Gloucestershire and East Riding of Yorkshire). Within this group, differences by family disadvantage are higher in the North than in the South and West.

In summary, we see that education success and family circumstances are key drivers of NEET rates in all Local Authorities. Gaps in NEET rates between groups of young people from disadvantaged families and better-off families are wider in less prosperous areas whether in the North or South of England (even though there are more disadvantaged areas in the North).

Re-entry to Employment, Education or Training

In addition to obtaining more detailed regional and local level NEET statistics for groups with certain education outcomes and family circumstances, the large size and the longitudinal nature of the administrative data also allow us to follow groups of people identified in the data as NEETs and to observe re-entry to Employment, Education and Training (EET) at detailed local level. Such statistics are currently not available other than at national level because of the small samples of NEETs in data from the Labour Force Survey (LFS) or Understanding Society.

With June 2017 being the last available point in time in our data, we selected the cohorts of secondary school leavers of 2006/07 until 2011/12, who were between 19 and 24 years in June 2016 and investigate transitions out of the NEET state 12 months on. As before, NEETs are young people who have been out of education, employment or training for at least three consecutive months up to and including June 2016. Thereafter, we analysed the same population one year after the June 2016 identification date. The group of people with an observed Re-Entry to Employment, Education and Training is then related to the overall group of NEETs observed in June 2016 to create "REEET rates".

The regional and national REEET rates are shown in Table 4. Overall, rates just above 20% suggest that the NEET status is persistent for many people.[14] There are slightly higher transition rates observed for London compared to the rest of England (23%).

[14] Again, these numbers were validated with an exploration of Labour Force Survey micro data. To do this, we used the five-quarters longitudinal LFS data and explore the persistence in the NEET status for young people aged 19-24 in April to June 2016. One year later, there are similar proportions (78%) still observed NEET (April-June 2017).

Table 4: Re-Entry to Education, Employment or Training (REEET) rates, year to June 2017

Government office regions in England	REEET rate
East Midlands	20%
East of England	20%
London	23%
North East	20%
North West	21%
South East	20%
South West	21%
West Midlands	20%
Yorkshire and the Humber	20%
England	21%

Source: NPD, ILR, HESA and LEO for the 2006/07- 2011/12 school leavers (age 19-24 when observed NEET)

The description of REEET rates by levels of education at age 18 (Table 5) shows relatively more transitions out of the NEET status for people with higher education attainment: Across the English regions, the REEET rates of people with Level 3 achievements are about 11-13 percentage points higher than the rates observed for people holding at best a Level 1 qualification, but there are only small differences across the regions, again with London showing consistently the highest rates.

Table 5: REEET rates by highest level of education, year to June 2017

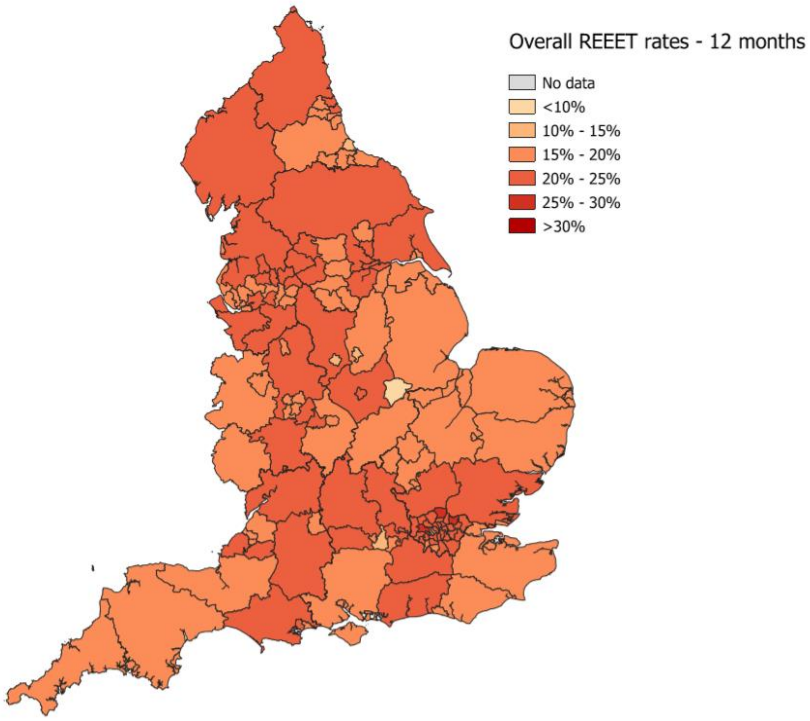
Government office regions in England	Level 1 REEET rate	Level 2 REEET rate	Level 3 REEET rate
East Midlands	17%	21%	28%
East of England	16%	19%	29%
London	19%	23%	31%
North East	15%	21%	30%
North West	17%	22%	29%
South East	16%	20%	29%
South West	17%	20%	28%
West Midlands	17%	20%	29%
Yorkshire and the Humber	17%	22%	29%
England	17%	21%	29%

