Labour Market Information Report

A report prepared for

South Yorkshire Mayoral Combined Authority

By

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June 2022

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Table of contents

List of Tables

Lists of figures

Acknowledgements

Warwick Institute for Employment Research (IER) would like to thank Jonathan Guest and Roger Wilde of SYMCA for their support throughout the project, and Grace Simmonds for providing us with ILR and EMSI data. We would also like to thank Stef Poole of IER for providing project support.

Glossary

AEB	Adult Education Budget
AI	Artifical Intelligence
ALL	Advanced Learner Loans
APPG	All-Party Parliamentary Group
BAME	Black and Minority Ethnic
BRES	Business Register and Employment Survey
CL	Community Learning
CRM	Customer relations management
DCMS	Department for Digital, Culture, Media & Sport
DfE	Department for Education
DSPs	Digital Skills Partnerships
ESS	Employer Skills Survey
FE	Further Education
FSM	Free School Meals
FTE	Full-time equivalent
GBSLEP	Greater Birmingham and Solihull LEP
GDHI	Gross Disposable Household Income
GVA	Gross Value Added
HE	Higher Education
HECSU	Higher Education Careers Services Unit
HESA	Higher Education Statistical Agency
IB	Incapacity Benefits
IDBR	Inter Departmental Business Register
IER	Institute for Employment Research, Warwick University
ILAs	Individualised Learning Accounts

ILR	Individual Learner Record
ILO	International Labour Organisation
IMD	Indices of Multiple Deprivation
IPA	Infrastructure and Projects Authority
JSA	Jobseeker's Allowance
KS4	Key stage 4
KS5	Key stage 5
LCREE	Low Carbon and the Renewable Energy Economy
LCR	Liverpool City Region
LEED	Local Employment and Economic Development
LEO	Longitudinal Education Outcomes
LEP	Local Enterprise Partnership
LGA	Local Government Association
LMI	Labour market information
LQ	Location Quotient
LSOAs	Lower-layer Super Output Areas
MCA	Mayoral Combined Authority
NEET	Not in Employment, Education or Training
NIESR	National Institute of Economic and Social Research
NOMIS	National Online Manpower Information System
ONS	Office for National Statistics
O*NET	US Occupational Information Network
pp	Percentage point
R&D	Research and development
R&I	Research and innovation
SAN	Skills Advisory Network
SAP	Skills Advisory Panel

SCR	Sheffield City Region
SEND	Special Educational Needs and Disability
SFC	Sixth Form College
SIC	Standard Industrial Classification
SMC	Social Mobility Commission
SMI	Social Mobility Index
SOC	Standard Occupational Classification
SSF	School sixth form
STAT	Strategic Transport Apprenticeship Taskforce
STEM	Science, Technology, Engineering and Mathematics
SYMCA	South Yorkshire Mayoral Combined Authority
TEST	Transport Employment and Skills Taskforce
TVCA	Tees Valley Combined Authority
UP	Upskilling Pathway
WMCA	West Midlands Combined Authority
WYCA	West Yorkshire Mayoral Combined Authority

1. Introduction

1.1. Introduction

Warwick University Institute for Employment Research (IER) was commissioned by South Yorkshire Mayoral Combined Authority (SYMCA) in March 2022 to produce a Labour Market Information (LMI) report.

Each Mayoral Combined Authority (MCA) and Local Enterprise Partnership (LEP) area has been requested by the Department for Education (DfE) to establish a Skills Advisory Panel (SAP), and to develop labour market and skills analyses to inform their future work. DfE has published guidance on the format the skills report and data analysis should take.[1]

1.2. SYMCA LMI report

In SYMCA, the SAP is called the Skills Advisory Network (SAN) and this report will assist the SAN in developing the skills dimension of SYMCA's economic development, labour market, skills and inclusive growth strategies. A key element of the study is identifying and analysing the key drivers influencing the supply of and demand for skills. This is especially important as the SYMCA economy emerges from the pandemic.

This report provides an extensive analysis on the variable sources of data on SYMCA's skills landscape – skills supply, demand, and areas of alignment and mismatch. A shorter summary of the full analysis is also submitted, along with an executive summary.

IER produced a skills report in 2021 which followed the structure of DfE's analytical toolkit methodology and suggested data sources. This report follows a similar structure to provide consistency in the analysis.

The 2021 report provided a limited analysis of the impact of COVID-19 on the subregion. This was mainly because the effect of the pandemic was uncertain given the timing of the data in last year's report and the extensive support which the Government provided to individuals and businesses alleviated much of the true impact. At present, most of the data sources have been updated so that a clearer picture emerges of the full impact of COVID-19 on the SYMCA economy in 2020, and its tentative emergence throughout 2021. However, a limited number have not and, where this is the case, reference is made to this data and analysis in the 2021 Skills Report.

Where information is available, the report analyses data for 2019 as the last year before the impact of the pandemic. For each indicator, the analysis provides a time series from 2014 (or as close as possible depending on the data source) to show the direction of travel pre-pandemic. Data is also presented and analysed from the last

[1] See https://www.gov.uk/government/publications/skills-advisory-panels

full year before the pandemic (usually 2019), the first full year of COVID-19 (2020) and the latest year available (usually 2021).

Where possible data is provided for each of the four SYMCA local authority districts – Barnsley, Doncaster, Rotherham and Sheffield[2] – and England (in some case Great Britain and the UK). Data permitting, there are also comparisons with benchmark MCA/LEP areas – Liverpool City Region (LCR), Tees Valley Combined Authority (TVCA), and the West Midlands Combined Authority (WMCA).[3]

A great deal of the data in the report is based on the Annual Population Survey (APS) which is an aggregation of the regular four quarterly Labour Force Surveys (LFS). This has been accessed via the National Online Manpower Information System (NOMIS). As the APS is a survey, the data is subject to sampling error. This is especially the case at lower geographic levels such as local authority districts, and for specific population or economic groups (e.g. age groups and industrial sectors). Furthermore, some of the data are rounded. Data from the APS is presented as a true representation for points in time for all geographic areas. However, change over time is not reported at local authority level where the effects of sampling error and rounding make reporting changes over time at this level unreliable.

1.3. Structure of the report

The report is organised into five further sections focusing on:

- **Local landscape.** Section 2 provides a background and context to SYMCA and the four local authorities presenting data on the population, economic activity, unemployment and levels of deprivation;
- **Skills demand.** Section 3 provides an analysis of the main determinants and indicators of skills demand including enterprise activity, sectoral and occupational structure, productivity, earnings, employer's training behaviour and future employment trends;
- **Skills supply.** Section 4 presents and analyses data on the qualifications and destinations of young people, provision in the higher education (HE) sector, and publicly funded provision in the further education (FE) sector, as well as international migration trends;
- **Priority sectors.** Section 5 provides an overview of the main employment and skills opportunities and challenges within four SYMCA priority sectors: the green economy; digital; engineering; and transport;

[2] Most of the data for SCR equates to the sum of the four local authority areas. However, a small amount of data covers the four local authority areas and parts of Derbyshire, where this geography is used, we refer to the area as SYMCA.

[3] LEP and MCA areas are coterminous for LCR and TVCA. WMCA is not, it covers three LEP areas: the Black Country LEP; part of Coventry and Warwickshire LEP; and Greater Birmingham and Solihull LEP (GBSLEP). Where LEP only data is provided, the GBSLEP is used as the comparator area for WMCA.

- **Conclusions.** Section 6 provides the main summary and conclusions from the full report identifying areas of alignment and mismatch.

2. Local landscape

2.1. Introduction

This section provides an overview of the economic, demographic and skills structure and direction of the SYMCA. It presents data for the four local authorities against the benchmark of the country as a whole. Comparisons are also made with the comparator MCA areas – LCR, TVCA and WMCA. A direction of travel is provided for the period from 2014 (where data allows) and a longer term perspective is available from economic and labour market analyses that SYMCA has produced since its inception in 2014. Data for 2019-21, where available, is also presented and analysed to show the impact of the pandemic.

2.2. Population

Key points:

- In 2020, 1.4 million people lived in SYMCA. Two out of five lived in Sheffield and the remainder split almost equally across the three other local authorities.
- SYMCA has a smaller BAME population compared to England.
- Sheffield's HE student population increases the number and proportion of 20-24 year olds, but otherwise the age distribution is similar across the local authorities.
- Two thirds of the population are of working age, a proportion that will decline as the average age of the population increases.
- Between 2019 and 2043 there is forecast to be population growth (+10%) in SYMCA in most broad age groups, especially those aged over 64 (+34%).
- However, around 27,000 will leave the workforce than enter it.

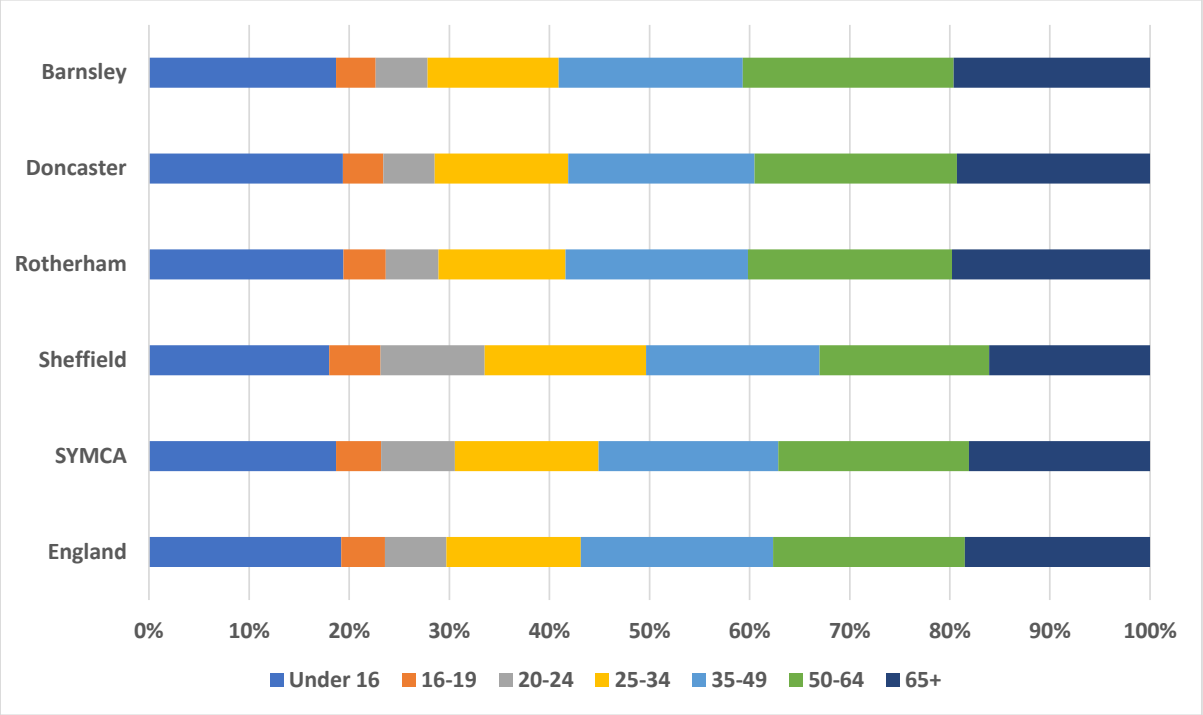
In 2020, there were just over 1.4 million people resident in SYMCA. The largest number lived in Sheffield (589,000 or 42% of the SYMCA population) with the remainder split almost equally between Doncaster (22%), Rotherham (19%) and Barnsley (18%). Just under two thirds (62%) of SYMCA's population is of working age (16-64), around one in five (19%) are aged under 16, and a similar proportion (18%) are aged 65 and over.

Figure 1 shows that the age structure of the population of SYMCA and local authorities was broadly similar. Sheffield had a higher proportion of people aged 16-64 (66%) compared to the other local authorities (61%), this was because Sheffield had a lower proportion of people aged 65 and over (16%) compared to the other districts (18%). The age profile of SYMCA is almost identical to that of England.

The key difference is that Sheffield has much higher proportions of people aged 20-34. In 2020, one in ten of Sheffield's population was aged 20-24, and 16% were aged 25-34. The respective figures for the other three local authorities (which were all identical) were 5% and 13%. This may be due to the presence of the two universities.

Compared to the benchmark MCAs, SYMCA is very similar to LCR and Tees Valley, whereas WMCA has a slightly younger population (21% are aged under 16) and fewer older people (17% are aged 65+).

Figure 1: Population by age – SYMCA, local authorities and England, 2020



Source: ONS population estimates accessed March 2022

Of the four districts, Doncaster is the most sparsely populated with 544 people per KM^2. Sheffield's population density was three times that of Doncaster (1,570 people per KM^2) with Barnsley (739) and Rotherham (919) in between.

The population of SYMCA has risen over the past decade by 5% (2012-2020) and across all four districts. Barnsley and Sheffield saw the largest population increases (both 6%), and Doncaster and Rotherham the smallest (3%).

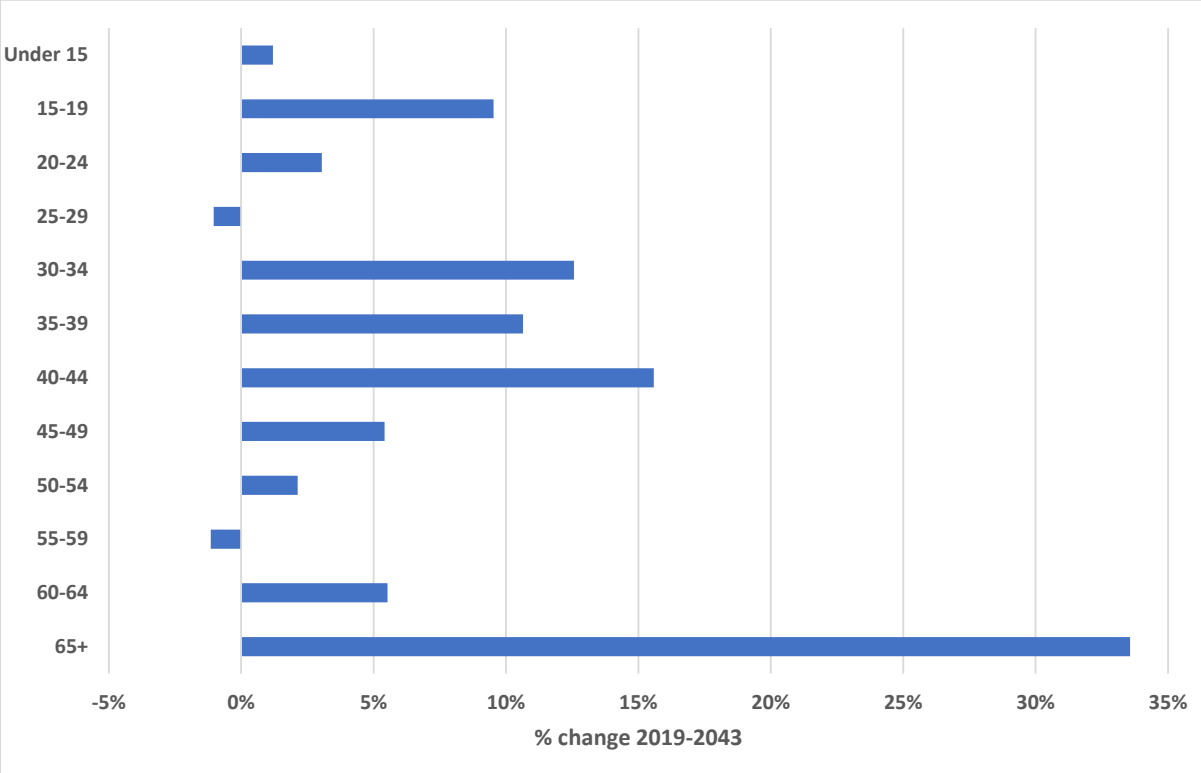
There are expected to be significant population changes over the next 20 years (Figure 3).[4] The total population of SYMCA is expected to grow by over 140,000 people to just over 1.55 million people by 2043, an increase of 10%.

Figure 2 shows that there are predicted to be major changes in the age profile of the population. The number of older people (aged 65+) in SYMCA is forecast to increase by 34% and the number of children (pre-16) to increase by only 1%. The number of people of working age (20-64) is expected to increase by 6%.

The changing age structure has important implications for job opportunities for younger people. People leaving the workforce creates replacement demand for those entering the workforce (see Section 3.5). Over the next 20 years, more of the SYMCA population is forecast to leave the workforce than enter it, there is an estimated net loss of 27,500 people of working age to 2043.

[4] The population projection figures do fluctuate significantly. In 2021, when last year's report was produced, the population projections suggested a much more modest 2% increase or about 8,000 people.

Figure 2: Population forecasts – SYMCA, 2019-2043



Source: ONS Population projections accessed via NOMIS March 2022

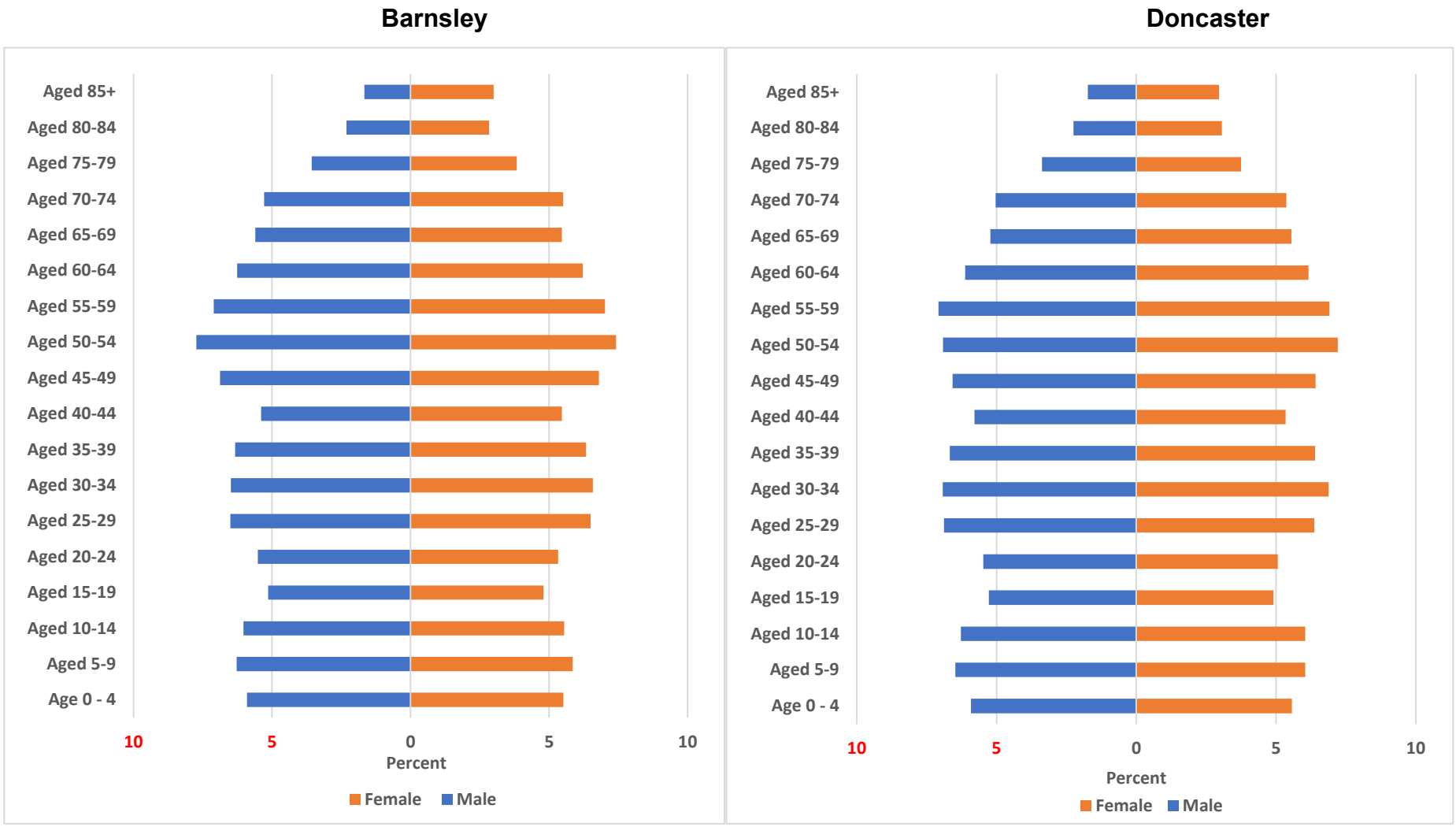
SYMCA serves as a mid-point between Sheffield and the three other local authorities. The ethnic composition of the population varies across the four local authority areas. According to the latest APS data (October 2020-September 2021) Sheffield is closer to the England average in terms of the percentage of the population that is of White ethnic origin (88% and 86% respectively). In the other three local authority areas, more than nine in ten people are of White ethnic origin, with Barnsley having the highest proportion (99%). The largest Black and Minority Ethnic (BAME) group is Asian/Asian British accounting for 8% of Sheffield's and 4% of Rotherham's population. In Sheffield 4% of the population is Black/African/ Caribbean/Black British and 4% are 'other ethnic groups'. Elsewhere any of the other specific BAME groups represent less than 1% of the population.

Figure 3 shows the 'population pyramids' for SYMCA, the four local authorities and England in 2018. The structure by age indicates how the workforce is likely to change in the future, as the various age group 'bulges' or 'constrictions' work through over time.

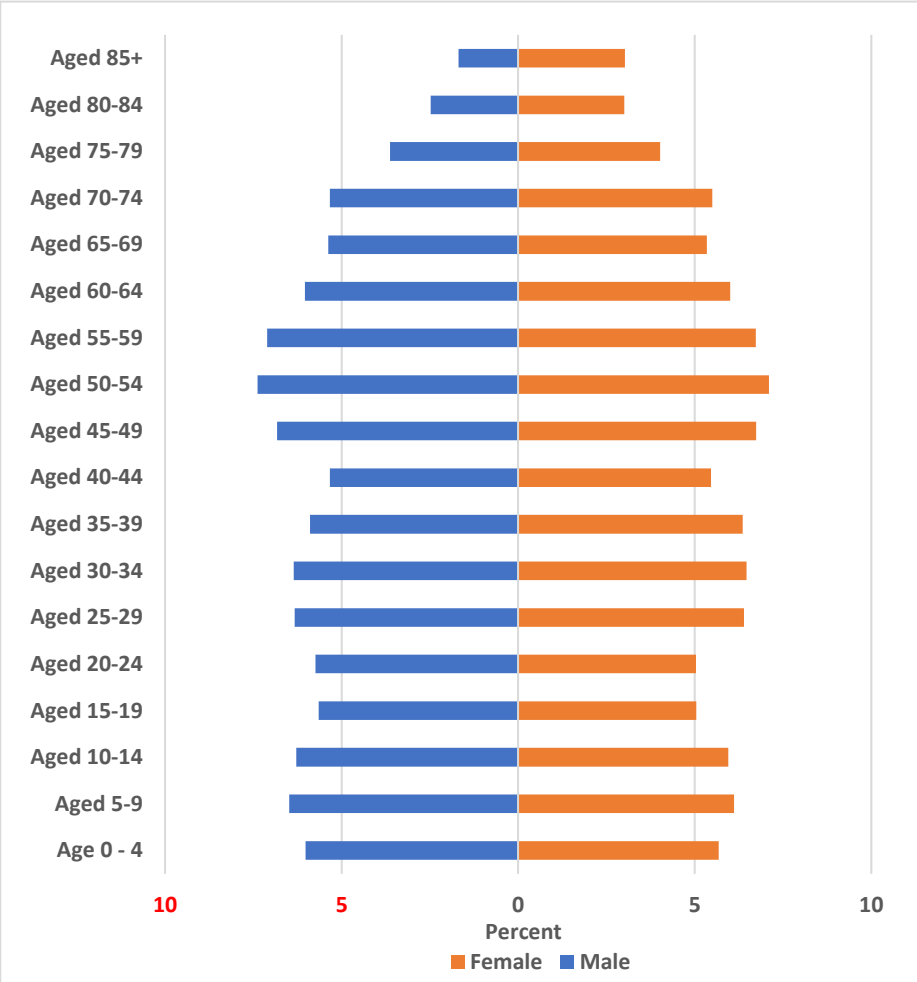
England has an ageing population, with a high percentage of older people and a narrower base. Such a pyramid is typical of a population with a low population growth rate. The historical development of the population in terms of a series of 'baby booms' followed by 'baby busts' can be seen in the widening and narrowing of the pyramid with age. The post-war 'baby boom' accounts for the larger percentage of 70 to 74 year olds and the 'baby boom echo' of the 1960s is apparent in the higher percentage

aged 50 to 54. The increasing number of children reflects low fertility in the noughties, followed by increasing birth rates.

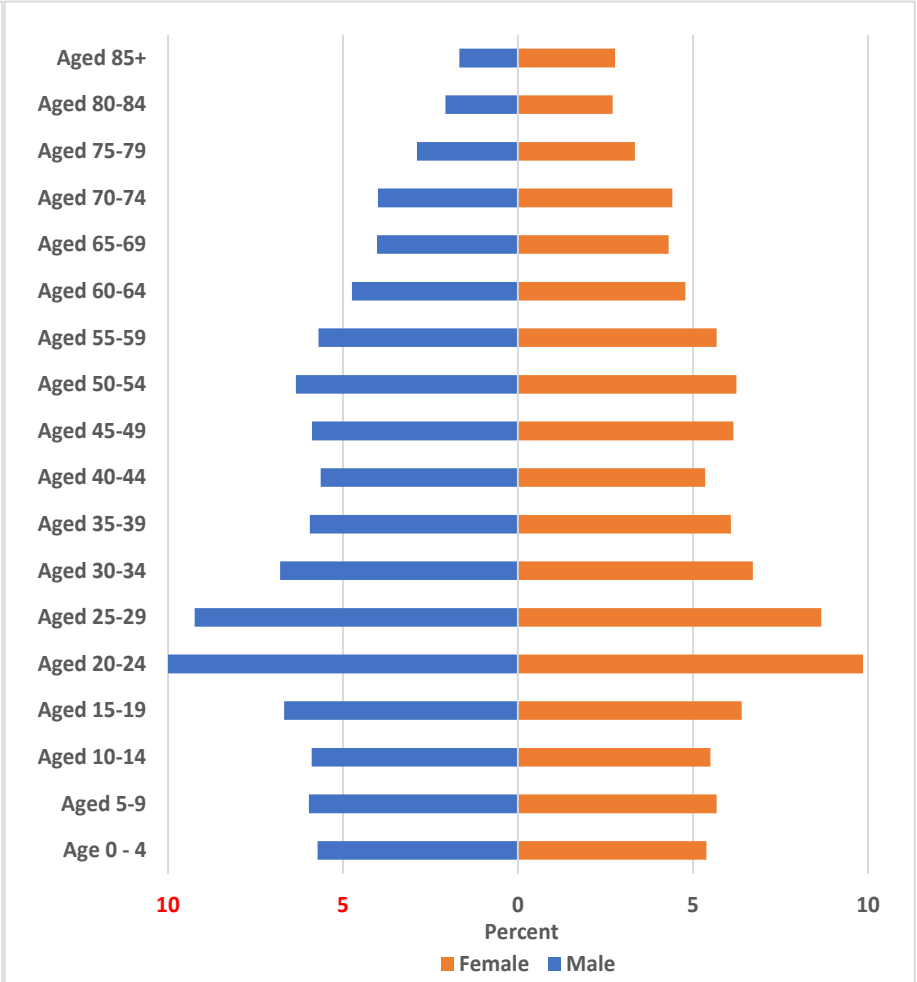
Figure 3: Population structure by age – SYMCA, local authorities and England 2019



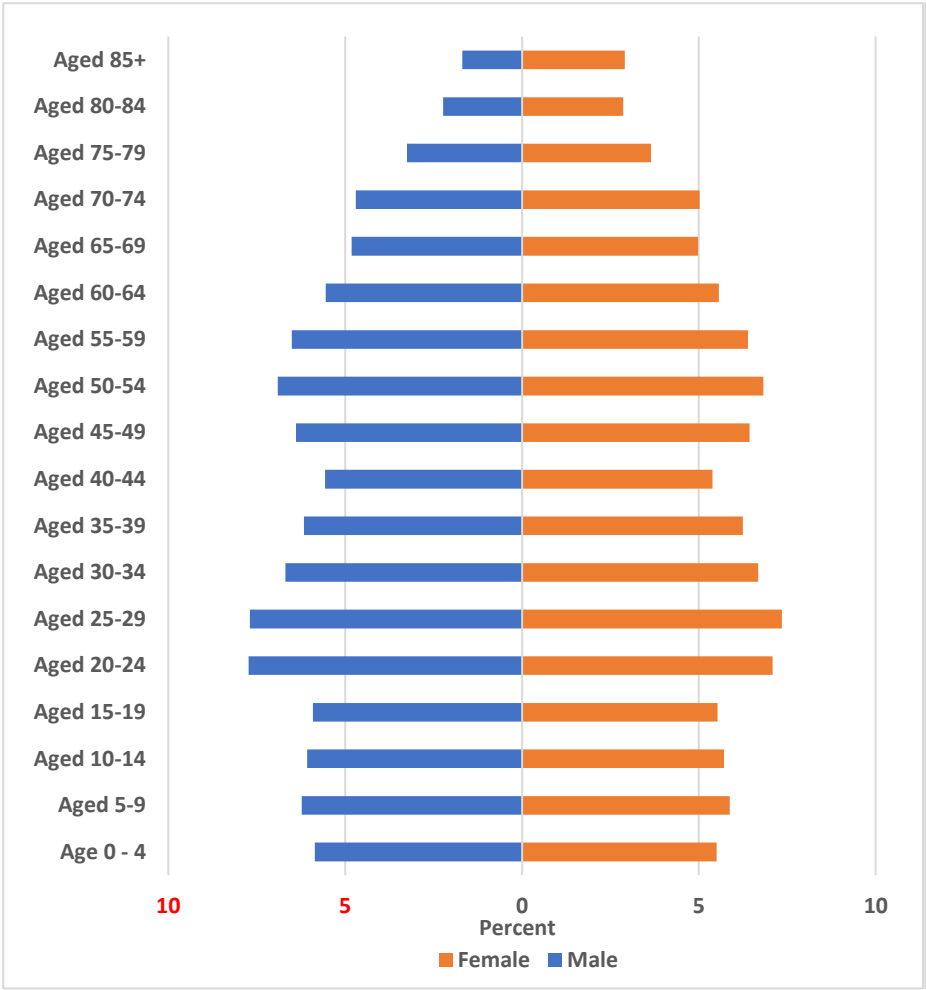
Rotherham



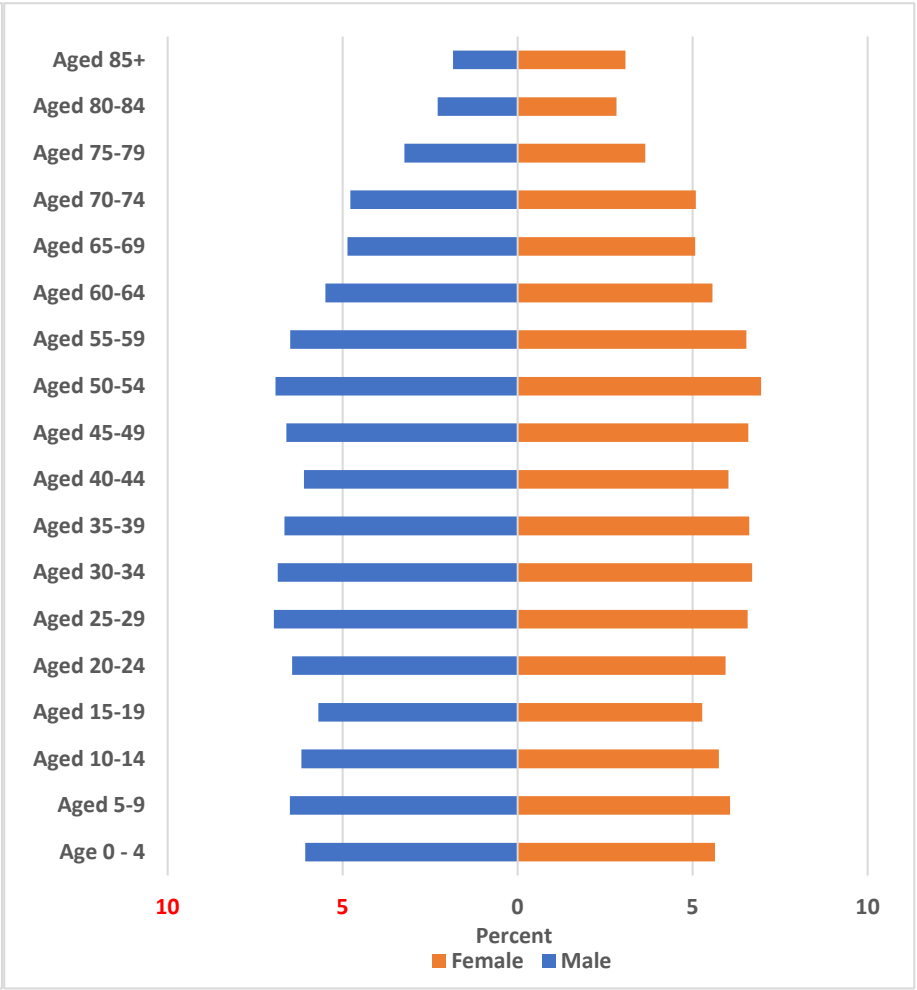
Sheffield



SYMCA



England



In Figure 3, the overall shape of the pyramid for SYMCA as a whole is very similar to England. The subregion has a slightly lower percentage of children (aged up to 14), but a higher proportion of young adults (aged 15-29). The main factor underlying the difference is the much higher representation of young adults in the population of Sheffield. The high percentage of both males and females aged 20 to 29 reflects the large number of university students living in the city. In contrast, there is a relative deficit of 15 to 24 year olds in the populations of Barnsley, Doncaster and Rotherham.

A common feature for the four local authorities is the relatively large percentage of people aged 50 to 59. Many people in these age groups will be moving into retirement during the period 2019 to 2029. The number of young people aged 5-14 is about 20,000 fewer, which means that there will be an ongoing need for employers to recruit new workers over this period.

2.3. Economic activity and inactivity

Key points:

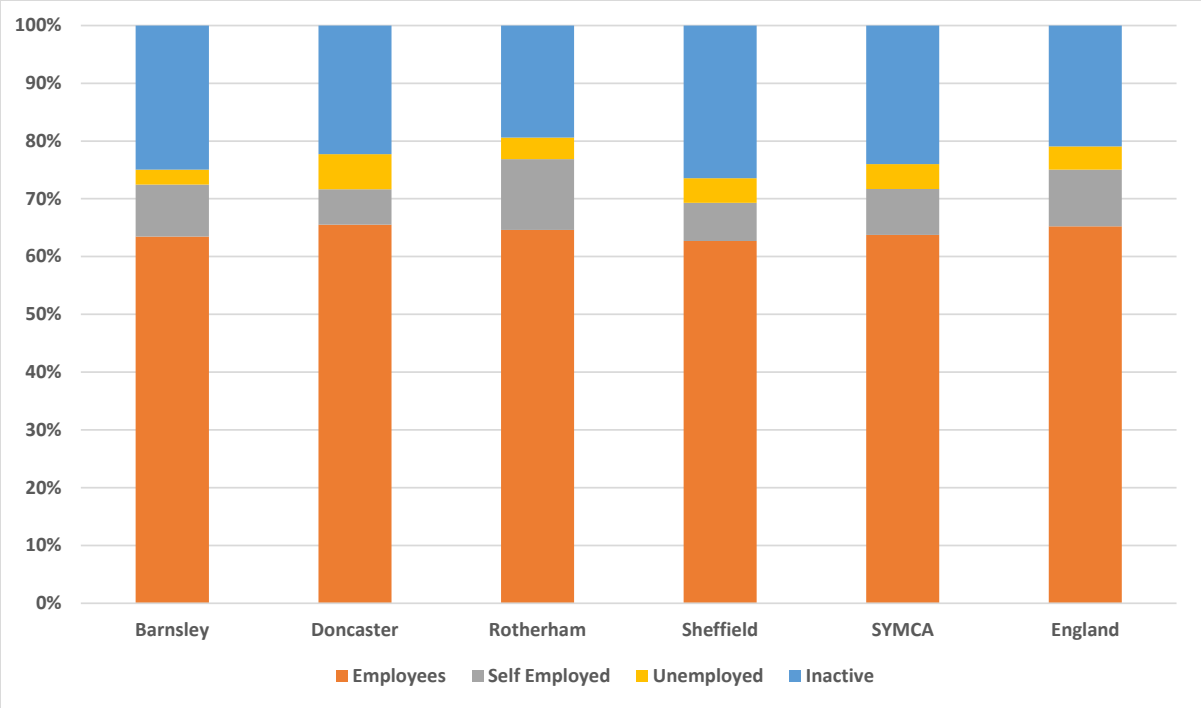
- At 76%, the economic activity of SYMCA working population is lower than that of England (79%). All local authorities are below the national average.
- In part, the relatively high economic incativity rates are due to a higher incidence of people with long term health conditions (29% compared to 21% in England).
- Economic activity rates are lower for people of BAME origin and disabled people within SYMCA and compared to England.
- Unemployment rates are higher for both groups relative to their comaprators in SYMCA and the gap is larger than in England.

In 2020/2021 (April 2020-March 2021) there were just under 880,000 people aged 16-64 in SYMCA. Of these, over three quarters (76%) were economically active (i.e. employed or unemployed) and 24% were economically inactive (e.g. students and retired people)[5]. Figure 4 shows the economic inactivity rate in SYMCA ranged from 19% in Rotherham to 26% in Sheffield. All areas are above the economically inactive rate for England as a whole (21%).

Rotherham also has the highest employment rate (77%) compared to 72% in SYMCA and 75% in England). Doncaster had the highest unemployment rate (6%) and Barnsley the lowest (3%).

[5] This is a change from the 2021 report where Rotherham had the highest economic inactivity rate. This is due to the APS being survey based.

Figure 4: Economic activity and inactivity – SYMCA, local authorities and England, April 2020/March 2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

SYMCA had relatively higher employment and economically active rates than the comparator MCA areas, but lower than England's. Conversely, economic inactivity rates were marginally lower in SYMCA than the other MCA areas, with similar unemployment rates.

The economic inactivity rate for SYMCA has remained higher than the level for the UK since 2004 and the difference has been stable.[6] SYMCA has a high proportion of people who are economically inactive due to long-term health conditions (29% of economically inactive people) compared to 21%. The proportion is particularly high in Barnsley (31%) and Doncaster (33%), compared to Rotherham (26%) and Sheffield (24%). Another key difference is that a larger percentage of economically inactive people in SYMCA want to work (31%) compared to England (22%).[7]

Economic inactivity is a significant and long term challenge with its roots in the areas industrial heritage, and underpins other economic indicators in this report especially levels of deprivation and poverty, and skill levels which tend to be clustered in particular communities.[8]

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[6] Sheffield City Region (May 2019), Sheffield City Region Economic Evidence Base: Skills and Employment.

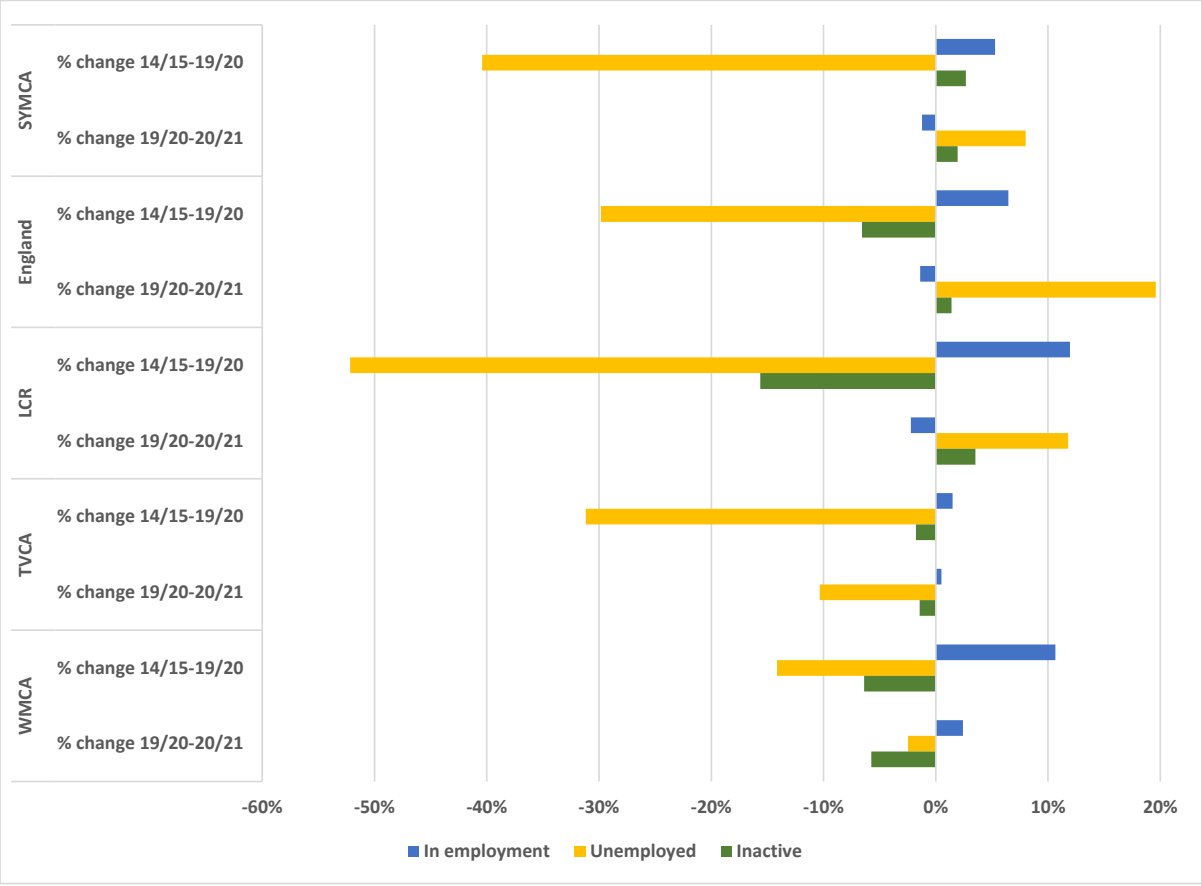
[7] Ibid.

[8] Sheffield City Region (February 2016) European Structural & Investment Fund Strategy 2014-20.

Figure 5 shows that in England and the comparator MCAs, between April 2014/March 2015 and April 2019/March 20 employment rose, and unemployment and economic inactivity fell in each area. The exception was SYMCA which saw economic inactivity increase. Over this period, employment increased at a comparatively slower rate in SYMCA. There was a much greater fall in unemployment, but this is probably due to people moving to economic inactivity rather than work.

In the first year of the pandemic, employment fell in each MCA area and England except for WMCA. However, the largest fall was -2% (in LCR) which is due to the large amounts of employment support provided. Unemployment and economic inactivity increased except in TVCA and WMCA. The largest increase in unemployment was in England (20%) which was much higher than in SYMCA (8%).

Figure 5: Economic activity and inactivity: the impact of COVID-19 – SYMCA, MCAs and England, percentage change 2014/15-2019/20 and 2019/20-2020/21



Source: IER analysis of NOMIS data based on the Annual Population Survey

Economic activity and inactivity vary by population groups. Figure 6 shows that, in SYMCA, the economic activity of people of White ethnic origin (79%) is higher than people of BAME origin (70%). Both of these figures are lower than the national average, both five percentage points (pps) lower.