Source: NPD, ILR, HESA and LEO for the 2006/07- 2011/12 school leavers (age 19-24 when observed NEET)

The description of REEET rates at local level (Figure 4) shows notable variation. The local areas with the ten highest rates are all London Boroughs (Redbridge, Enfield, Ealing, Haringey, Brent, Islington, Waltham Forest, Tower Hamlets, Barnet, Newham) showing REEET rates between 22% and 26%. The ten lowest REEET rates of less than 17% were found in Portsmouth, the Isle of Wight, Thurrock, Halton, Middlesbrough, Nottingham, Wokingham, Derby, Hartlepool and Kensington and Chelsea.

Overall, while there is quite small variance in the REEET rates across Local Authorities, there are some notable differences between neighbouring Local Authorities, for example Reading (17%) and West Berkshire (22%), the London Borough of Enfield (26%) compared to neighbouring Hertfordshire or the London Boroughs of Havering (22%) and Redbridge (26%).

Figure 4: Re-Entry to Education, Employment or Training (REEET) rates

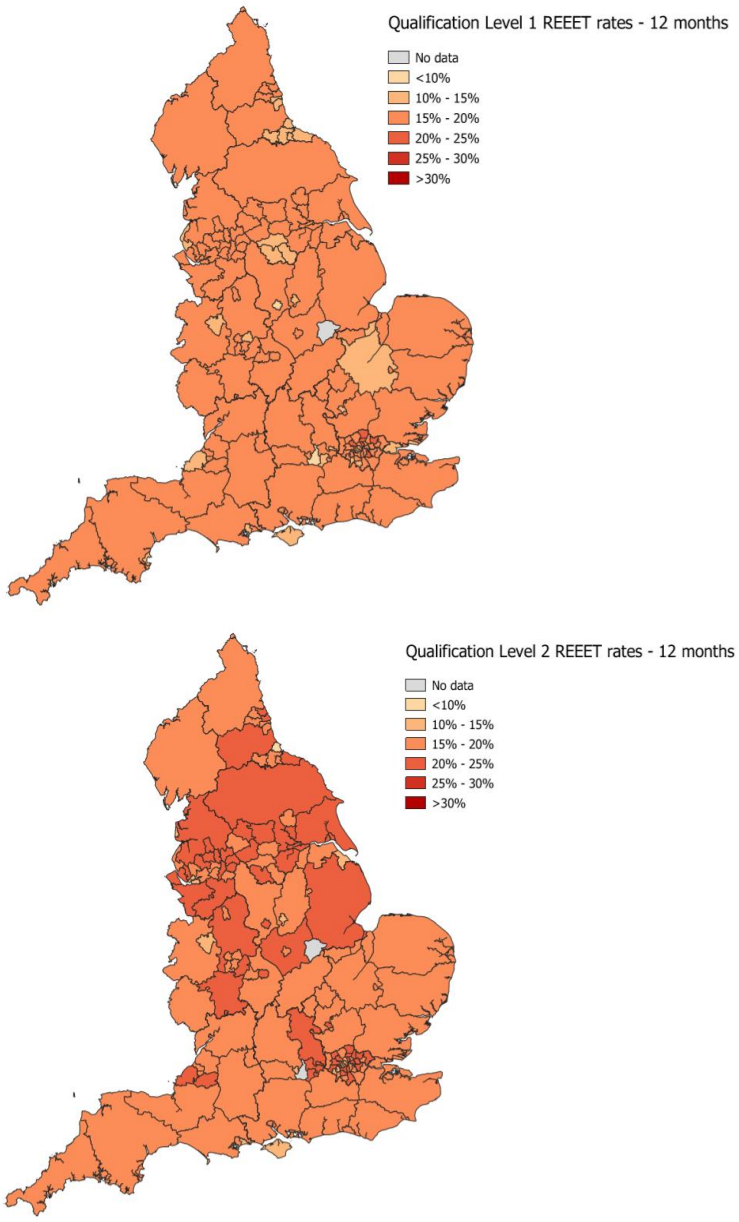


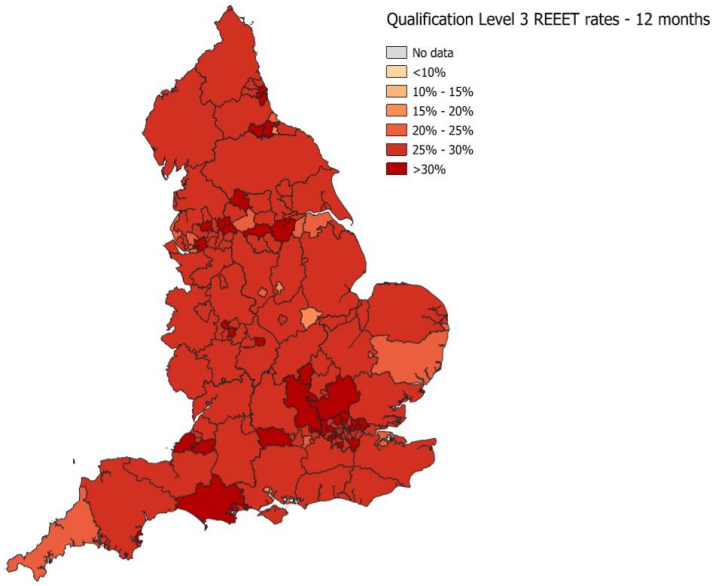
Source: NPD, ILR, HESA and LEO for the 2006/07- 2011/12 school leavers (age 19-24 when observed NEET)

Figure 5 illustrates the REEET rates for groups with different levels of qualification. As with the regional and national figures presented before, we find generally higher proportions of young people making transitions out of NEET if they hold higher level qualifications across the Local Authorities. The median of the REEET rate of young people with Level 2 qualifications is 19% compared to 17% for those with a Level 1 or below and 28% for people with A-Levels.

The local REEET rates for Level 3 attainers are always higher than for those with only Level 2 qualifications, there are seventeen Local Authorities where the REEET rates of people with Level 2 qualifications are at least one percentage point below those with Level 1 qualifications. Six of these Local Authority areas are London Boroughs (Camden, Richmond upon Thames, Hillingdon, Hammersmith and Fulham, Lewisham, Hackney, Enfield, and Brent), including the two Boroughs with the highest REEET rates (Brent and Enfield). In Camden, Richmond and Hillingdon, REEET rates for NEETS with Level 2 qualifications are more than three percentage points below the rates of people with lower qualifications. Similar differences are observed for Reading, North East Lincolnshire, Hartlepool, Halton and Bournemouth.

Figure 5: REEET rates by Level of qualification at age 18





Source: NPD, ILR, HESA and LEO for the 2006/07- 2011/12 school leavers (age 19-24 when observed NEET)

In summary, we find low REEET rates derived from the LEO data of 20%-30%, similar to LFS data. There is little variation across localities, both on average and when shown separately for young people with different levels of education.

A key finding is that – while re-engagement tends to be higher for young people with higher formal levels of education attainment – some Local Authorities have higher rates for those with very low-level skills compared to those who have achieved Level 2 (GCSE equivalent) qualifications. The difference might arise on account of the different economic structure of different areas (e.g. the type of firms). It might also result from better local support available for people with low skills, who retain entitlements to gain their first Level 2 qualification, while NEETs with higher level skills in their early twenties do not have straightforward options. Although all re-engagement rates are surprisingly low and need to increase, lifting the low re-engagement rates of people with Level 2 qualifications in these areas would require offering more support for this group of young people.

Identifying types of local areas

Based on the maps described above, we analysed the data from the Local Authorities' areas in a subsequent cluster analysis, which empirically identifies clusters of similar areas when including various dimension discussed in the previous sections. The aim of the cluster analysis is to determine if there are unique patterns that the local authorities exhibit in terms of NEET and REEET rates, poverty and gaps in educational attainment. Table 5 shows the number of areas in four clusters requested from a k-means algorithm along five dimensions of local inequality in youth disadvantage, such as the overall NEET rate, the differences between NEET rates of disadvantaged young people and others, differences between groups of high and low education attainment, the NEET rate of the very low qualified and the re-entry rate into activity.

Sensitivity analysis (e.g. changing the number of clusters) suggests that four clusters describe the different local area types well. As discussed above, Re-Entry rates to EET show comparatively little variance across localities, while there is some variation in overall NEET rates and much more variation in differences by for individuals classified by education or family background across areas.