Economic activity is related to age and qualification levels so some forms of inactivity (e.g. younger people who are more likely to be full-time students) will have longer term

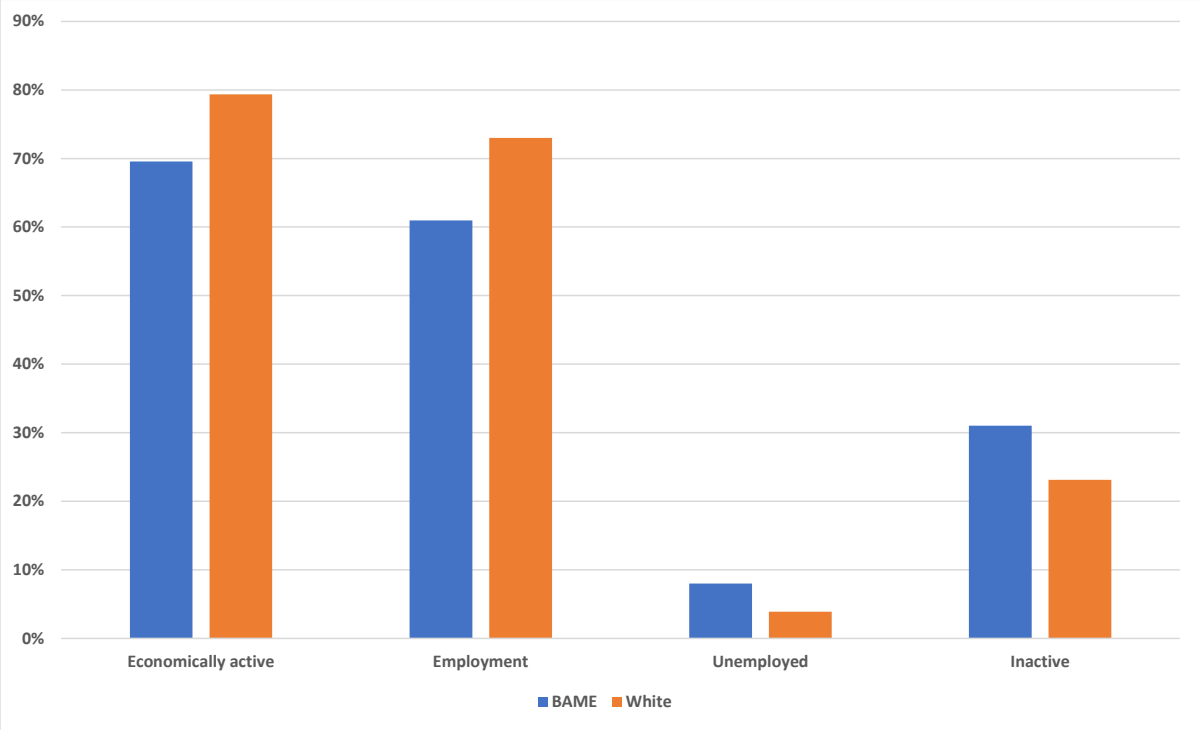
benefits whereas other types are more detrimental (such as inactivity related to health conditions more common amongst older people).[9][10]

Employment rates vary between different ethnic groups and compared to England. In SYMCA, employment rates are much higher for those of White ethnic origin (73%) compared to those of BAME origin (61%). This is mostly due to higher economic inactivity rates rather than unemployment rates. The respective figures for England are 77% and 68%.

The unemployment rate for people of BAME ethnic origin (8%) is twice that of people of White ethnic origin (4%), which is similar to the national averages (7% and 4% respectively).

As the numbers of BAME people in specific categories is relatively small (and the sampling error concomitantly large) the data has not been presented.

Figure 6: Economic activity and inactivity by broad ethnic group – SYMCA April 2020/March 2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

Disabled people[11] are much more likely to be disadvantaged in the labour market compared to non-disabled people as Figure 7 shows. In SYMCA, disabled people are twice as likely to be unemployed (6% compared to 3% for non-disabled people),

[9] Sheffield City Region (2016), LMI Report.

[10] Sheffield City Region (February 2016) European Structural & Investment Fund Strategy 2014-20.

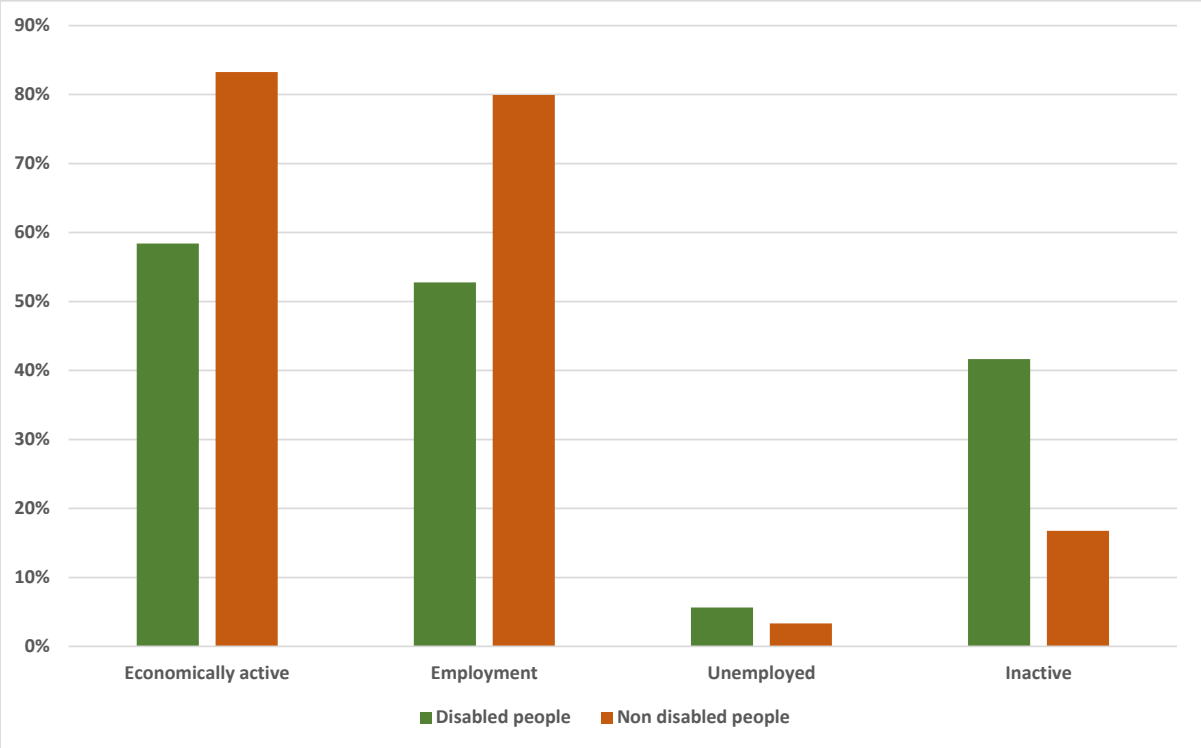
[11] As defined by the Equality Act 2010 i.e. a physical or a mental condition which has a substantial and long-term impact on your ability to do normal day to day activities.

economically inactive (42% compared to 17%), and much less likely to be in employment (53% compared to 80%).

Compared to England, disabled people in SYMCA are more likely to be economically inactive (42% compared to 39% in England), less likely to be in employment (53% and 56%) and more likely to be unemployed (6% and 4%).

As the numbers of disabled people in specific categories is relatively small (and the sampling error concomitantly large) the data has not been presented for changes over time.

Figure 7: Economic activity and inactivity by disability – SYMCA April 2020/March 2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

2.4. Unemployment and deprivation

Key points:

- There are two measures of unemployment, the ILO measure and the claimant count. In 2021, both gave similar unemployment rates in SYMCA.
- The ILO measure of unemployment shows:
  - Higher levels of unemployment in SYMCA (5%) in 2021 when compared to England (4%). Doncaster has the highest uemployment rate (8%);
  - Between 2014 and 2021, unemployment fell at a faster rate in SYMCA (-5pps) than in England (-2pps);

- Young people's unemployment (17%) is much higher than other age groups but lower than in England or the other MCA areas.
- The unemployment rates for people of BAME origin (12% and 5%) and disabled people (9% and 5%) are around twice that of their comparator groups.

- Claimant count measure shows:
  - A similar level of unemployment (6%) in SYMCA compared to the ILO measure (5%), and similar to England's (6%);
  - The trend in the claimant count from 2015 to 2021 is very similar in each area.
- Deprivation and social mobility
  - Compared to the comparator LEP areas SYMCA has lower levels of deprivation on the income and employment measures;
  - However, much higher levels of deprivation on the education, skills and training indicator, especially in Doncaster;
  - Between 2015-2019, levels of deprivation varied on the different domains and in different areas. But generally, deprivation increasesd.

There are two main measures of unemployment: the International Labour Organisation (ILO) definition[12]; and the claimant count. The introduction of Universal Credit has removed the distinction between benefits supporting those who are not working but are seeking work, and those who are in receipt of benefits for some other reason, such as a long term health condition. Since the Financial Crisis, levels of unemployment initially rose but then fell due to an improving economy but also because of changes in the requirements and conditionality placed on claimants.[13]

2.4.1. Total unemployment

Figure 8 shows that, in the main, unemployment fell across SYMCA and England from 2014 until 2020. The exception was in Doncaster where unemployment fell to 2016 but then the trend has been upwards.

In 2019, the unemployment rate was across the SYMCA area (5%) was lower than the comparator MCA areas (with the exception of LCR) but higher than in England (4%). However, the range is quite small (three percentage points). By 2021, the rate was 5% in both areas.

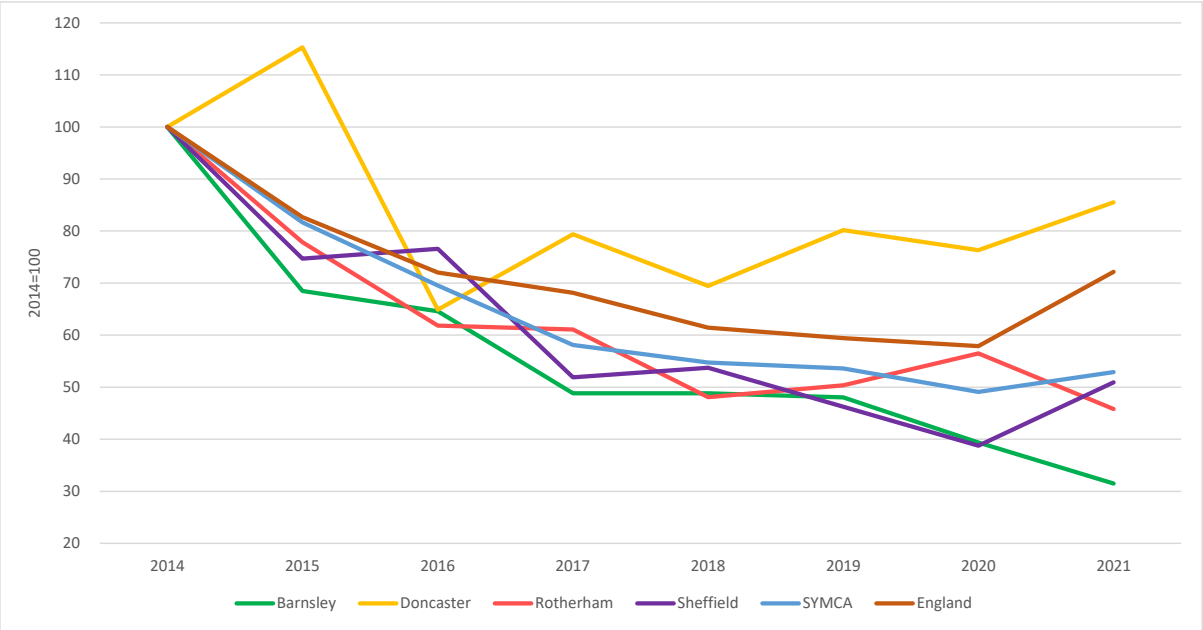
Given the impact of COVID-19 on the economy, unemployment rates were relatively unaffected. Across SYMCA, the ILO unemployment rate was the same in 2019 and

[12] The LFS uses the ILO definition of unemployment includes people not in employment who have been actively seeking work in the past four weeks and are available to start work in the next two weeks; or who have found a job and are waiting to start it in the next two weeks.

[13] Beatty, C. et al (April 2019), Embedding inclusive growth in the Sheffield City Region. Sheffield City Region.

2021. Across England the unemployment rate rose by one percentage point. This reflects the success of the furlough scheme and other Government support.

Figure 8: Unemployment change from 2014 – SYMCA, local authorities and Great Britain



Source: IER analysis of NOMIS data based on the Annual Population Survey

2.4.2. Unemployment by demographic group

Figure 9 shows how unemployment rates vary across different age groups. In each of the areas, the unemployment rate of 16-19 year olds is much higher than for any other age group. In SYMCA 17% of 16-19 year olds were unemployed, but this is much lower than in England and the other MCA areas. This is a concern given the range of options and levels of support for young people.

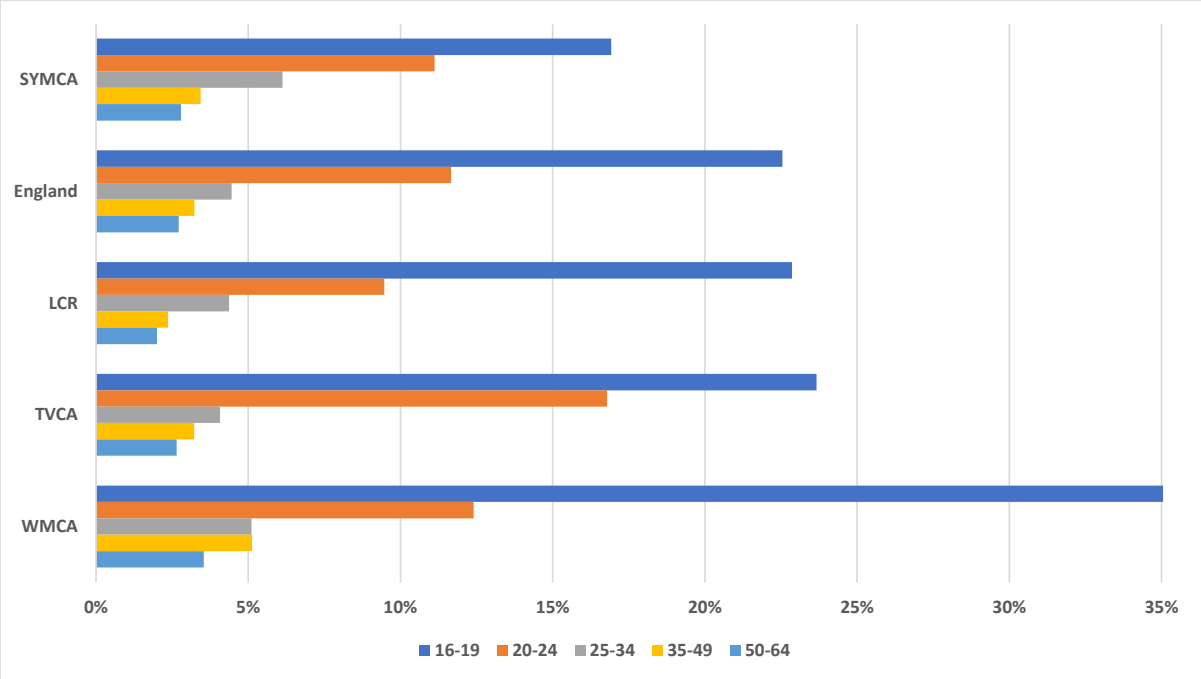
In each area there is then a significant decrease to 20-24 year olds, and then to 25-24 year olds, before unemployment rates tend to level out. Unemployment in the oldest age group (50-64 year olds) is lowest in each area.

Between 2013/14 and 2019/20, unemployment fell in every age group in every MCA area and England, declining by at least one third. In SYMCA the fall was greatest for the younger age groups (16-19, 20-24 and 25-34) compared to England.

As the data is survey based and rounded, there is no analysis of the changes by age group impacted by COVID-19.

In SYMCA, the impact of the pandemic on male unemployment (an increase of 23%) was greater than that for females (-10%). In England, both male and female unemployment rates rose by 24%.

Figure 9: Unemployment rate by age group– SYMCA and England April 2020/March 2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

Due to concerns over sampling error and rounding there is no analysis of changes between 2019 and 2021 by ethnicity or disability.

2.4.3. Claimant count

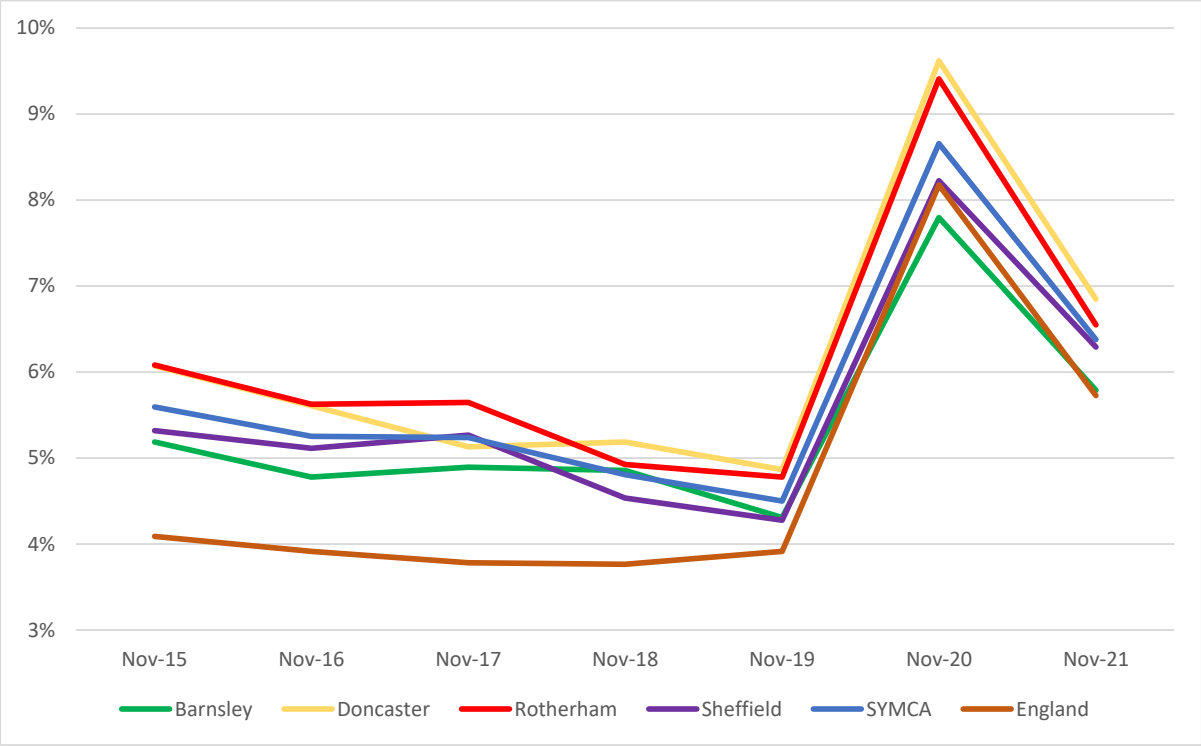
The preceding sections are based on the ILO definition of unemployment, but other sources of data are available, for example, the claimant count. The claimant count used to be based on the number of people claiming Jobseeker's Allowance (JSA) but with the introduction of Universal Credit the definition includes JSA claimants and those in the Universal Credit 'Searching for Work' conditionality group. The combined figure is known as the alternative claimant count.

In November 2021, the alternative claimant count in SYMCA numbered 42,719 (this compares with 37,500 in 2021 according to the ILO definition). This gives a SYMCA percentage rate of 6% on the claimant count and 5% on the ILO measure.

Figure 10 shows that the trend in unemployment is very similar in every area. In SYMCA, there was a gradual decline of around 1pp between 2015 and 2019. An increase from 2019-2020 of about 4pps as COVID-19 impacted, and then a reduction of -2pps as restrictions were eased in 2021. The changes were very similar in each area.

In November 2021, the percentage alternative claimant count rate was very similar across SYMCA and England, ranging from 7% in Doncaster to Rotherham to 6% in the other areas. The alternative claimant count rate was higher in each of the comparator MCA areas (7%-10%) than in SYMCA (6%).

Figure 10: Alternative claimant count percent – SYMCA, local authorities and England November 2015-November 2021



Source: IER analysis of Stat Xplore data

2.4.4. Benefit claimants

There is no updated data for people claiming in-work tax credits, out of work benefits and incapacity benefits. The analysis in the 2021 report found that:

- Just under one third (30%) of SYMCA households claimed in-work benefits, higher than the national average (24%) especially in Doncaster (35%);
- SYMCA had higher levels of households claiming out of work benefits (11%) which was higher than the national average (8%) , especially in Barnsley and Rotherham (both 12%).

2.4.5. Deprivation and social mobility

Levels of deprivation in SYMCA have been historically high and in the top quintile of LEP areas.[14] The way the data is constructed (area rankings) means that levels of deprivation are focused in specific communities i.e. pockets of high levels of deprivation. The data in this section is presented across three of the Indices of Multiple Deprivation (IMD) domains – income, employment, and education and training – and

[14] Sheffield City Region (2016), LMI Report.

shows the proportion of Lower-layer Super Output Areas (LSOAs) in the 10% most deprived in England.

No new data has been published since 2019. However, this section includes data from 2015 which was not in last year's report. Last year's report found that in 2019:

- **Income domain:** SYMCA, and each of the four local authorities, had lower deprivation levels on the income domain compared to the three comparator MCA areas. Within the SYMCA, Sheffield had the highest deprivation levels and Doncaster the lowest.
- **Employment domain:** SYMCA had much lower levels of deprivation on the employment domain than LCR and Tees Valley, and the same as Greater Birmingham and Solihull LEP (GBSLEP) area.[15] Within the SYMCA, Doncaster had the lowest deprivation levels, and Barnsley and Rotherham the highest.
- **Education and training domain:** on this measure, SYMCA has much higher levels of deprivation than LCR and GBSLEP and marginally above Tees Valley. Doncaster has much higher levels of deprivation, as does Barnsley.

Figure 11 shows the percentage point change for SYMCA, its four local authorities and the comparator LEP areas between 2015 and 2019. In the chart, a negative figure means that that index of deprivation has decreased in the area i.e. it has fewer LSOAs in the most deprived 10% nationally. A minus figure therefore represents less deprivation in an area.

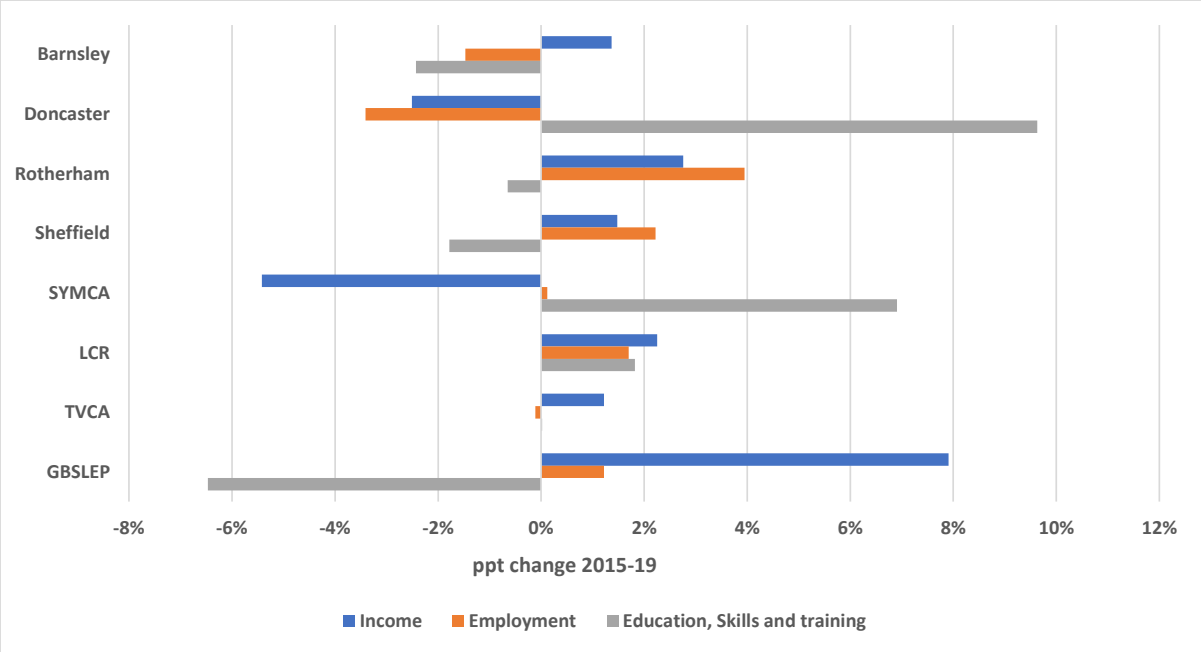
In SYMCA, between 2015-19 deprivation, deprivation generally increased. But the picture is complicated because there were different changes in the various domains and in different local authority areas.

Between 2015-19 in SYMCA, deprivation fell in the income domain, remained at a similar level in the employment domain, but rose in the education, skills and training domain. Within SYMCA, income deprivation increased in all areas except Doncaster. Employment deprivation rose in Sheffield and Rotherham but fell in Barnsley and Doncaster. Education, skills and training deprivation fell in all Local authorities apart from Doncaster where it rose significantly.

In the comparator LEP areas, there was an increase in income deprivation, and employment deprivation in most areas.

[15] Data isn't available for the WMCA so the GBSLEP area is used instead.

Figure 11: Indices of Multiple Deprivation – SYMCA, local authorities and comparator LEPs, 2015-2019



Source: English Indices of Deprivation

The Social Mobility Commission (SMC) publishes indices of social mobility (Social Mobility Index [SMI]). However, the latest available data is for 2017 and no new data is available.

Last year's report found that:

- there were a wide range of social mobility scores across the local authorities and LEP areas;
- SYMCA and the Local authorities had lower rankings on the youth and adulthood indicators. Youth social mobility was particularly low in Barnsley and Doncaster.

2.5. Summary and conclusions

2.5.1. Summary

In 2020, 1.4 million people lived in SYMCA. Two out of five lived in Sheffield and the remainder split almost equally across the three other local authorities. SYMCA has a smaller BAME population compared to England, although this varies across the four local authorities. Sheffield has the largest BAME population (although still below England's) whilst less than 2% of people in Barnsley are BAME. SYMCA is closer in profile to LCR and TVCA than WMCA and England.

Two thirds of the SYMCA population are of working age, a proportion that will decline as the average age of the population increases. Sheffield's HE student population increases the number and proportion of 20-24 year olds, but otherwise the age distribution is similar across the local authorities.

Between 2019 and 2043 there is forecast to be population growth (+10%) in SYMCA in most broad age groups, especially those aged over 64 (+34%). However, the published population forecasts do vary from year to year so it is worth monitoring them.

From 2019 and 2043 it is predicted that around 27,000 more people will leave the workforce (primarily due to retirement) than enter it. This should provide employment opportunities for younger people as most of the forecast employment changes are due to replacement demand rather than changes within sectors or occupations (see Section 5).

At 76%, the economic activity of SYMCA working population is lower than that of England (79%). All SYMCA local authority areas are below the national average as well. In part, the relatively high economic inactivity rates are due to a higher incidence of people with long term health conditions (29% compared to 21% in England). Such people will require additional support of re-entering the labour market than other economically inactive groups, such as women returners or students.

Economic activity rates are lower for people of BAME origin and disabled people within SYMCA and compared to England. Unemployment rates are higher for both groups relative to their comparators in SYMCA and the gap is larger than in England. However, the biggest gap is in economic inactivity rates for both groups, and the gaps are greater than in England.

There are two measures of unemployment, the ILO measure and the claimant count. In 2021, both gave similar unemployment rates in SYMCA (around 5% or 6%).

The ILO measure of unemployment shows that unemployment in SYMCA (5%) in 2021 was the same as the national average (5%). Doncaster has the highest unemployment rate (8%) within SYMCA, and Barnsley the lowest (3%). Between 2014 and 2021, unemployment fell at a faster rate in SYMCA (-5pps) than in England (-2pps).

Given the size of the economic impact of the pandemic its impact has not been long lasting. According to the ILO measure, unemployment levels have returned to their pre-lockdown levels in Barnsley and Rotherham and just above them in Doncaster and Sheffield.

Unemployment amongst young people (17%) is higher than for other age groups. However, it is lower in SYMCA than in England or the other MCA areas.

The unemployment rates in SYMCA for people of BAME origin (12% and 5%) and disabled people (9% and 5%) are around twice that of their comparator groups. And the gaps are wider than in England.

Using the claimant count measure of unemployment shows a similar level of unemployment in SYMCA (6%) compared to the ILO measure (5%), and similar to England's (6%). The trend in the claimant count from 2015 to 2021 is very similar in each area, local authorities and MCAs.

The analysis of deprivation data shows that compared to the comparator LEP areas SYMCA has lower levels of deprivation on the income and employment measures. However, there are much higher levels of deprivation on the education, skills and training indicator, especially in Doncaster. Between 2015-2019, levels of deprivation varied on the different domains and in different areas. But generally, deprivation increased.

2.5.2. Conclusion

This section has shown that, in keeping with other areas, the SYMCA population is getting older and over the next quarter of century more people are likely to leave the labour market than enter it. This is likely to create employment opportunities for young people.

On a range of measures, SYMCA is more disadvantaged and deprived than the national average. But tends to perform better than the comparator MCA areas.

In terms of bringing people into the labour market, the largest group not currently engaged are those who are economically inactive. Different categories of people make up this group and some will require more support (e.g. those with a long term health condition) to enter or re-enter the labour market than others (such as women returners and students).

An important effect of COVID-19 has been the withdrawal of people from the labour market into economic inactivity[16]. During the pandemic, the extensive Government support measures masked its true impact. As the economy emerges and support measures have been removed, COVID-19's economic effects are becoming more apparent. Nationally, there has been a significant increase (from before the pandemic) in the number of economically inactive people, a key factor of this is people reporting that they have left the labour market due to long term health reasons. Prior to 2020, SYMCA was untypical in seeing a rise on economic inactivity, and during the last year has seen above average increases in inactivity. This compares with similar changes in employment levels and better than average changes in unemployment.

Across SYMCA, there is varying performance across the four districts. For example, whilst Sheffield performs better than the SYMCA and national average for low levels of people claiming in work tax credits and unemployment falls over the past decade, the data on levels of employment and economic inactivity are worse than the subregional and national averages. Similarly, Barnsley scores less well on IMD indicators but has lower levels of unemployment and the largest decrease in unemployment levels over the past decade.

However, across a range of the local landscape indicators, Rotherham and Sheffield tend to score relatively better than Barnsley and Doncaster.

[16] IES Briefing (April 2022). Labour Market Statistics, April 2022. Institute for Employment Studies.

3. Skills demand

3.1. Introduction

This section focuses on the main drivers of skills demand in SYMCA: enterprise activity; productivity; present and forecast sectoral and occupational distributions; earnings; and vacancies.

3.2. Enterprise activity

Key points:

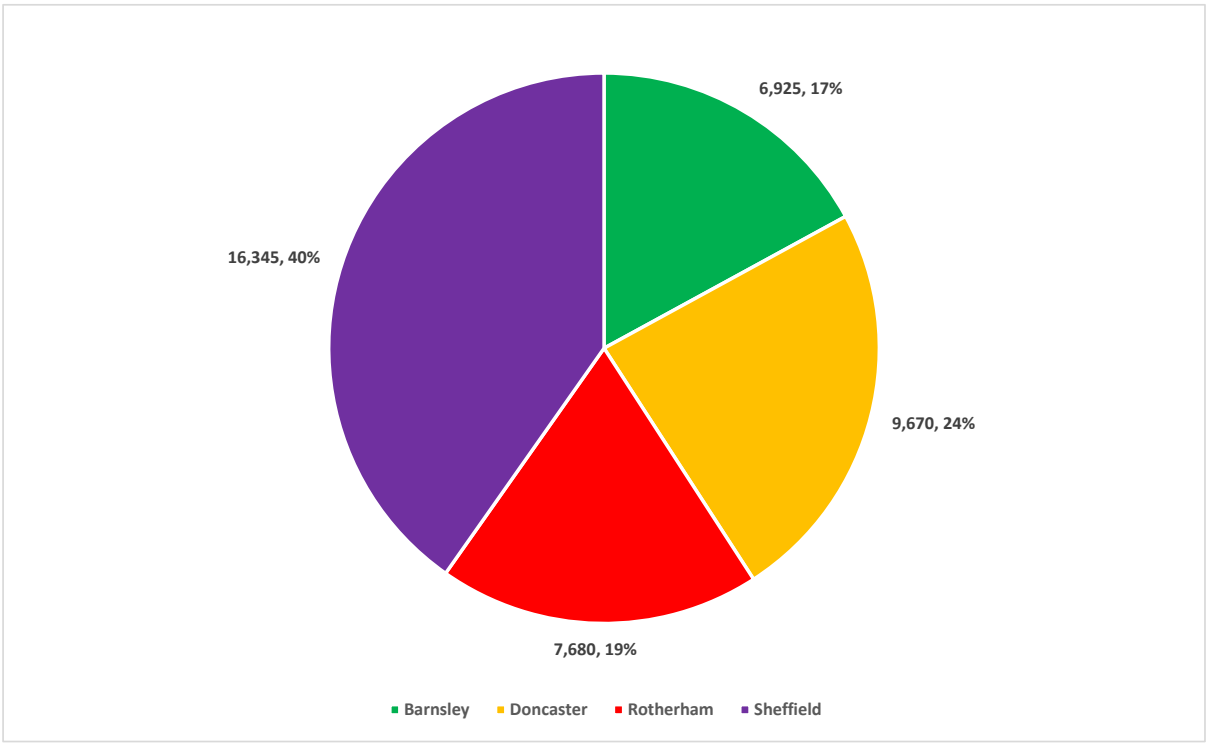
- Business density (number of businesses per adult population) in SYMCA in 2021 (35.3), was much lower than in England (52.6) but similar to the comparator MCA areas:
- The distribution of businesses by size and sector is similar across all of the areas.
- Between 2014 and 2021, the number of businesses of all sizes grew in every area, and in most SYMCA areas, above the national average.
- Compared to their 2019 levels, the number of enterprises grew in each SYMCA area and England. The number of enterprises also increased in most sectors 2019-21, despite the pandemic.
- In SYMCA in 2020, 14% of the stock of businesses were created and 10% stopped trading, this is a similar proportion in each area. This has been the same (more or less) since 2015 and, again, the data do not show much impact from the pandemic.
- In SYMCA in 2021, whilst the largest number of businesses were in banking, finance and insurance etc. and distribution, hotels & restaurants, public admin, education & health accounted for the largest share in employment.
- Whether measured by employment, turnover or both, SYMCA has similar proportions of high growth businesses to the comparable MCA areas, and England. From 2015-2020, the proportion of high growth businesses (employment measure) has remained stable, about 4%-5% in each area.

3.2.1. Number of businesses

In 2021, there were just over 40,600 businesses in SYMCA. It is difficult to assess what number of businesses is the 'right' level for an area. Business density is one measure (number of businesses per adult population). In 2021, SYMCA's business density (35.3 businesses per 1,000 adult population) was much lower than in England (52.6). But this is similar to the comparator MCA areas: higher than TVCA (32.5) but lower than WMCA (39.4). Across SYMCA, Doncaster has the highest business density (38.3) and Sheffield has the lowest (33.8).

Figure 12 shows that 40% of SYMCA businesses were located in Sheffield, around one quarter in Doncaster (24%), one in five in Rotherham (19%) and the remaining 17% in Barnsley.

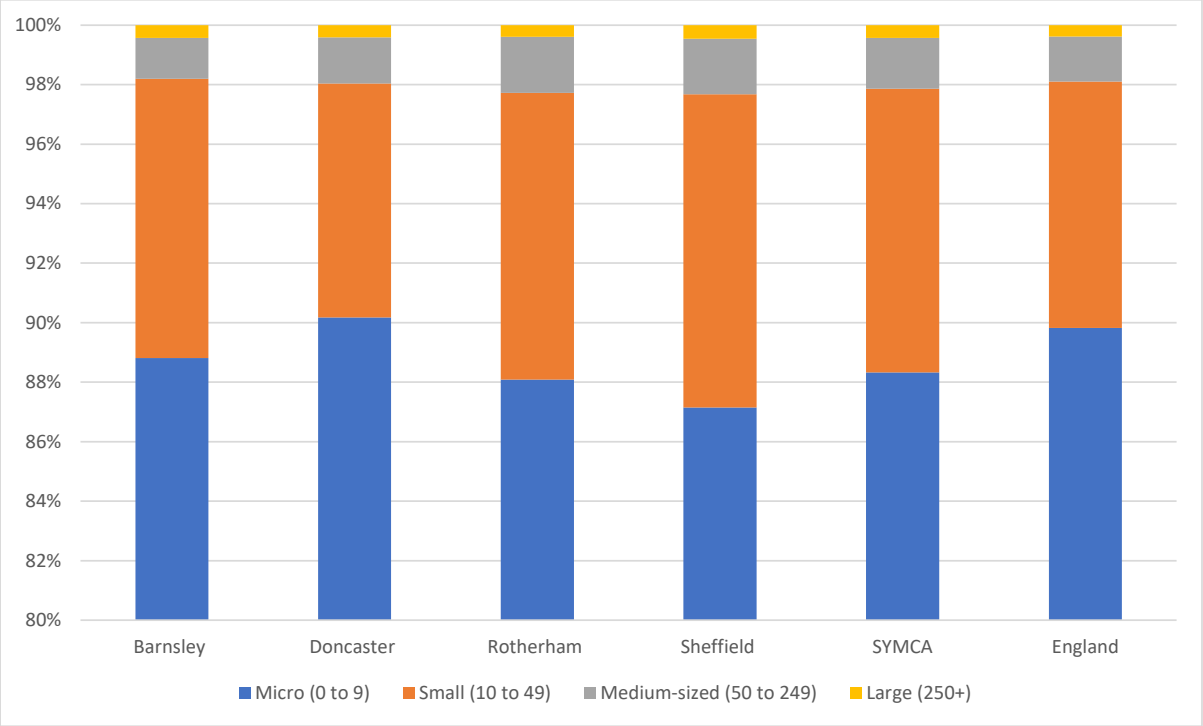
Figure 12: Number of enterprises – SYMCA local authority 2021



Source: IER analysis NOMIS data based on UK Business Counts

In 2021, the large majority of businesses in each area (about nine out of ten) are micro businesses employing up to nine people (Figure 13). Few enterprises are large businesses (less than 0.5%). Doncaster has an above average proportion of micro businesses but fewer small businesses. However, the proportion of micro and small businesses in each SYMCA area, England and comparator MCA areas is the same (98%). The percentage of medium and large businesses is similar across the areas.

Figure 13: Enterprises by size – SYMCA, local authority and England 2021



Source: IER analysis NOMIS data based on UK Business Counts

Between 2014 and 2021, the number of businesses of all sizes grew in every area, as Figure 14 shows. In SYMCA the total number of businesses increased by 31%, micro (35%) and large (30%) enterprises in particular. This was slightly above the national average for England (23%).

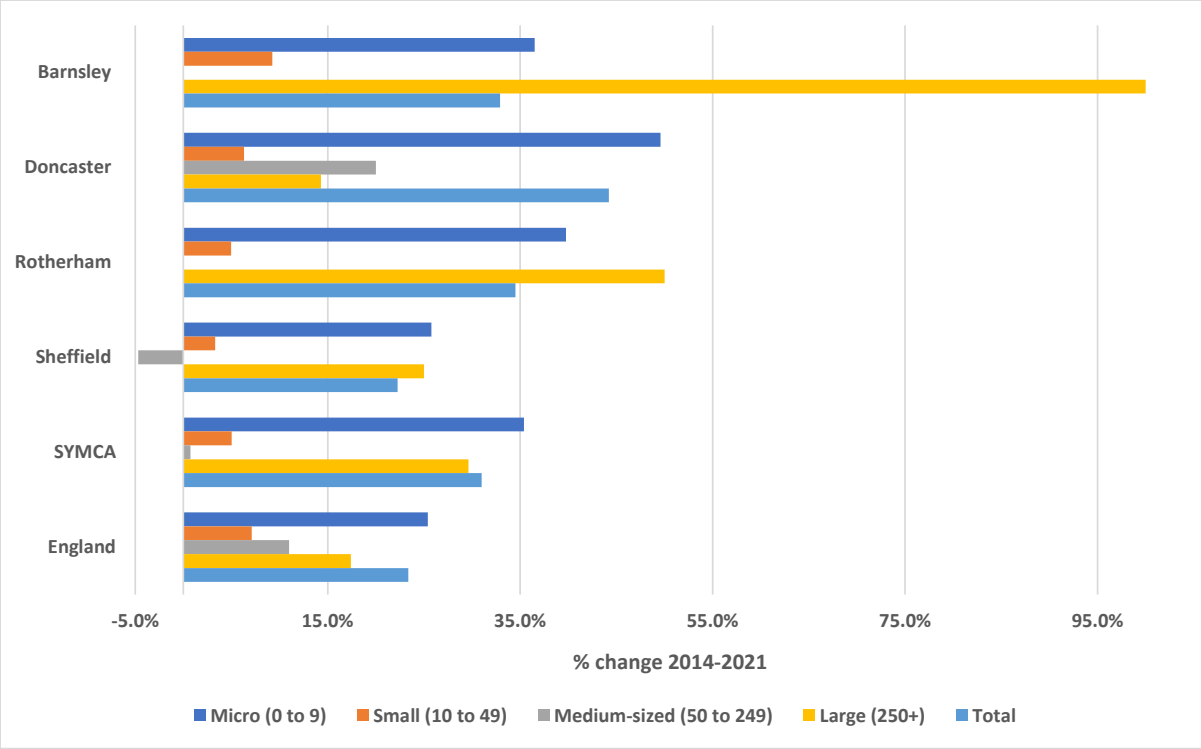
The number of micro enterprises increased more than the average in each area. Whilst the number of small and medium sized enterprises rose by a below average amount in each area.

The number of large enterprises increased by more than other business sizes in Barnsley and Doncaster, and by a the second largest in Sheffield.

The comparator MCA areas also saw most business growth at the extremes, with above average increases in micro and large enterprises.

Compared to their 2019 levels, the number of enterprises grew in each area (except for TVCA). In SYMCA, the growth was largest in Barnsley (8%) and lowest in Sheffield (2%). Much of the growth was led by large organisations which increased by 9% in SYMCA, but also by micro enterprises (6%). The number of medium sized businesses fell in each SYMCA area. These patterns were similar to England and the comparator MCA areas.

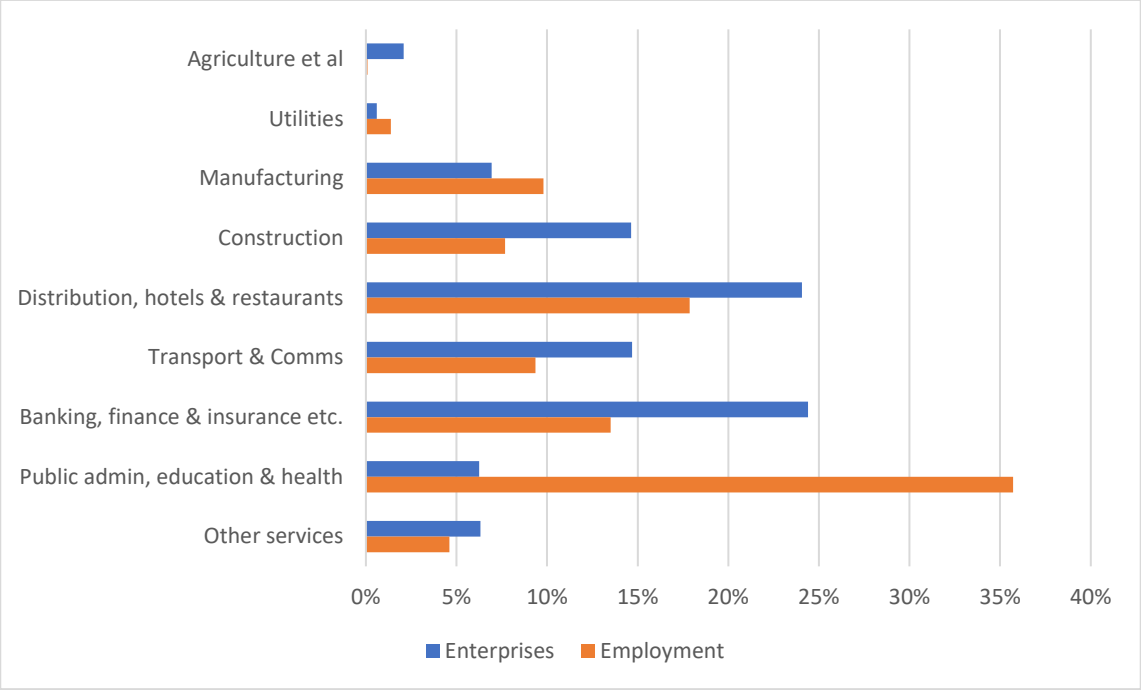
Figure 14: Enterprises by size – SYMCA, local authority and England, percent change 2014-21



Source: IER analysis NOMIS data based on UK Business Counts

Figure 15 shows the number of enterprises and employment by sector. In SYMCA in 2021, the largest number of businesses were in banking, finance and insurance etc. (24%) and distribution, hotels & restaurants (24%). However, the largest sector for employment was public admin, education & health (36%) despite it having only 6% of businesses. Manufacturing and utilities are the two other sectors with the percentage of employment larger than the number of enterprises, due to the number of medium and large organisations.

Figure 15: Enterprises and employment by sector – SYMCA, 2021



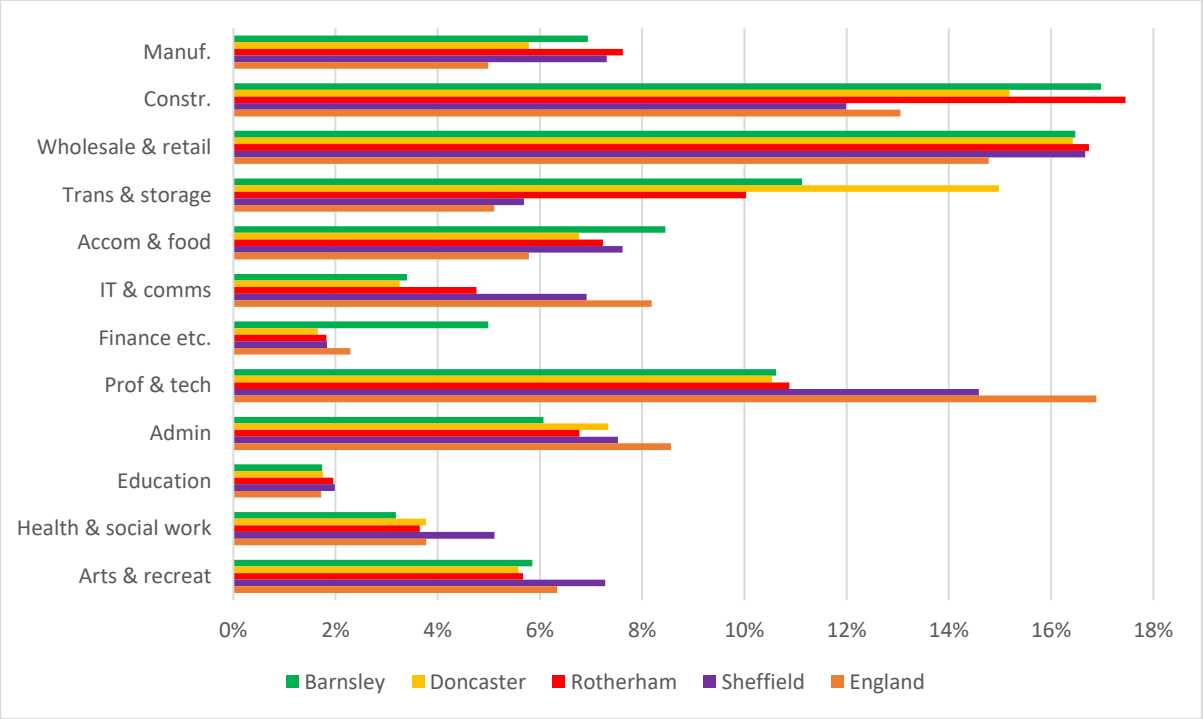
Source: IER analysis NOMIS data based on UK Business Counts and APS employment data

Figure 16 shows the percentage of enterprises (based on VAT and/or PAYE data) in each area. The overall distribution in businesses by sector is broadly consistent across the areas with a maximum of three percentage points difference separating the highest and lowest proportions most sectors.

The largest difference is in transport and storage which has a range of 15% of enterprises in Doncaster to 6% in Sheffield. Barnsley has the largest proportion of construction enterprises (17%) and Sheffield the fewest (12%). Sheffield has the highest percent of enterprises in professional and technical enterprises (15%) compared to 11% in the three other Local authorities. Sheffield also has the largest proportion of IT and communications enterprises (7%) compared to 3% in Barnsley and Doncaster.

Sheffield is much closer to the distribution of enterprises by sector in England compared to the other three local authorities and the comparator MCA areas.

Figure 16: Enterprises by sector - SYMCA, local authorities and England 2021



Source: IER analysis NOMIS data based on UK Business Counts

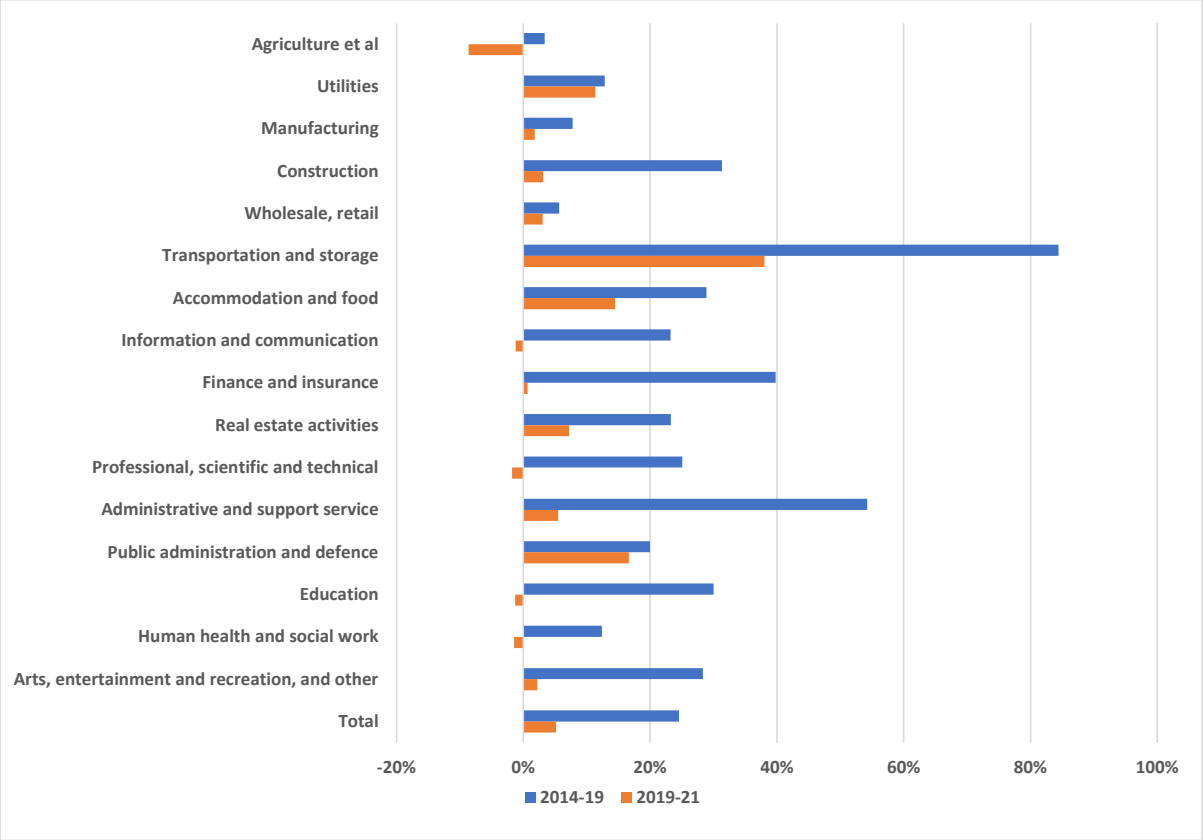
Figure 17 shows that in SYMCA, the number of enterprises grew in each sector between 2014 and 2019. The number also increased in most sectors despite the impact of the pandemic.

Between 2014-19, the largest percentage increase was in transport and storage, administrative and support services, and finance and insurance. Every sector, except for agriculture, manufacturing, and wholesale and retail, experienced double digit increases.

From 2019 to 2021, the largest growth was in transport and storage (38%), public administration (17%), accommodation and food (15%), and utilities (11%). Apart from agriculture, the sectors which had a decline in the number of enterprises saw only a small decrease of 1% or 2%.

Given the impact of the pandemic this shows remarkable resilience.

Figure 17: Enterprises by sector - SYMCA, percentage change 2014- 2021



Source: IER analysis NOMIS data based on UK Business Counts

3.2.2. Enterprise activity

Table 1 shows business births and deaths, and net change, for each area SYMCA area and England 2015-2020. There is a constant rotation in every area of businesses coming into being and ceasing to trade. In SYMCA in 2020, 14% of the stock of businesses were created and 10% stopped trading, this is a similar proportion in each area. This has been the same (more or less) since 2015 and, again, the data do not show much impact from the pandemic.

The turnover rate of business births and deaths is higher in Doncaster than any other area by about 3pp difference. Doncaster has higher levels of business births (17% compared to SYMCA's 14%) but only slightly more business deaths (12% and 11% respectively). Hence why the number of businesses has increased in Doncaster more than any other area.

Table 1: Business births and deaths – SYMCA, local authorities and England, 2015-2019

		2015	2016	2017	2018	2019	2020	% change 2015-2020
Barnsley	**Births**	870	1,000	840	920	950	995	14%
	Deaths	640	650	810	750	810	730	14%
	Net change	230	350	30	170	140	265	-
Doncaster	**Births**	2,135	1,955	1,480	1,605	1,815	1,770	-17%
	Deaths	1,000	1,490	1,433	1,375	1,345	1,245	25%
	Net change	1,135	465	48	230	470	525	-
Rotherham	**Births**	1,110	1,220	950	955	1,185	1,135	2%
	Deaths	750	725	950	855	885	835	11%
	Net change	360	495	0	100	300	300	-
Sheffield	**Births**	2,285	2,525	2,200	2,155	2,315	2,230	-2%
	Deaths	1,940	1,855	2,080	1,850	2,050	1,785	-8%
	Net change	345	670	120	305	265	445	-
SYMCA	**Births**	6,400	6,700	5,470	5,635	6,265	6,130	-4%
	Deaths	4,330	4,720	6,025	4,770	5,090	4,595	6%
	Net change	2,070	1,980	-555	865	1,175	1,535	-
England	**Births**	344,065	373,580	335,280	331,305	349,675	321,650	-7%
	Deaths	249,995	248,655	311,285	281,220	288,965	282,565	13%
	Net change	94,070	124,925	23,995	50,085	60,710	39,085	-

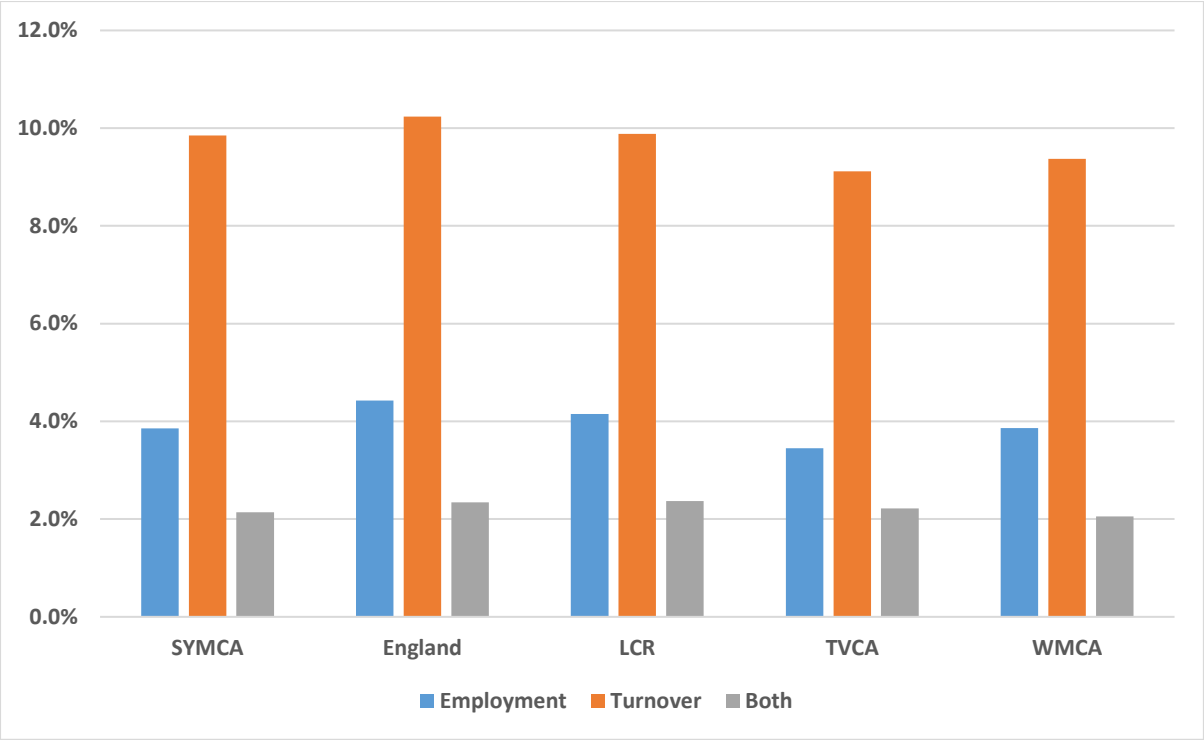
Source: IER analysis NOMIS data based on UK Business Counts

Another measure of the economic health of an area is the proportion of high growth businesses[17]. Figure 18 shows that whether measured by employment, turnover or both, SYMCA has similar proportions of high growth businesses to the comparable

[17] A high growth business is an enterprise with average annualised growth greater than 20% per annum, over a three year period. Growth can be measured by the number of employees or by turnover, and by other levels of growth e.g. 10% per annum.

MCA areas, and England. In each area, around 4% of businesses are high growth on the employment definition, 10% on turnover, and 2% on both.

Figure 18: High growth businesses – SYMCA, comparator MCAs and England, 2020

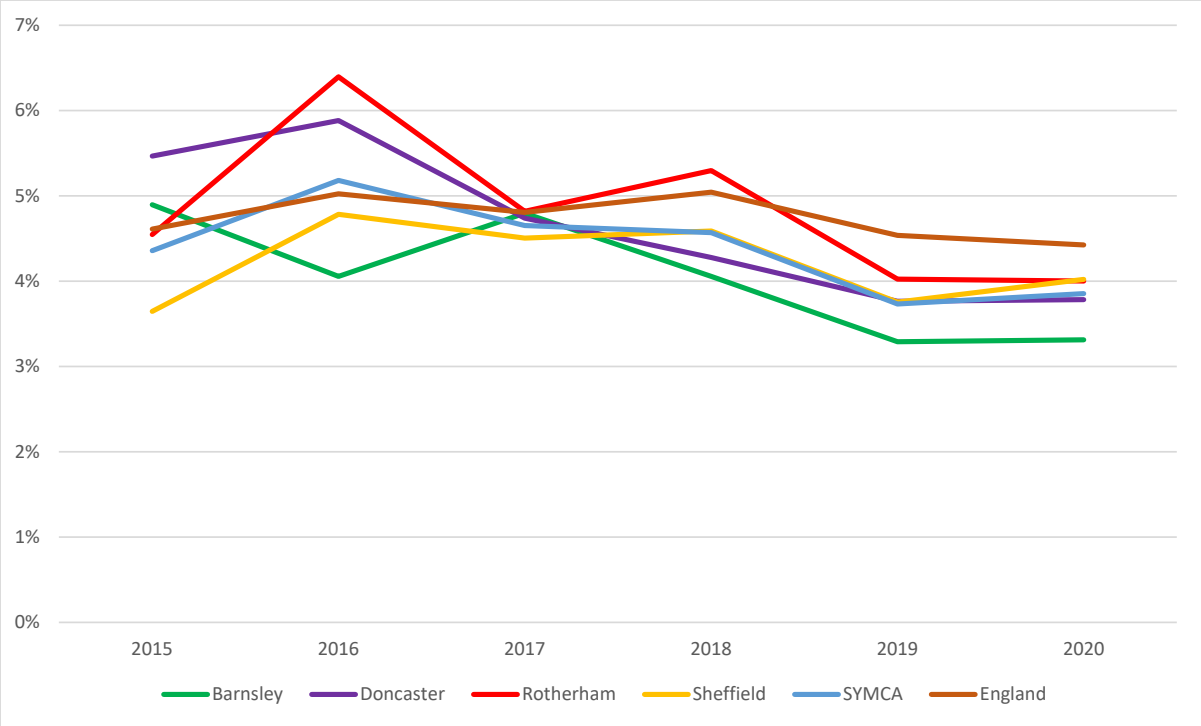


Source: IER analysis of ONS business demography data

Figure 19 shows that from 2015 to 2020, the number of high growth (employment measure) businesses has been fairly stable between 4% and 5% in each area. Over the period the trend has been slightly downwards, especially between 2017 and 2019. Since COVID-19 struck, the proportion of high growth businesses has levelled off.

Compared to the other MCA areas, SYMCA has similar levels of high growth businesses, with a similar trend over the past six years.

Figure 19: High growth businesses (employment) – SYMCA, local authorities and England, 2015-2020



Source: IER analysis of ONS business demography data

3.3. Productivity

Key points:

- Over the past two decades, productivity (using the GVA per hour measure) in SYMCA has persistently been lower than the national average (around four fifths) and the comparator MCAs.
- Sheffield has the highest levels of productivity in SYMCA and these are consistently below the comparator areas.
- Since 2004 productivity in SYMCA has increased at a similar rate to England, and as a result the productivity gap has not closed.

3.3.1. Gross Value Added (GVA)

Low levels of productivity are a national as well as a local concern. For a number of years the UK has lagged behind its main competitors. Throughout the 2000s the productivity gap with countries such as Germany and France were closed. However, in the 2010s UK productivity levels have been mostly static and the gap has again widened. Amongst OECD countries, only Hungary, Italy and Greece had lower productivity growth than the UK between 2010-15.[18]

[18] Sheffield City Region (2016), LMI Report

Productivity is a key measure of how well local economies are performing. It is a measure of the effectiveness and efficiency of local economies, an indicator of future economic growth potential and is related to changes in real wages. The quality of labour (especially its skills) and the utilisation of labour (management approaches and business models) are important factors driving or holding back productivity.

Productivity is measured by GVA of which there are several indicators.[19] The one used in the Table 2 and Figure 20 below is **GVA per hours** worked because it provides a direct comparison between the level of economic output and direct labour input.[20]

Table 9 shows that in 2004, GVA per hour in SYMCA (£20.39) which was below the UK average (£24.73) and also below the three comparator MCA areas. Within SYMCA, Rotherham had the lowest productivity level (£18.09). By 2019, GVA per hour in SYMCA had risen to £28.32 which was still below the UK average (£35.15) and that of the three comparator MCAs.

Table 2: Gross Value Added per hour – SYMCA, local authorities and United Kingdom 2019

	GVA per hour		% change
	2004	2019	
Barnsley	£20.87	£26.38	26%
Doncaster	£18.60	£27.25	47%
Rotherham	£18.09	£27.58	52%
Sheffield	£21.38	£29.85	40%
SYMCA	£20.39	£28.32	39%
United Kingdom	£24.73	£35.15	42%
Liverpool City Region	£22.99	£30.29	32%
TVCA	£23.10	£31.02	34%
WMCA	£21.70	£31.76	46%

Source: IER analysis of ONS subregional productivity data

Figure 19 shows that productivity (measured by GVA per hour) across the subregion has increased steadily increased since 2005. Whilst the Financial Crisis in 2008 reduced the rate of growth, there were above national average increases in Rotherham and Sheffield. The biggest slowdown came in the period after 2014.

[19] Research found that using different GVA measures, productivity in SYMCA varied from 69% to 92% of the national average depending on the GVA indicator used. Beatty, C. and Fothergill, S. (May 2020), Productivity in Sheffield City Region. CRESR, Sheffield Hallam University.

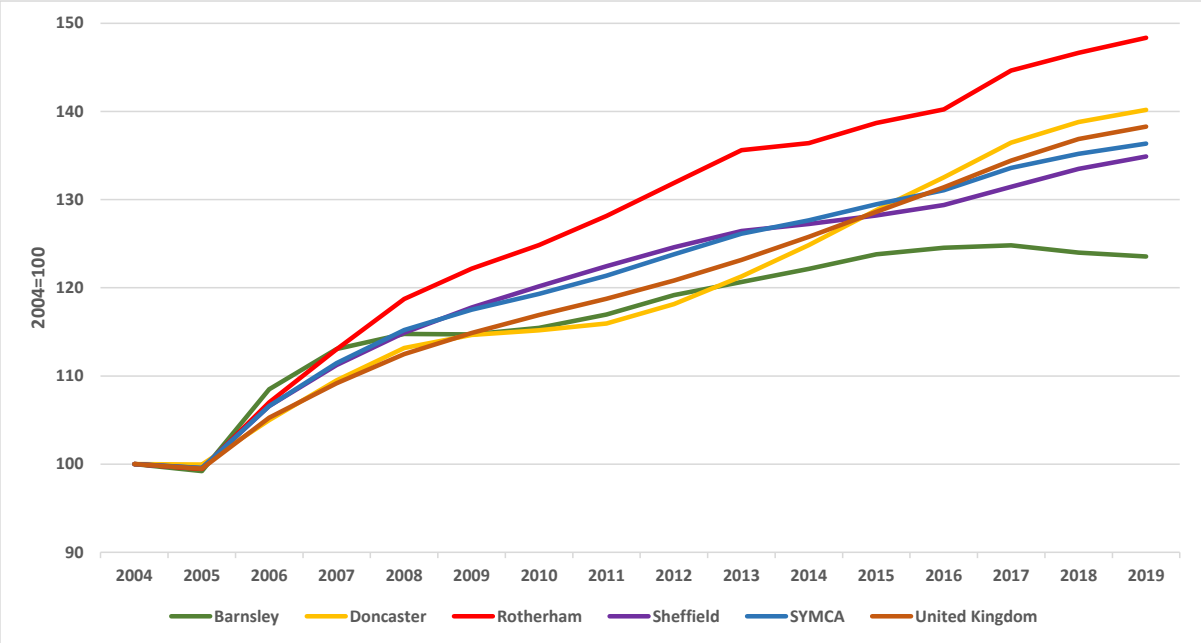
[20] https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/articles/regionalandsubregionalproductivityintheuk/february2020

Over the 15 year period, productivity levels in Doncaster (40%) and Rotherham (48%) grew higher than the national average (38%). SYMCA's productivity growth (36%) was just below that of England and higher than the comparator MCA areas except for WMCA (42%).

In the period before the Financial Crisis (2004-08), productivity in SYMCA increased by 15%, which was higher than the UK average (13%) and all of the three comparator MCA areas (10%-14%). In the period after the Financial Crisis (2008-14) productivity in SYMCA grew the same as the national rate (7%), slightly below that of TVCA and WMCA, but marginally higher than LCR. Since 2014, SYMCA's productivity grew at a similar rate to TVCA (7%), higher than LCR (4%) but lower than WMCA (13%). And well below that of the UK (10%).

Currently, GVA per hour in SYMCA is currently around four fifths of the national average, and lower than the three comparator MCA areas. The most productive SYMCA area, Sheffield, is 85% of the national average and this is lower than the average for each of the comparator MCA areas. Productivity in Barnsley, Doncaster and Rotherham is around three quarters of the national average.

Figure 20: GVA per hour – SYMCA, local authorities and UK, 2004-2019



Source: IER analysis of ONS subregional productivity data

GVA by sector is not available as a relative measure i.e. either by hours worked or people employed. Because of this care must be taken in drawing conclusions from the analysis as a sector may have lower levels of GVA because fewer hours are worked or people are employed.

The data has not been updated since last year's report which found that:

- Total GVA for SYMCA in 2017 was £34,762 million;

- Manufacturing is the largest contributor to SYMCA GVA (£4,710 million) followed by wholesale and retail (£4,175 million), and human health and social work (£3,666 million);
- Controlling for inflation, there was a fall in manufacturing GVA between 2004 and 2017 (-7%) compared to an overall increase in GVA of 14%;
- The biggest contributors to GVA growth over the period were: administrative and support services (95%); wholesale and retail (35%); human health and social work (34%); information and communication (33%); and professional and scientific services;
- Within SYMCA, Sheffield is the biggest contributor to GVA, followed by Doncaster, Rotherham and Barnsley.[21]

3.4. Structure of employment

Key points:

- The sectoral composition of the SYMCA workforce is similar to that across England. However, within SYMCA, the industrial structure of Sheffield tends to be distinct from Barnsley, Doncaster and Rotherham. Sheffield has a similar sectoral employment structure to England.
- Over the five years to 2019, total employment in SYMCA grew by 7% which was the same as in England. Compared to most of the comparator MCA areas, SYMCA tended to have slightly lower jobs growth.
- COVID-19 impacted on SYMCA employment more than the national average (-4% compared to -1%), especially in Sheffield and Doncaster.
- One of the reasons why SYMCA did not fare as well in employment terms is due to the performance of the largest employment sectors (2-digit SIC). In England, LCR and WMCA employment in the top five and top ten employment sectors all grew. In SYMCA, jobs fell in the top ten employment sectors and stayed at the same level in the top five. This was even in the same sectors.
- SYMCA has identified a number of priority sectors: 'big employment', 'sectors with potential' and 'growing sectors'. Between 2015 and 2020, the non priority sectors in SYMCA performed better in all areas than the priority sectors.
- However, all of the negative change was due to the pandemic. Prior to 2020, employment grew in all priority sector groupings with the exception of 'big employment sectors' in Rotherham.
- In general, Sheffield tended to perform below the SYMCA average and Barnsley and Doncaster above it.

3.4.1. Employment by sector

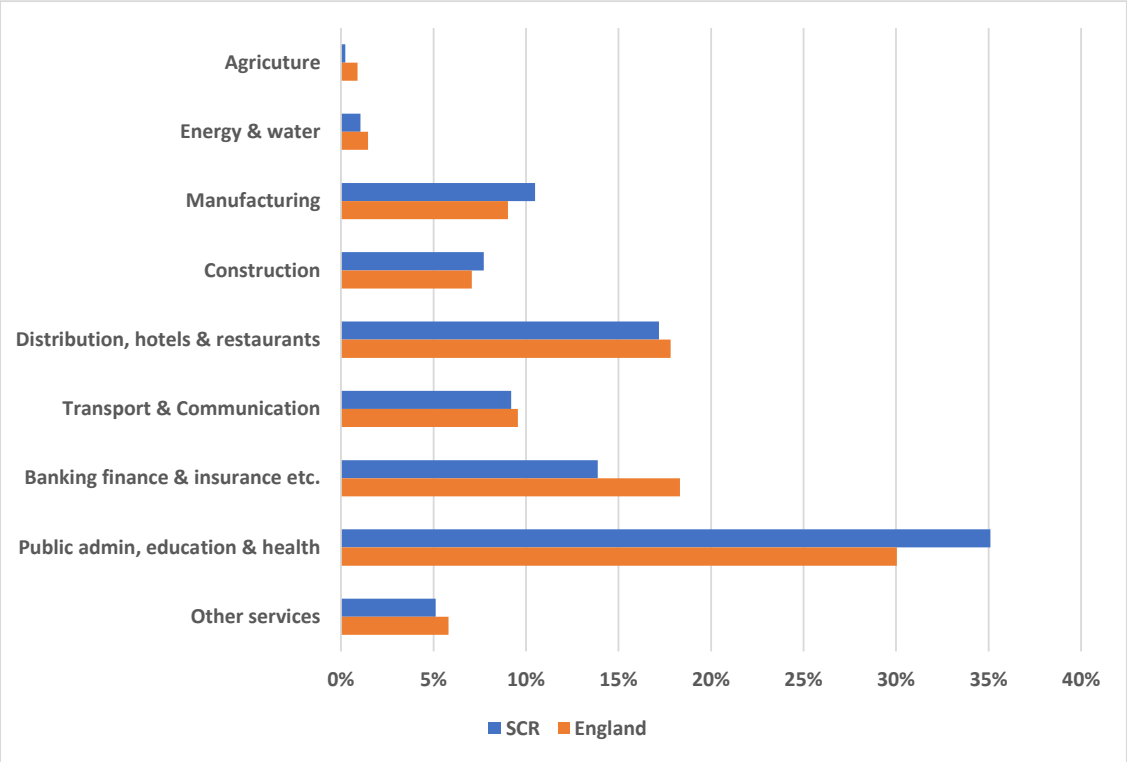
[21] Sheffield City Region (2016), LMI Report

Employment in SYMCA was greatly affected by the Financial Crisis in 2008. Whilst employment grew steadily over the past decade, much of this growth happened after 2013. In the first part of the 2010s employment fell, and the jobs that were created tended to be part-time and lower paid.[22] Much of the reason for this was the reduction in public sector employment and an increase in private sector jobs.[23]

In 2020/21, there were almost 620,000 people employed in SYMCA. Figure 21 shows that over one third of people in SYMCA (36%) worked in public administration, education and health (35%), two out of five in distribution (18%), and 14% in banking finance and insurance etc. Non-service sectors accounted for 19% of employment, with manufacturing the largest non-service sector with one in ten of all jobs.

The sectoral composition of the SYMCA workforce is very similar to that across England. In most sectors there is only a one percentage point difference in the distribution of employment by sector in SYMCA and England. Public administration, education and health (36% in SYMCA compared to 32% in England) and distribution (18% and 16%) account for more jobs in SYMCA than in England and fewer SYMCA people work in banking finance and insurance etc. (14% and 19%).

Figure 21: Employment by sector – SYMCA and England April 2020/March 2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

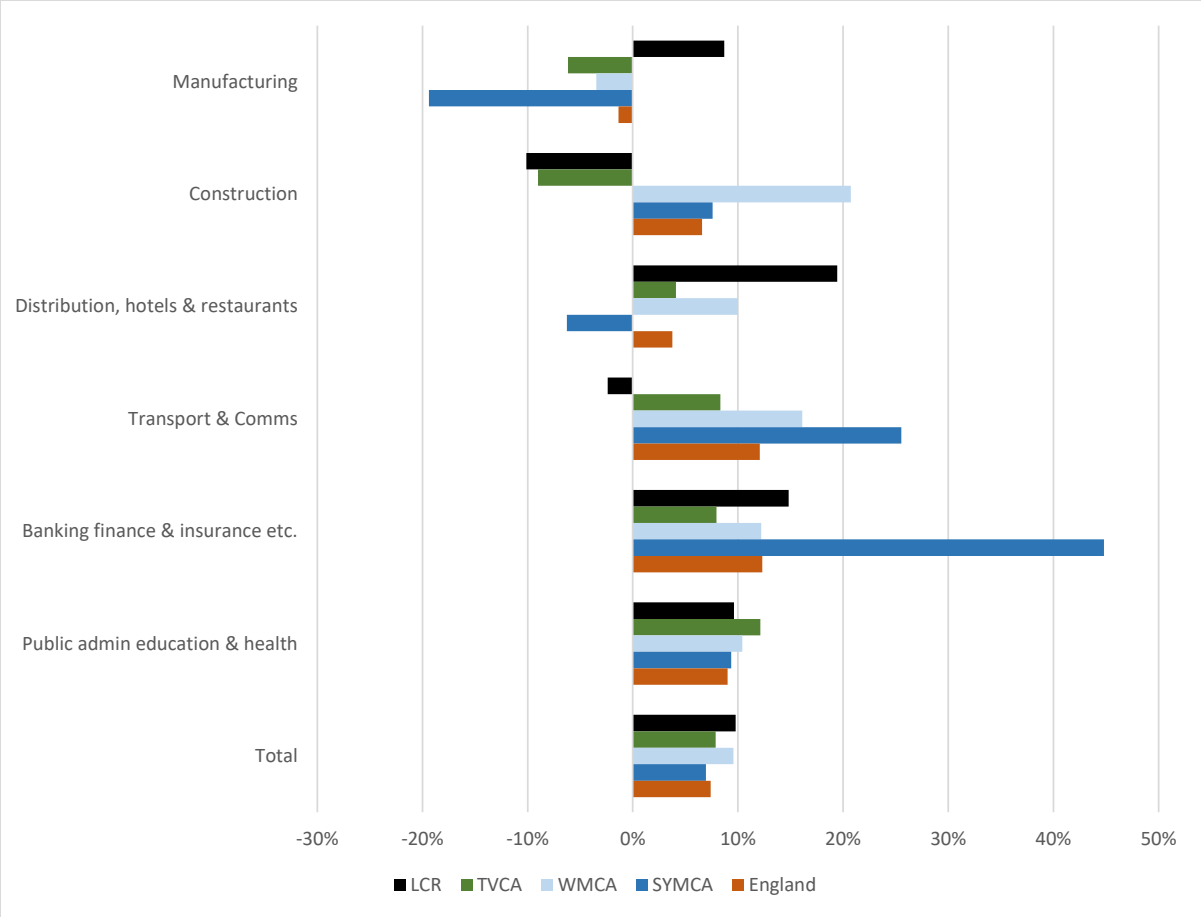
[22] Sheffield City Region (May 2019), Sheffield City Region Economic Evidence Base: Skills and Employment

[23] Sheffield City Region (February 2016), European Structural & Investment Fund Strategy 2014-20

Over the five years to 2019, total employment in SYMCA grew by 7% which was the same as in England. Figure 22 shows that employment in SYMCA grew at a slightly lower rate than the other areas. district grew by more than the national average, except for Rotherham where it increased by 4%.

SYMCA employment grew significantly more in transport and communications, and banking, finance and insurance, than in England and the other MCA areas. But there were significant falls in manufacturing and distribution much larger than elsewhere.

Figure 22: Employment change by sector – SYMCA, comparator MCA areas and England 2014-2019



Source: IER analysis of NOMIS data based on the Annual Population Survey

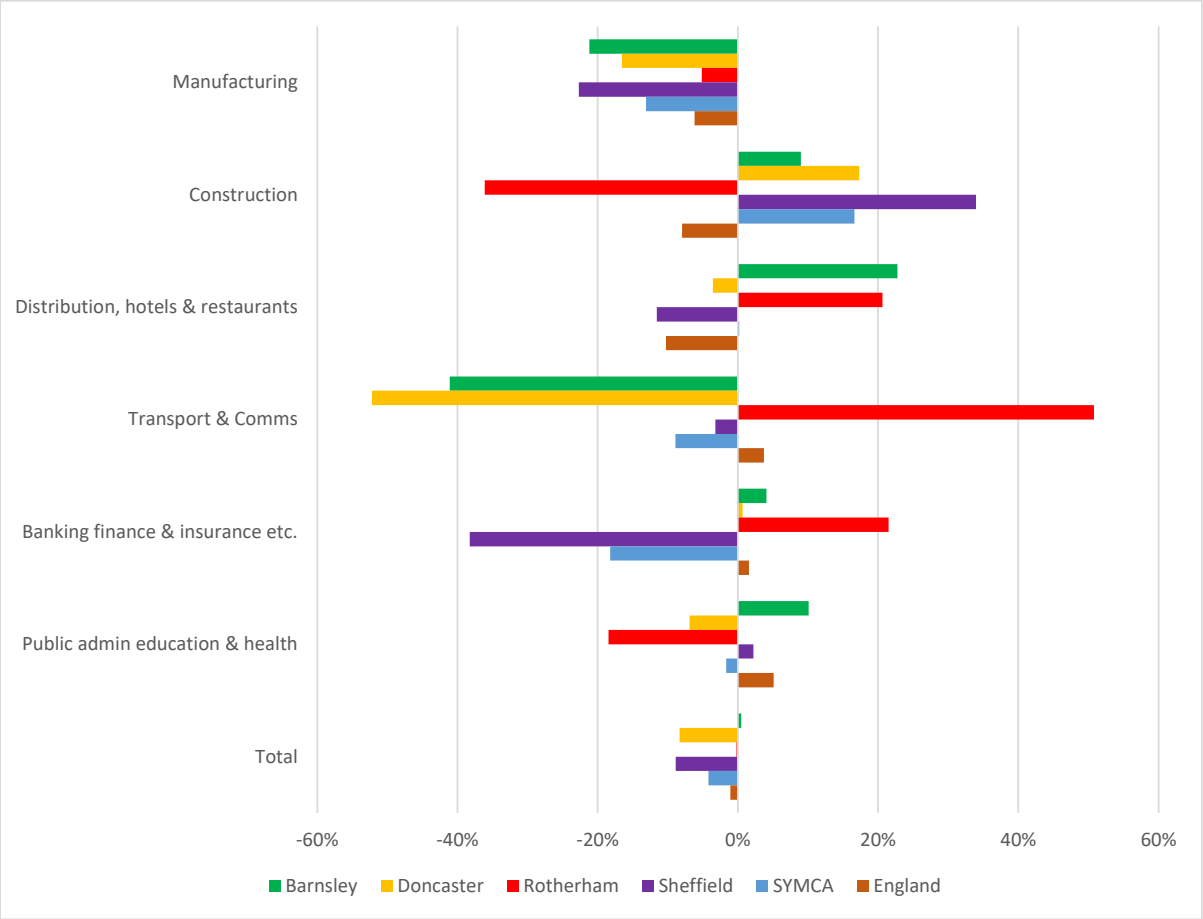
Figure 23 describes the impact of COVID-19 on local employment. Over the period of the pandemic, the number of jobs fell by -4% across SYMCA compared to -1% in England. However, SYMCA job losses were concentrated in Doncaster (-8%) and Sheffield (-9%). Employment remained at pre-pandemic levels in Barnsley and Doncaster.

Manufacturing employment fell in every area throughout the pandemic but change in all other sectors varied considerably. For example, the number of distribution jobs in Barnsley and Rotherham rose considerably but fell in Sheffield and Doncaster. Construction jobs increased in every area but fell significantly in Rotherham.

Compared to the similar MCA areas, employment fell much more in SYMCA than in the other areas. The number of jobs fell by -1% in TVCA but rose by 1% in both LCR and WMCA.

Employment in SYMCA fell in public administration, education and health, and banking, finance and insurance but rose in the other MCA areas. Construction and distribution jobs fared much better in SYMCA than the comparator MCA areas.

Figure 23: Employment change by sector – SYMCA and England 2019-2020/2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

One of the reasons why SYMCA has not fared as well in recent years in employment terms is due to the performance of the largest employment sectors (2-digit SIC). Table 3 shows that in England, LCR and WMCA employment in the top five and top ten employment sectors grew between 2015 and 2020. In SYMCA, jobs fell in the top ten employment sectors and stayed at the same level in the top five.

Eight of the top ten sectors are common in all of the areas. In seven of these, SYMCA did not perform as well in employment as the other areas, apart from TVCA. The only sector where SYMCA outperformed the other areas was in specialised construction activities.

All the MCA areas and England shared the same top three sectors: retail; human health; and education. But SYMCA did not perform as well in any of these sectors apart from TVCA.

Table 3: Top ten 2-digit SIC employment sectors – SYMCA, comparator MCAs and England percentage change 2015-2020

SYMCA		England		LCR		TVCA		WMCA	
85: Education	-3%	**47: Retail trade, except motor**	-2%	**47: Retail trade, except motor**	0%	**86: Human health activities**	7%	**85: Education**	2%
47: Retail trade, except motor	-4%	**85: Education**	1%	**86: Human health activities**	27%	**47: Retail trade, except motor**	-7%	**47: Retail trade, except motor**	3%
86: Human health activities	8%	**86: Human health activities**	16%	**85: Education**	2%	**85: Education**	-8%	**86: Human health activities**	20%
84: Public administration	3%	**56: Food and beverage service**	6%	**56: Food and beverage service**	6%	**56: Food and beverage service**	7%	**46: Wholesale trade, excep motor**	-8%
56: Food and beverage service	0%	**46: Wholesale trade, except motor**	-2%	**84: Public administration**	11%	71: Architectural and engineering activities	-62%	**56: Food and beverage service**	12%
46: Wholesale trade, except motor	-5%	**84: Public administration**	5%	**88: Social work**	-20%	**84: Public administration**	23%	78: Employment activities	-18%
88: Social work	-43%	78: Employment activities	-3%	**46: Wholesale trade, except motor**	-5%	87: Residential care activities	0%	**84: Public administration**	6%
82: Office and other business support	-21%	**88: Social work**	-10%	87: Residential care activities	-20%	**88: Social work**	0%	**43: Specialised construction activities**	-31%

78: Employment activities	20%	70: Activities of head offices; management consultancy	3%	78: Employment activities	11%	**43: Specialised construction activities**	0%	25: Manufacture of fabricated metal products	-13%
43: Specialised construction activities	36%	**43: Specialised construction activities**	6%	**43: Specialised construction activities**	-25%	**46: Wholesale trade, except motor**	-14%	**88: Social work**	19%
Top five sectors	**0%**	**Top five sectors**	**3%**	**Top five sectors**	**9%**	**Top five sectors**	**-8%**	**Top five sectors**	**6%**
Top ten sectors	**-2%**	**Top ten sectors**	**2%**	**Top ten sectors**	**3%**	**Top ten sectors**	**-4%**	**Top ten sectors**	**2%**

Source: IER analysis of Business Register and Employment Survey

Note: Sectors in bold are common to all areas.