As Table 5 indicates, the cluster analysis suggested four typographies based on characteristics related to the overall NEET rate, poverty (as proxied by the Free School Meals indicator), the NEET rate of low-qualified students, the NEET gap between low- and high-qualified students, and the overall re-entry rate. The analysis suggests clusters with the following distinguishing features:

i. Local Authorities in cluster 1 typically have an average overall NEET rate, but an above-average disadvantaged NEET rate;
ii. Cluster 2 groups together Local Authorities that have a high overall NEET rate, above-average disadvantaged NEET rates and a large NEET gap between low- and high-qualified unemployed people;
iii. The third cluster is characterised by a high overall NEET rate as well as a large NEET gap between low- and high-qualified unemployed people; and
iv. Cluster 4 is defined by a below-average NEET rate, but a large NEET gap between low- and high-qualified unemployed people.

Table 5: Mean local area characteristics of clusters

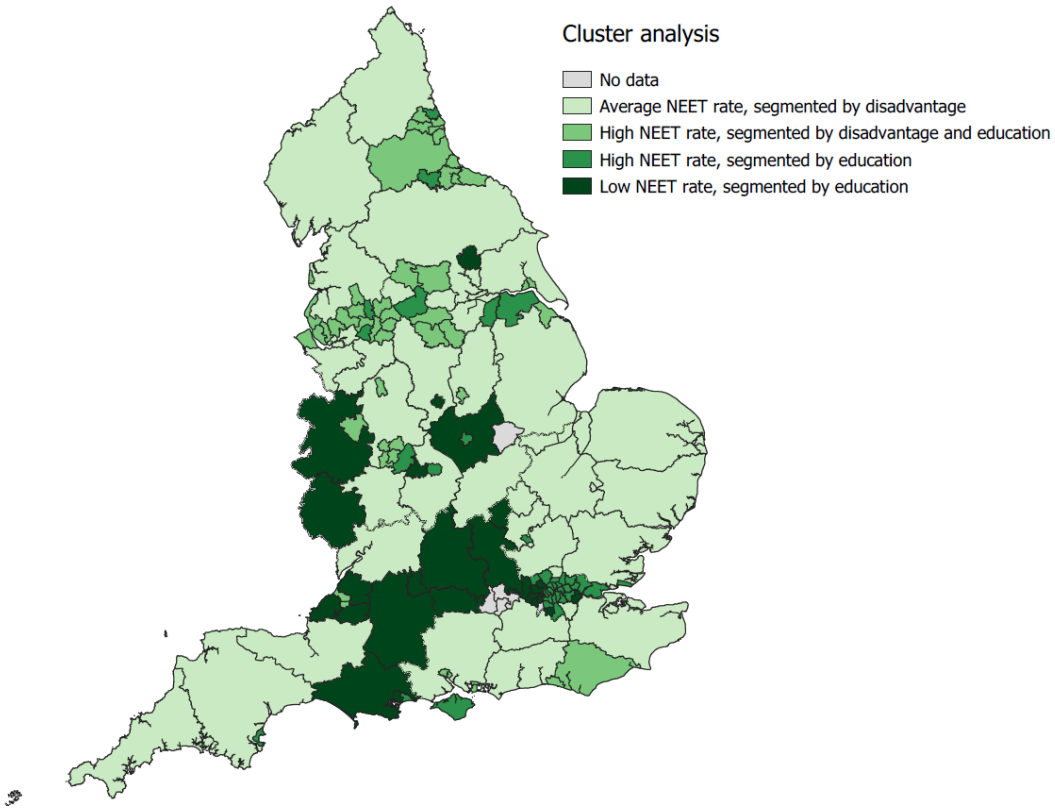
Cluster	Overall NEET rate % of population	Diff. NEET rates disadvantaged to non-disadvantaged (%-points)	Diff. NEET rates Level 1 to Level 3 (%-points)	NEET rate Level 1 (% of population)	Re-entry to Empl., Edu. and Training (% NEETs year before)
Average NEET rate, segmented primarily by disadvantage (39 areas)	13.7	12.9	19.8	27	20.1
High NEET rate, highly segmented by education and disadvantage (43 areas)	17.7	15.2	26	34	18.8
High NEET rate, segmented primarily by education (37 areas)	16.2	5.4	22.9	31.6	20.6
Low NEET rate, segmented primarily by education (26 areas)	12	2.9	17.6	24.3	20.4
Total	15.2	9.9	22	29.8	19.9

Source: NPD, ILR, HESA and LEO for the 2006/07- 2011/12 school leavers (age 19-24 when observed NEET)

A map of the resulting clusters of local areas in England (Figure 6) shows some co-location of the different types of areas obtained from this exploration. As discussed previously, low NEET rates and a relatively low gap between students from poor households and others can be found in the more affluent areas south and west of London, but there are still great differences between young people having achieved different levels of education. The urban centres, particularly in the South, have high NEET rates, but relatively smaller gaps observed between students from poor and non-poor family backgrounds. The more densely populated areas in the North show similarly high NEET rates, e.g. around Greater Manchester, Leeds and North Lincolnshire, but more areas show wider gaps between students from poor and non-poor family backgrounds compared to areas in the South. The pattern is similar for the West Midlands.