3.4.2. Industrial concentration

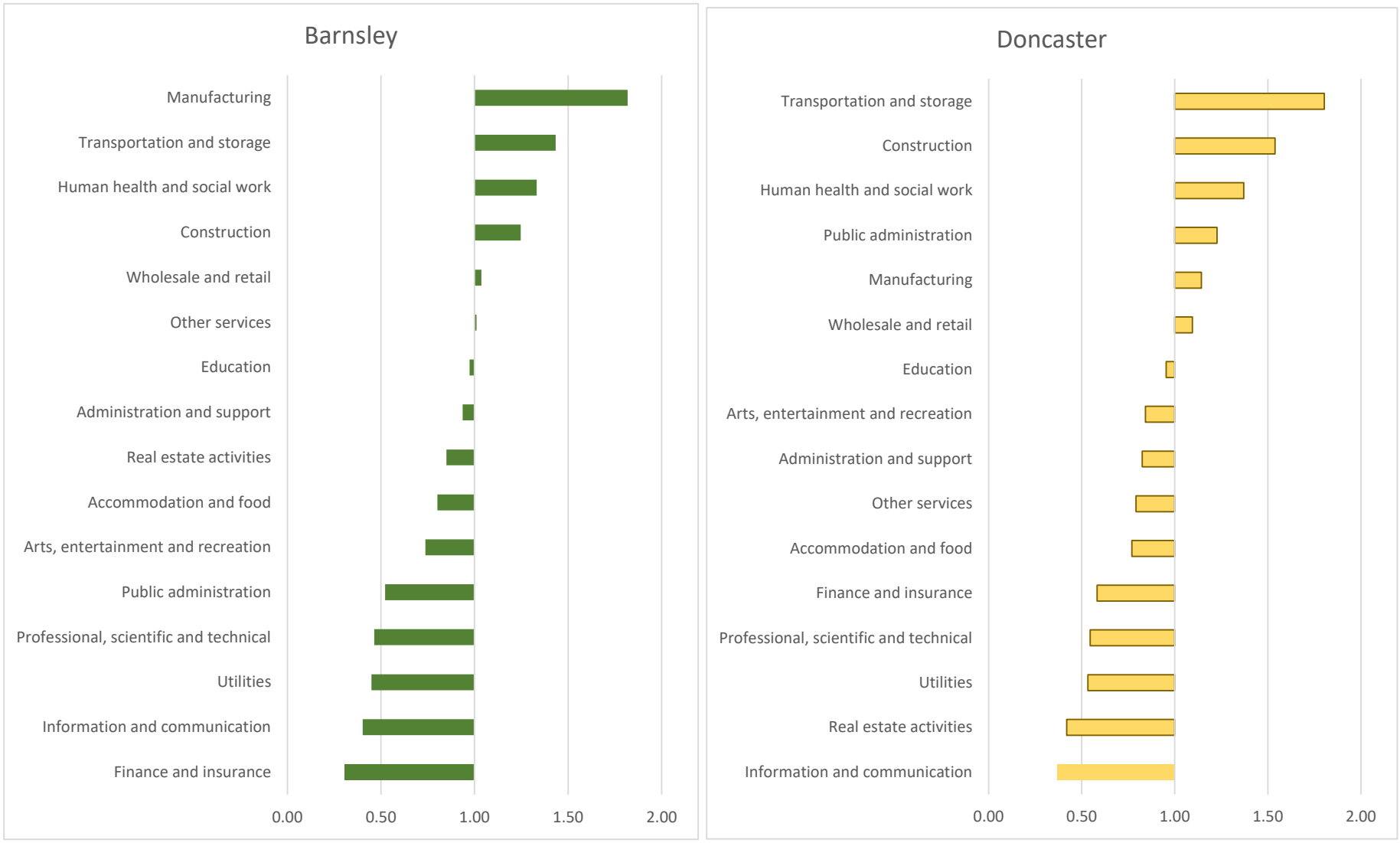
Location quotient (LQ) measures the relative concentration of a sector within an area. Figure 24 and Figure 25 show the relative industrial concentration of employment in the four SYMCA local authorities compared to England in 2019. The data is ranked according to the size of the LQ of each sector in each area. A number higher than 1 indicates that the area has a relatively higher concentration of employment compared to England, whereas a figure less than 1 shows that it is lower than the national average.

Figure 23 and Figure 24 show that Sheffield has a similar sectoral employment structure to England, in that the range of the location quotients is narrower than in the other three districts. Sheffield has much higher concentrations of employment in public sectors, such as public administration, education and health and social work compared to the national average.

Barnsley has the largest variation to the national average, with much higher proportions working in manufacturing, transport and storage, and health and social work. And relatively fewer working in finance and insurance, and information and communication.

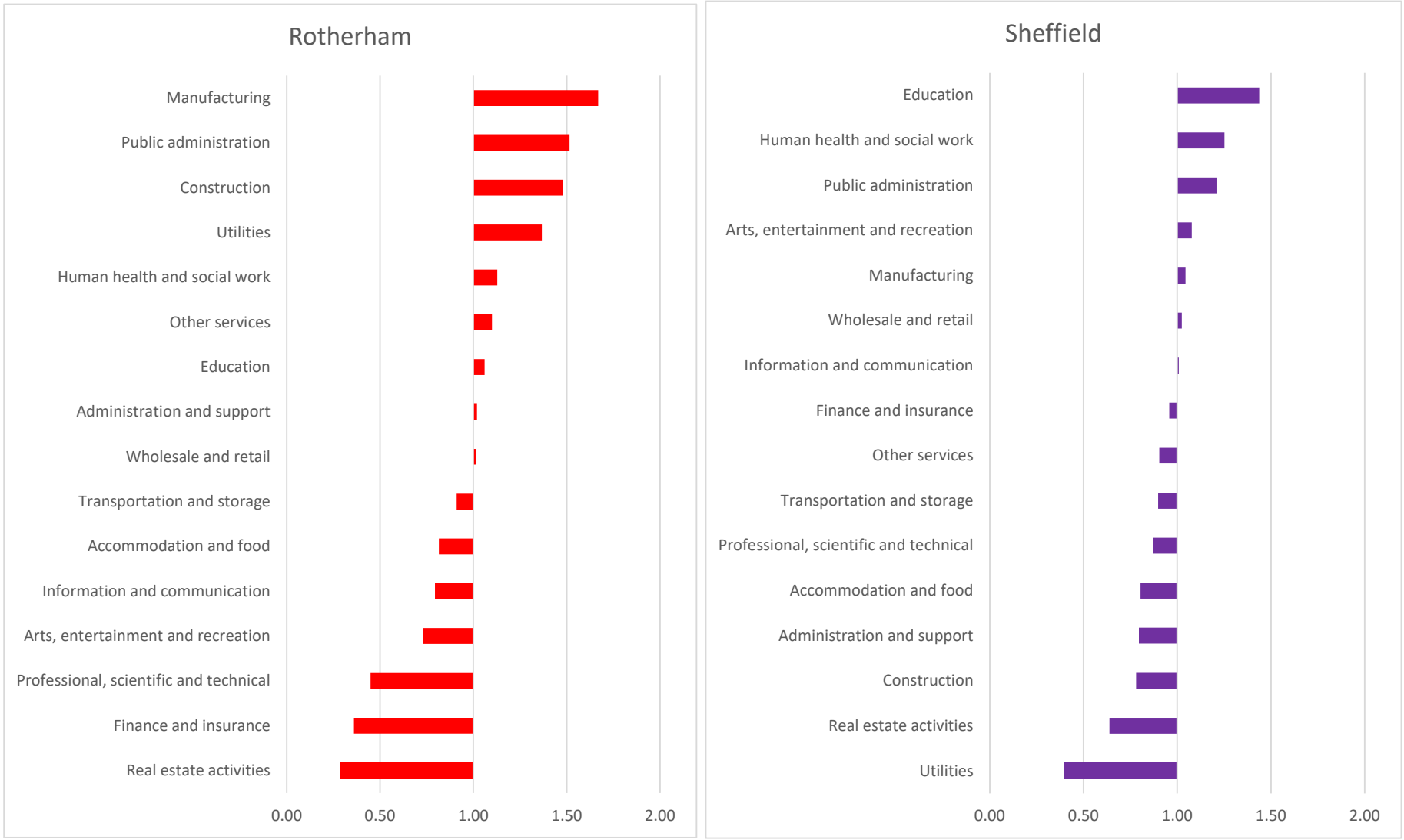
Doncaster is similar to Barnsley with higher than national concentrations in wholesale and retail, construction as well as, manufacturing, transport and storage, and health and social work. Rotherham is also similar to Doncaster and Barnsley but has higher concentrations in utilities and other services.

Figure 24: Location quotients by sector – Barnsley and Doncaster 2019



Source: Business Register and Employment Survey 2019

Figure 25: Location quotients by sector – Rotherham and Sheffield 2019



Source: Business Register and Employment Survey 2019

3.4.3. Priority sectors

SYMCA has identified a number of priority sectors based on share of local employment; specialism; and growth potential. There are ten specific sectors grouped into three categories: 'big employment'[24]; 'sectors with potential'[25]; and 'growing sectors'.[26] [27] In this section, Healthcare is shown separately as it is both within big employment and sectors with potential.

Figure 26 shows the local authority employment distribution by priority sector in 2020. Barnsley has the highest proportion of its workforce working in these priority sectors (57%) the other three local authorities each has 52%-53%.

The 'big employment sector' (including healthcare) accounts for over one third (35%) of total employment in SYMCA, this compares to 31% in England. 'Big employment sectors' comprise 40% of jobs in Barnsley compared to around one third in Doncaster and Rotherham, and 37% in Sheffield.

'Sectors with potential' more than double in size if healthcare is included. In SYMCA, 9% of people work in the non-healthcare sectors with potential and 10% in healthcare. Across England, 19% of people also work in these sectors with potential, including healthcare. Doncaster has the highest concentration of 'sectors with potential' (22%, including healthcare), and Rotherham the fewest (15%).

Around one in ten people in SYMCA work in 'growing sectors' (excluding healthcare). Rotherham (12%) has the largest proportions working in these 'growing sectors'.

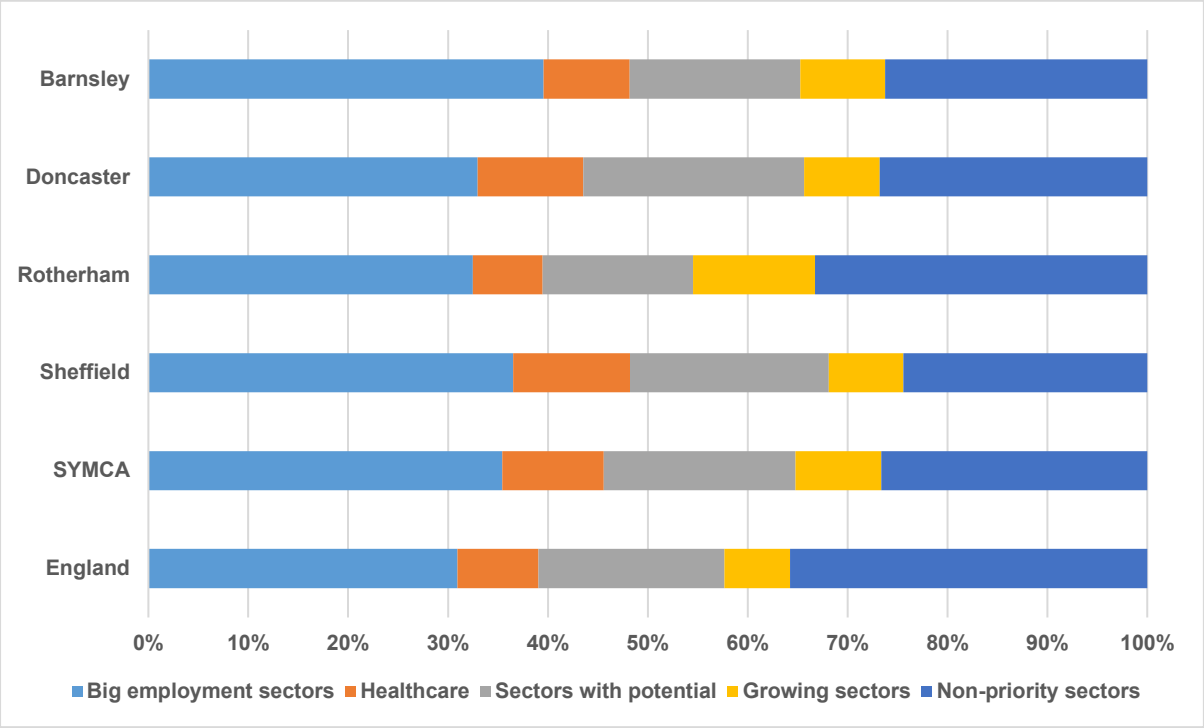
[24] Big employment: Healthcare (SIC 86), Retail (47), Manufacturing (10-32) and Education (85).

[25] Sectors with potential: Transport, storage and warehousing (SIC 49-52), Healthcare (86), Insurance and pensions (65) and Creative and digital (26, 58, 59, 60, 61, 62, 63, 90, 91, 95).

[26] Growing sectors: Advanced manufacturing (SICs 24, 25, 26, 27, 28, 30, 72) and Specialised construction and infrastructure (42-43).

[27] To avoid double-counting, "Big employment" excludes SIC codes for "Advanced manufacturing" which is only included as a "Growing" sector. "Healthcare" is included separately as it is a sector in both "Big employment" and "Sectors with Potential".

Figure 26: Employment share in priority sectors 2020



Source: Business Register and Employment Survey (BRES). Office for National Statistics

Figure 27 shows the percentage change of employment by priority sector 2015-2020. As before, healthcare is included separately.

'Sectors with potential' have the largest employment increase over this period (30% in SYMCA). Employment grew significantly in every local authority district but this ranged from 24% in Sheffield to 42% in Rotherham. The other priority sector groups changed more modestly in SYMCA: 'growing sectors' by 2% and healthcare by 8%; and 'big employment sectors' fell by -2% (underlining the point made above). All of the priority sector groups increased jobs more in England than in SYMCA.

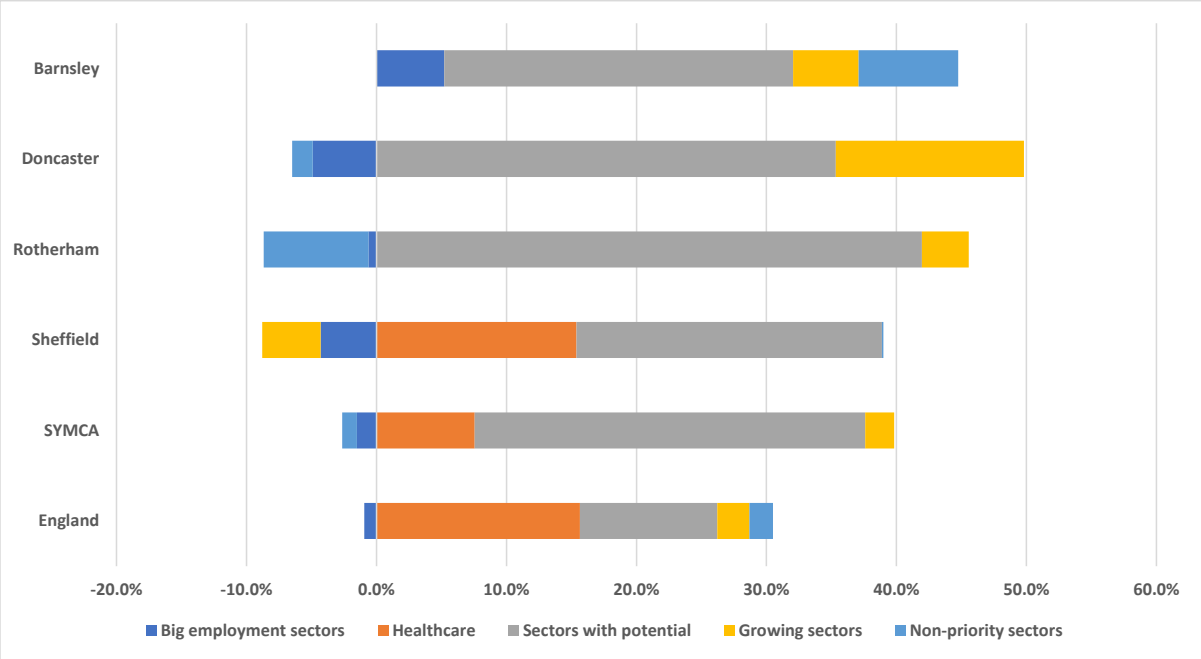
The non-priority sectors performed better in all areas than the priority sectors.

However, all of the negative change was due to the pandemic. Prior to 2020, employment grew in all priority sector groupings with the exception of 'big employment sectors' in Rotherham.

Within each sector grouping however, there were large changes within individual subsectors across SYMCA and districts. For example, within 'big employment sectors' employment fell in education in most areas (except Sheffield), but rose in manufacturing (except Sheffield). In 'growing sectors', specialised construction declined (except in Rotherham) but advanced manufacturing grew (except Sheffield).

In general, Sheffield tended to perform below the SYMCA average and Barnsley and Doncaster above it.

Figure 27: Percentage change in employment 2015 - 2020



Source: Business Register and Employment Survey (BRES). Office for National Statistics

3.4.4. Occupational structure of employment

Key points:

- In 2020/21, the overall distribution of employment by occupation in SYMCA is not too dissimilar to that of England.
- Analysis of more detailed occupations (2-digit SOC) shows that, whilst there are differences in the relative size, nine occupations are represented in the top ten in SYMCA and England. Likewise, there is also a great deal of similarity across the four SYMCA districts. There is therefore a core number of occupations which account for a significant proportion of jobs in any labour market area.
- SYMCA has fewer people working in higher skill level occupations and more working in lower skills occupations compared to England. If SYMCA jobs displayed the same occupational profile as England there would be around 38,000 fewer people working in lower skilled occupations and 44,000 more in higher skilled jobs.
- When compared to England, SYMCA tends to have lower skilled jobs even within the same sectors. Relative to the comparator MCAs, SYMCA sits at a mid-point with WMCA.

- Pre-pandemic, the trend in SYMCA was towards higher level occupations. This was higher than the national average, and the comparator MCA areas.
- The pandemic had a different impact on SYMCA than in most of the comparator areas. Most other areas had an increase in higher skilled jobs and falls in lower skilled jobs, but the reverse was true in SYMCA.
- The impact of the pandemic on the top ten occupations was much greater in SYMCA than across England. SYMCA also saw greater declines overall relative to the comparator MCA areas, and amongst a greater number of the top ten occupations.

Occupation is closely related to wage levels, modes of working and qualification levels and so the occupational structure of an economy is an indicator of position and prospects of an area.

After the Financial Crisis, there were increases in some higher level occupational categories in SYMCA, professional occupations in particular. Whilst there were also increases in managerial, and associate professional jobs growth was much lower than in the rest of the country. There were also above national increases in lower skilled occupations such as sales and customer service, plant and machine operatives, and elementary occupations.[28]

In 2020/21, the overall distribution of employment by occupation in SYMCA is not too dissimilar to that of England, as Figure 28 shows. In no occupation category is there more than two percentage points difference, except for professional occupations (3pp difference).

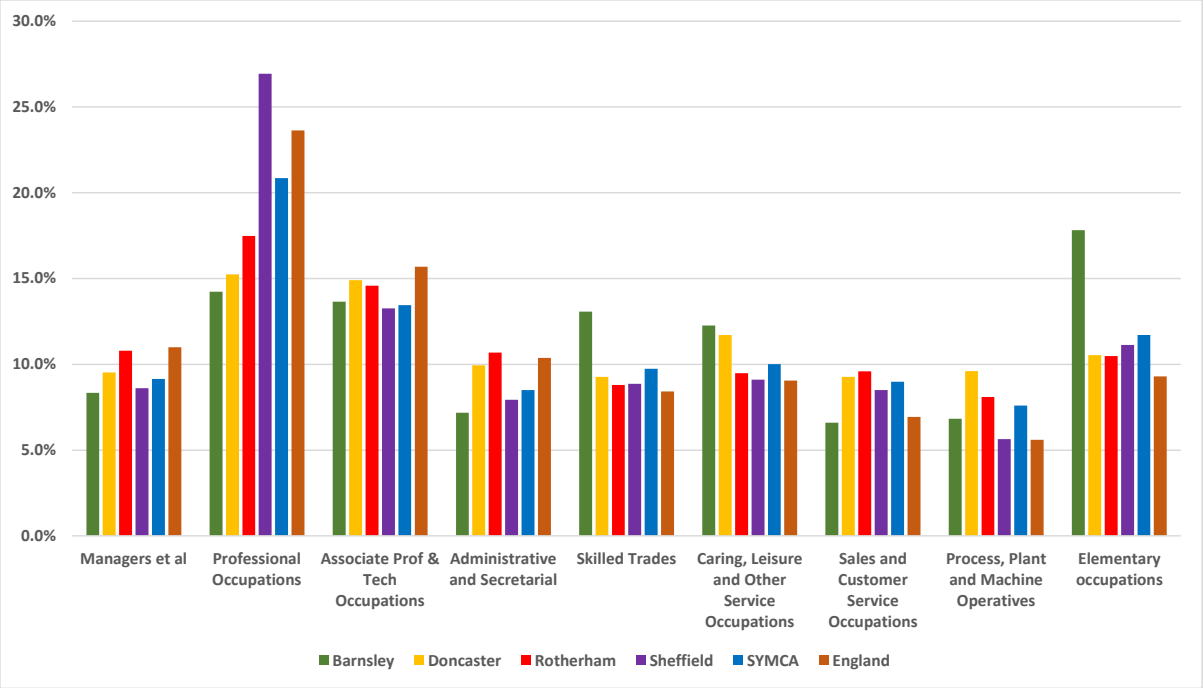
However, grouping the occupations into high, medium and low skill level occupations shows that 43% of jobs in SYMCA are in higher skill level occupations (i.e. managerial, professional and associate professional) compared to 50% across England, and 28% of SYMCA jobs are in lower skills occupations (i.e. sales and customer service, plant and machine operatives and elementary occupations) compared to 22% in England. If SYMCA jobs displayed the same occupational profile as England there would be around 38,000 fewer people working in lower skilled occupations (around one in five less) and 44,000 more in higher skilled jobs (16% more). The spread of jobs in medium skill level occupations (i.e. all other occupations) is identical in SYMCA and England.

Across the SYMCA area in 2020/21, the occupational profile ranged from Barnsley to Sheffield. Barnsley had the highest proportion of low skilled jobs and the lowest percentage of high skilled jobs, whilst the opposite is true of Sheffield. Around half (49%) of all jobs in Sheffield are high skilled which is very similar to England. Rotherham's occupational profile is similar to that of SYMCA, whilst Doncaster tends to have relatively low levels of high skilled jobs and higher levels of low skilled jobs.

[28] Sheffield City Region (May 2019), Sheffield City Region Economic Evidence Base: Skills and Employment

Compared to the three comparator MCA areas, SYMCA has the same occupational profile as WMCA. LCR tends to have the higher level skilled workforce and TVCA the lowest skilled.

Figure 28: Employment by occupation – SYMCA and England April 2020/March 2021



Percent 2020/21	Barnsley	Doncaster	Rotherham	Sheffield	SYMCA	England
Managers et al	8.3%	9.3%	10.8%	8.6%	9.1%	11.0%
Professional	14.2%	15.0%	17.5%	26.9%	20.8%	23.5%
Associate Prof & Tech	13.7%	14.6%	14.6%	13.3%	13.4%	15.6%
Admin & Secretarial	7.2%	9.8%	10.7%	7.9%	8.5%	10.3%
Skilled Trades	13.1%	10.9%	8.8%	8.9%	10.1%	8.8%
Caring, Leisure & Other Service	12.3%	11.5%	9.5%	9.1%	10.0%	9.0%
Sales & Customer Service	6.6%	9.1%	9.6%	8.5%	9.0%	6.9%

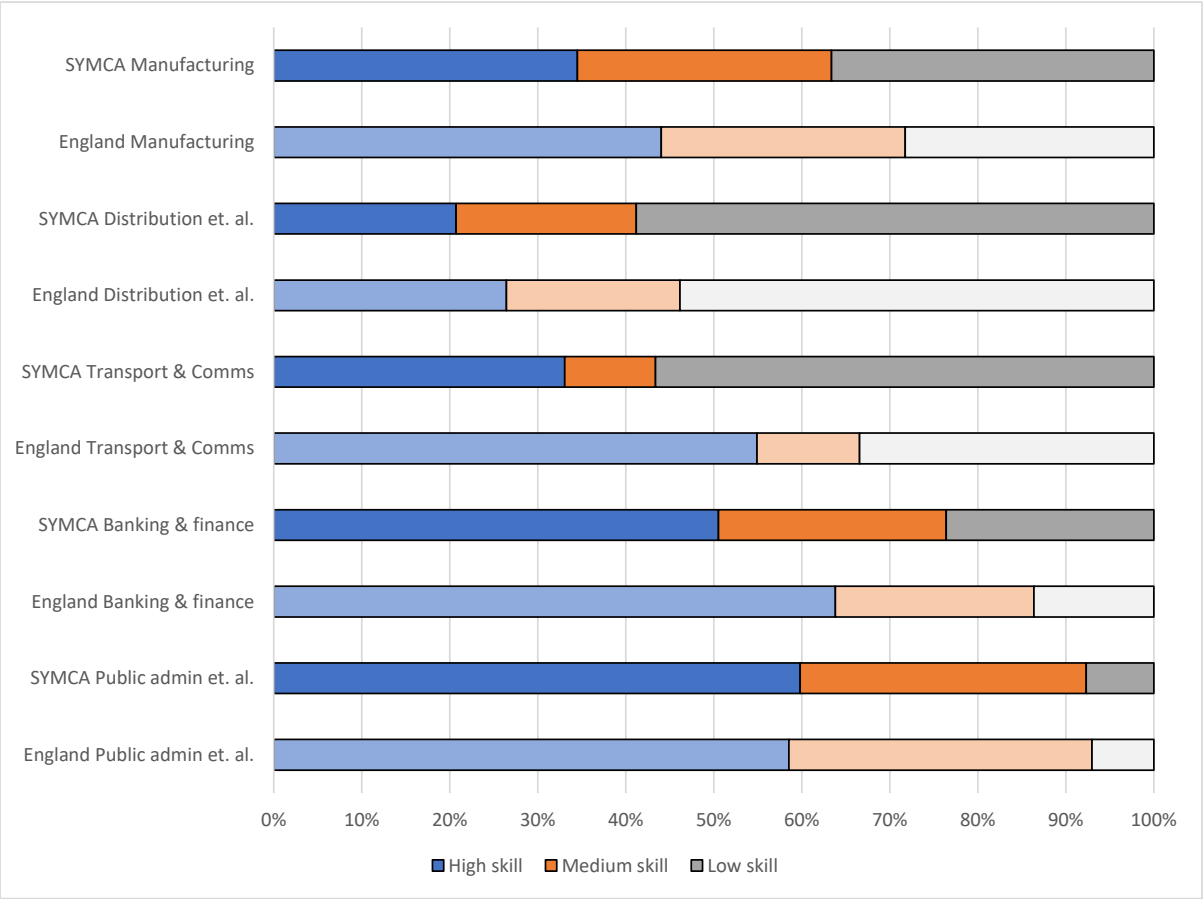
Process, Plant & Machine Operatives	6.8%	9.4%	8.1%	5.6%	7.6%	5.6%
Elementary occupations	17.8%	10.3%	10.5%	11.1%	11.7%	9.3%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: IER analysis of NOMIS data based on the Annual Population Survey

When compared to England, SYMCA tends to have lower skilled jobs within the same sectors. Figure 29 shows that in the largest employment sectors, SYMCA has a lower proportion of high skilled jobs and a higher percentage of low skilled jobs compared to the national distribution. The sectors with the largest skill discrepancies between SYMCA and England are transport and communications, and banking & finance.

The only sector where the occupational profile is similar is in public administration.

Figure 29: Employment by occupation in selected sectors – SYMCA and England April 2020/March 2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

NOTE: SYMCA in darker shade; England bars in lighter shade.

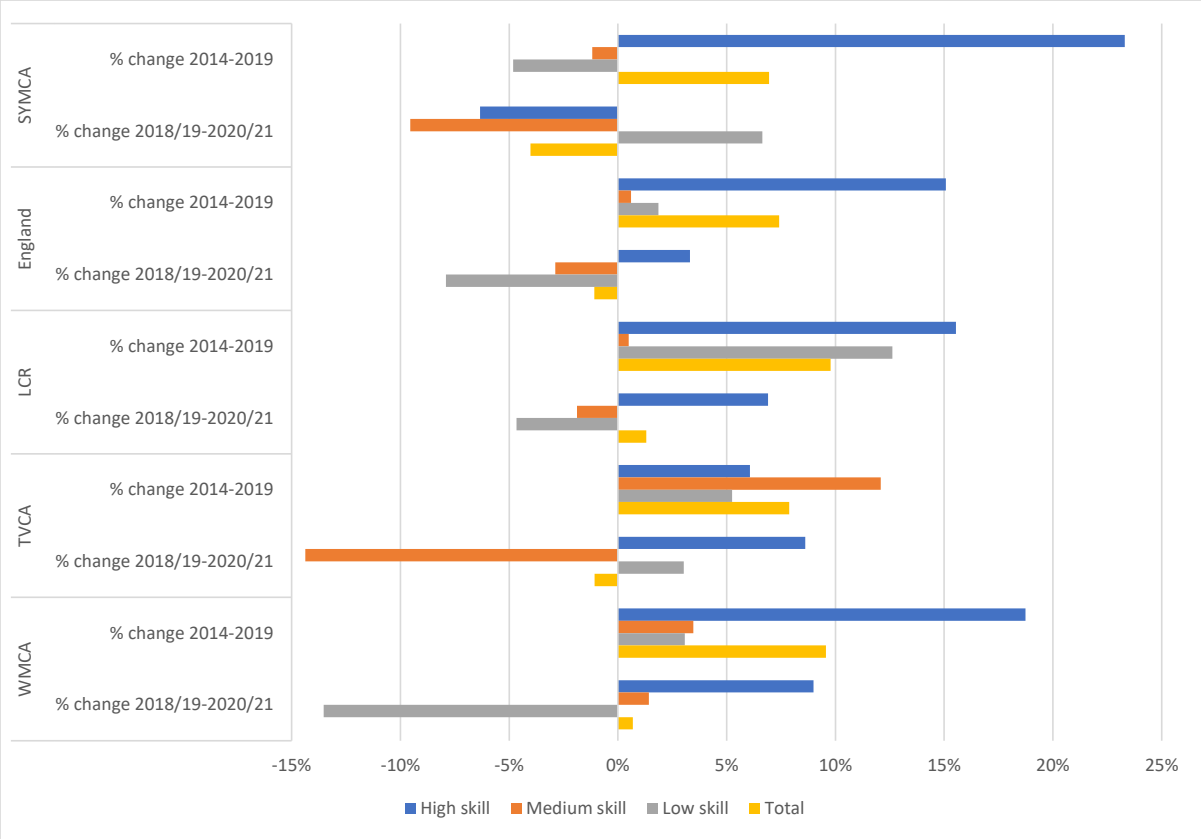
Figure 30 shows that, pre-pandemic, the direction of change of jobs in SYMCA has been towards higher level occupations. People employed in the higher level occupations increased in the five years to 2019 in SYMCA. This was higher than the national average, and the comparator MCA areas. This builds on trends since 2007 but for the first time outstrips that of England.[29] There was a small decrease in medium skilled jobs in SYMCA 2014-2019, and a larger fall in lower skilled jobs.

The pandemic had a different impact on SYMCA than in most of the comparator areas. Most other areas had an increase in higher skilled jobs and falls in lower skilled jobs, but the reverse was true in SYMCA.

In SYMCA 2018/19-2020/21, there was a fall in each high skilled occupation and an increase in every low skilled occupation. Again this was the opposite of what happened in most of the comparator areas.

[29] Ibid.

Figure 30: Employment change by occupation – SYMCA, MCA areas and England 2014-2021



Source: IER analysis of NOMIS data based on the Annual Population Survey

Table 3 shows the Top 10 occupations (at two-digit SOC) by employment for SYMCA and England in 2020/21, and the percentage change 2014-2019 and 2018/19 and 2020/21. Together these top ten occupations account for around two thirds of all jobs in the SYMCA (65%) and England (68%) labour markets.

Whilst there are differences in the relative size, nine occupations are represented in both columns, suggesting that the occupational structure of areas is similar. Across the comparator MCA areas and England seven occupations are amongst the top ten in all areas[30], and two are present in four out of the five areas[31].

[30] SOC 34 Administrative Occupations; 1 Corporate Managers and Directors; 10 Health Professionals; 13 Teaching and Educational Professionals; 58 Sales Occupations; 16 Business, Media and Public Service Professionals; 31 Business and Public Service Associate Professionals; 52 Caring Personal Service Occupations; and 73 Elementary Administration and Service Occupations.

[31] 10 Health Professionals and 16 Business, Media and Public Service Professionals.

Table 4: Top 10 occupations with the largest number of workers – SYMCA and England 2014-2020/21

SYMCA				England			
Occupation	2020/21	% change 14-19	% change 18/19-20/21	Occupation	2020/21	% change 14-19	% change 18/19-20/21
Elementary Admin. & Service	59,400	0%	8%	Elementary Admin. & Service	2,008,100	3%	-15%
Administrative	41,500	9%	-21%	Corporate Managers & Directors	2,171,300	27%	-5%
Caring Personal Service	52,100	3%	-2%	Business & Public Service Associate Professionals	2,288,500	10%	8%
Corporate Managers & Directors	40,100	51%	-18%	Administrative Occupations	2,282,100	-2%	7%
Sales Occupations	40,800	-15%	7%	Caring Personal Service	1,963,100	5%	4%
Health Professionals	34,300	34%	-19%	Business, Media & Public Service Professionals	1,784,300	18%	9%
Business & Public Service Associate Professionals	45,500	17%	7%	Science, Research, Engineering & Technology Professionals	1,988,400	19%	21%
Teaching & Educational Professionals	36,900	0%	11%	Sales Occupations	1,300,100	-7%	-9%
Science, Research, Engineering & Technology Professionals	28,500	30%	-16%	Teaching & Educational Professionals	1,396,800	7%	3%
Transport and Mobile Machine Drivers and Operatives	22,800	23%	-17%	Health Professionals	1,185,400	20%	-4%

Source: Annual Population Survey. Office for National Statistics

Likewise, there is also a great deal of similarity across the four SYMCA districts with five occupations present in the top ten in each area[32] and a further three occupations present in at least three areas[33].

There is therefore a core number of occupations which account for a significant proportion of jobs in any labour market area. In Barnsley and Doncaster, the top ten occupations account for two thirds of all jobs, whilst it is 71% in Sheffield, and almost three quarters (74%) in Rotherham.

Between 2014 and 2019, there was an increase in all top ten occupations in SYMCA and England, except for sales occupations (in SYMCA and England) and administrative occupations (only in England).

Within the four districts the performance of the top occupations fared differently. In Barnsley and Rotherham most of the top ten occupations, but in Sheffield and especially Doncaster there was much more churn. In Doncaster employment in six of the top ten occupations fell.

The impact of the pandemic on the top ten occupations was much greater in SYMCCA than across England. In SYMCA, taken together, the top ten occupations fell by -6% whereas in England they grew by 2%. In SYMCA, six of the top ten occupations saw job losses compared to four in England.

SYMCA also saw greater declines overall relative to the comparator MCA areas, and amongst a greater number of the top ten occupations.

3.4.1. Flexible working

According to the SAPs methodology, and as far as the data analysis is concerned, flexible working is defined as self-employment or temporary working.

In 2020/21, 17% of people in SYMCA worked 'flexibly' (i.e. self-employed or on temporary contracts). Around one in ten (11%) were self-employed and 6% were on temporary contracts. This compares with 14% and 5% in England i.e. there are fewer self-employed people in SYMCA and about the same proportion on temporary contracts. The proportions in the comparator MCA areas are very similar to SYMCA. Nationally and in all of the MCCA areas, self-employment is most prevalent in skilled trades (due to construction working patterns) where over one third (in England and SYMCA) and one quarter (in the other MCA areas work). Managers, and process, plant and machine operatives also have above average levels of self-employment in all areas.

---

[32] 1 Corporate Managers and Directors; 10 Health Professionals ; 13 Teaching and Educational Professionals; 31 Business and Public Service Associate Professionals; 34 Administrative Occupations; 52 Caring Personal Service Occupations; 58 Sales Occupations; and 73 Elementary Administration and Service Occupations.

[33] 13 Teaching and Educational Professionals; 31 Business and Public Service Associate Professionals; 34 Administrative Occupations; and 52 Caring Personal Service Occupations.

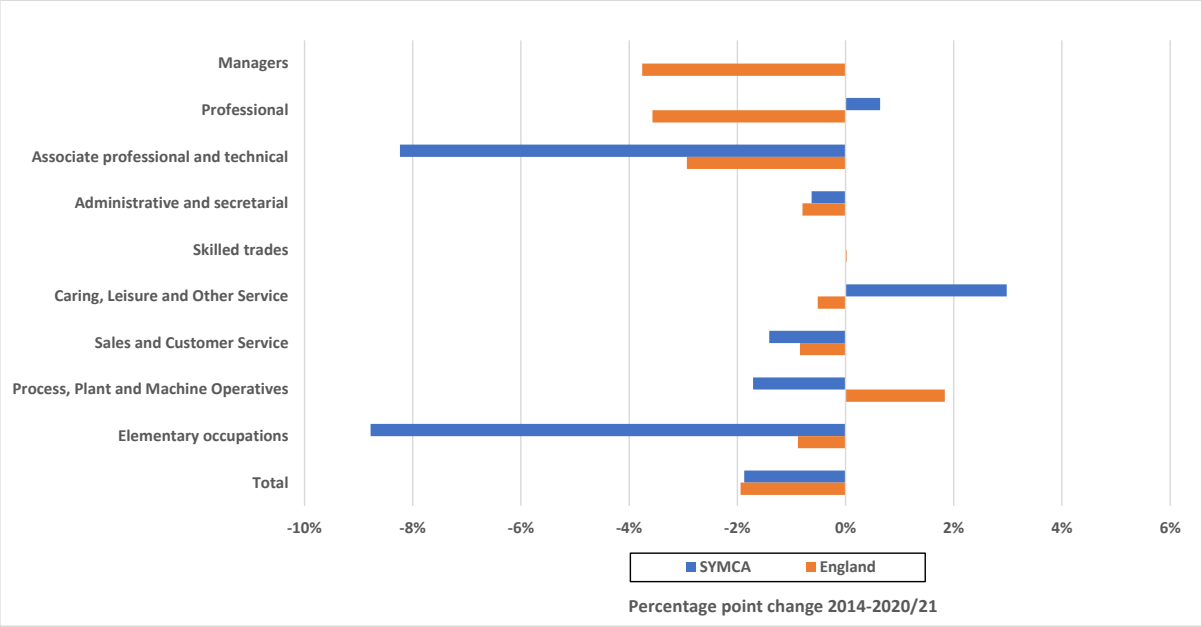
In SYMCA, temporary contracts are most common in professional, caring, leisure and other service, and elementary occupations where one in ten people are on temporary contracts.

Figure 32 shows the change in the proportion of people working flexibly (i.e. self-employed or on temporary contracts) in SYMCA and England between 2014/15 and 2020/21. The figures presented are for percentage point change and therefore show relative change within each occupation group.

Prior to the pandemic, there was an overall decline in flexible working across SYMCA and England. In England, most of the changes were less than one percentage point (pp) showing that flexible working by occupation remained very similar over the period. There were larger changes in SYMCA. Administrative and secretarial, and managers both showed shifts towards more flexible working whereas sales and customer service, and elementary occupations showed less. In most occupations, there was an increase in self-employment and a decrease in temporary working which is similar to the three comparators MCA areas.

The pandemic reduced flexible working still further. In SYMCA, from 2014-2020/21 there was decrease in the proportion of flexible workers in each occupation group except for professional, and caring, leisure and other service occupations. There were significant falls in the proportion of flexible workers in the associate professional and technical, and elementary occupations. In England, flexible working over this period only increased in process, plant and machine operatives.

Figure 31: Employment change by occupation and flexible working – SYMCA and England 2014/15-2019/20



Source: IER analysis of NOMIS data based on the Annual Population Survey

3.5. Employment forecasts

Working Futures employment forecasts were last published just before the pandemic struck in January 2020. They are in the process of being updated but new Working Futures forecasts have not yet been published. This section includes the main findings from the analysis of Working Futures forecasts in last year's report. It also includes new forecasts from the SYMCA's EMSI suite of data.

Key points:

- The main component of industrial and occupational change is replacement demand. Working Futures employment forecasts predicted a total net job requirement of 297,000 by 2027, of these 280,000 would be generated by employment demand.
- Between 2017 and 2027 in SYMCA, total employment was projected to grow by 17,000 to 863,000 jobs by 2027, an increase of 2.0% compared with 2.8% for England as a whole.
- Working Futures estimated an increase in total net job requirements in every sector, driven by replacement demand. However, net employment change (i.e. excluding replacement demand) was forecast to decline in manufacturing but increase in construction and all service sectors.
- Similarly, replacement demand will drive positive job requirements in all occupations to 2027.
- Net occupational changes are forecast to be similar to England's. There are expected net increases in higher skilled occupations. However, for medium and low skilled jobs the picture is mixed. For example, in medium skilled occupations, there are forecast net job losses in administrative, and skilled trades occupations but an increase in caring, leisure and other services occupations.
- EMSI (which does not include replacement demand) forecasts that from 2021-2031 there will be employment growth of 6,000 jobs or a 1% increase. Unlike Working Futures, EMSI forecasts a net increase in manufacturing jobs, and a decline in some large employment service sectors such as wholesale and retail, and human health and social work.
- EMSI forecasts net occupational growth in all occupations except for caring, leisure and other service, and sales and customer service occupations.
- Working Futures forecasts that between 2017 and 2027, there is predicted to be a net increase in qualification levels, especially higher, and medium level qualifications (i.e. at Level 3 and above). The number of jobs with qualifications below this level are forecast to decline.
- England is forecast to move to higher level qualifications faster than in SYMCA.

3.5.1. Industrial employment trends

This is a period of significant uncertainty for the British economy. In addition to the developing impact of Brexit and recovering from the pandemic, the UK economy has to contend with the impact of the Russian invasion of Ukraine.

Sectoral employment forecasts: Working Futures

The employment forecasts presented in last year's report were from the Working Futures 2017-2027 projections commissioned by the DfE.[34] They were created during Winter 2018/19 and published by DfE in early 2020 i.e. just before the pandemic. Any projections of the future pattern of employment at this time must therefore be treated with extra caution. Working Futures projections are available for Sheffield City Region (SCR) LEP area (as defined in 2017, which covers SYMCA together with neighbouring parts of northern Derbyshire).

Working Futures identifies two key components of change: net change[35] and replacement demand.[36]

The main points from last year's report were:

- Whilst net changes were expected to drive an increase of 17,000 jobs, replacement demand was forecast to provide 280,000 jobs, providing a total requirement (i.e. the number of jobs the economy needs over the period) of 297,000. Such replacement demand is equivalent to 35% of 2017 employment. Replacement demand is particularly high in non-marketed services (reflecting the older age structure of industries like education). There is replacement demand in all sectors, but it is least in declining sectors (such as manufacturing). Therefore, replacement demand is a much larger driver of employment change in local economies. It is also more predictable as the age distribution by sector and occupation is known from sources such as the LFS but also the forthcoming 2021 Population Census data.
- According to Working Futures total employment in the SCR LEP area, was projected to grow by 17,000 to 863,000 jobs by 2027, an increase of 2.0% compared with 2.8% for England as a whole.
- Within this total, employment in manufacturing is forecast to decline (by 14% to 2027), but this will be offset by increases in jobs in non-marketed services (6.3%) and business and other services (5.7%). The rate of change in employment demand is slower than for England in all sectors except construction and non-marketed services.

Sectoral employment forecasts: EMSI

More recent sector forecasts are available from EMSI. These are for the SYMCA area rather than the LEP area. They therefore cover the four local authority districts. Unlike Working Futures, EMSI does not include replacement demand.

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[34] These are based on the outputs of a multi sectoral macro-economic model of the economy which produces projections of output and employment which drive further models of employment by industry, occupation and educational qualifications.

[35] Net change is the overall change due to overall macroeconomic factors and specific sectoral impacts.

[36] Replacement demand are the jobs created due to people leaving the workforce e.g. due to retirement.

Table 4 shows that employment levels are forecast to increase by 1% or 6,000 additional jobs. Two large employment sectors – administrative and support services, and public administration and defence – are predicted to grow by 11%. Transportation and storage is also predicted to grow by 6%. However, this will be partly offset by smaller percentage falls in two other large employment sectors: wholesale and retail (-5%), and human health and social work (-3%). The percentage sectoral distribution of employment is forecast to remain very similar.

Table 5: Projected employment change by broad occupation in the SYMCA, 2021-2031

SIC Major sectors	Number		Percent		% change 2021-31
	2021	2031	2021	2031	
Primary sector and utilities	7,607	8,885	1%	2%	17%
Manufacturing	56,750	57,740	10%	10%	2%
Construction	29,740	30,466	5%	5%	2%
Wholesale and Retail	79,420	75,636	14%	13%	-5%
Transportation and Storage	34,628	36,584	6%	6%	6%
Accommodation and Food Service	32,579	32,101	6%	6%	-1%
Information and Communication	15,361	15,096	3%	3%	-2%
Financial, Insurance and Real Estate	19,874	20,108	4%	4%	1%
Professional, Scientific and Technical	32,770	32,370	6%	6%	-1%
Administrative and Support Services	53,826	59,851	10%	11%	11%
Public Administration and Defence	32,824	36,427	6%	6%	11%
Education	58,860	58,802	11%	10%	0%
Human Health and Social Work	84,246	81,403	15%	14%	-3%
Arts, Entertainment, Recreation and Other services	19,842	19,006	4%	3%	-4%
Total	**558,327**	**564,475**	**100%**	**100%**	**1%**

Source: EMSI

3.5.2. Occupational employment trends

Occupational employment forecasts: Working Futures

The main points from last year's report were:

- Working Futures forecast that the percentage of employment in managerial, and professional occupations (which includes teaching) would increase from 27% in 2017 to 29% in 2027, with total labour requirement increasing by nearly half (49% and 47% respectively) in both of these occupations (due to replacement demand). The expected growth in employment in associate professional occupations (which includes nursing) is nearly as large (42%). However, the fastest projected rate of increase is for caring, leisure and other

service occupations (net change of 16% plus replacement demand of 41%) increasing the total labour requirement for this occupation by 57%.

- In contrast, jobs in administrative occupations, skilled trades occupations, process, plant and machine operative, sales and customer service and elementary occupations are projected to decline. These trends reflect those for England as a whole, but the growth in caring, leisure and other services occupations is projected to be stronger, and the decline in skilled and semi-skilled manual occupations is projected to be faster than across the country. The projected net change percentage rate increase in managerial, and professional occupations is slower than across England.
- Replacement demand, however, is significant in each occupation group more than outweighing any declines in employment due to net changes. For example, whilst there is forecast to be a fall (due to net changes) of 11% in skilled trades in SYMCA, there is expected to be an increase of 26% due to replacement demand, leading to a total employment requirement increase of 15%.
- These different factors have a varying effect on different occupation groups, but for each occupation there is a positive employment requirement by 2027.

Occupational employment forecasts: EMSI

Table 5 shows that there will be more modest occupational than sectoral changes. None of the percentage change are more/less than +/-2%. The largest increases will be in medium skilled occupations (administrative and secretarial, and skilled trades) and in low skilled occupations (process, plant and machine operatives, and essential occupations). There will be small increases in all high skilled occupations.

The two occupations forecast to decrease are caring, leisure and other service (-2%), and sales and customer service occupations (-1%).

Table 6: Projected employment change by occupation in the SYMCA, 2021-2031

SIC Major sectors	Number		Percent		% change 2021-31
	2021	2031	2021	2031	
Managers et al	48,733	49,166	9%	9%	1%
Professional Occupations	107,910	109,185	19%	19%	1%
Associate Prof & Tech Occupations	69,602	70,566	12%	13%	1%
Administrative and Secretarial	64,819	66,285	12%	12%	2%
Skilled Trades	47,128	48,034	8%	9%	2%
Caring, Leisure and Other Service Occupations	49,531	48,460	9%	9%	-2%

Sales and Customer Service Occupations	51,216	50,634	9%	9%	-1%
Process, Plant and Machine Operatives	40,456	41,372	7%	7%	2%
Elementary occupations	78,934	80,771	14%	14%	2%
Total	**558,329**	**564,473**	**100%**	**100%**	**1%**

Source: EMSI

3.5.3. Trends in job qualifications

Working Futures, unlike EMSI, provides forecasts by skill level. Working Futures has not updated this data. The main points from last year's report were:

- Working Futures also provides forecasts on skill levels i.e. the implications of projected industrial and occupational trends in terms of the demand for workers by highest educational qualification levels. This reflects shifts towards higher skill occupations but also the increased demand for higher qualifications across all occupation groups.
- In 2017, those with Level 2 (GCSE A to C) qualifications comprised the largest group within SYMCA workforce (180,000 or 21%). People holding Level 3 (A level and equivalent) were the next largest category (175,000 and 21%). However, between 2017 and 2027, there is forecast to be an increase in qualification levels. By 2027, there will be an increase of over a third in the number with a first degree (37%), and an increase in nearly a quarter in the number with Higher Education below degree level (24%).
- The numbers with each level of qualification above Level 2 is projected to increase, while the number with less than an A-level or equivalent as their highest qualification is projected to fall. The largest projected declines are for those with no qualifications (-32%) or Level 1 (-28%) as their highest qualification.
- The rate of increase in those with higher qualifications is lower than the average for England, while the projected rate of decline in the least qualified is also lower than the England average. The percentage with highest educational qualification of Level 5 or above is projected to increase from 33% to 37%.

3.6. Earnings and income

3.6.1. Earnings

Key points:

- In 2021, the workplace median annual gross pay of all employees in SYMCA was £23,572 or 90% of the corresponding figure for England. Wage levels were lower than in LCR and WMCA but higher than in TVCA.

- Within SYMCA, Sheffield has the highest median pay levels (£25,187), followed by Doncaster (£24,575) and Barnsley (£23,017). Rotherham has the lowest average pay (£22,089).
- Between 2014 and 2021, SYMCA had the same wage growth as LCR, slightly higher than in TVCA and England and lower than in WMCA.
- In 2021, the gender pay gap in SYMCA was lower than in TVCA and WMCA, but larger than in LCR. But the gender pay gap decreased by the largest amount in SYMCA between 2014 and 2021.
- In 2019, gross disposable household income per head in SYMCA was £16,653. This was about three quarters of the figure for England and lower than the comparable MCA areas. Between 2014 and 2019, GDHI per head rose by 11% in SYMCA.
- In 2019, gross disposable household income per head in Barnsley, Doncaster and Rotherham was around 78% of the national average. However in Sheffield it was 73%.

Earnings levels and change provides an indication of labour demand in the local economy. In 2021, the workplace median annual gross pay of all employees in SYMCA was £23,572, this is 90% of the corresponding figure for England (£26,204).

Figure 33 shows the change in employee median annual pay for the local authorities, SYMCA and England for 2014, 2019 and 2021. The gap in median pay between SYMCA and England fell by 1pp over this period.

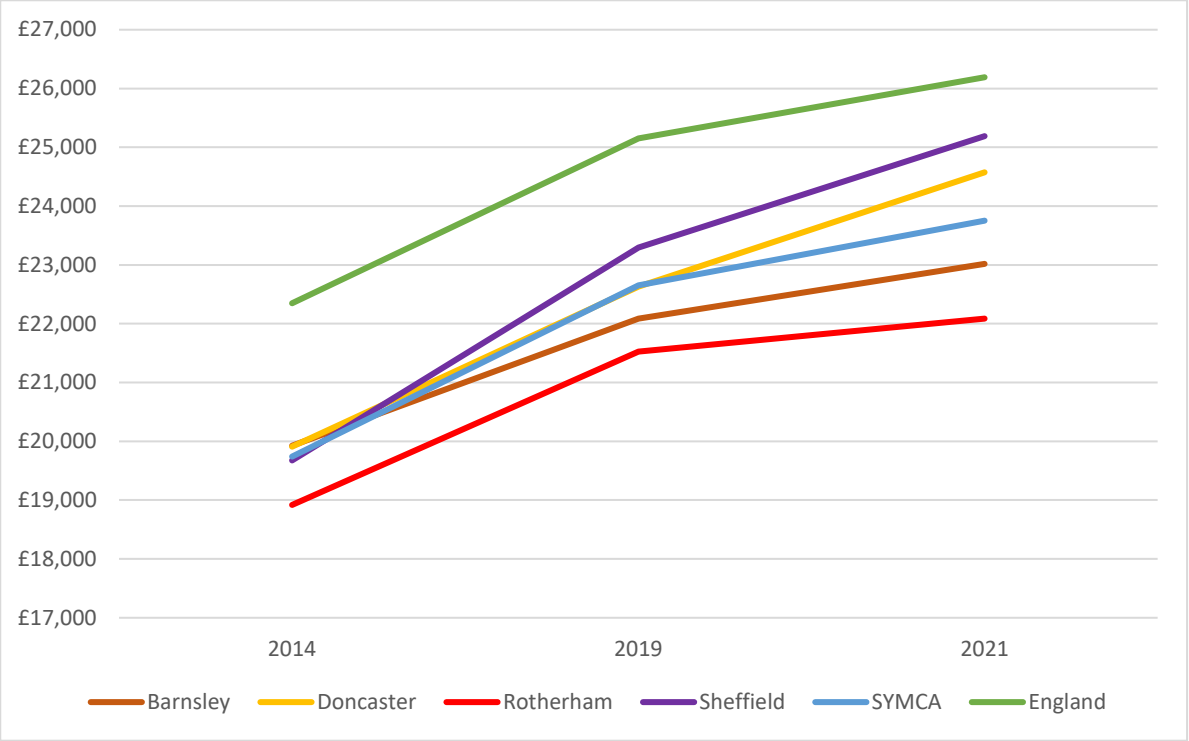
Within SYMCA in 2021, Sheffield has the highest median pay levels (£25,187), followed by Doncaster (£24,575) and Barnsley (£23,017). Rotherham has the lowest average pay (£22,089).

In the five years to 2019, average wages in SYMCA grew by 13%, the same as the national figure. Wages grew by 15% in Barnsley, Rotherham and Sheffield by only by 8% in Doncaster.

Between 2019 and 2020, however, wage growth across SYMCA averaged 5%. Average wage growth in Doncaster, Rotherham and Sheffield was around 6% but it was only 3% in Barnsley.

Average wages in SYMCA are lower than those in LCR and WMCA but higher than TVCA. Between 2014 and 2019, average wages grew by a similar amount in SYMCA, LCR and TVCA (around 13%), but this was lower than in WMCA (19%). Between 2019 and 2021, wage growth in TVCA and WMCA was slightly lower (4%) than in SYMCA (5%), but LCR had higher pay increases (7%).

Figure 32: Median annual pay (Gross £) of all employees – SYMCA, local authorities and England 2014-2021



Source: Annual Survey of Hours and Earnings (ASHE). Office for National Statistics

There is a difference in the pay rates of men and women, referred to as the gender pay gap. Hourly pay is used to reflect the fact that women are approximately three times more likely to be employed part-time than men in SYMCA.[37]

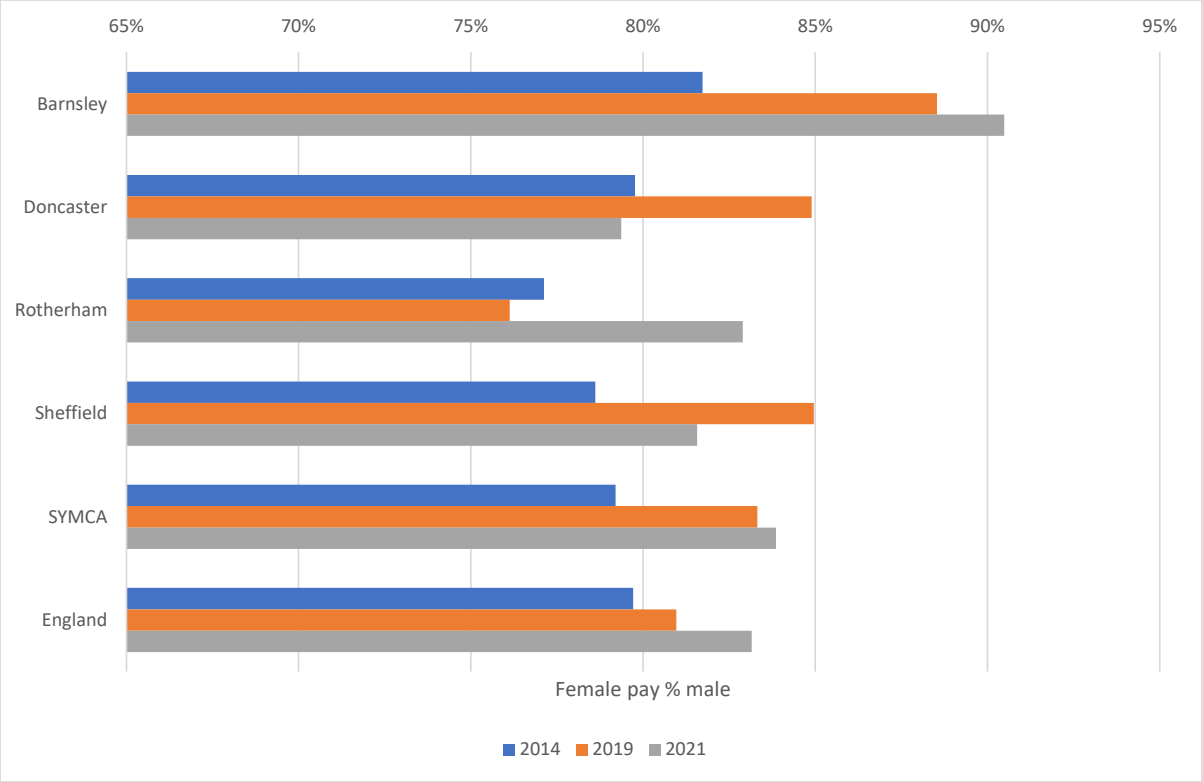
Figure 34 shows that in most areas the gender pay gap has decreased. In SYMCA in 2014, women's wages were 79% of men's, but this had been reduced to 84% by 2021. This meant that in 2021, the gender pay gap in SYMCA was lower than the nationally.

In Doncaster and Sheffield the gender pay gap declined significantly to 2019, but then increased again by 2021. In Doncaster this meant that the gender pay gap was larger in 2021 than in 2014. In Barnsley and Rotherham the gender pay gap has reduced by 8pps and 6pps respectively 2014-21.

In 2021, the gender pay gap in SYMCA was lower than in TVCA and WMCA, but larger than in LCR. But the gender pay gap decreased by the largest amount in SYMCA between 2014 and 2021.

Figure 33: Hourly pay gender gap – SYMCA, local authorities and England 2014 - 2021

[37] Sheffield City Region (February 2016) European Structural & Investment Fund Strategy 2014-20



Source: Annual Survey of Hours and Earnings (ASHE). Office for National Statistics

3.6.2. Income

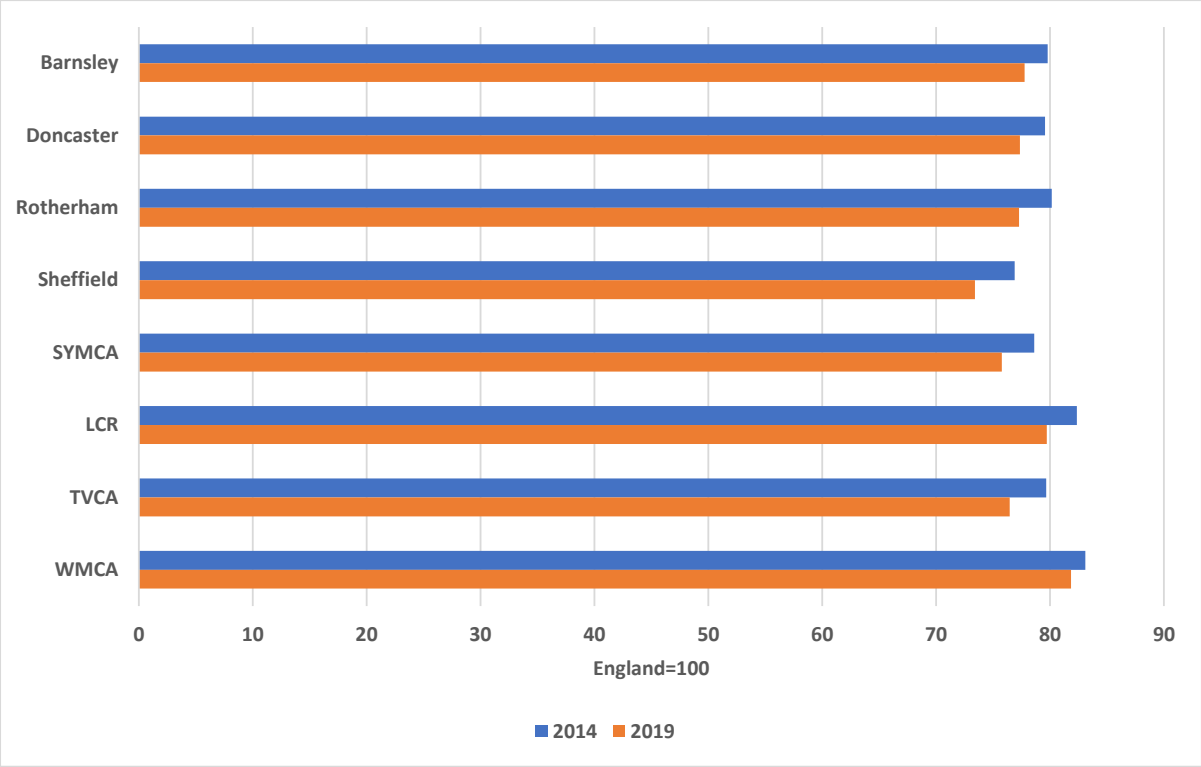
Gross disposable household income (GDHI) provides information on all income (not just pay) and all households (including workless households) net of outgoings.

According to Figure 35, GDHI per head in SYMCA was £16,653. This was about three quarters of the figure for England (£21,978) and lower than the comparable MCA areas. In 2014, GDHI per head in SYMCA was also lower than in England and the three MCA areas. Between 2014 and 2019, GDHI per head rose by 11% in SYMCA. This was the same as in LCR and TVCA but lower than in WMCA (13%) and England (14%).

Across the SYMCA area in 2019, GDHI per head was highest in Barnsley (£17,093) and lowest in Sheffield (£16,131), with Doncaster and Rotherham just below Barnsley's figure. Between 2014 and 2019, GDHI rose by 12% in Barnsley and Doncaster, 11% in Rotherham, but only 10% in Sheffield.

In 2019, GDHI per head in Barnsley, Doncaster and Rotherham was around 78% of the national average. However in Sheffield it was 73%.

Figure 34: Gross disposable household income per head – SYMCA, LADs, MCA areas and England 2014 - 2019



Source: Regional gross disposable household income (GDHI) at current basic prices via NOMIS

3.7. Labour and skills demand

Key points:

- In 2019, an average of 1,300 job postings per month appeared on recruitment websites. This compares to around 1,150 in LCR, 550 in TVCA, 2,150 in GBSLEP, and 71,200 in England.
- The impact of COVID-19 and the resulting lockdown initially halved job postings in April 2020 in all areas. However, job postings quickly rebounded so that they were near or above pre-pandemic levels in July and September 2020.
- By 2021, job postings in each area were higher than 2019 levels.
- In all of the areas, half or more of all job postings are for professional, and associate professional occupations. Around one in ten job postings in each area are for administrative and secretarial, and caring leisure and other service jobs.
- 'Cross-sector' skills are in most demand by employers in the sub region.
- In SYMCA, just over one quarter (27%) were green job vacancies. This compares with 30% in England.

- In both SYMCA and England, more than three quarters of craft and related workers job postings are for green jobs, and around half for plant and machine operators, and assemblers, and clerical support.
- In SYMCA, the most sought after green occupation (as a proportion of all green job postings) was enquiry clerk (i.e. people who respond to customer and supplier enquiries and complaints) followed by accountants (8%) and software developers (6%).
- Almost two thirds of the SYMCA jobs are higher level skill jobs (65%), around one quarter are medium skill (27%) and just under one in ten (8%) are low skill occupations.

At a basic level, labour demand is equivalent to current employment levels plus unfilled vacancies. The level of employment is known from APS and BRES data, but the level of vacancies is more difficult to calculate. This section includes data for online vacancies, but this provides only a partial picture as many vacancies are advertised through other formal means (such as Jobcentres and recruitment agencies) or informal (especially word of mouth).

In addition to labour demand, there is an additional skills demand some of which can be measured through jobs vacancies (e.g. skill shortage vacancies) but some of which is internal to the organisation (such as skills gaps). Another aspect of skills demand is utilisation, as skilled and qualified people may not be being used to their full potential either those employed by a specific employer or aggregated across a labour market.

3.7.1. Vacancies/job postings

LMI for All monitors job postings in the main recruitment websites. Figure 36 shows that the number of web based job vacancy postings remained relatively constant during 2019. The number of vacancies in England averaged 71,270 per month and varied between 58,000 and 79,000. SYMCA averaged 1,300 vacancies per month, ranging between 1,479 and 1,116.

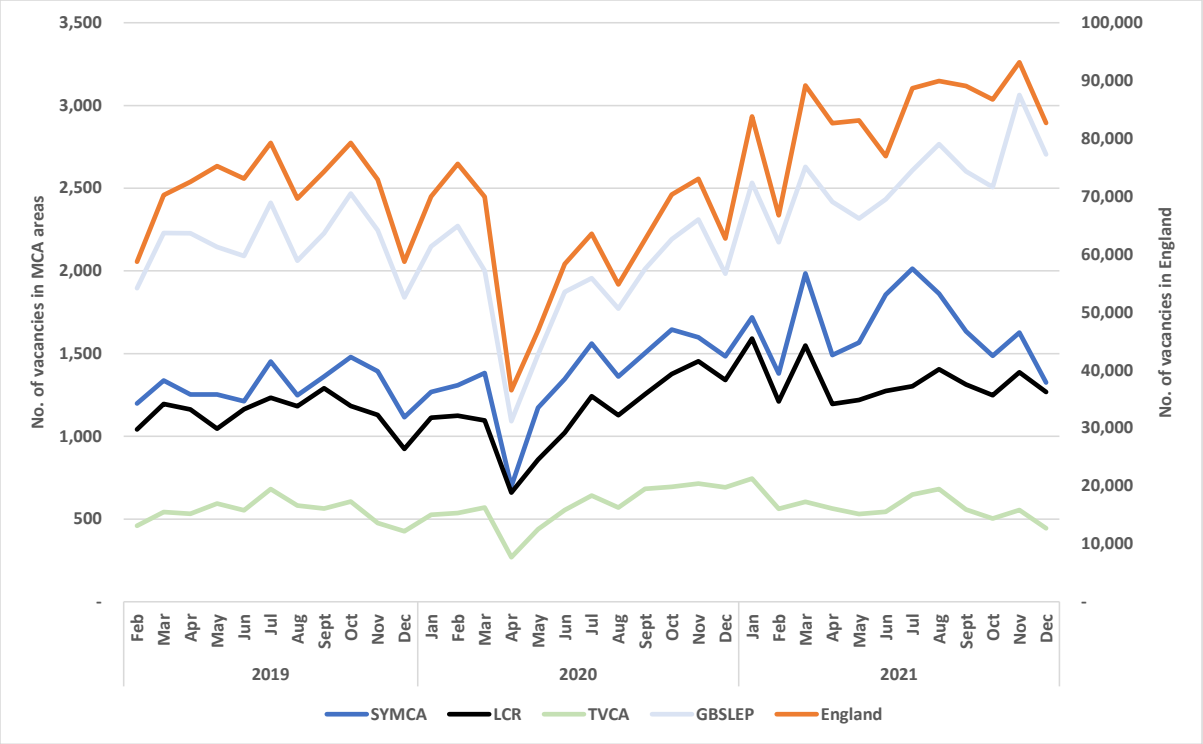
Throughout the three years there were seasonal variations in job postings. Low points in February and December, and peaks in July and September. All areas (to a greater or lesser extent) follow these trends. In 2019 in SYMCA, an average of 1,300 job postings per month appeared on recruitment websites. This compares to around 1,150 in LCR, 550 in TVCA, 2,150 in GBSLEP, and 71,200 in England.

The impact of COVID-19 and the resulting lockdown initially halved job postings in April 2020 in all areas. However, job postings quickly rebounded so that they were near or above pre-pandemic levels in July and September 2020. In 2020, average monthly job postings job postings were at or above pre-pandemic levels in SYMCA, LCR and TVCA. But in GBSLEP and England, they were 10% lower.

By 2021, job postings in each area were higher than 2019 levels. Compared to average monthly postings in 2019, SYMCA the saw 2021 average increase by 28% which was much higher than the 18% increase in LCR, GBSLEP and England, and

the 6% rise in TVCA. In 2021 in SYMCA, job postings peaked at 2,000 per month in March and July. This is 500 postings higher than in the peak months in 2019.

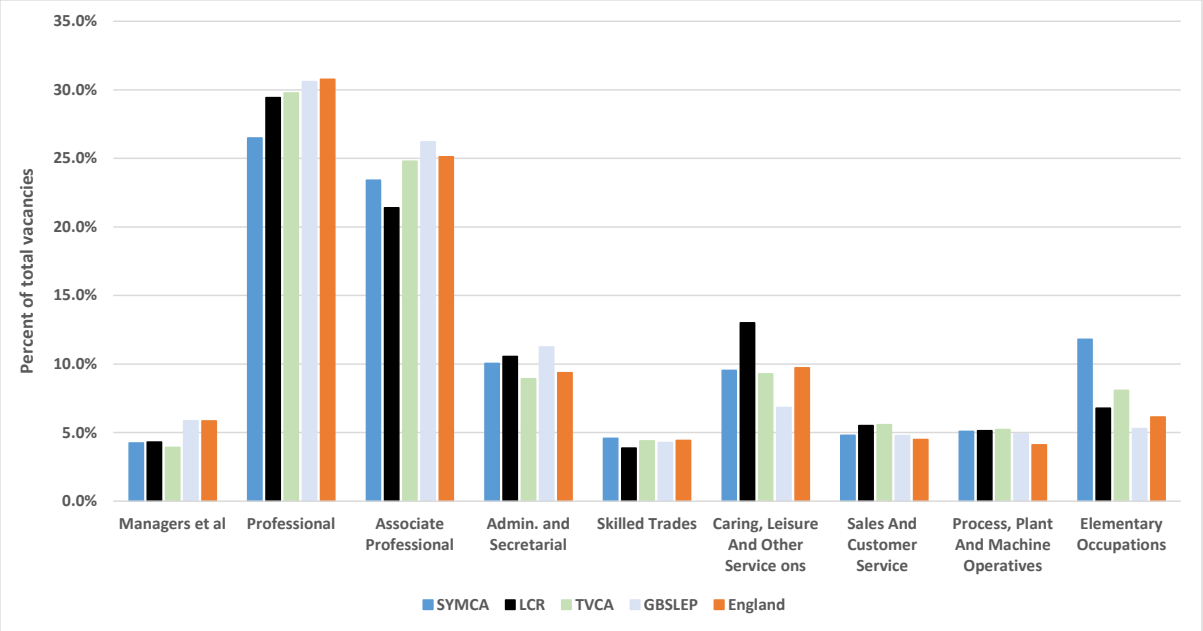
Figure 35: Job postings – SYMCA, comparator LEP areas and England, 2019-2021



Source: LMI for All vacancy dataset

Recruitment patterns vary by occupation with some vacancies (e.g. professional occupations) more likely to appear on recruitment websites. Figure 37 shows the distribution of job placements by occupation is similar across the five areas. In all of the areas, half or more of all job postings are for professional, and associate professional occupations; around 10% in each area are for administrative and secretarial, and caring leisure and other service jobs.

Figure 36: Job postings by occupational group – SYMCA, comparator LEP areas and England 2021



Source: LMI for All vacancy dataset

Table 6 shows the top 15 skills most in demand in SYMCA Region from internet job postings in 2021. Cross-sector skills[38] such as 'communication', 'logistics' and 'attention to detail' were most in demand. The top two sector specific skills were customer service and Javascript.

Cross-sector skills are the ones most mentioned in job postings. Around two thirds (65%) 58% of vacancies require cross-sector skills, followed by sector-specific (25%), transversal skills (6%), and occupational (4%).

Table 7: Top 15 skills most in demand in SYMCA, job postings 2021

Ranking	Top 15 Skills demanded in SYMCA	Skill type
1	Communication	cross-sector
2	Customer Service	sector-specific
3	Logistics	cross-sector
4	Attention Detail	cross-sector
5	Work Team	cross-sector
6	Accounting	cross-sector
7	Lead Team	cross-sector
8	Primary Care	cross-sector
9	Javascript	sector-specific
10	Manage Team	cross-sector
11	Work Independently	transversal
12	Psychology	cross-sector

[38] Cross-sector skills are those necessary for different sectors. (ESCO, 2017, p.6). Sector specific skills are those relevant for one sector but required in different occupations e.g. 'customer service'. Occupation specific skills are those relevant for one occupation e.g. managing storage tanks are specific for dewatering technicians. Transversal skills are those that are relevant to a range of occupations and sectors e.g. social interaction and critical thinking.

13	Project Management	sector-specific
14	Nutrition	sector-specific
15	Computer Science	cross-sector

Source: LMI for All vacancy dataset

3.7.2. Hard to fill and skill shortage vacancies[39]

The ESS identifies provides data on hard to fill and skill shortage vacancies. However, it has not been updated since 2019. Last year's report found that in 2019:

- SYMCA (15%) had vacancy levels just below the national average (17%). This corresponds to 2.8% of SYMCA workforce compared to 3.2% of the national workforce.
- Almost one in ten (8%) of SYMCA employers reported a hard to fill vacancy, the same as in England. This represents 1% of jobs in both areas. Just over one third (36%) of all vacancies in SYMCA and England are hard to fill.
- In SYMCA, associate professional and technical were the hardest to fill (29%). Skilled craft trades (18%) and professional occupations (16%) and caring, leisure and other service occupations (14%) were also hardest to fill.
- Compared to England, SYMCA has higher levels of hard to fill vacancies for high skill occupations (46% and 33% respectively), similar levels of medium skill hard-to-fill vacancies (35% and 37%) and much lower levels of low skill hard-to-fill vacancies (19% and 29%).
- The level of skill shortage vacancies is lower in SYMCA than England. In SYMCA 4% of employers reported a skill shortage vacancy representing 0.5% of employment. The respective figures for England were 6% and 0.8%. In SYMCA one in five (21%) vacancies is a skill shortage vacancy compared to 25% in England.
- Across SYMCA skilled craft trades (22%), professional occupations (21%) and caring, leisure and other service occupations (18%) comprised the largest skill shortage vacancies.
- Compared to England, SYMCA had higher levels of high skill occupation skill shortage vacancies (38% and 34% respectively); higher medium occupation skill shortage vacancies (42% and 39%); and lower levels of skill shortage vacancies for low skilled occupations (20% and 26%).
- In SYMCA the main reasons for skill shortage vacancies were: the lack of "any technical or practical skills"[40] (75% of employers with a skill shortage vacancy

[39] In the ESS, hard to fill vacancies are those which employers are having any difficulty in filling. Skill shortage vacancies are those employers find hard to fill due to applicants lacking the skills, experience or qualifications they require.

[40] Technical or practical skills refers to "specific skills required to perform the specific functions of a job role" (ESS, 2019).

gave this reason) and "any people and personal skills"[41] (76%). These two skills along with self-management skills were the most prevalent reasons across each of the local authorities. Rotherham and Barnsley (in particular) had high levels of skill shortages due to a lack of management and leadership skills (59% and 81% respectively).

3.7.3. Skills gaps and skills utilisation[42]

The ESS also reported on other recruitment and skills issues facing employers, including skills gaps, and staff underutilisation. In 2019 the ESS found:

- In SYMCA and England, the total number of vacancies is less than 4% of total jobs and represents less than one in five employers (who have at least one vacancy). The level of hard to fill vacancies is even lower, less than 1.5% of jobs and affecting fewer than one in ten employers. Skills shortage vacancies are less than 1% of employment and affect less than 7% of employers in any of the areas.
- By contrast, skills gaps affected 4% of all jobs in SYMCA and 5% in England, and are experienced by more than one in ten employers (15%-13% respectively).
- Staff underutilisation affects around one third of employers in each area (36% in SYMCA and 34% in England).
- Skills gaps and staff underutilisation are more likely to affect SYMCA employers compared to England.

In summary, hard to fill and skills shortage vacancies represent a relatively small proportion of recruitment and skills issues than skills gaps and underutilisation.

3.7.4. Vacancies for green jobs

'Green jobs'[43] are a priority at both the national[44] and subregional level.[45] How green jobs is defined is in Annex A.

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[41] These skills are defined as "the 'softer', less tangible skills required to manage oneself and interact with others in the workplace" (ESS, 2019).

[42] Skills gaps are where staff are not fully proficient in doing their job. Skills underutilisation is where have staff have qualifications that are more advanced than required for their current job role.

[43] Green occupations "refer to the extent to which green economy activities and technologies increase the demand for existing occupations, shape the work and worker requirements needed for occupational performance, or generate unique work and worker requirements" (Dierdorff et al. 2009, p.4).

[44] HM Government. (2011) Enabling the transition to a green economy: government and business working together

[45] Sheffield City Region (January 2021) Our Strategic Economic Plan 2021-2041

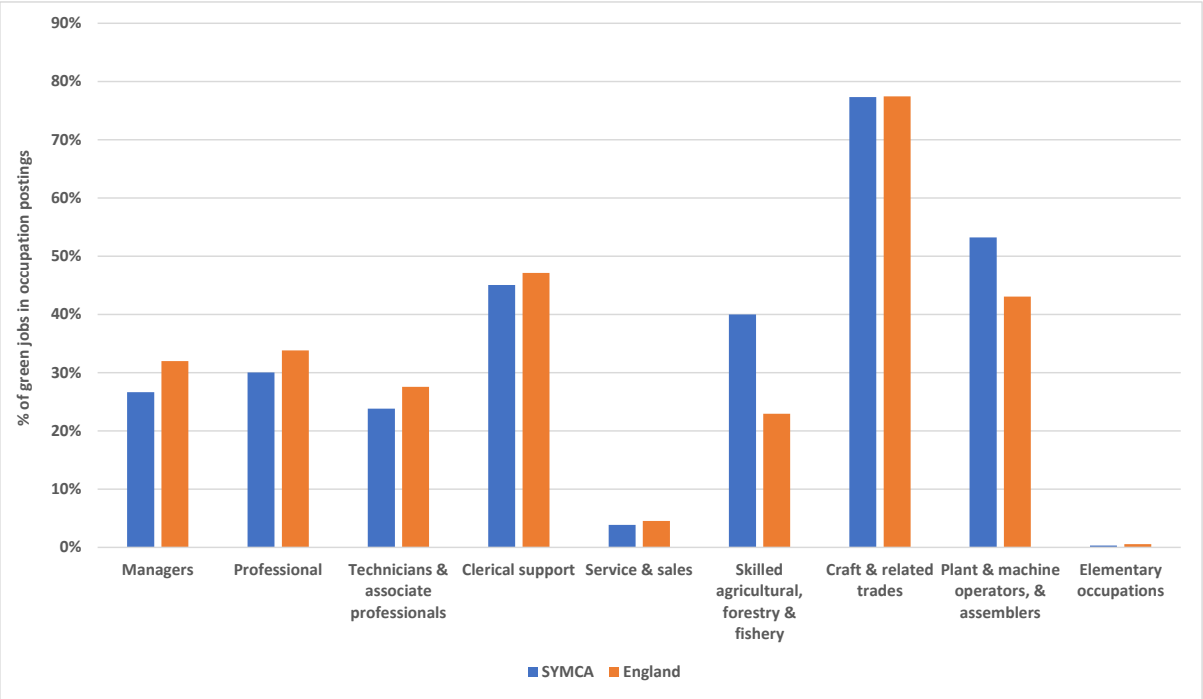
In 2021, there were around 17,000 job postings in SYMCA.[46] Of these just over one quarter (27%) were green job vacancies. This compares with 30% in England.

Figure 43 shows the occupation of green job vacancies. The occupational distribution (ISCO major groups) is similar between the SYMCA Region and England. The main exceptions are for a larger proportion of green jobs in skilled agricultural, forestry and fishing, and plant and machine operators, and assemblers job postings in SYMCA than England. England has higher percentages of green job postings in managerial, profession, and technicians and associate professional occupations.

In both areas, more than three quarters of craft and related workers job postings are for green jobs, and around half for plant and machine operators, and assemblers, and clerical support. The share of green job vacancies in elementary, and service and sales occupations are less than 5% in both SYMCA and England.

[46] The total number of job postings used in this section is smaller than in Section 3.7.1 because some job titles could not be coded into green/non-green jobs and, to a lesser extent, because there are a few occupations without a clear match in the green taxonomy used.

Figure 37: Percentage of vacancies that are green jobs by occupational group: SYMCA and England 2021



Source: LMI for All vacancy dataset

At a more detailed occupational level, Table 7 shows the proportion of all green job postings in SYMCA and England for the top 20 green occupations in SYMCA. These top 20 of occupations account for two thirds of the total green job vacancies in SYMCA.

In SYMCA, the most sought after green occupation (as a proportion of all green job postings) was enquiry clerk (i.e. people who respond to customer and supplier enquiries and complaints) followed by accountants (8%) and software developers (6%).

Almost two thirds of the SYMCA jobs are higher level skill jobs (65%), around one quarter are medium skill (27%) and just under one in ten (8%) are low skill occupations.

The distribution of the top 20 green jobs is similar for SYMCA and England. England has slightly more postings (2pp more) for accountants and lawyers, and SYMCA has slightly more (2pp) for machinery mechanics and repairers, and heavy truck and lorry drivers.

Compared to the other LEP areas, the distributions of job postings by occupation were similar. The main differences were the higher levels of job postings for accountants and lawyers in LCR and GBSLEP.

Table 8: Top 20 in most demand green occupations in SYMCA (2021)

Green occupations	SYMCA	England
Enquiry clerks	9%	8%
Accountants	8%	10%
Software developers	6%	6%
Sales and marketing managers	4%	5%
ICT user support technicians	4%	4%
Machinery mechanics and repairers	4%	2%
Psychologists	4%	2%
Heavy truck and lorry drivers	3%	2%
Physical & engineering science technicians nec	3%	2%
Engineering professionals nec	3%	3%
Social work and counselling professionals	2%	2%
R&D managers	2%	3%
Receptionists (general)	2%	2%
Lawyers	2%	4%
Financial and investment advisers	2%	2%
Real estate agents and property managers	2%	2%
Mechanical engineers	1%	2%
Biologists, botanists et al	1%	3%
Systems analysts	1%	2%
Chefs	1%	2%

Source: LMI for All vacancy dataset

3.8. Employer training behaviour

The 2021 report contained information on employer training behaviour from the ESS 2019. However, the data has not been updated. The main findings from the ESS were:

- 63% of employers in SYMCA provide some form of staff training, this is higher than in England;
- Different measures of training behaviour provide different rankings in the level of training by area. But generally, SYMCA is cose to the England average;
- Most training is job specific (86% of SYMCA employers undertake this training) but a high proportion is health and safety (71%) and basic induction (59%);
- Of those employers who do not train, more than 80% say that their staff are fully proficient and so there is no need to train;

- For those employers who do train, the main reasons they do not increase their levels of training are because of the costs associated with losing staff whilst they train (49% of SYMCA employers providing training), and the actual costs of funding the training (49%).

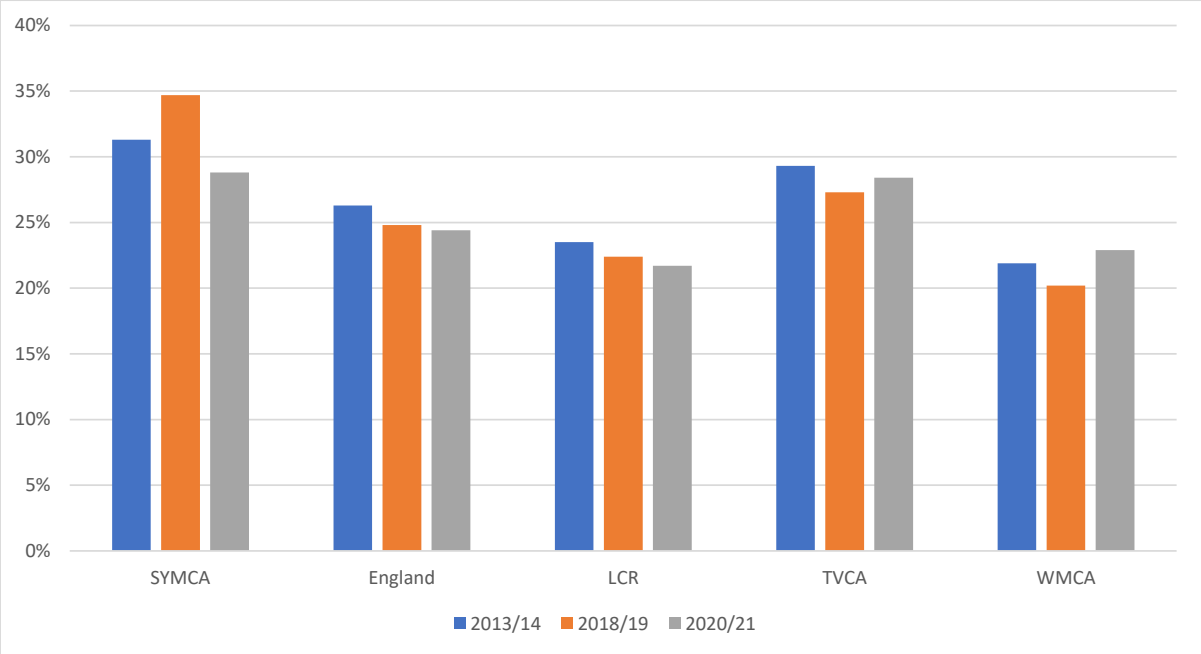
A limited amount of data is available on job related training from the APS. Figure 39 shows the amount of job related training undertaken by people (aged 16-64) in employment in SYMCA, comparator MCAs and England 2013/14-2020/21. The measure refers to any job related training in the past 13 weeks (i.e. four months) which would cover one-off training (e.g. induction and health and safety) through to longer term, off-the-job training leading to a formal qualification.

In 2013/14, on this measure, levels of training are much higher in SYMCA (31%) than in England (26%) and the comparator MCA areas (ranging from 22%-29%).

Between 2013/14 to 2020/21, levels of job related training fell in each area (by 1-2 pps), except for SYMCA where it rose by 3 pps to 35%.

COVID impacted on levels of training in SYMCA, England and LCR, but rose in TVCA and WMCA. Training in SYMCA was affected the most by the pandemic, with levels of training falling by 6 pps, but still remained above the level in all other areas.

Figure 38: Job related training in the past 13 weeks: SYMCA, districts, MCAs and England 2013/14-2020/21



Source: Annual Population Survey via NOMIS

The increase in levels of training across SYMCA between 2013/14 was due to large increases in Sheffield and Rotherham. Levels of training fell in Barnsley and Doncaster. However, the reverse was true in the period to 2020/21. The pandemic led to a reduction in job related training in Rotherham and Sheffield, and an increase in Barnsley and Doncaster. In 2020/21, levels of training in each SYMCA district was higher than the average for England.

3.9. Summary and conclusions

3.9.1. Summary

The key points identified in this section are that on enterprise the business density (number of businesses per adult population) in SYMCA in 2021 was much lower than in England but similar to the comparator MCA areas. The distribution of businesses by size and sector is similar across all of the areas. Between 2014 and 2021, the number of businesses of all sizes grew in every area, and in most SYMCA areas, above the national average. Between 2019 and 2021, the number of enterprises also increased in most sectors despite the pandemic.

The churn in businesses in 2020 was 14% of the stock of businesses were created and 10% stopped trading, this is a similar proportion in each area. This has been the same (more or less) since 2015 and, again, the data do not show much impact from the pandemic.

Whether measured by employment, turnover or both, SYMCA has similar proportions of high growth businesses to the comparable MCA areas, and England. From 2015-2020, the proportion of high growth businesses (employment measure) has remained stable, about 4%-5% in each area.

Over the past two decades, productivity (using the GVA per hour measure) in SYMCA has persistently been lower than the national average (around four fifths) and the comparator MCAs. Sheffield has the highest levels of productivity in SYMCA and these are consistently below the comparator areas. Since 2004 productivity in SYMCA has increased at a similar rate to England, and as a result the productivity gap has not closed.

The sectoral composition of the SYMCA workforce is similar to that across England. However, within SYMCA, the industrial structure of Sheffield tends to be distinct from Barnsley, Doncaster and Rotherham. Sheffield has a similar sectoral employment structure to England.