In the many other, more rural areas, NEET rates are around average or slightly below. Although in all areas, prospects are better for young people with better education outcomes, these areas also show significant differences in NEET rates by socio-economic status.

Figure 6: NEET rates and dimensions of inequality



Source: NPD, ILR, HESA and LEO for the 2006/07- 2012/13 school leavers
(age 19-24 when observed NEET)

4. Conclusions

Summary

This analysis takes a deep look into young people in England, who are Not in Education, Employment or Training (NEET) in a recent year. NEETs are a persistent problem resulting from the structural weaknesses of the institutions affecting the school-to-work transition, especially the lack of education opportunities outside the academic track by age 19. Because of their negative effects on employment and earnings later in life, the numbers of NEETs need to go down and there are some support programmes to help young people, who struggle making successful transitions. However, local area statistics are currently only available for the 16-18-year olds, who are still in the education participation age, although we know that young people above the age of 18 are relatively more affected by being NEET.

Against this background, we provide a thorough description on this issue for the 20-24-year-olds in small geographical areas ("Upper Tier Local Authorities"). We exploit "Big Data" of all young people in England completing their secondary school education between 2007 and 2012, about 3.6 million young people, and track their individual education and labour market outcomes through administrative data. We create first-time ever statistics on NEETs and transition rates from a NEET status back into education and employment for small local areas.

While headline figures are very similar to statistics, which can be created from the Labour Force Survey, our exploration finds wide variation in the NEET rates across England, especially when looking at particular groups of young people. Shown mostly in maps here, both NEET rates and rates of Re-Entry into Education, Employment and Training (REEET) provide evidence on the great inequalities in young people's opportunities, simply resulting from the area they live in.

As no straightforward pattern seems to emerge from the maps, we implement cluster analysis methods to understand similarities and differences in inequality of youth opportunities across the local areas along the different dimensions of NEET rates, REEET rates and how they are affected by education and family disadvantage. These clusters show:

- Low NEET rates and a small gap between those from different socio-economic groups in very affluent areas (although gaps are big according to educational background).
- High NEET rates in the urban centres.
    - In the South, gaps between groups are much more evident when people are classified by prior level of education than by socio-economic status (according to the Free School Meal measure).
    - In the North, gaps between students from different family backgrounds are much more prominent.

- Relatively low NEET rates in rural areas, although there is a big gap between students from poor and non-poor households.

Conclusions

There are three main conclusions from the descriptions to improve support for young people at the school-to-work transition and to reduce the number of NEETs:

- **Education**: Reducing the number of low attainers is likely to create the most substantive reduction of NEETs in local areas.
- **Family disadvantage:** There is less inequality resulting from family disadvantage in the more affluent and more densely populated southern areas.
- **Targeting**: In Local Authority areas with the highest rates of re-engagement of young people with very low skills, we observe lower mobility out of a NEET status for young people with intermediate compared to those with low skills. An offer to young people with intermediate education outcomes could improve the situation.

The different place-based patterns of inequality for young people from disadvantaged families and for those NEETs of different levels of educational attainment suggest that there is no single obvious solution to reduce inequality in young people opportunities. Instead, programmes will need to tackle the particular nature of inequality that exists in the different localities across England with specific interventions. A policy response might be to introduce more flexibility how policies can be implemented in the local context while at the same time creating consistent monitoring to investigate what works to improve the situation.

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Appendix: Cohort used for outcome tracking

Table A1 illustrates how the different cohorts represent the different age groups in various years after the end of compulsory education. For example, the population of the 19-24-year olds in 2015/16 left secondary education between 2007 and 2012.

Table A1: Academic age of cohort in each year of tracking

		Year of post-16 education and employment outcomes							
		09/10	10/11	11/12	12/13	13/14	14/15	15/16	16/17
Year of leaving Key stage 4	2007	18	19	20	21	22	23	24	
	2008		18	19	20	21	22	23	24
	2009			18	19	20	21	22	23
	2010				18	19	20	21	22
	2011					18	19	20	21
	2012						18	19	20

Note: Academic age refers to age at the start of the academic year