Over the five years to 2019, total employment in SYMCA grew by 7% which was the same as in England. Compared to most of the comparator MCA areas, SYMCA tended to have slightly lower jobs growth. COVID-19 impacted on SYMCA employment more than the national average.

One of the reasons why SYMCA did not fare as well in employment terms is due to the performance of the largest employment sectors (2-digit SIC). In England, LCR and WMCA employment in the top five and top ten employment sectors all grew. In SYMCA, jobs fell in the top ten employment sectors and stayed at the same level in the top five. This was even in the same sectors.

SYMCA has identified a number of priority sectors: ‘big employment’, ‘sectors with potential’ and ‘growing sectors’. Between 2015 and 2020, the non-priority sectors in SYMCA performed better in all areas than the priority sectors. However, all of the negative change was due to the pandemic. Prior to 2020, employment grew in all priority sector groupings with the exception of ‘big employment sectors’ in Rotherham.

In general, Sheffield tended to perform below the SYMCA average and Barnsley and Doncaster above it.

In 2020/21, the overall distribution of employment by occupation in SYMCA is not too dissimilar to that of England. Analysis of more detailed occupations (2-digit SOC) shows that, whilst there are differences in the relative size, nine occupations are represented in the top ten in SYMCA and England. Likewise, there is also a great deal of similarity across the four SYMCA districts. There is therefore a core number of occupations which account for a significant proportion of jobs in any labour market area.

SYMCA has fewer people working in higher skill level occupations and more working in lower skills occupations compared to England. If SYMCA jobs displayed the same occupational profile as England there would be around 38,000 fewer people working in lower skilled occupations and 44,000 more in higher skilled jobs. When compared to England, SYMCA tends to have lower skilled jobs even within the same sectors. Relative to the comparator MCAs, SYMCA sits at a mid-point with WMCA.

Pre-pandemic, the trend in SYMCA was towards higher level occupations. This was higher than the national average, and the comparator MCA areas.

The pandemic, however, had a different impact on SYMCA than in most of the comparator areas. Most other areas had an increase in higher skilled jobs and falls in lower skilled jobs, but the reverse was true in SYMCA. The impact of the pandemic on the top ten occupations was much greater in SYMCA than across England. SYMCA also saw greater declines overall relative to the comparator MCA areas, and amongst a greater number of the top ten occupations.

The main component of industrial and occupational change is replacement demand. Working Futures employment forecasts predicted a total net job requirement of 297,000 by 2027, of these 280,000 would be generated by employment demand.

Between 2017 and 2027 in SYMCA, total employment was projected to grow by 17,000 to 863,000 jobs by 2027, an increase of 2.0% compared with 2.8% for England as a whole. Working Futures estimated an increase in total net job requirements in every sector, driven by replacement demand. However, net employment change (i.e. excluding replacement demand) was forecast to decline in manufacturing but increase in construction and all service sectors.

Similarly, replacement demand will drive positive job requirements in all occupations to 2027. Net occupational changes are forecast to be similar to England's. There are expected net increases in higher skilled occupations. However, for medium and low skilled jobs the picture is mixed. For example, in medium skilled occupations, there are forecast net job losses in administrative, and skilled trades occupations but an increase in caring, leisure and other services occupations.

EMSI (which does not include replacement demand) forecasts that from 2021-2031 there will be employment growth of 6,000 jobs or a 1% increase. Unlike Working Futures, EMSI forecasts a net increase in manufacturing jobs, and a decline in some

large employment service sectors such as wholesale and retail, and human health and social work. EMSI forecasts net occupational growth in all occupations except for caring, leisure and other service, and sales and customer service occupations.

Working Futures forecasts that between 2017 and 2027, there is predicted to be a net increase in qualification levels, especially higher, and medium level qualifications (i.e. at Level 3 and above). The number of jobs with qualifications below this level are forecast to decline. England is forecast to move to higher level qualifications faster than in SYMCA.

In 2021, the workplace median annual gross pay of all employees in SYMCA was £23,572 or 90% of the corresponding figure for England. Wage levels were lower than in LCR and WMCA but higher than in TVCA. Within SYMCA, Sheffield has the highest median pay levels (£25,187), followed by Doncaster (£24,575) and Barnsley (£23,017). Rotherham has the lowest average pay (£22,089). Between 2014 and 2021, SYMCA had the same wage growth as LCR, slightly higher than in TVCA and England and lower than in WMCA.

In 2021, the gender pay gap in SYMCA was lower than in TVCA and WMCA, but larger than in LCR. But the gender pay gap decreased by the largest amount in SYMCA between 2014 and 2021.

In 2019, gross disposable household income per head in SYMCA was £16,653. This was about three quarters of the figure for England and lower than the comparable MCA areas. Between 2014 and 2019, GDHI per head rose by 11% in SYMCA. In 2019, gross disposable household income per head in Barnsley, Doncaster and Rotherham was around 78% of the national average. However in Sheffield it was 73%.

In 2019, an average of 1,300 job postings per month appeared on recruitment websites. This compares to around 1,150 in LCR, 550 in TVCA, 2,150 in GBSLEP, and 71,200 in England. The impact of COVID-19 and the resulting lockdown initially halved job postings in April 2020 in all areas. However, job postings quickly rebounded so that they were near or above pre-pandemic levels in July and September 2020. By 2021, job postings in each area were higher than 2019 levels.

In all of the areas, half or more of all job postings are for professional, and associate professional occupations. Around one in ten job postings in each area are for administrative and secretarial, and caring leisure and other service jobs. 'Cross-sector' skills are in most demand by employers in the sub region.

In SYMCA, just over one quarter (27%) were green job vacancies. This compares with 30% in England. In both SYMCA and England, more than three quarters of craft and related workers job postings are for green jobs, and around half for plant and machine operators, and assemblers, and clerical support. In SYMCA, the most sought after green occupation (as a proportion of all green job postings) was enquiry clerk (i.e. people who respond to customer and supplier enquiries and complaints) followed by accountants (8%) and software developers (6%). Almost two thirds of the SYMCA

green jobs are higher level skill jobs (65%), around one quarter are medium skill (27%) and just under one in ten (8%) are low skill occupations.

According to the ESS in 2019 (which has not been updated since) SYMCA has lower levels of skills shortage and hard to fill vacancies. However, skills gaps and staff underutilisation are much more significant issues for employers in all areas.

Just under one third (63%) of employers in SYMCA provide some form of staff training, this is higher than in England. However, different measures of training behaviour provide different rankings in the level of training by area. Most training is job specific but a high proportion is health and safety and basic induction.

Of those employers who do not train, more than 80% say that their staff are fully proficient and so there is no need to train. For those employers who do train, the main reasons they do not increase their levels of training are because of the costs associated with losing staff whilst they train, and the actual costs of funding the training.

Due to Government support for people and individuals the full impact of COVID-19 on the demand for skills has not yet materialised and is unlikely to be until the support and lockdown are lifted. The data available suggests that, due to Government support, the impact to date has been relatively small. Levels of job postings were initially hit hard by the lockdown in March 2020 but recovered quite quickly by the summer. Employment and enterprise data show minimal changes overall and by sector and occupation.

3.9.2. Conclusions

This section has shown that in a number of respects, the economy and labour market of the SYMCA area is very similar to the rest of England and the comparator MCA areas. The structure of business by size and sector, the number and growth in high performing businesses, employment by sector, recent employment growth, the distribution by occupation, forecast employment growth and skill level, and job postings.

In some aspects it has performed better than other areas, such as, the growth in the number of businesses.

However, on a number of key variables SYMCA underperforms compared to the national average. SYMCA performs below the national average, and relative to the comparator MCA areas on productivity, wages and numbers working in high skilled occupations (often within the same sector). It is often these variables underpin more successful economies. This is not because employers do not invest in the skills of their workforce any differently than in other areas. The most recent ESS, from 2019, shows that on a range of training measures, employers in SYMCA perform as well as other areas.

Working Futures employment forecasts identify that most net job requirements across every sector and occupation will be driven by replacement demand (as people leave the labour market), rather than any sectoral or occupational changes. This, along with

the population changes identified in the previous section, will create a number of job opportunities for young people and those not currently in employment.

The pandemic undoubtedly had an impact on the local economy and labour market but this appears to have been temporary, and when the lockdowns were eased, the economy appears to have bounced back to pre-COVID-19 levels. And above it in some cases. As far as employment is concerned, SYMCA's top employment sectors and occupations were affected more than those in England and the comparator MCA areas, resulting in larger employment falls.

Across SYMCA the picture is mixed. Barnsley performs relatively well on employment change both prior to and since the pandemic. Doncaster outperforms other areas on enterprise growth (including high growth businesses) but underperforms on more recent employment changes. On key indicators, especially those associated with high performing economies(skills, wages and productivity) Sheffield outperforms the subregional, but not the national, average. Rotherham is closest to Sheffield on these three indicators, with Barnsley scoring the lowest.

4. Skills supply

4.1. Introduction

This section provides an analysis of data relating to skills supply. It presents data on the attainment and destinations of young people; publicly funded post-19 FE provision; HE delivery and destinations; qualifications in the wider population; population migration; and the impact of COVID-19 on skills supply.

4.2. Young people

Key points:

- Key Stage 4 (KS4):
  - Attainment 8 scores have currently replaced Progress 8 as the main metric for KS4 attainment due to how GCSEs were awarded during the pandemic;
  - For context, in 2017/18, all of the local authority districts were below the national average on the Progress 8 measure, except for Sheffield;
  - The Attainment 8 scores for 2018/19-2020/21 show that all four SYMCA areas were below the England average for each of the three years;
  - The attainment gap between the areas and England widened over this period, except in Rotherham;
  - The proportion of pupils entering sustained education and apprenticeship destinations increased by around 5pps across the areas from 2010/11 to 2019/20, similar to the England average. The increase across SYMCA districts was slightly higher;
  - The pandemic impacted on these positive destinations falling by -5pps in SYMCA and -3pps in England;
  - More than four out of five KS4 pupils in every area progress into some form of full-time further education. In SYMCA, FE destinations are higher than they are in England (36%) where KS4 pupils are more likely to enter a school sixth form (37%);
  - Barnsley stands out in terms of the high number of pupils entering FE (71%);
  - Between 2018/19 and the COVID-19 affected 2019/20, there was an increase in SYMCA KS4 pupils entering employment which rose by 3 percentage points compared to a reduction in England (-1pp). The main decrease was a fall in numbers entering school sixth forms which fell by -5 percentage points in Doncaster and -4 percentage points in Sheffield;
  - The Government now publishes longer term destination data. In SYMCA, the 'not sustained' group is marginally higher at Year 1 in SYMCA (7%) than in England (5%). This gap then widens between SYMCA and England to four pps by Year 5 (17% and 13% respectively). The numbers entering HE are greater in England at Year 3 (29%)

compared to 25% in SYMCA, and the gap widens to Year 5 (40% and 33% respectively);

- Young people of BAME origin and women (one percentage point more) are slightly more likely to enter further education and training than their comparator groups, however, SEND young people have a significantly lower rate (four percentage points less).

- Key Stage 5 (KS5):
  - The latest data, 2019/20, is affected by the pandemic. Also the data for Doncaster appears problematic;
  - In 2019/20, The profile is similar between SYMCA and England with a maximum 2pps difference in destinations between the two areas. At KS5 young people in SYMCA were marginally less likely to enter HE (-1pp) and employment (-2pps), but more likely to enter an apprenticeship (+2pp) and a 'not sustained' destination (+2pp);
  - KS5 young people in Barnsley and Rotherham are less likely to enter HE, but more likely to progress into an apprenticeship or employment;
  - At KS5 attainment levels in Rotherham and Sheffield are similar to the national average, but lower in Barnsley and Doncaster;
  - On average 15% of the 16-24 year old population in SYMCA were not in work or education and training. This equates to just under 25,000 people. This is below the UK average of 12% but a similar level to the comparator MCA areas.

4.2.1. Key stage 4

In the past, Progress 8 scores were used as the key measure for attainment at area level. Progress 8 figures were contextualised i.e. they compared pupils' key stage 4 results to those of other pupils nationally with similar prior attainment. However, Progress 8 measures were suspended in 2020 and 2021 because of the ways in which exam grades were assessed during COVID-19. Instead, Attainment 8 scores have currently replaced Progress 8 as the main metric for KS4 attainment at area level. The earliest Attainment 8 data is for 2018/19.

For context, in 2017/18, all of the local authority districts were below the national average on the Progress 8[47] measure, with the exception of Sheffield which was the same as the GB average. Barnsley and Doncaster had negative average scores for each of the three years 2015/16 to 207/18. Sheffield had positive scores until 2017/18, and Rotherham fell below the national average only in 2017/18. However, SYMCA performed relatively better than the comparator MCA areas. LCR and TVCA had

[47] A Progress 8 score of 0.0 means pupils in the group make on average the same progress than the national average. A Progress 8 score of 1.0 means pupils in the group make on average a grade more progress than the national average; a score of -0.5 means they make on average approximately half a grade less progress than average.

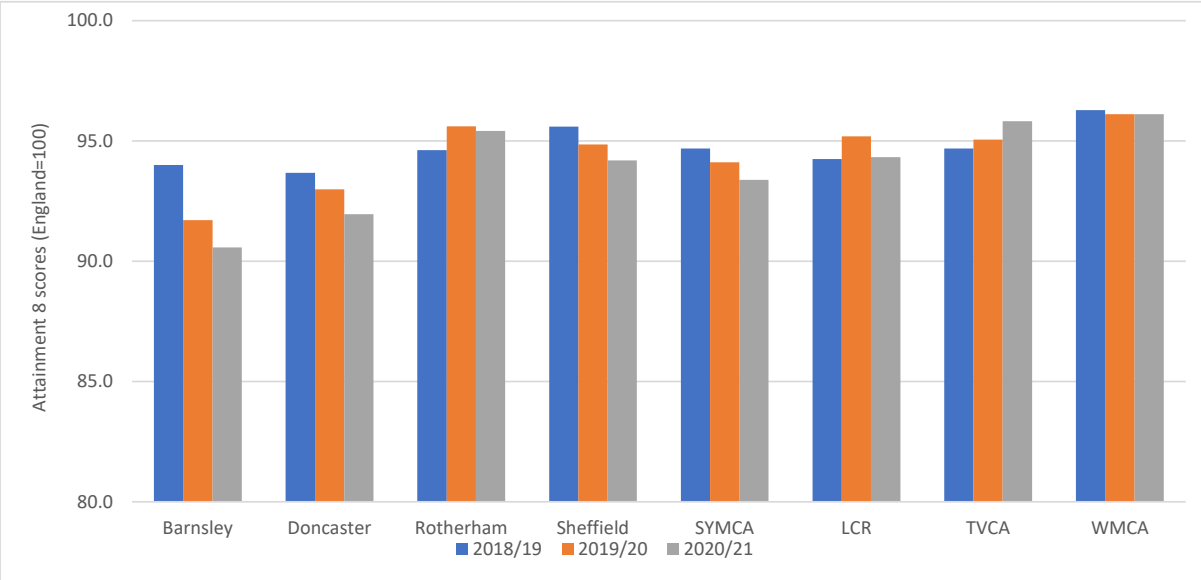
much lower average Progress 8 scores, whilst WMCA was more similar to SYMCA, especially in 2017/18.

Figure 39 shows the Attainment 8[48] scores for SYMCA, each district, comparator MCA areas and England 2018/19-2020/21 – England is equal to 100. All of the areas are below the England average (i.e. 100) for each of the three years. Of the four MCA areas, WMCA has the highest level of attainment, with SYMCA falling behind the other three MCA areas in 2019/20 and 2020/21.

Within SYMCA in 2020/21, Rotherham had the highest level of attainment (48.7) followed by Sheffield (48.1), Doncaster (47.0) and Barnsley (46.3).

Over the three years to 2020/21, each district saw increases in Attainment 8 scores of around 3 points. However, relative to England, Barnsley, Doncaster and Sheffield each had a year on year decline. Whereas Rotherham increased its relative attainment across the period by 4.3 points.

Figure 39: Attainment 8 scores – SYMCA, local authorities, comparator MCA areas 2018/19-2020/21; England = 100



Source: Department for Education GCSE (Key Stage 4) Statistics

Within SYMCA, the attainment of girls is higher than boys in each area, but both genders have seen increases in their Attainment 8 scores from 2018/19-2020/21.

Pupils of BAME origin have higher Attainment 8 scores than pupils of White ethnic origin in Barnsley, Doncaster and Rotherham. However, in Sheffield attainment levels of White pupils are higher than BAME pupils. The attainment of both BAME and White pupils increased in every district except in Doncaster where BAME pupil attainment fell slightly.

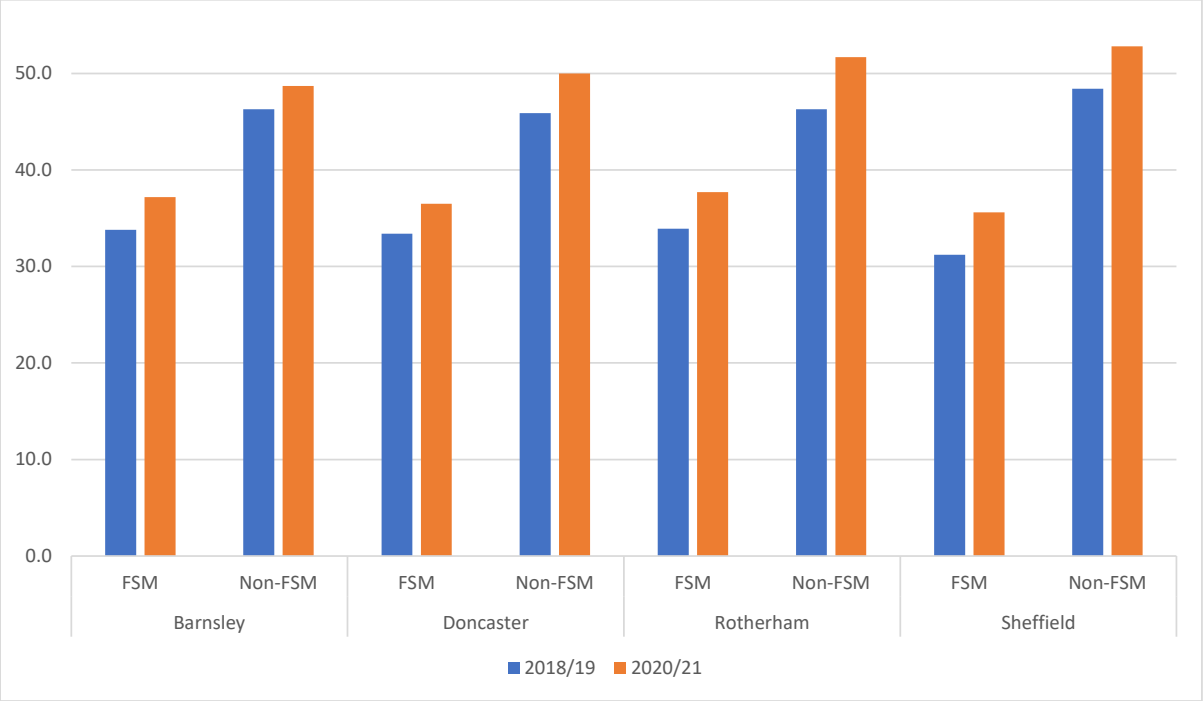
[48] Attainment 8 measures the achievement of a pupil across 8 qualifications including mathematics and English. Unlike Progress 8 it does not take into account prior attainment.

The attainment of pupils with special educational needs (SEN) is between 50%-60% of non-SEN pupils in each district. Sheffield has the largest gap between SEN and non-SEN attainment, in 2020/21 the Attainment 8 score of SEN pupils was 54% of that of non-SEN pupils.

Figure 40 shows Attainment 8 scores of pupils who are and are not eligible for free school meals (FSM). Across SYMCA in 2018/19, the attainment of pupils eligible for FSM was around three quarters (73%) of those not eligible. Except for Sheffield where FSM attainment levels were about 10 pps lower at 64%.

Between 2018/19 and 2020/21, the gap narrowed in Barnsley and Sheffield, but remained the same in Doncaster and Rotherham.

Figure 40: Attainment 8 scores by FSM – SYMCA districts 2018/19-2020/21

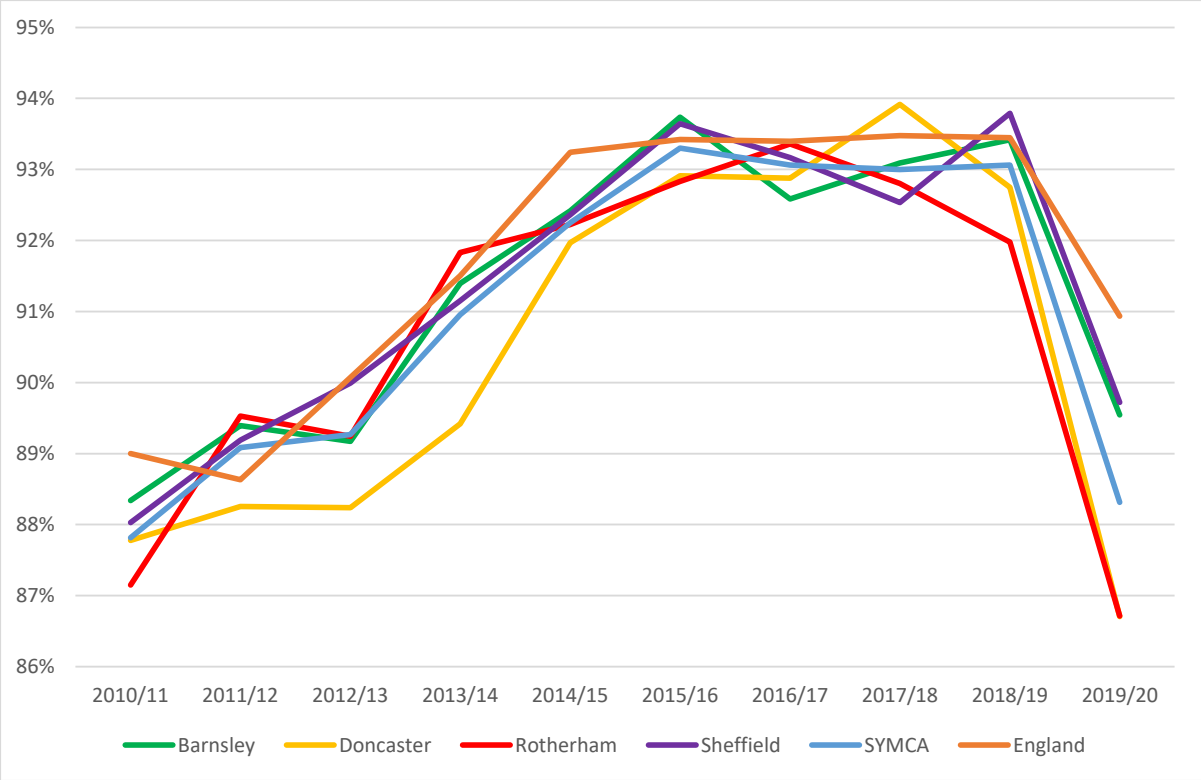


Source: Department for Education GCSE (Key Stage 4) Statistics

Figure 41 shows the proportion of KS4 pupils entering sustained education and apprenticeship destinations from 2010/11 to 2019/20. The vertical axis is condensed, so the changes in this broad positive destination category are similar across SYMCA, the four districts and England. In England the proportion progressing into this broad category increased by +4pps over the period, whereas it was slightly higher in SYMCA (+5pps).

The chart also shows that the pandemic impacted on these destinations falling by -5pps in SYMCA and -3pps in England.

Figure 41: Percentage of pupils in Key Stage 4 achieving sustained education and apprenticeships, 2010/11 to 2019/20



Source: Department for Education

Figure 42 shows the main destinations of KS4 pupils in 2019/20. More than four out of five KS4 pupils in every area progress into some form of full-time further education. In SYMCA, 42% progress into an FE college, 27% into school sixth form and 13% into a Sixth Form College. FE college destinations are higher than they are in England (36%) where KS4 pupils are more likely to enter a school sixth form (37%). Around 5% enter an apprenticeship in both SYMCA and England, and 6% enter employment.

Across SYMCA, Barnsley stands out in terms of the high number of pupils entering an FE college (71%). FE college destinations in the other three districts range from 34% in Doncaster to 38% in Sheffield. Sheffield KS4 pupils are more likely to enter a school sixth form (37%) and Barnsley the fewest (4%). Around one in five pupils in Doncaster and Rotherham progress into a Sixth Form College compared to 9% in Sheffield and 4% in Barnsley.

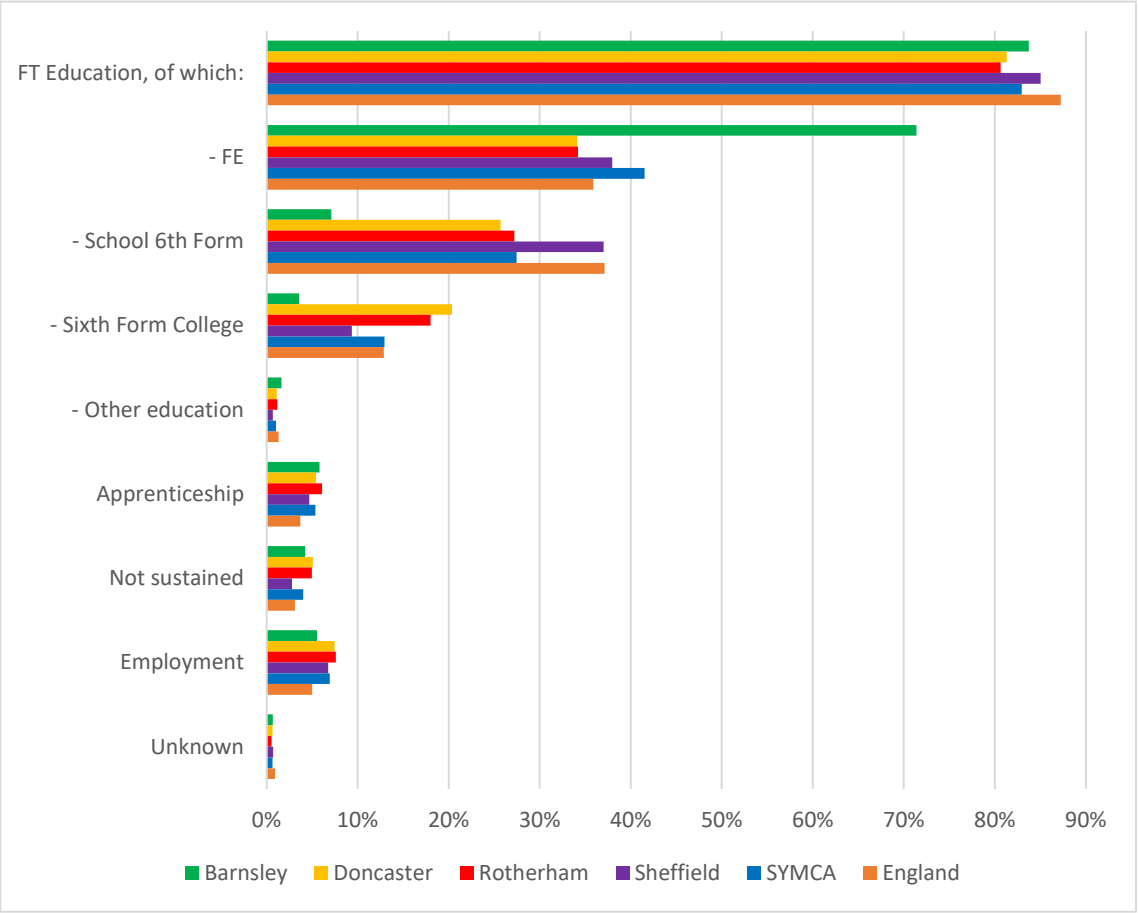
Whilst similar proportions of KS4 pupils in the comparator MCA areas enter full-time further education, there is large variation between specific destinations. Half of pupils in TVCA (51%) enter an FE college compared to 36% on LCR. TVCA also has the largest percentage entering a Sixth Form College (19%) and WMCA the fewest (9%).

Between 2014/15 and 2018/19, there were large reductions in the percentage of KS4 pupils entering school sixth forms in SYMCA. Over this period the percentage point change was -4%, this was due to decreases in Doncaster (-6pps) and Barnsley (-

3pps). Progression into an FE college rose in Barnsley (+7pps), Doncaster (+3pps) and Rotherham (+3pps).

Between 2018/19 and the COVID-19 affected 2019/20, the largest change across SYMCA was an increase in KS4 pupils entering employment which rose by 3 percentage points compared to a reduction in England (-1pp). There was an increase in every SYMCA district ranging from +1 percentage points in Barnsley and Sheffield to +3 percentage points in Rotherham. The main decrease was a fall in numbers entering school sixth forms which fell by -5 percentage points in Doncaster and -4 percentage points in Sheffield.

Figure 42: KS4 destinations – SYMCA, local authorities and England 2019/20



Source: https://explore-education-statistics.service.gov.uk/find-statistics/key-stage-4-destination-measures/

The Government now publishes longer term destination data. This provides one, three and five year destinations of KS4 pupils. The latest data are for those pupils who completed key stage 4 in the 2013/14 academic year and identifies their main activity in the 2014/15 (Year 12), 2016/17 (post-Year 13) and 2018/19 (ages 20/21) academic years.

Table 8 shows these five year destinations for SYMCA and England. In SYMCA, the 'not sustained' group (equivalent to NEET) is marginally higher at Year 1 in SYMCA (7%) than in England (5%). This gap then widens between SYMCA and England to 4

pps by Year 5 (17% and 13% respectively). In both England and SYMCA there is a more than doubling in this category from Year 1 to Year 3 (i.e. after KS5 when aged 18-19). This means that young people are much more likely to become NEET after Year 13 than Year 11.

The numbers entering HE are greater in England at Year 3 (29%) compared to 25% in SYMCA, and the gap widens to Year 5 (40% and 33% respectively).

The main differences between SYMCA and England, are that SYMCA young people are more likely to enter apprenticeships in Year 3 (+3pps) and less likely to enter HE (-3pps). At Year 5, SYMCA young people (at age 20/21) are more likely to be in employment (+5pps) and less likely to be in HE (-6pps).

Table 9: Destinations of KS4 pupils leaving school in 2013/14: SYMCA and England

Destination of 2013/14 KS4 cohort	SYMCA			England		
	Year 1 (2014/15)	Year 3 (2016/17)	Year 5 (2018/19)	Year 1 (2014/15)	Year 3 (2016/17)	Year 5 (2018/19)
FT Education, of which:	82%	45%	36%	87%	49%	42%
HE	0%	25%	33%	0%	29%	40%
FE college	40%	15%	2%	34%	15%	2%
SFC and SSF	42%	4%	0%	52%	5%	0%
Other education	1%	1%	0%	1%	1%	0%
Apprenticeship	6%	13%	6%	4%	11%	6%
Employment	3%	22%	36%	3%	24%	34%
Not sustained	7%	15%	17%	5%	12%	13%
Unknown	0%	5%	5%	1%	5%	5%
Sum of cohort	100%	100%	100%	100%	100%	100%

Source: https://explore-education-statistics.service.gov.uk/find-statistics/longer-term-destinations

No new data is available on the destinations of different groups of young people. Last year's report found that:

- The percentage of BAME young people engaged in education and training is slightly higher than White young people in all areas except for Barnsley. Rotherham (97%) and Doncaster (96%) have very high levels of BAME young people engaging in education and training.
- In Barnsley, Doncaster and England SEND young people aged 16-17 are less likely than non-SEND young people to participate in education and training. In Rotherham and Sheffield, however, SEND young people are more likely to participate in education and training.

- At 16 years of age the proportion of males and females engaged in education and training was very similar across all of the areas. At age 17, however, females are 2pp more likely to be engaged in education and training compared to males.
- Figure 50 shows there was a sustained increase in the proportion of KS4 pupils entering sustained education throughout the last decade. Across SYMCA it rose from 78% on 2010/11 to 83% in 2018/19. The largest increase in all areas came before 2013/14, after which there was a levelling off. SYMCA gap to England has remained constant.

4.2.2. Key stage 5

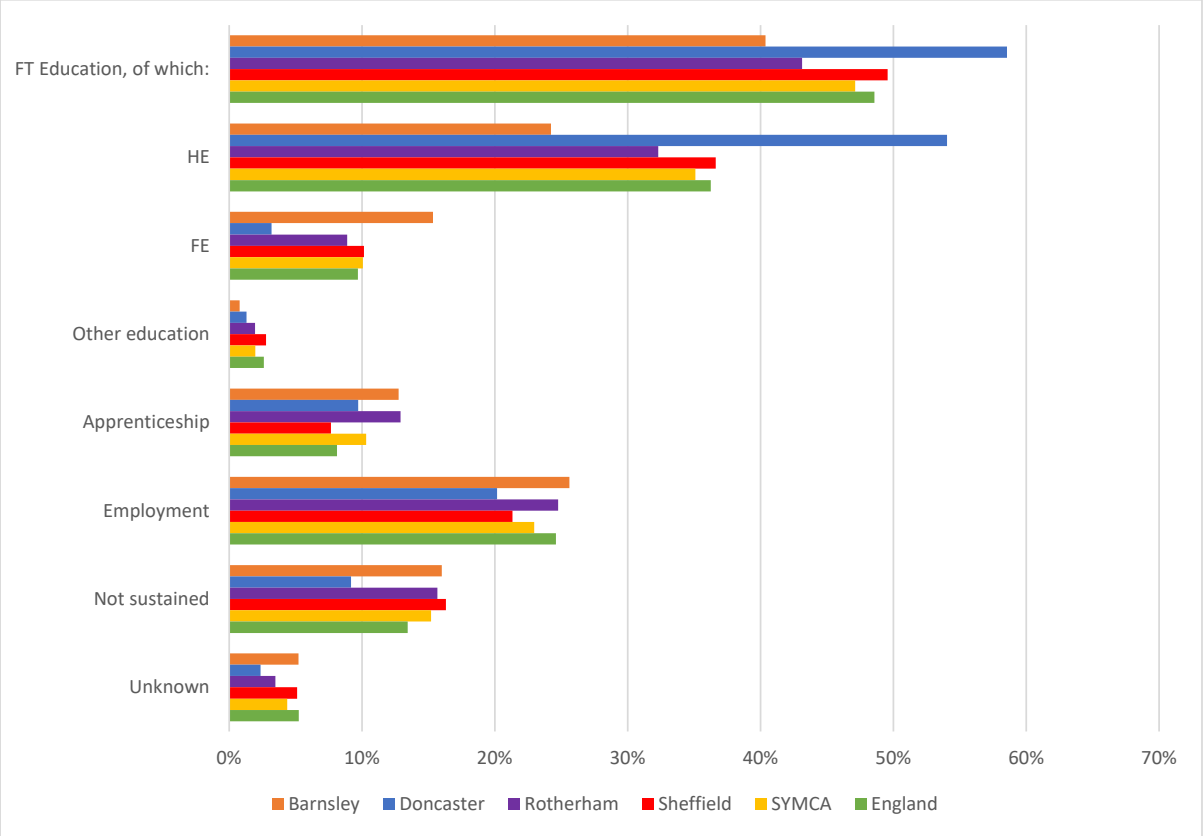
NB: THE DATA FOR DONCASTER APPEAR INCORRECT

Figure 43 shows the KS5 destinations in 2019/20, so the data is affected by the pandemic. The profile is similar between SYMCA and England with a maximum 2pps difference between the two areas. At KS5 young people in SYMCA were marginally less likely to enter HE (-1pp) and employment (-2pps), but more likely to enter an apprenticeship (+2pp) and a 'not sustained' destination (+2pp).

Doncaster stands out as the area with the largest HE destinations (54% compared with 36% in England) but there may be a problem with the data. KS5 young people in Barnsley and Rotherham are less likely to enter HE, but more likely to progress into an apprenticeship or employment.

SYMCA has a similar proportion of young people entering HE compared to the comparable MCAs (35%) and the same level entering 'not sustained' destinations (15%). Young people in the other MCAs are more likely to progress into an FE college, whilst young people in SYMCCA are more likely to enter employment.

Figure 43: KS5 destinations – SYMCA, local authorities and England 2019/20

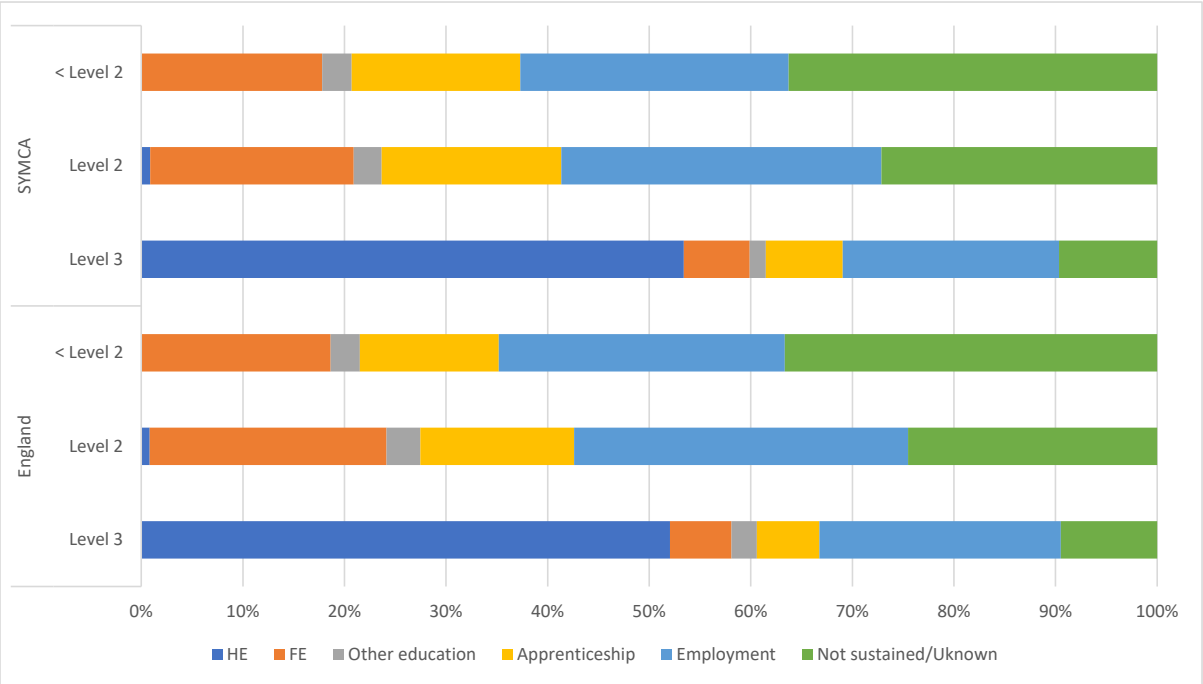


Source: https://content.explore-education-statistics.service.gov.uk/api/releases/563f654c-61c2-44b9-a40d-50ab2ed284d8/files/07ae0276-3cf4-4d7d-ac70-08d9d771ae37

Figure 44 shows the KS5 destinations by level of attainment in 2019/20 for SYMCA and England. In SYMCA, there is a great deal of similarity between the destinations of KS5 young people attaining Level 2 or below Level 2. Those with Level 2, however, are more likely to enter employment (26% for those below Level 2 and 32% for those with Level 2 and), whilst those with below Level 2 are more likely enter a 'not sustained' destination (36% and 27% respectively). The most significant difference both of these groups have with those attaining Level 3 is that over half of this latter group enter HE (53%).

A main difference between SYMCA and England is that below Level 2 and at Level 2 young people are more likely to enter an apprenticeship (+3pps in both cases). SYMCA young people attaining Level 2 are more likely to enter 'not sustained'. All other differences between SYMCA and England are 2pps or less.

Figure 44: KS5 destinations by level of attainment – SYMCA and England 2019/20



Source: https://content.explore-education-statistics.service.gov.uk/api/releases/563f654c-61c2-44b9-a40d-50ab2ed284d8/files/07ae0276-3cf4-4d7d-ac70-08d9d771ae37

4.2.3. Economic activity of 18-24 year olds

Last year's report presented data on 16-24 year old not in employment, education or training (NEET), but these figures have not been updated. The data showed that in the 2017-2019 period:

- On average 15% of the 16-24 year old population in SYMCA were not in work or education and training. This equates to just under 25,000 people. This is below the UK average of 12% but a similar level to the comparator MCA areas.
- Across SYMCA, NEET levels ranged significantly from a high of 19% in Barnsley to 11% (below the national average) in Sheffield.
- Across the UK, and in SYMCA, levels of female NEET are higher than that for males. However, this gender difference is much greater in SYMCA than the UK or comparator areas. In SYMCA, females are 7 percentage points more likely to be NEET than males, but this is only 1 percentage point in the UK.

More recent data is available on 18-24 year olds.

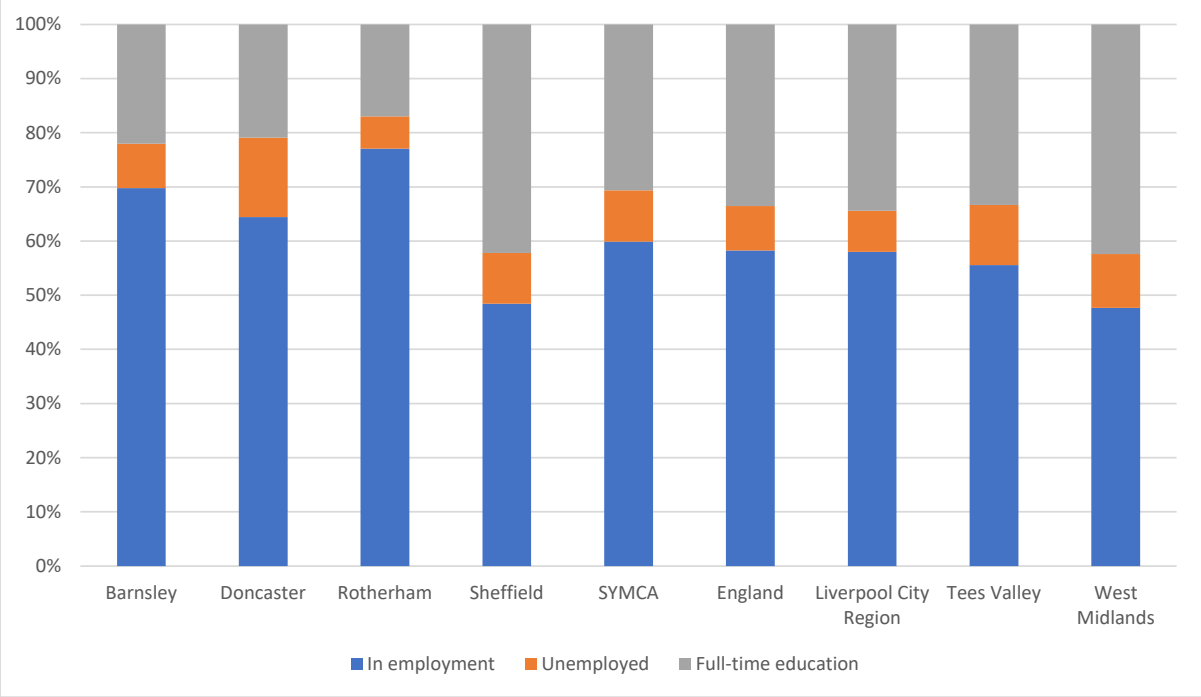
Figure 45 shows the economic activity of 18-24 year olds in 2020/21. SYMCA is very similar to England and LCR. WMCA has more young people in full-time education but, along with TVCA, higher levels of unemployment.

Across SYMCA, Sheffield has much higher levels of young people in full-time education (42%) which reflects the fact that the subregion's two universities are based

there. Rotherham has more than three quarters of 18-24 year olds in employment (77%) whilst Doncaster has higher levels of unemployment (15%) than any other area.

Between 2018/19 and 2020/21, in all of the comparator MCAs, there was an increase in full-time education, a smaller rise in unemployment, and a fall in employment. In SYMCA, both employment and unemployment rose whilst full-time education fell. There was no consistent pattern of change within the four districts, for example, employment rose in Barnsley and fell in Sheffield, and progression into FE rose in Doncaster and fell in Rotherham.

Figure 45: Economic activity of 18-24 year olds – SYMCA and England 2020/21



Source: Annual Population Survey via NOMIS

4.3. FE funded post-18 learning provision

Key points:

- In 2020/21 there were 198 SYMCA FE funded learning providers delivering 53,976 learning aims to people resident in the sub region. There was a total of 32,339 learners in the four funding streams, but some of these may be double counted;
- AEB was the largest SYMCA programme funding 38,176 or 71% of learning aims. ALL was the smallest accounting for 3% of all learning aims. There were 7,162 funded apprentices;
- COVID-19 had a significant impact on learning starts across SYMCA. There was an overall reduction in learning aims of 29%. The decline was greatest in CL where overall learning aims declined by two thirds (-67%);
- The number of apprentices fell in each district by between -25% (Sheffield) and -29% (Barnsley);

- AEB learners and apprentices are split almost 50:50 between men and women (51% and 52% female respectively);
- Just under one quarter (24%) of all learning aim starts were by BAME learners. BAME learners were more likely to undertake AEB provision whilst non-BAME learners were much more likely to undertake apprenticeships;
- Disabled learner comprise 26% of CL funded learners, 23% of AEB learners, 13% of apprentices and 21% of ALL learners;
- All types of provision and all areas were hit hard by the pandemic. The fall in learning aims ranged from -25% in Rotherham and Sheffield to -35% in Doncaster. The largest declines were in CL and apprenticeships, and were broadly similar across the districts;
- In 2020/21, excluding CL, most learners (48%) were funded to undertake provision which was higher than their current level of attainment, just over one quarter were at the same level and the same proportion below;
- The subject profile of provision does appear to be in line with the profile of the local workforce and priority sectors. Compared to the priority sectors digital (ICT 4% of apprenticeships) and cultural and creative (arts and media 1% of apprenticeships) are underrepresented in the FE data;
- In addition, there is much provision at Entry and Level 1 (59% in the AEB) to support those with no or low qualifications.

This section analyses data from the Individual Learner Record (ILR) on FE funded learning provision in SYMCA. It reports on four streams of funding: Adult Education Budget (AEB), Advanced learner Loans (ALL), Community Learning (CL), and Apprenticeships. Data is provided for the period July 2018 to August 2019 which is the full year pre-COVID. All data, except for apprenticeships, is for learners aged 19 and over.

4.3.1. Overview of FE provision

In 2020/21 there were 198 SYMCA FE funded learning providers delivering 53,976 learning aims to people resident in the sub region. There was a total of 32,339 learners in the four funding streams, but some of these may be double counted.

Table 9 shows that there is a large amount of skills provision across SYMCA.[49] AEB was the largest programme funding 38,176 or 71% of learning aims. ALL was the smallest accounting for 3% of all learning aims. There were 7,162 funded apprentices with Doncaster over represented in this provision accounting for one third of all apprentices more than Sheffield (30%).

[49] There is likely to be a high level of double counting of providers by local authority, the provider numbers should not be totalled across districts nor across different funding programmes. There is also likely to be double counting of learners across local authorities and funding programmes, but this is likely to be less numerous. There is no double counting of learning aims.

Table 10: FE funded learning provision – SYMCA and districts 2020/21

		Barnsley	Doncaster	Rotherham	Sheffield	SYMCA
AEB	Providers	124	136	128	143	-
	Learners	3602	4417	3617	7996	19632
	% learners	18%	22%	18%	41%	100%
	Learning aims	6,504	8,654	7,233	15,785	38,176
ALL	Providers	42	55	35	56	-
	Learners	412	738	439	667	2256
	% learners	18%	33%	19%	30%	100%
	Learning aims	297	566	329	487	1,679
Apprentice	Providers	236	280	265	324	-
	Learners	1,374	1,760	1,490	2,538	7,162
	% learners	19%	25%	21%	35%	100%
	Learning aims	-	-	-	-	-
CL	Providers	12	19	12	22	-
	Learners	528	559	1069	1133	3289
	% learners	16%	17%	33%	34%	100%
	Learning aims	936	1,136	2,329	2,558	6,959

Source: SYMCA ILR data 2020/21

COVID-19 had a significant impact on learning starts across SYMCA. Table 10 shows the percentage change between the academic years of 2018/19 and 2020/21. There was an overall reduction in learning aims of 29%, with the largest falls in Doncaster (-35%) and Barnsley (-33%). The decline was greatest in CL where overall learning aims declined by two thirds (-67%) and almost three quarters in Barnsley (-73%).

The number of apprentices fell in each district by between -25% (Sheffield) and -29% (Barnsley). The only increase was in ALL learners and learning aims in Doncaster.

Table 11: FE funded learning provision – SYMCA and districts percent change 2018/19 2020/21

		Barnsley	Doncaster	Rotherham	Sheffield	SYMCA
AEB	Learners	-31%	-27%	-18%	-15%	-22%
	Learning aims	-18%	-26%	6%	-6%	-12%
ALL	Learners	-13%	5%	-14%	-28%	-14%

		Barnsley	Doncaster	Rotherham	Sheffield	SYMCA
	Learning aims	-15%	9%	-12%	-31%	-14%
Apprentice	Learners	-29%	-28%	-28%	-25%	-27%
	Learning aims	-	-	-	-	-
CL	Learners	-65%	-79%	-67%	-72%	-71%
	Learning aims	-73%	-72%	-61%	-67%	-67%
All learning aims		**-33%**	**-35%**	**-25%**	**-25%**	**-29%**

Source: SYMCA ILR data 2020/21

Table 11 shows that around four out of five AEB and CL funded learners (79% and 76%) are aged 25-64. Younger learners are more likely to be funded through apprenticeships (53% 16-24) and ALL (31% 19-24). Between 2018/19 and 2020/21 there were falls in virtually every category of age and provision. The only increase was a slight rise (+2%) in the numbers of 19-24 year olds funded through AEB. Young people aged 16-18 were especially affected by the fall in apprenticeship numbers (-38%) which was almost double that of 25-64 year olds (-21).

Table 12: FE funded provision by age - SYMCA 2020/21

Starts – learning aims	AEB (N=38,176)	ALL (N=1,679)	Apprentice (N=7,162)	CL (N=6,959)
16-18	0%	0%	25%	0%
19-24	20%	31%	28%	4%
25-64	79%	69%	47%	76%
65+	1%	0%	0%	20%
Total	100%	100%	100%	100%

Source: SYMCA ILR data 2020/21

AEB learners and apprentices are split almost 50:50 between men and women (51% and 52% female respectively). However, ALL and CL learners are more likely to be female (76% and 83%). Between 2019/18 and 2020/21 there were falls in every gender and provision type. Female learning aims decreased the most (-32% compared to -26% for men), but males were most affected by the decline in apprenticeships (-32% for men and -23% for women).

Overall, just under one quarter (24%) of all learning aim starts were by BAME learners. BAME learners were more likely to undertake AEB funded provision (28%) whilst non-BAME learners were much more likely to undertake apprenticeships (94%) and ALL funded provision (86%). In the three years to 2020/21, learning aims fell by 27% for BAME and by 30% for non-BAME learners

Disabled learners comprise 26% of CL funded learners, 23% of AEB learners, 13% of apprentices and 21% of ALL learners. The number of AEB and ALL funded learners increased between 2018/19 and 202/21 by +7% and +15% respectively. However, disabled learners were disproportionately affected by the decrease in CL where their numbers fell by -78% compared to -60% for learners who did not consider themselves to have a disability.

Table 12 shows that the level of learning varies by funding stream in 2020/21. Almost two thirds (60%) of AEB learning supports provision at Entry and Level 1, whereas nine out of ten ALL starts are at Level 3 (88%) and one in ten (9%) are Levels 4 or 5. This reflects the strategic aims, priorities and restrictions around the different budgets.

Just under two thirds of apprenticeships are at Level 2 (30%) with whilst 42% are at Level 3 and 28% at Level 4 and above. This represents a significant change in the use of apprenticeships by employers, they are now much more likely to be used to train existing employees at higher levels than as an entry point for young people. Between 2018/19 and 2020/21, Level2 apprenticeships almost halved -46%, Level 3 fell by -25% but Level 4+ apprenticeships rose by 4%.

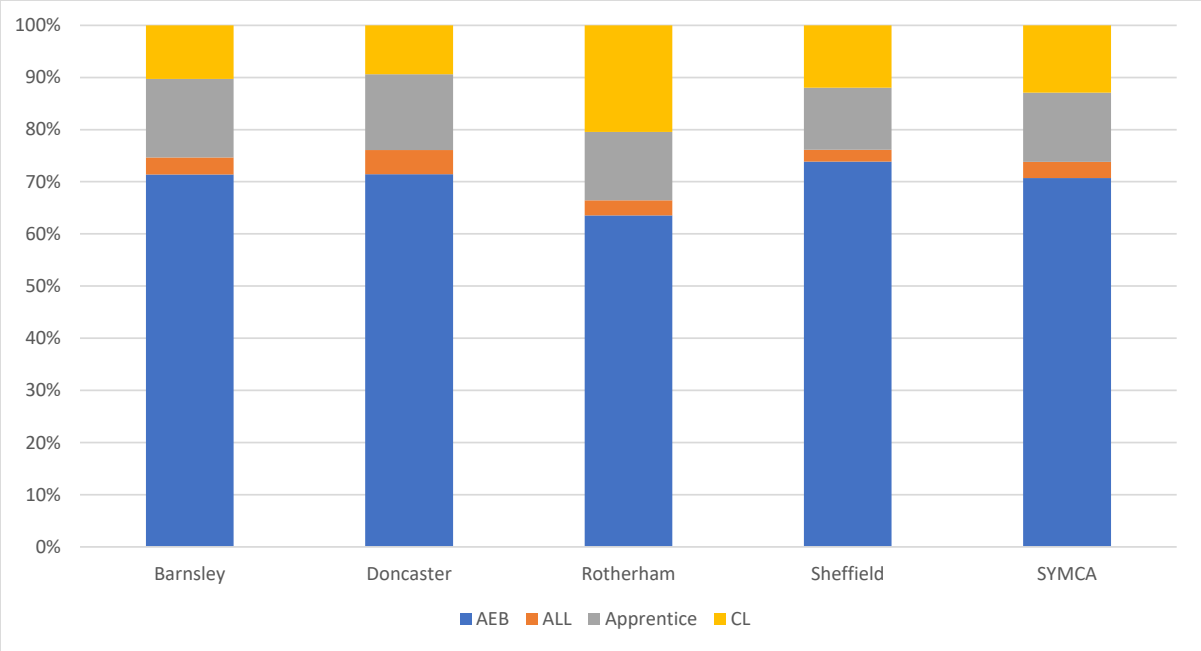
Table 13: FE funded provision by level - SYMCA 2020/21

Starts – learning aims	AEB N=43,235	ALL N=1,950	Apprentice N=9,857	CL N=21,187
Entry level	26%	0%	0%	8%
Level 1	33%	1%	0%	0%
Level 2	39%	2%	30%	0%
Level 3	1%	88%	42%	0%
Level 4	0%	8%	28%	0%
Level 5	0%	1%	0%	0%
Not Applicable/Known	0%	0%	0%	91%
Total	100%	100%	100%	100%

Source: SYMCA ILR data 2020/21

Figure 46 shows provision by funding programme in the four local authorities and SYMCA in 2020/21. The different programmes account for varying levels of provision in the four areas. In Rotherham two thirds (64%) of leaning aim starts are funded through AEB compared to over 70% in the other three areas. All areas had similar levels of ALL and apprenticeship funded starts. One in five Rotherham starts is CL funded compared to about one in ten in the other three districts.

Figure 46: Provision by programme – local authorities and SYMCA 2020/21

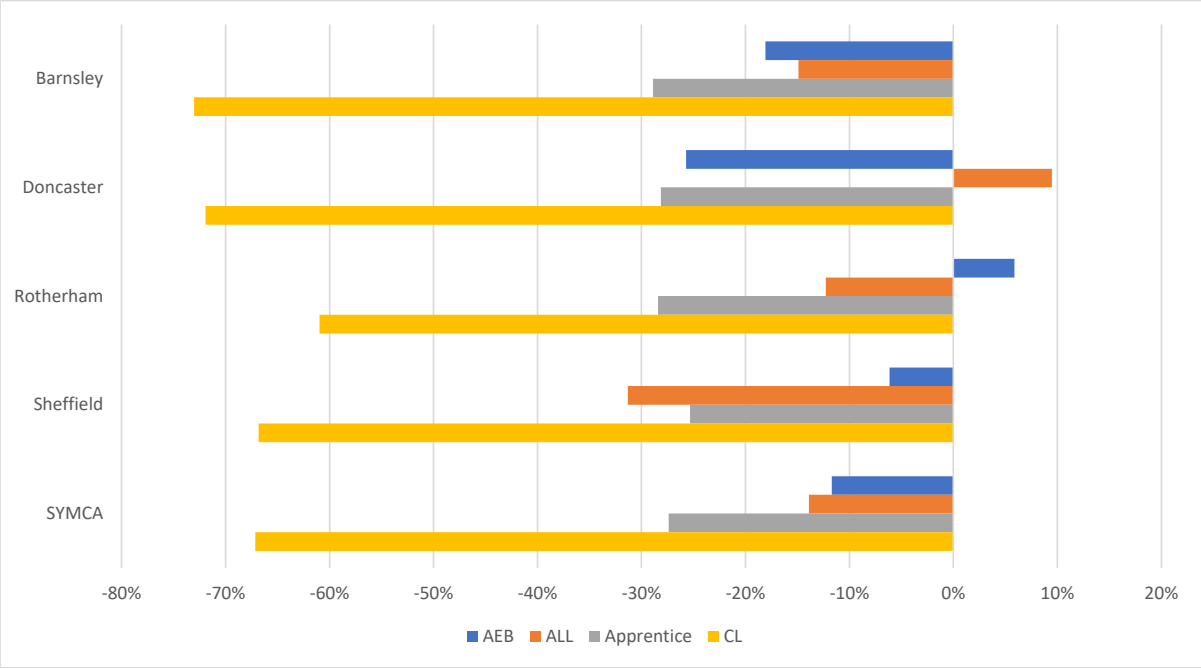


Source: SYMCA ILR data 2020/21

Figure 47 shows that between 2018/19 and 2020/21, all areas were hit hard by the pandemic. The fall in learning aims ranged from -25% in Rotherham and Sheffield to -35% in Doncaster. The declines in CL and apprenticeships were broadly similar across the districts.

AEB funded provision fell by -26% in Doncaster but rose by +6% in Rotherham. ALL learning aims fell by -31% in Sheffield but increased by +9% in Doncaster.

Figure 47: Provision by programme – local authorities and SYMCA 2018/19-2020/21



Source: SYMCA ILR data 2020/21

Figure 48 shows the learners level of prior attainment compared to the level of the provision they are undertaking. For example, someone in the 'higher' category would be undertaking provision which is higher than their level of prior attainment (e.g. someone with an existing Level 2 qualification undertaking an Advanced Level 3 apprenticeship).

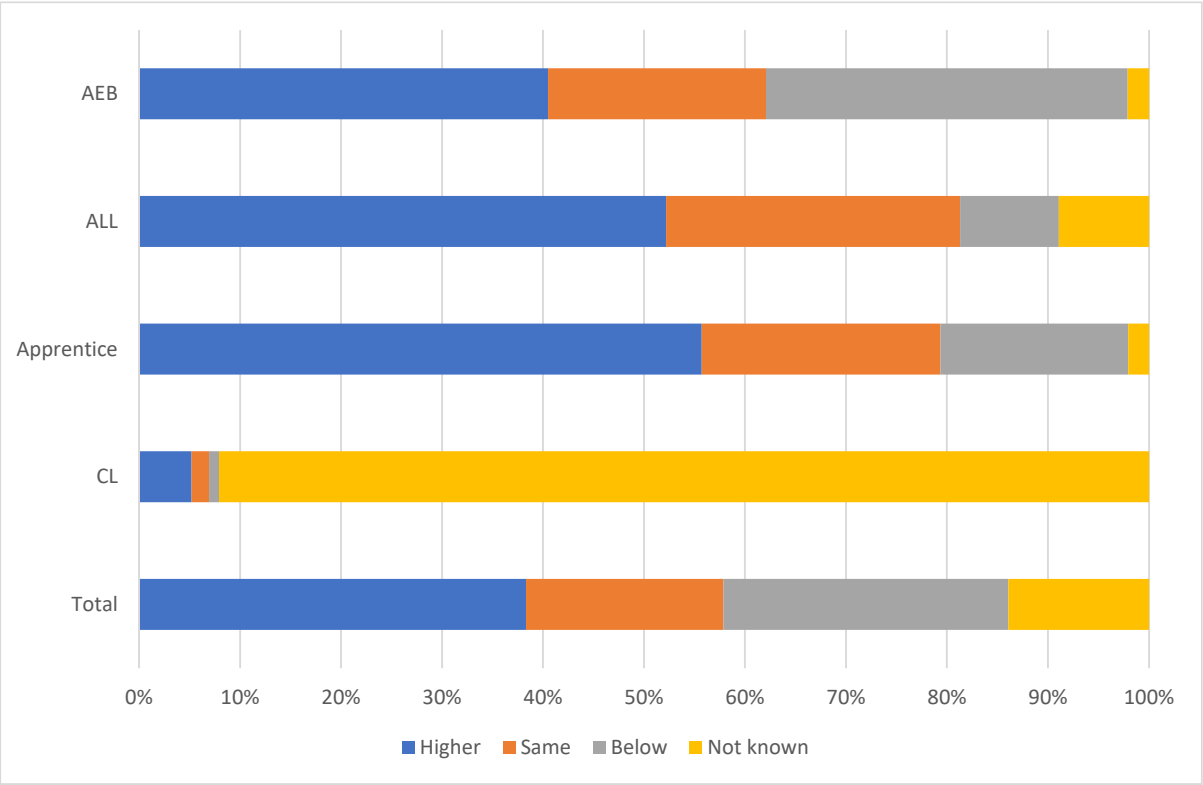
In 2020/21, most learners (38%) were funded to undertake provision which was higher than their current level of attainment, one in five was at the same level and 28% was below. However, the figures are distorted to some extent by the large not known category in CL. If not knowns are excluded, the proportion undertaking provision higher than their level of attainment is 48%, 26% are at the same level, and 26% are below.

Excluding not knowns, for apprenticeships, 57% of starts are for levels of provision which are higher than the learner's current highest qualification. For ALL the figure is 57% and for AEB is 41%.

Just under one quarter of apprentices (24%) are undertaking provision at the same level of prior attainment and around one in five (19%) it is lower. For AEB 22% undertake provision at the same level and for 37% it is below. For ALL the respective figures are 32% and 11%.

Between 2018/19 and 2020/21 there was an increase in funding for people undertaking provision below their current level of attainment (+7pp) and a reduction for those undertaking provision below (-3%pp) or at the same level (-3%pp). This was more prevalent in AEB and apprenticeship funded provision than ALL. For example, in 2020/21 there was a +10pp increase in apprentices undertaking provision at a level below their prior attainment and a -10pp reduction in those undertaking apprenticeships above their level of prior attainment.

Figure 48: Level of prior attainment compared to level of provision – SYMCA 2020/21



Source: SYMCA ILR data 2020/21

Table 13 shows the subject areas by different funding sources. Just under half of all AEB learners (46%) are undertaking Preparation for Life courses which can include basic skills, work preparation and independent living support (most is at Entry and Level 1). Just over one quarter are taking health public services and care courses (17%). The other largest AEB funded courses are in retail and commercial services (8%); business, administration and law (7%); and construction (6%). Between 2018/19 and 2020/21 there were percentage point increases in those undertaking construction (+4pps), health public services and care courses (+3pp), and ICT courses (2pps), and a reduction in those on Preparation for Life provision (-5pps).

Two thirds of ALL provision was in health public services and care (37%), retail and commercial services (18%), and business, administration and law (12%). All of these subjects saw percentage point increases in starts between 2018/19 and 2020/21 by +6pp, +2pp and +1pp respectively.

Arts media and publishing (40%) and Preparation for Life (26%) account for to thirds of CL provision. Between 2018/19m and 2020/21 the former increased by +9pps and the later declined by -9pps.

Apprenticeships are discussed in more detail in the next section.

The subject profile of provision does appear to be in line with the profile of the local workforce and priority sectors. Compared to the priority sectors digital (ICT 4% of

apprenticeships) and cultural and creative (arts and media 1% of apprenticeships) are underrepresented in the FE data.

Table 14: FE funded provision by subject – SYMCA 2020/21

Starts – learning aims	AEB	ALL	Apprentice	CL
Agriculture et al	0%	3%	1%	1%
Arts and Media	0%	5%	1%	40%
Business, Administration and Law	7%	12%	30%	1%
Construction	6%	1%	9%	0%
Education and Training	1%	5%	3%	3%
Engineering and Manufacturing Technologies	3%	2%	13%	0%
Health, Public Services and Care	17%	37%	28%	4%
History, Philosophy and Theology	0%	0%	0%	6%
ICT	5%	2%	4%	4%
Languages and Literature	2%	0%	0%	6%
Leisure, Travel and Tourism	1%	5%	1%	5%
Preparation for Life and Work	46%	0%	0%	26%
Retail and Commercial Enterprise	8%	18%	10%	3%
Science and Mathematics	3%	5%	0%	1%
Social Sciences	0%	4%	0%	1%
Total	100%	100%	100%	100%

Source: SYMCA ILR data 2020/21

Table 14 shows the top twenty detailed subject areas (learning aim starts) for the four main funding streams. For AEB and CL there is a concentration of starts in a limited number of subjects. For example, 61% of AEB starts are in three subject areas: Foundations for Learning and Life, Preparation for Work, and health and social care. However, in ALL and apprenticeships there is a much broader spread. This is especially the case in apprenticeships where the top ten specific subjects account for only 35% of all starts.

Table 15: Top 20 detailed subjects by funding stream – SYMCA 2020/21 (learning aim starts)

AEB (N=38,176)		ALL (N=1,679)		Apprentice (N=7,162)		CL (N=6,959)	
Foundations for Learning and Life	29%	Nursing and Subjects and Vocations Allied to Medicine	18%	Team Leader or Supervisor	7%	Crafts, Creative Arts and Design	38%
Preparation for Work	17%	Service Enterprises	18%	Business Administrator	5%	Foundations for Learning and Life	21%
Health and Social Care	15%	Health and Social Care	14%	Adult Care Worker	4%	History	6%
Building and Construction	6%	Business Management	7%	Operations or Departmental Manager	4%	Preparation for Work	5%
ICT for Users	5%	Sport, Leisure and Recreation	5%	Lead Adult Care Worker	3%	Sport, Leisure and Recreation	5%
Administration	4%	Science	5%	Early Years Educator	3%	Other Languages, Literature and Culture	4%
Warehousing and Distribution	4%	Sociology and Social Policy	4%	Senior Leader	3%	Health and Social Care	3%
Service Enterprises	3%	Direct Learning Support	4%	Customer Service Practitioner	2%	ICT for Users	3%
Business Management	2%	Accounting and Finance	3%	Nursing Associate (NMC 2018)	2%	Hospitality and Catering	3%
Mathematics and Statistics	2%	Child Development and Well Being	3%	Police Constable (integrated degree)	2%	Direct Learning Support	2%
Languages, Literature and Culture of the British Isles	2%	Crafts, Creative Arts and Design	3%	Hair Professional	2%	Performing Arts	2%
Direct Learning Support	1%	Animal Care and Veterinary Science	2%	Installation Electrician and Maintenance Electrician	2%	Marketing and Sales	1%

AEB (N=38,176)		ALL (N=1,679)		Apprentice (N=7,162)		CL (N=6,959)	
Engineering	1%	**Engineering**	2%	**Supply Chain Warehouse Operative**	2%	**Languages, Literature and Culture of the British Isles**	1%
Public Services	1%	**Teaching and Lecturing**	2%	**Carpentry and Joinery**	2%	**Teaching and Lecturing**	1%
Manufacturing Technologies	1%	**ICT Practitioners**	2%	**Accountancy or Taxation Professional**	2%	**Child Development and Well Being**	1%
Transportation Operations and Maintenance	1%	**Public Services**	1%	**Early Years Practitioner**	2%	**Horticulture and Forestry**	1%
Child Development and Well Being	1%	**Building and Construction**	1%	**Dental Nurse (integrated)**	1%	**Science**	1%
Sport, Leisure and Recreation	1%	**Performing Arts**	1%	**Engineering Technician**	1%	**Geography**	0.4%
Accounting and Finance	0.4%	**Media and Communication**	1%	**Teaching Assistant**	1%	**Manufacturing Technologies**	0.4%
Retailing and Wholesaling	0.4%	**Administration**	1%	**Plumbing and Domestic Heating Technician**	1%	**Linguistics**	0.4%

Source: SYMCA ILR data 2018/19

It is difficult to assess the quality and responsiveness of FE provision in SYMCA based on the ILR data. In 2016 an area review was undertaken of FE colleges in SYMCA but did not include other types of FE providers.[50] Overall the review concluded that quality of provision (based on Ofsted reports) was good, and providers were responsive to the needs of local learners and employers.

According to the most recent inspection reports on Ofsted's website, four out of five FE providers (79%) in SYMCA are 'good' or 'outstanding', and a further 3% are 'satisfactory'. However, 13% 'required improvement' and 5% were 'inadequate'.

4.4. Apprenticeships

Key points

- Over the last decade, apprenticeships expanded up to 2016/17. But then, due to the reforms introduced in Spring 2017, apprenticeship starts began to fall, and this decline has continued in each area ever since. In 2020/21, apprenticeship starts in SYMCA had halved from their 2014/15 levels. In Barnsley (-64%), Doncaster (-51%) and Rotherham (-58%), the proportion of starts fell even further. In Sheffield starts declined by -34%.
- All areas were impacted by the pandemic, falling by a further -25% in SYMCA.
- There were two key trends which pre-dated the apprenticeship reforms. A reduction in younger (16-18) and an expansion of older (25+) apprentices; and a fall in Intermediate and a rise in higher apprenticeships. Both these trends were exacerbated by the Spring 2017 reforms.
- The move to older apprentices (usually existing employees) was not as linear in SYMCA as in England. For example, the number of 16-18 year old apprentices increased in Doncaster and Rotherham.
- In SYMCA in 2014/15, 60% of apprenticeships were Intermediate, 36% were Advanced and 3% were Higher. In 2020/21, the respective proportions were 31%, 39% and 30%.
- Another key trend brought on by the reforms was the relative increase in apprenticesh starts for levy payers and a reduction for non-levy payers. Both were affected by the pandemic, but non-levy payers more so.

The data in this section comes from DfE published apprenticeship statistics and plots changes in apprenticeships from 2014/15 to 2020/21 and is based on ILR data.

In Spring 2017 a number of reforms were introduced, most notably the apprenticeship levy. As Figure 49 shows they had a significant negative impact on apprenticeship numbers. Throughout the last decade, until the reforms were introduced, apprenticeship starts had been on an upward trajectory.

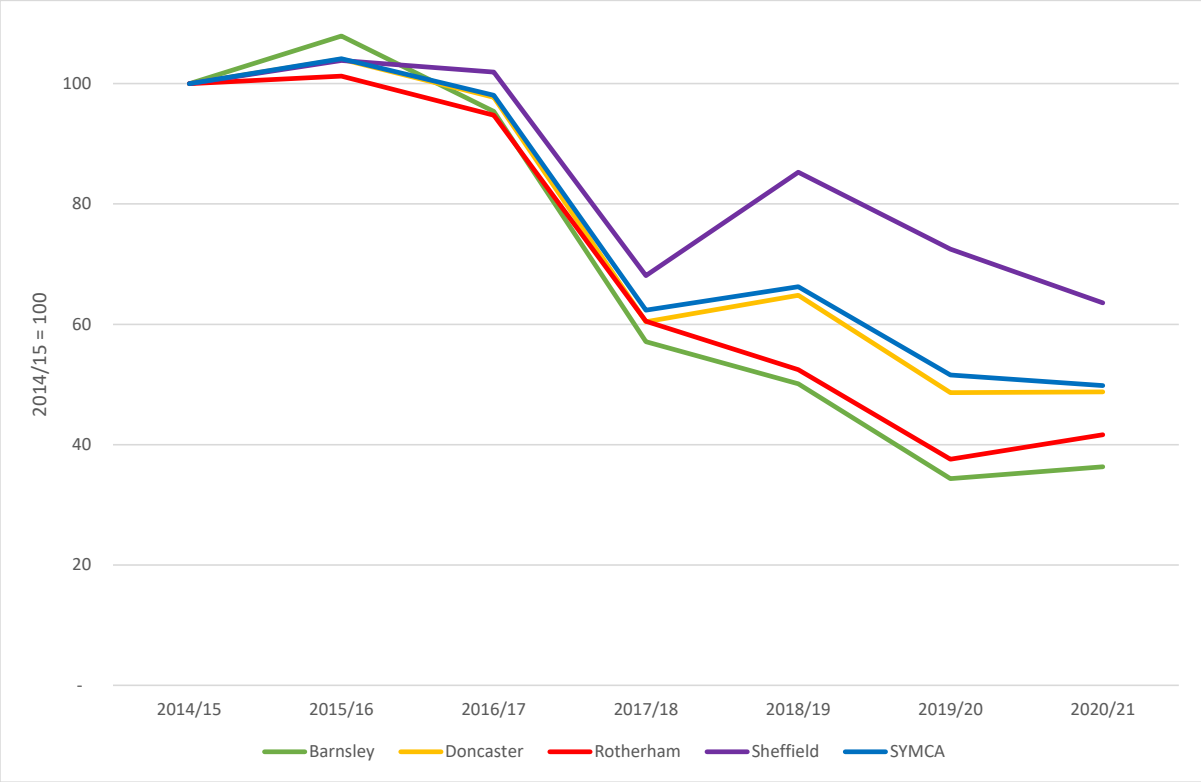
[50] DfE (November 2016) Sheffield City Region Area Review: Final report

Between 2014/15 and 2016/17, apprenticeship starts increased slightly. But then from 2016/17 (which covers Spring 2017) apprenticeship starts began to fall, and this decline has continued in each area ever since.

In 2020/21, apprenticeship starts in SYMCA had halved from their 2014/15 levels. In Barnsley (-64%), Doncaster (-51%) and Rotherham (-58%), the proportion of starts fell even further. In Sheffield starts declined by -34%.

In each area, the reduction from 2015/16-2018/19 (the last full year before the pandemic) apprenticeship starts in each area fell at a faster rate than between 2018/19 and 2020/21. The exception being Sheffield. In SYMCA, starts fell by -36% between 2015/16 and 2018/19, and by a further -25% 2018/19-2020/21

Figure 49: Apprenticeship starts in SYMCA and local authorities – 2014/15 to 2020/21 (2014/15=100)



Source: Department for Education Apprenticeship Data Pack

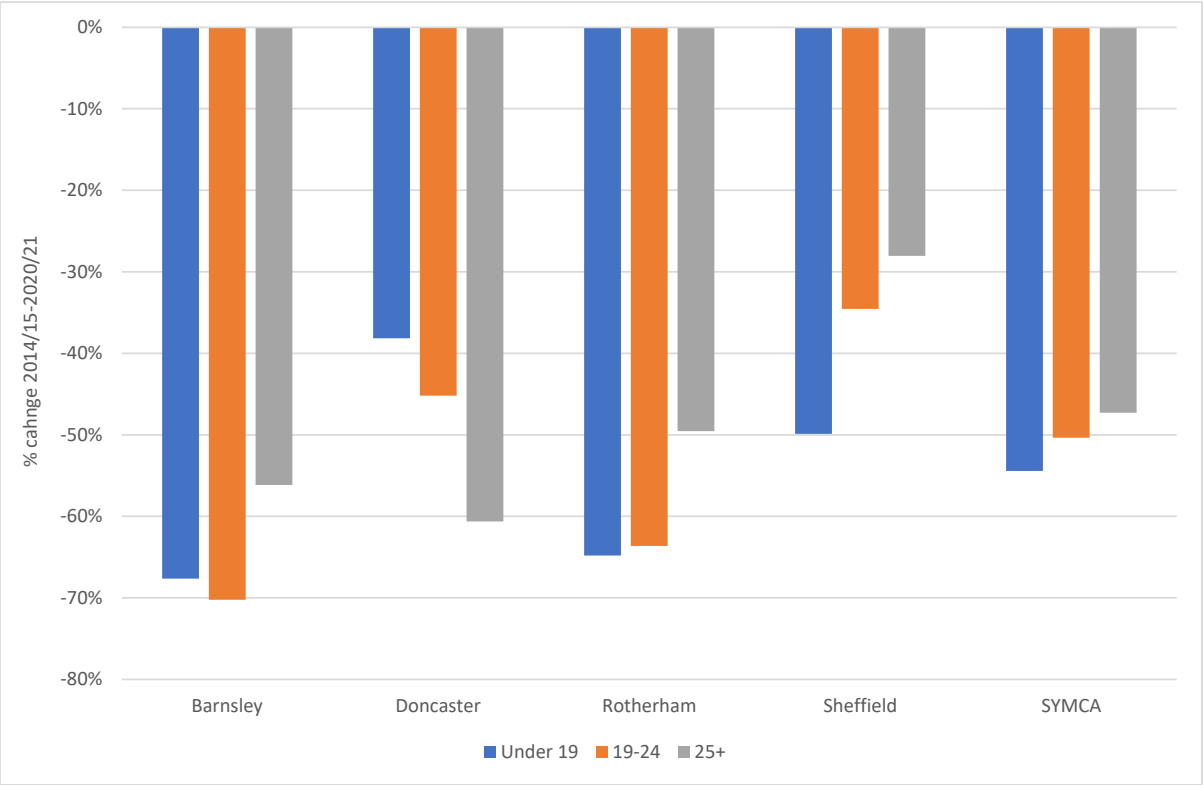
As was mentioned earlier, a trend over the last decade was an increase in older apprentices, typically existing employees, and a fall in younger apprentices using apprenticeships as a stepping stone into the labour market.

Figure 50 shows that across SYMCA the apprenticeship starts of 16-18 year olds fell by the greatest amount (-54%), followed by 19-24 year olds (-50%) and 25+ apprentices (-47%). This was repeated in each area with the exception of Doncaster where there was a much larger decline in 25+ starts (-61%) than the youngest age group (-38%).

The proportion of 16-18 apprentices in Doncaster rose from 23% of starts to 30% between 2014/15 and 2020/21 whereas they fell from 29% to 23% in Sheffield over the same period.

Although the data is not shown, these trends occurred across England as well.

Figure 50: Apprenticeship starts in SYMCA and local authorities by age – 2014/15 to 2020/21



Source: Department for Education Apprenticeship Data Pack

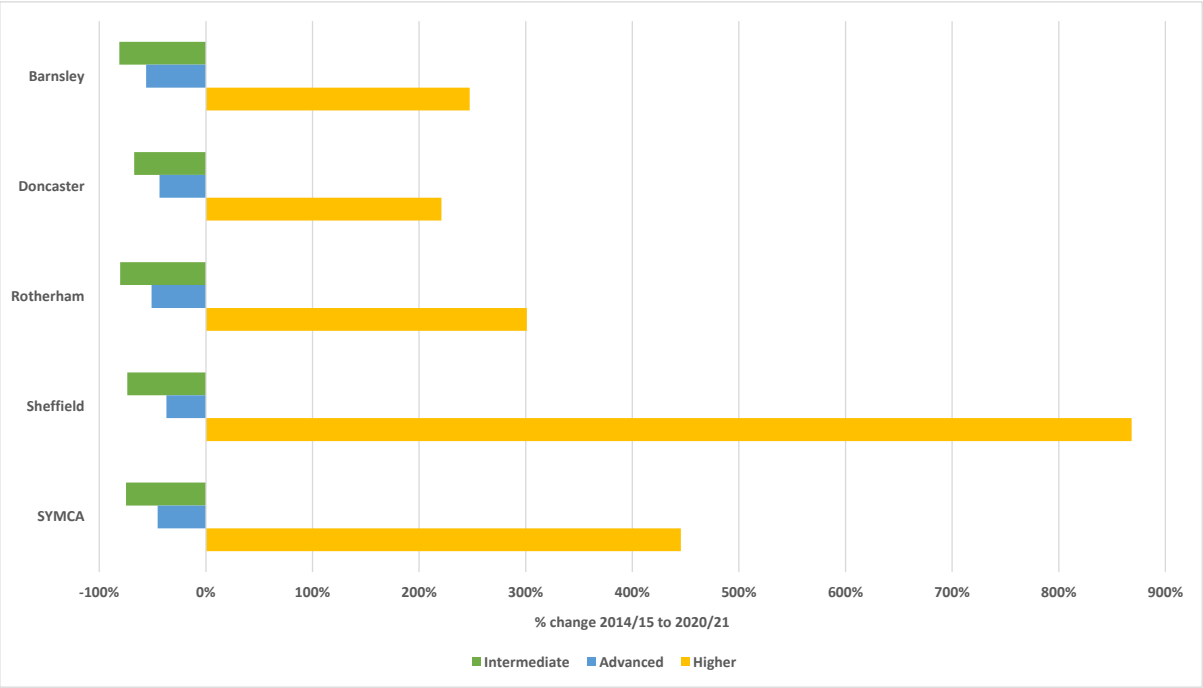
Another key trend of the past decade has been the increase in higher level apprenticeships. Figure 51 shows that there was a sizeable shift to higher level apprenticeships in SYMCA. In the seven years to 2020/21, the number of higher level apprenticeships rose by 445% across SYMCA. This very large increase happened in each district, ranging from +868% in Sheffield (probably due to the location of the two universities) to +221% in Doncaster. In part this was because the number of higher level apprenticeships was relatively small in 2014/15 when only 3% of apprenticeship starts were at this level. By 2020/21 this had risen to 21%.

There were large falls in Intermediate and Advanced apprenticeship starts in each area. Across SYMCA, the number of Intermediate apprenticeship starts fell by -75% 2014/15-2020/21, and Advanced apprenticeship starts by -45%. Whilst the level of decline varied, Intermediate apprenticeships fell by a greater amount than Advanced apprenticeships in each area.

In each area, the decline in Intermediate and Advanced level starts was greater from 2015/16-2018/19, than between 2018/19 and 2020/21.

Although the data is not shown, these trends occurred across England as well.

Figure 51: Apprenticeship starts in SYMCA and local authorities by level – 2014/15 to 2020/21



Source: Department for Education Apprenticeship Data Pack

Changes in apprenticeship subjects is more complicated to analyse because some subject areas are quite small (e.g. education and training) and small changes can have large percentage changes. In 2014/15 there were five subjects which accounted for more than 90% of apprenticeship starts in SYMCA and each local authority district.[51]

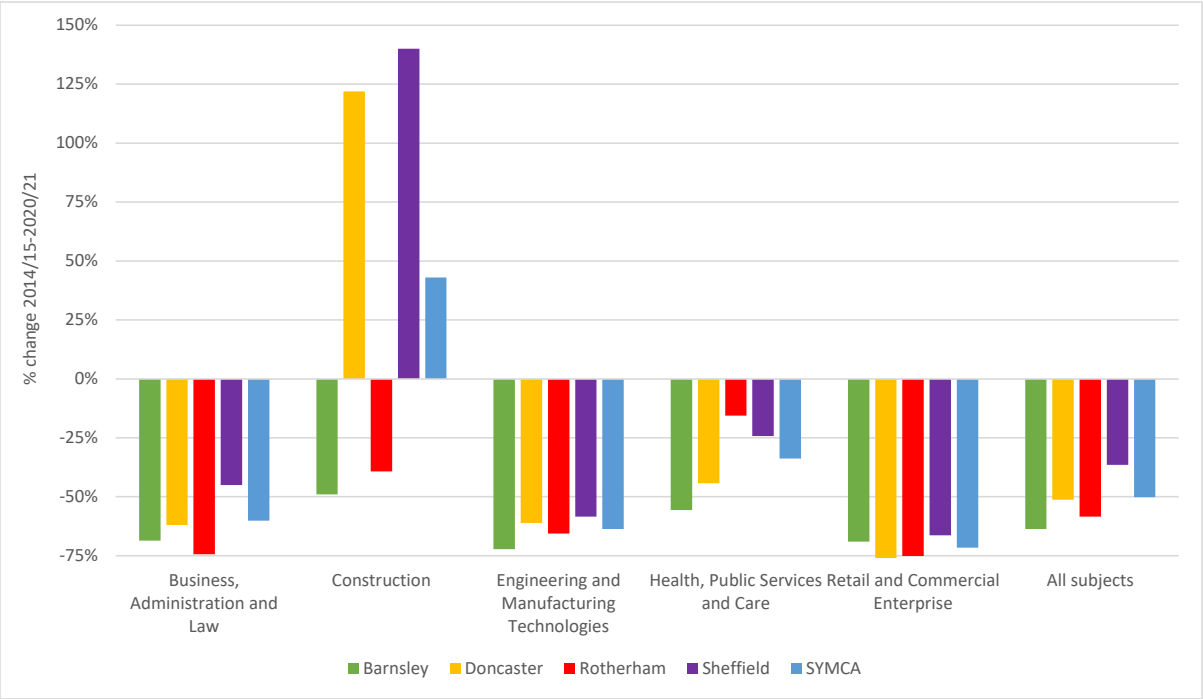
Limiting the analysis to these five subjects, Figure 52 shows that the number of apprenticeship starts fell in each subject area in each district with the exception of construction which increased in Doncaster. However, the numbers in each subject area and in each district all fell from 2014/15 to 2020/21, with the exception of construction in Doncaster and Sheffield, and in SYMCA overall.

In virtually every subject, the decline 2015/16-2018/19 was greater than 2018/19-2020/21.

In each area and in each subject, the percentage decrease in apprenticeships starts was greatest for Intermediate than Advanced apprenticeships (except in construction in Doncaster). Whilst higher level apprenticeship starts increased for every subject in every area (except for business administration on Rotherham).

[51] These were: Business, Administration and Law; Construction, Planning and the Built Environment; Engineering and Manufacturing Technologies; Health, Public Services and Care; and Retail and Commercial Enterprise.

Figure 52: Apprenticeship starts in SYMCA and districts by largest five subjects – 2014/15 to 2020/21

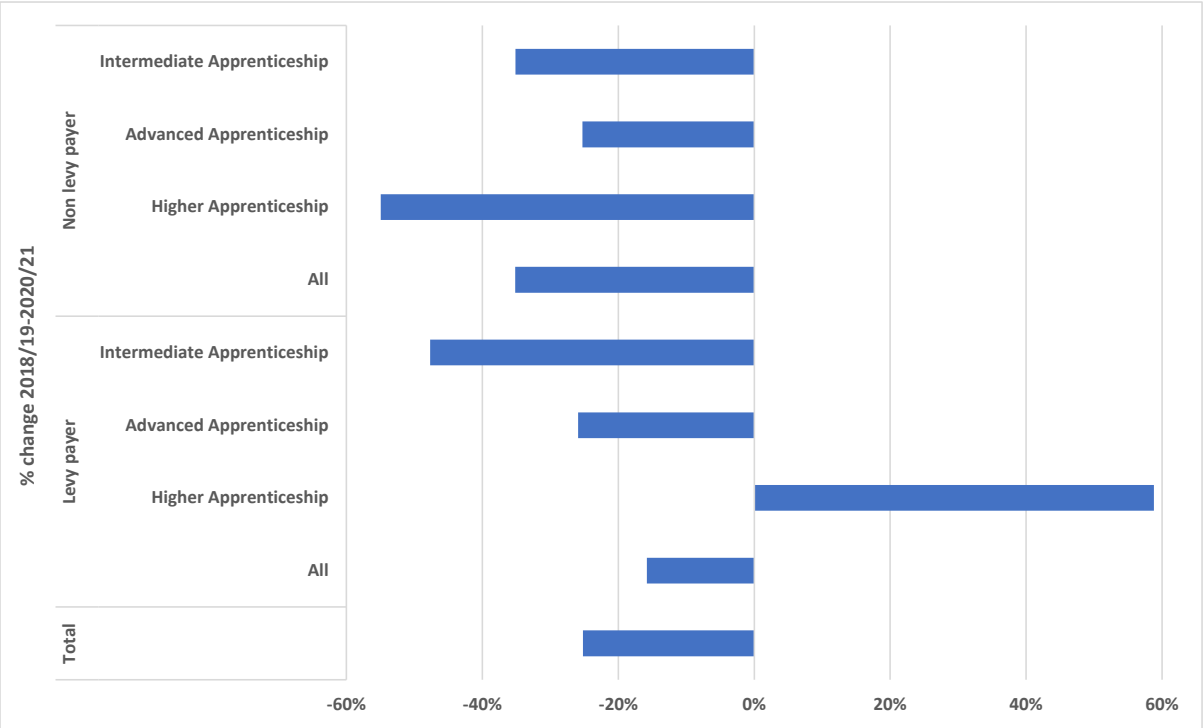


Source: Department for Education Apprenticeship Data Pack

The most impactful of the Spring 2017 reforms was the introduction of the apprenticeship levy. Figure 53 shows the percentage change in SYMCA for level of apprenticeship by levy and non-levy payer between 2018/19 and 2020/21.

Overall, apprenticeship starts fell by 25% across SYMCA. This fall was greater for non-levy payers (-35%) than for levy payers (-16%). Whilst there was a decrease in every level of apprenticeship for non-levy payers, levy payers had a 59% increase in higher level apprenticeship starts. In contrast, non-levy payer Higher level starts fell by -55%.

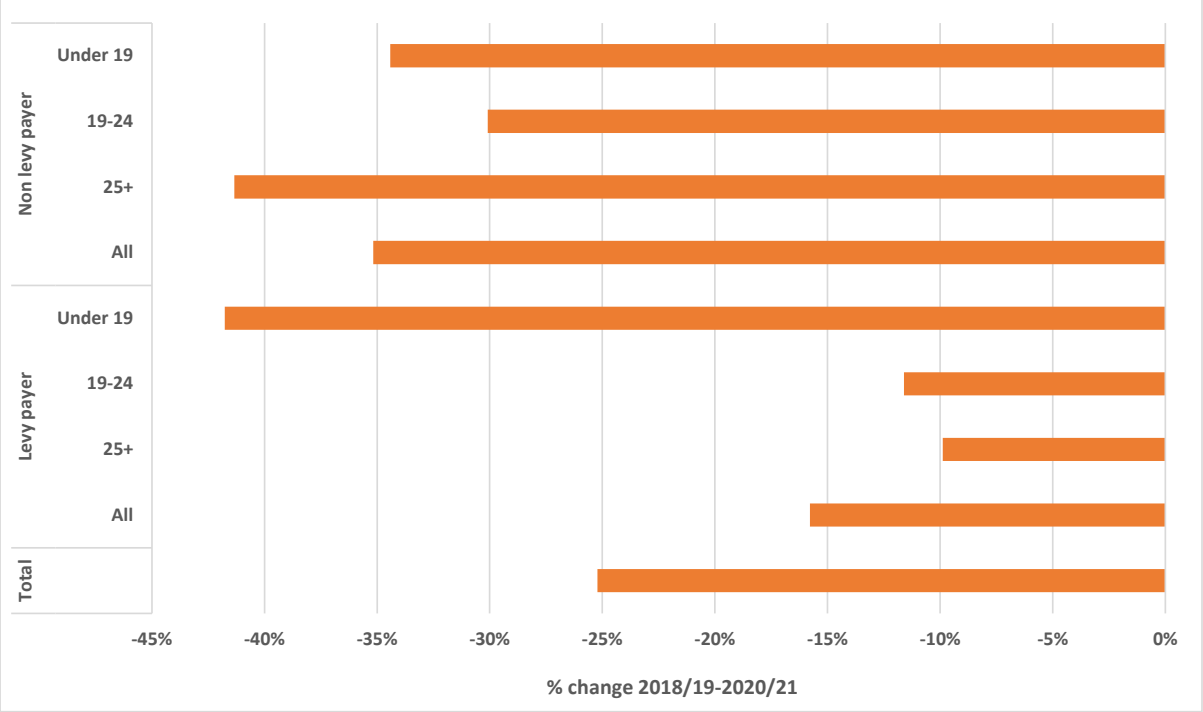
Figure 53: Apprenticeship starts in SYMCA by level, and whether a levy payer – 2018/19 to 2020/21



Source: Department for Education Apprenticeship Data Pack

Figure 54 shows that apprenticeship starts fell in every age group for both levy and no levy payers. The smallest falls were for 25+ (-10%) and 19-24 (-12%) amongst levy payers.

Figure 54: Apprenticeship starts in SYMCA by age group, and whether a levy payer – 2018/19 to 2020/21



Source: Department for Education Apprenticeship Data Pack

4.5. Higher Education

Key points:

- Across SYMCA, higher education (HE) provision is delivered primarily through the two universities based in Sheffield, but also five FE colleges.
- In 2020/21, there were 65,551 HE students studying in the SYMCA area, two thirds (69%) of whom were undergraduates. Most HE students (51%) were studying at Sheffield Hallam University, 47% at Sheffield University, and 3% at the five FE colleges.
- Four out of five (78%) HE students were UK residents, one in five were non-EU ones (19%), with 3% from the EU. However, non-EU students make up 40% of all postgraduates.
- The largest subjects by student numbers are: subjects allied to medicine, business and management, engineering and technology, and social sciences. Together these four subjects account for more than half of all students, half of undergraduates and 57% of post graduates.
- Almost half of students were studying Science, Technology, Engineering and Mathematics (STEM) subjects.
- For those who students stuyding in SYMCA who graduated in 2018/19, by 2021: 70% were in work, predominantly full-time employment. Only 5% of students were unemployed.

Across SYMCA, higher education (HE) provision is delivered primarily through the two universities based in Sheffield - Sheffield University and Sheffield Hallam University. Each of the five SYMCA FE colleges – Barnsley College, Dearne Valley College, Doncaster College, Rotherham College and Sheffield College – also offer HE provision.

HE delivered by FE institutions is not included in the Higher Education Statistical Agency (HESA) data. However, FE delivered HE provision data was provided by the South Yorkshire Colleges Group.

Table 15 shows that in 2020/21, there were 65,551 HE students studying in the SYMCA area, two thirds (69%) of whom were undergraduates. Most HE students (51%) were studying at Sheffield Hallam University, 47% at Sheffield University, and 3% at the five FE colleges.

Data for 2018/19 is not available for FE college HE students but it is for the two universities. Between 2018/19 and 2020/21, the total number of students increased by 10%. This was largely as a result of increased postgraduate numbers which increased by 44% whereas undergraduate numbers rose by 1%.

Table 16: Higher education students in SYMCA - 2020/21

	Sheffield Hallam University	Sheffield University	SY FE Colleges	All South Yorkshire
	N=33,280	N=30,605	N=1,666	N=65,551
Postgraduate (research)	1%	8%	0%	4%
Postgraduate (taught)	25%	28%	15%	26%
All postgraduate	26%	36%	15%	31%
First degree	70%	62%	16%	65%
Other undergraduate	4%	2%	69%	5%
All undergraduate	74%	64%	85%	69%
All	100%	100%	100%	100%

Source: HESA 2021 and South Yorkshire Colleges Group

Table 16 shows country/region of origin. Four out of five (78%) HE students were UK residents, one in five were non-EU (19%) and (3%) were EU. However, non-EU students make up 40% of all postgraduates.

Sheffield University students are more likely to come from non-EU countries. Almost one third of Sheffield University students (32%) were non-EU compared to 91% of Sheffield Hallam University and 99% of FE college students.

For the two universities, between 2018/19 and 2020/21 there was an increase in UK students (+4%), a large rise in non-EU students (+116%) but a fall in EU students (-21%). Postgraduate non-EU and UK students increased more than undergraduates. The number of EU graduates increased (+8%) but this was offset by a large decrease in postgraduates (-76%).

Table 17: Higher education students in SYMCA – percent 2020/21

N=65,551	UK	EU	Non-EU	All
Postgraduate (research)	0%	0%	0%	1%
Postgraduate (taught)	10%	0%	3%	13%
All postgraduate	10%	0%	3%	13%
First degree	34%	0%	1%	36%
Other undergraduate	2%	0%	0%	2%

All undergraduate	36%	0%	1%	37%
All	46%	1%	4%	51%

Source: HESA 2021 and South Yorkshire Colleges Group

Table 17 provides data on the subjects studied by SYMCA HE students, ranked in descending order of the total number of students studying each subject. The largest subjects are: subjects allied to medicine (16%), business and management (13%), engineering and technology (12%), and social sciences (11%). Together these four subjects account for more than half of all students (53%), half of undergraduates (51%) and 57% of post graduates. One in ten postgraduate students (11%) study education and teaching. .

Almost half of the subjects (54%) in Table 29 are Science, Technology, Engineering and Mathematics (STEM) subjects.

Table 18: Subjects studied by university students in SYMCA - 2019/20

Subject area	Undergraduate		Postgraduate		All students	
	No.	%	No.	%	No.	%
02 Subjects allied to medicine	6,398	14%	4,405	22%	10,803	16%
17 Business and management	5,609	12%	3,181	16%	8,790	13%
10 Engineering and technology	6,151	13%	1,995	10%	8,146	12%
15 Social sciences	5,500	12%	1,700	9%	7,200	11%
11 Computing	2,624	6%	860	4%	3,484	5%
22 Education and teaching	1,198	3%	2,175	11%	3,373	5%
13 Architecture, building and planning	2,156	5%	915	5%	3,071	5%
03 Biological and sport sciences	2,419	5%	640	3%	3,059	5%
21 Creative arts and design	2,301	5%	310	2%	2,611	4%
04 Psychology	1,815	4%	750	4%	2,565	4%
19 Language and area studies	1,788	4%	583	3%	2,371	4%
01 Medicine and dentistry	1,955	4%	305	2%	2,260	3%
16 Law	1,922	4%	255	1%	2,177	3%
18 Communications and media	1,045	2%	855	4%	1,900	3%
20 Historical, philosophical and religious studies	1,180	3%	285	1%	1,465	2%
07 Physical sciences	801	2%	295	1%	1,096	2%

09 Mathematical sciences	710	2%	280	1%	990	1%
12 Geographical and environmental studies (natural sciences)	509	1%	70	0%	579	1%
06 Agriculture, food and related studies	134	0%	60	0%	194	0%
23 Combined and general studies	5	0%	5	0%	10	0%
All subjects	**46,220**	**100.0**	**19,924**	**100.0**	**66,144**	**100.0**

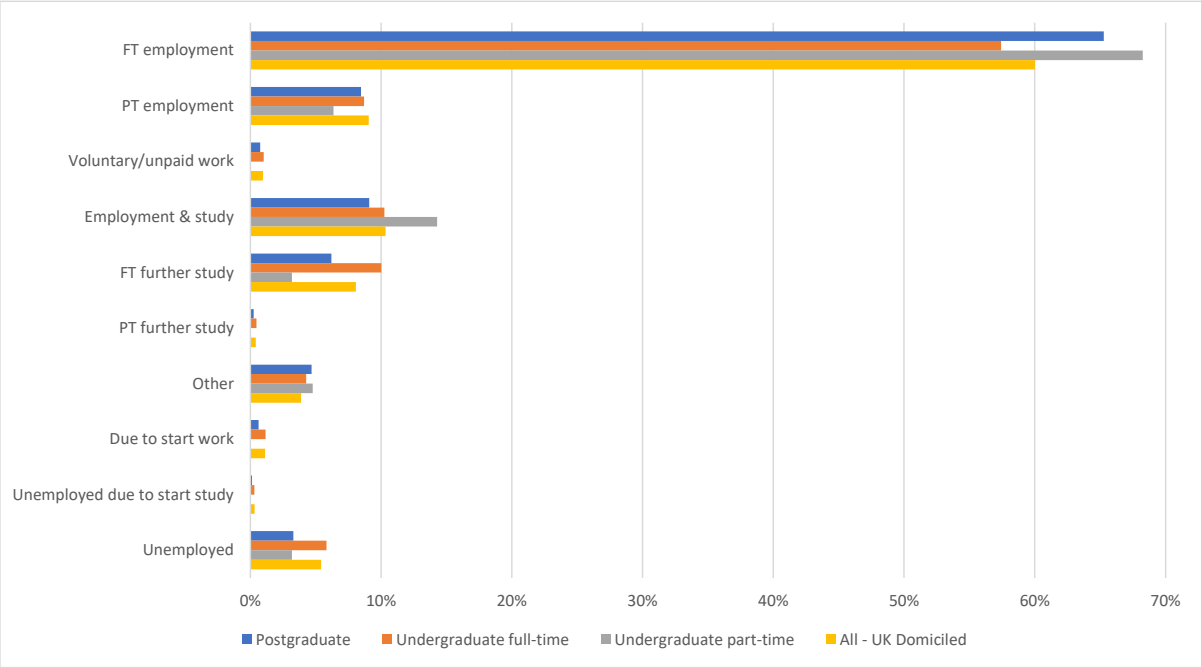
Source: HESA 2019/20.

The HESA Graduate Outcomes Survey monitors the labour market outcomes of students three years after graduation. Of the 21,000 SYMCA university students included in the survey, 52% responded. HE students graduating from FE colleges are not included in this section.

Figure 56 shows the labour market situation of SYMCA university graduates in 2021, three years after they graduated in 2018/19. Of those whose labour market situation is known, 70% were in work, predominantly full-time employment (61%). Postgraduates and part-time undergraduates were most likely to be in employment whilst full-time undergraduates were more likely to be in further study. Only 5% of students were unemployed.

The profile of UK resident students is virtually identical to that of all students.

Figure 55: Labour market outcomes of 2018/19 university graduates in 2021



Source: HESA Graduate Outcomes.

There is no available data which shows how many of SYMCA's graduates remain in the area to live and work. Local level analysis has been undertaken which suggests that around one third of SYMCA's undergraduates remain after graduation.[52] However, there is no comparable data which can be used to determine whether this is a low or high level of retention nor what the current position is.

HECSU reported that the 5 largest professional occupations for Sheffield university graduates were nurses, primary and nursery education teaching professionals, medical practitioners, marketing associate professionals, and general office jobs. The 5 largest employing organisations were: hospital activities, primary education, government, aerospace and general secondary education.

[52] Guest, J. and Gelder, H. (2018) Report on the scale and nature of Sheffield City Region's graduate retention problem, SNC-Avelin and Atkins.

4.6. Qualifications in the population

Key points:

- The proportion of SYMCA working age population (16-64) with no qualifications is almost identical to England (7% and 6% respectively). However, people in England are qualified to higher levels. Especially at Level 4+ qualifications (43% in England compared to 37% in SYMCA).
- Sheffield is much closer to the national average with 47% of people holding a qualification at Level 4+.
- In 2004, 20% of people in SYMCA were qualified to at least NVQ Level 2 compared to 26% in England. By 2020, the respective figures were 38% and 43%. This attainment gap has narrowly slightly by 1pp.

Table 18 shows that the highest qualification level of the working age population in the SYMCA, the four districts and England in 2020.

The proportion of SYMCA working age population (16-64) with no qualifications is almost identical to England (7% and 6% respectively). However, people in England are qualified to higher levels. Similar proportions of SYMCA and England populations hold qualifications below Level 3, but people in England are more likely to hold Level 4+ qualifications (43% compared to 37% in SYMCA) whereas people in SYMCA are more likely to hold Other and Level 3 qualifications (35% compared to 33% in England).

Within SYMCA, there are large differences between Sheffield and the three other local authorities. Sheffield is much closer to the national average with 47% of people holding a qualification at Level 4+. This compares with around one quarter in the three other local authorities (21%-23%). Almost one third (30%) of people in Doncaster are qualified below Level 3 which is about 10pps higher than in the other districts.

Compared to the comparator MCA areas, the SYMCA population is better qualified and more likely to hold a Level 4+ qualification. But this is largely due to the high level of qualifications of people in Sheffield.

Table 19: Highest qualification working age population – SYMCA, local authorities and England, 2020

	Percentage of people aged 16 to 64with highest qualification						
	No quals	NVQ 1	NVQ 2	NVQ 3	Apprenticeships	Other quals	NVQ 4+
Barnsley	9%	5%	11%	19%	5%	23%	28%
Doncaster	7%	10%	13%	17%	4%	23%	26%

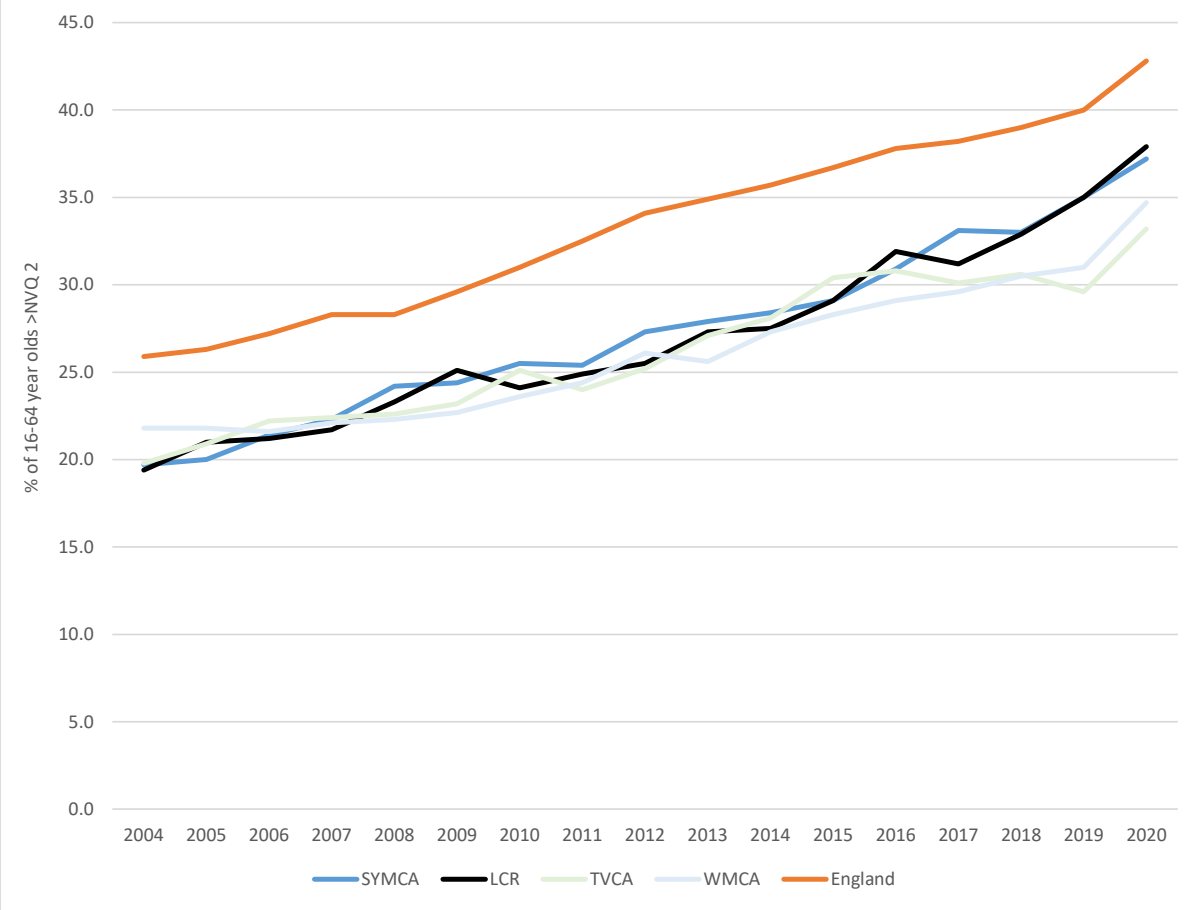
Rotherham	3%	6%	13%	19%	5%	21%	34%
Sheffield	7%	5%	9%	14%	3%	15%	47%
SYMCA	7%	6%	11%	16%	4%	19%	37%
England	6%	6%	10%	16%	3%	17%	43%

Source: Annual Population Survey, January to December 2020 via NOMIS

Figure 57 shows the proportion of the working age population qualified to at least NVQ Level 2 between 2004 and 2020. Attainment at this level has grown consistently in each of the areas. In 2004, 20% of people in SYMCA were qualified to at least NVQ Level 2 compared to 26% in England. By 2020, the respective figures were 38% and 43%.

There is a gap in attainment between England and the MCA areas. But the gap has narrowed slightly for SYMCA and LCR from 6pps to 5pps.

Figure 56: Percent of working age population qualified to at least NVQ Level 2: SYMCA, comparator MCAs and England 2004-2020



Source: Annual Population Survey, January to December 2020 via NOMIS

4.7. Population migration

There is no updated population migration data. This was included in last year's report and the main points were:

- The high number of university students in Sheffield underpins the relatively high rate of net international migration into Sheffield which is higher than the England average.
- Following the 2008/9 Financial Crisis, in-migration fell. Since 2010, in-migration in SYMCA and England has fluctuated from year to year, with SYMCA having an international in-migration rate lower than England.
- The presence of the two universities means that Sheffield has an international in-migration rate four times that of the other SYMCA local authorities.
- Net international migration (the difference between in- and out-migration) has been positive in all parts of SYMCA since 2010. Sheffield again has much higher rates than England and the other three SYMCA local authorities.
- Net in-migration peaked in 2011/12 and 2015/16 in most areas, but then declined after the Brexit vote.
- As a result of sustained net international in-migration, the proportion of the population of SYMCA born outside the UK increased over the past decade.
- In England, the percentage of the population born outside the UK increased to 16% by 2019, compared to 9% in SYMCA. At 13%, Sheffield's population born overseas was twice as high as the other local authorities.
- It is difficult to predict the impact of Brexit on migration patterns in SYMCA. The new points based immigration system restricts the in-migration of both EU and non-EU citizens to work in the UK. Overall, in order to work in the UK, migrant workers will require an offer of a job paying £25,600 and English language skills. The salary threshold could affect the employment of migrant workers in low paying sectors such as the care and hospitality sectors.

4.8. Impact of COVID-19 on labour supply in SYMCA

Key points:

- In the 12 months before the first lockdown in March 2020, the claimant count in SYMCA averaged 3.1% compared to 2.8% in England. The first lockdown brought about a step change, more than doubling the rate in each area;
- Since May 2020 the trend has been downwards in each area culminating in a claimant count rate in February 2022 of 4.8% in SYMCA and 4.4% in England. This is 2pps higher than the corresponding figure in February 2020 in both areas;
- The impact on different age and gender groups was similar. However, the difference between the pre-COVID-19 and current rate shows that is highest for younger people (18-24).

4.8.1. Impact on unemployment (claimant count)

Figure 58 shows that the impact on the claimant count from the impact of the pandemic. In the 12 months before the first lockdown in March 2020, the claimant count in SYMCA averaged 3.1% compared to 2.8% in England. Within SYMCA, Doncaster had the highest claimant count rate (3.6%) and Sheffield the lowest (2.7%). Barnsley and Rotherham were just below Doncaster's figure at 3.4% and 3.5% respectively.

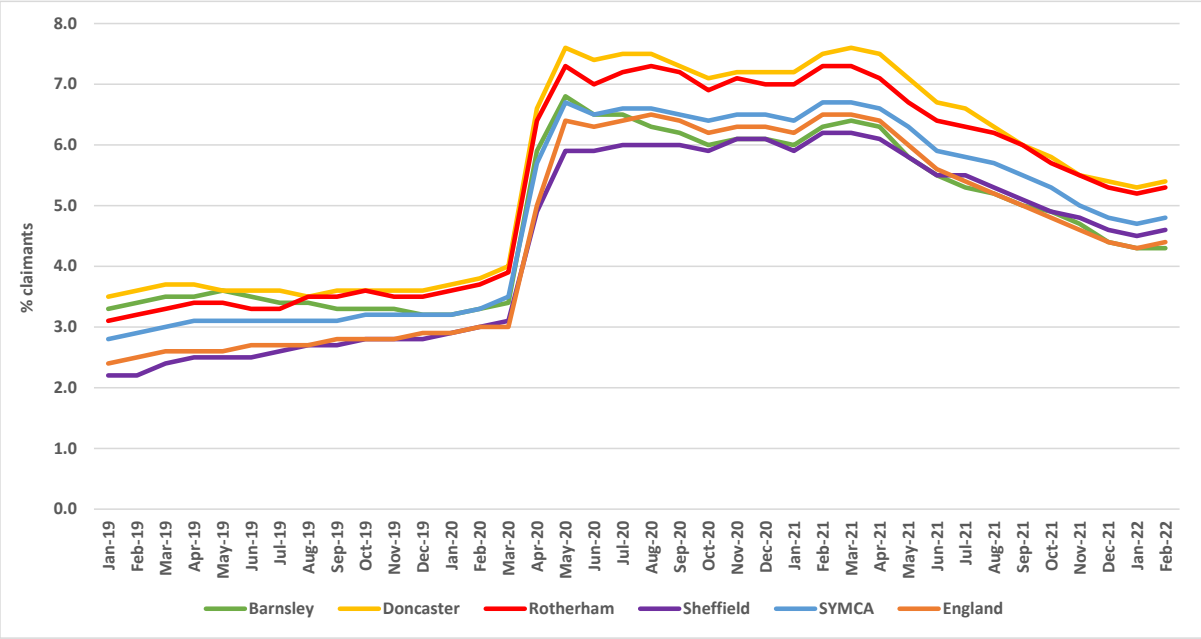
As the first lockdown was implemented there was a step change in the claimant count, more than doubling the rate in each area. Overall, the increases from May 2019-May 2020 within SYMCA was greatest in Doncaster (+4.0pps) and least in Barnsley (+3.2pps). In SYMCA and England, the claimant count rate rose by 3.7pps in both areas.

Since May 2020 the trend has been downwards in each area culminating in a claimant count rate in February 2022 of 4.8% in SYMCA and 4.4% in England. This is two percentage points higher than the corresponding figure in February 2020 in both areas.

Currently (February 2022), Barnsley has the lowest rate of 4.3% and Doncaster the highest (5.4%). Compared to the rate in the previous year (February 2020) Sheffield's rate is +2.4pps higher and Barnsley's +0.9pps.

Figure 57 shows that broadly the trajectory of the claimant count is very similar in each area.

Figure 57: Claimant count rate – SYMCA, local authorities and England, January 2019-February 2022



Source: Office for National Statistics from NOMIS

Figures 58 and 59 show a similar story of the impact of the pandemic on the claimant count rate by age group and gender. There was an initial step change, but the increase affected all groups.

Figure 58 shows that, in the 12 months pre-COVID 19, in SYMCA, the claimant count for 18-24 year olds was 3.4%, for those aged 25-49 years it was 3.5%, and 2.3% for 50-64 year olds. In England the respective figures were 3.1%, 2.9% and 2.3%. Therefore, SYMCA's 25-49 claimant count rate is relatively high.

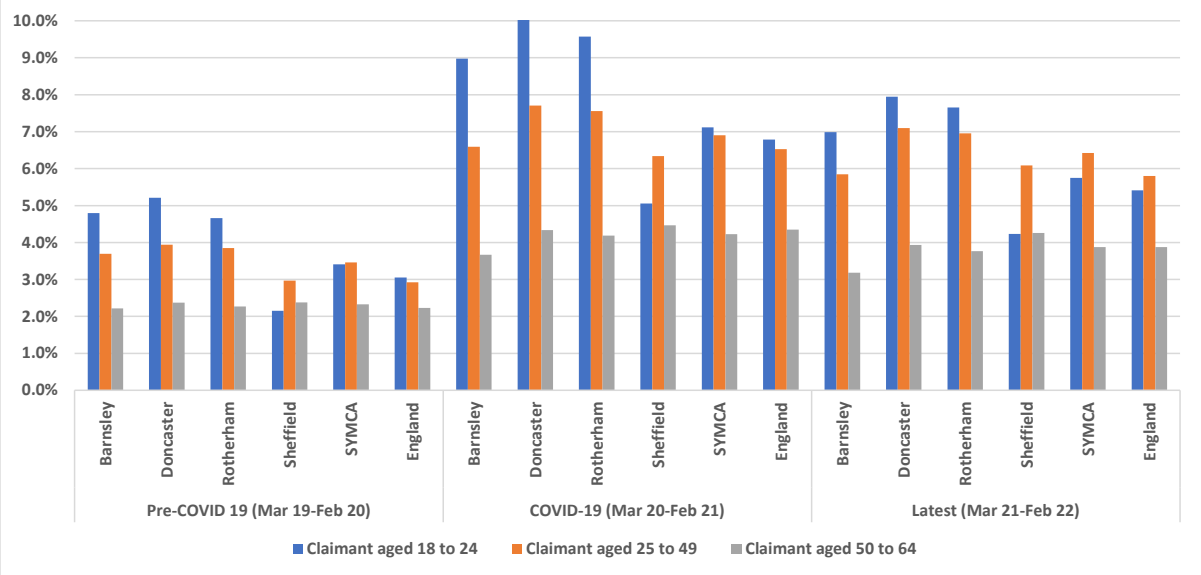
Across SYMCA, the claimant count rate in Doncaster was the highest in each age group. Sheffield has the lowest claimant count rate, especially amongst 18-24 year olds where it was 2.2% pre-COVID.

The impact of the pandemic was an increase for every age group in every area. The increase was largest for 18-24 year olds, an increase of 3.7pps in SYMCA and England, compared to 2.1pps and 1.9pps for 50-64 year olds respectively. The percentage point increase for 18-24 year olds was over 4pps in Barnsley, Doncaster and Rotherham, but 2.9pps in Sheffield.

In the period, March 2021-February 2022, the claimant count rate fell in every age group in every area. In SYMCA, 18-24 year olds saw the largest decrease (-1.4pp) the same as in England, compared to a -0.5pp fall for 50-64 year olds.

Comparing pre-COVID with the latest figures, the claimant count rate for young people was still 3.7pps above the March 2019-February 2020 figure in both SYMCA and England, compared to 2.0pps for 50-64 year olds. Based on the claimant count figures, the impact of the pandemic has been greatest on young people.

Figure 58: Claimant count rate by age group – SYMCA, local authorities and England, 2019/20-2021/22



Source: Office for National Statistics from NOMIS

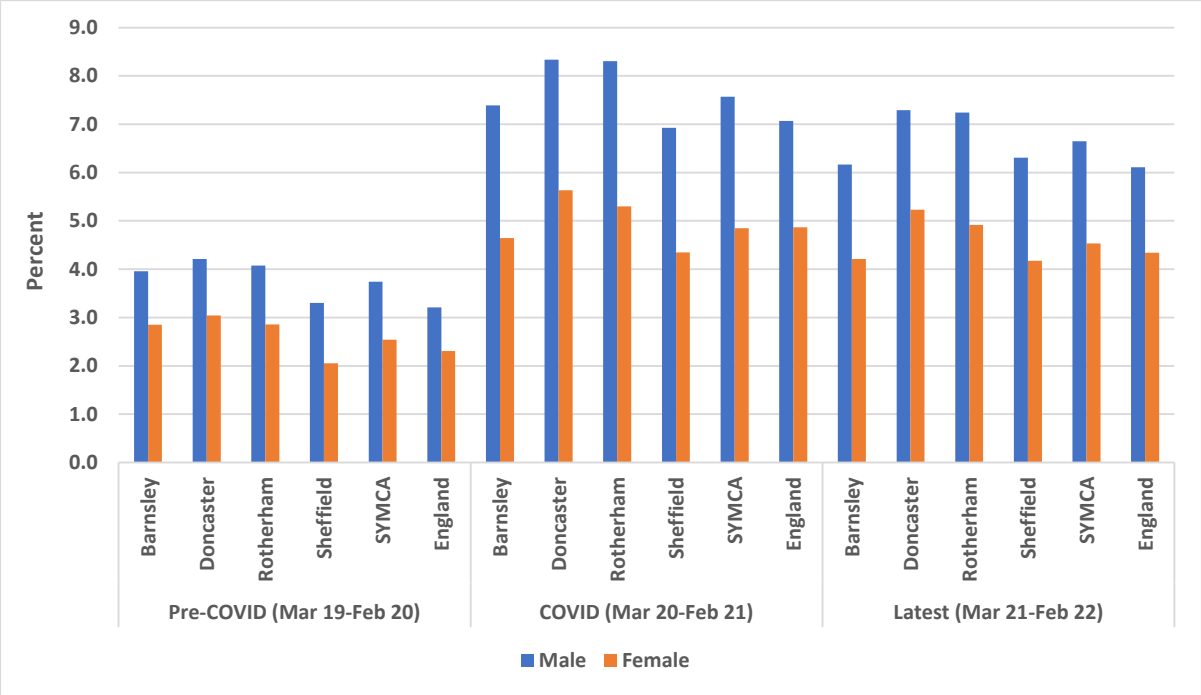
Figure 60 shows that, in SYMCA, in March 2019-February 2020, the claimant count rate for men was 3.7% compared to 2.5% for women. The respective figures in England were 3.2% and 2.3%. Women generally tend to have lower claimant count rates because they tend to be economically inactive rather than unemployed.

In both SYMCA and England, COVID-19 impacted on men's claimant count rate (+3.8pps) more than women's (2.3+pps) in SYMCA. Both rates were slightly lower than in England (+3.9pps and 2.6pps).

The latest data show that by March 2021-February 2022 in SYMCA, men's claimant count rate was 2.9pps higher than the pre-COVID rate and women's was 2.0pps higher. It was the same change in England for both men and women.

Within SYMCA, the male claimant count rate for men was higher in each area than for women, with a similar gender difference in each area. COVID-19 impacted on men more than women in each area to a similar extent. Doncaster had the largest percentage point increase for both men and women. The latest data show that in Doncaster, Rotherham and Sheffield, the latest claimant count rate for men is +3.1pps higher than pre-COVID-19,and for women it is +2.1pps higher. Barnsley was less affected with respective rates of +2.2 and +1.4pps.

Figure 59: Claimant count rate by gender – SYMCA, local authorities and England, 2019/20-2021/22



Source: Office for National Statistics from NOMIS

4.9. Summary and conclusions

4.9.1. Summary

Progress 8 measures which provided a contextualised perspective on attainment were suspended due to the way in which GCSE attainment was measured during COVID-19. The pre-pandemic Progress 8 scores in 2017/18, shows that all of the local authority districts were below the national average, except for Sheffield. SYMCA was closer to the national average than the comparator areas.

The Attainment 8 scores for 2018/19-2020/21 show that all four SYMCA areas were below the England average for each of the three years. The attainment gap between the areas and England widened over this period, except in Rotherham.

Compared to the other MCA areas, in 2018/19 SYMCA was very similar. But 2020/21, SYMCA attainment grew at a slower rate.

The large majority of KS4 pupils have positive destinations, and this has increased by around 5pps across the areas from 2010/11 to 2019/20, similar to the England average. The pandemic impacted on these positive destinations falling by -5pps in SYMCA and -3pps nationally.

More than four out of five KS4 pupils in every area progress into some form of full-time further education. In SYMCA, FE destinations are higher than they are in England where KS4 pupils are more likely to enter a school sixth form. In Barnsley, almost one quarter enter FE compared to 42% in SYMCA.

The effect of COVID-19 was to increase SYMCA KS4 pupils entering employment, the opposite of England. The main decrease in SYMCA was a fall in numbers entering school sixth forms, especially in Doncaster and Sheffield.

KS4 longer term destination data shows that in SYMCA, those in the 'not sustained' group increase in the five years after leaving KS4 compared to England. The numbers entering HE are greater in England by 7pps.

In SYMCA, young people of BAME origin and women are slightly more likely to enter further education and training after KS4 than their comparator groups, however, SEND young people have a significantly lower rate (four percentage points less).

At KS5, in 2019/20, The profile is similar between SYMCA and England with a maximum 2pps difference in destinations between the two areas. At KS5 young people in SYMCA were marginally less likely to enter HE (-1pp) and employment (-2pps), but more likely to enter an apprenticeship (+2pp) and a 'not sustained' destination (+2pp). KS5 young people in Barnsley and Rotherham are less likely to enter HE, but more likely to progress into an apprenticeship or employment.

At KS5 attainment levels in Rotherham and Sheffield are similar to the national average, but lower in Barnsley and Doncaster.

On average 15% of the 16-24 year old population in SYMCA were not in work or education and training. This equates to just under 25,000 people. This is below the UK average of 12% but a similar level to the comparator MCA areas.

In 2020/21 there were 198 SYMCA FE funded learning providers delivering 53,976 learning aims to people resident in the sub region. There was a total of 32,339 learners in the four funding streams, but some of these may be double counted. AEB was the largest SYMCA programme funding 38,176 or 71% of learning aims. ALL was the smallest accounting for 3% of all learning aims. There were 7,162 funded apprentices.

COVID-19 had a significant impact on learning starts across SYMCA. There was an overall reduction in learning aims of 29%. The decline was greatest in CL where overall learning aims declined by two thirds. The number of apprentices fell in each district by between -25% (Sheffield) and -29% (Barnsley).

AEB learners and apprentices are split almost 50:50 between men and women. Just under one quarter of all learning aim starts were by BAME learners. BAME learners were more likely to undertake AEB provision whilst non-BAME learners were much more likely to undertake apprenticeships. Disabled learners comprise around one quarter of CL funded learners, and AEB learners, one in eight apprentices and one fifth of ALL learners

All types of provision and all areas were hit hard by the pandemic. The fall in learning aims ranged from -25% in Rotherham and Sheffield to -35% in Doncaster. The largest declines were in CL and apprenticeships, and were broadly similar across the districts.

In 2020/21, excluding CL, most learners (48%) were funded to undertake provision which was higher than their current level of attainment, just over one quarter were at the same level and the same proportion below.

The subject profile of provision does appear to be in line with the profile of the local workforce and priority sectors. Compared to the priority sectors digital (ICT 4% of apprenticeships) and cultural and creative (arts and media 1% of apprenticeships) are underrepresented in the FE data. In addition, there is much provision at Entry and Level 1 (59% in the AEB) to support those with no or low qualifications.

Over the last decade, apprenticeships expanded up to 2016/17. But then, due to the reforms introduced in Spring 2017, apprenticeship starts began to fall, and this decline has continued in each area ever since. In 2020/21, apprenticeship starts in SYMCA had halved from their 2014/15 levels. In Barnsley and Rotherham they fell by almost two thirds, in Doncaster they halved and in Sheffield fell by one third.

Apprenticeships in all areas were impacted by the pandemic, falling by a further -25% in SYMCA.

There were two key trends which pre-dated the apprenticeship reforms. A reduction in younger (16-18) and an expansion of older (25+) apprentices; and a fall in Intermediate and a rise in higher apprenticeships. Both these trends were exacerbated by the Spring 2017 reforms. The move to older apprentices (usually existing employees) was not as linear in SYMCA as in England. For example, the number of 16-18 year old apprentices increased in Doncaster and Rotherham.

In SYMCA in 2014/15, 60% of apprenticeships were Intermediate, 36% were Advanced and 3% were Higher. In 2020/21, the respective proportions were 31%, 39% and 30%;

Another key trend brought on by the reforms was the relative increase in apprenticeships for levy payers and a reduction for non-levy payers. Both were affected by the pandemic, but non-levy payers moreso.

Across SYMCA, higher education (HE) provision is delivered primarily through the two universities based in Sheffield, but also five FE colleges. In 2020/21, there were 65,551 HE students studying in the SYMCA area, two thirds (69%) of whom were undergraduates. Most HE students (51%) were studying at Sheffield Hallam University, 47% at Sheffield University, and 3% at the five FE colleges. Four out of five (78%) HE students were UK residents, one in five were non-EU (19%) and (3%) were EU. However, non-EU students make up 40% of all postgraduates.

The largest subjects by student numbers are: subjects allied to medicine, business and management, engineering and technology, and social sciences. Together these four subjects account for more than half of all students, half of undergraduates and 57% of post graduates. Almost half of the subjects are Science, Technology, Engineering and Mathematics (STEM) subjects.

For Sheffield HE students who graduated in 2018/19, by 2021: 70% were in work, predominantly full-time employment. Only 5% of students were unemployed.

The proportion of SYMCA working age population (16-64) with no qualifications is almost identical to England (7% and 6% respectively). However, people in England are qualified to higher levels. Especially at Level 4+ qualifications (43% in England compared to 37% in SYMCA). However, relative to the comparator MCA areas, SYMCA has more people holding NVQ 4+ qualifications and fewer with no qualifications.

Within SYMCA, Sheffield is much closer to the national average with 47% of people holding a qualification at Level 4+.

In 2004, 20% of people in SYMCA were qualified to at least NVQ Level 2 compared to 26% in England. By 2020, the respective figures were 38% and 43%. This attainment gap has narrowly slightly by 1pp.

The migration data has not been updated since last year's report. The high number of university students in Sheffield underpins the relatively high rate of net international migration into Sheffield which is higher than the England average. Following the 2008/9 Financial Crisis, in-migration fell. Since 2010, in-migration in SYMCA and England has fluctuated from year to year, with SYMCA having an international in-migration rate lower than England. The presence of the two universities means that Sheffield has an international in-migration rate four times that of the other SYMCA local authorities.

As a result of sustained net international in-migration, the proportion of the population of SYMCA born outside the UK increased over the past decade.

In the 12 months before the first lockdown in March 2020, the claimant count in SYMCA averaged 3.1% compared to 2.8% in England. The first lockdown brought about a step change, more than doubling the rate in each area; Since May 2020 the trend has been downwards in each area culminating in a claimant count rate in February 2022 of 4.8% in SYMCA and 4.4% in England. This is 2pps higher than the corresponding figure in February 2020 in both areas;

The impact on different age and gender groups was similar. However, the difference between the pre-COVID-19 and current rate shows that is highest for younger people (18-24).

4.9.2. Conclusion

On a number of measures, the position for young people is consistently below the England average, and the gap has not closed in recent years. However, on destinations at KS4 and KS5 the large majority of young people in every area progress into positive destinations. Young people in SYMCA are less likely to enter HE.

All areas were impacted by the pandemic. And this shows that external shocks have similar impacts on every area. This is true of apprenticeships, where the 2017 reforms has led to the continuation of trends to older and higher level apprenticeships. The reforms have also brought about a reduction in the number of apprentices taken on by smaller firms which tend to be non-levy payers.

The pattern for the claimant count and the impact on SYMCA funded learning provision was similar across the areas.

Sheffield stands out in a number of regards because of the location of the subregion's two universities here. This affects the higher levels of Level 4+ in the Sheffield population and the higher in-migration rates of non-UK people.

Relative to the comparator MCA areas, on supply side indicators SYMCA performs well. However, as previous sections have shown, this does not necessarily translate into economic performance.

On measures of skills supply, Sheffield performs above the SYMCA average on virtually all the indicators: destinations, HE participation, KS4 attainment and levels of qualification amongst the population. Doncaster is at the other extreme, scoring below average on most indicators. Barnsley and Rotherham are often at the mid-point between the two. In Barnsley, progression from school appears to be an issue with relatively high levels of not sustained destinations (KS4 and KS5) and low HE participation. Rotherham has comparatively high HE participation and population qualification levels but higher than average NEET levels in the 18-24 population.

5. Priority sectors

5.1. Introduction

This section includes a rapid evidence review of the employment and skills issues for four of SYMCA's priority sectors: the green economy; the digital economy; engineering/advanced manufacturing; and transport and storage.

5.2. The green economy

While there is much debate about green jobs or the green economy, there is no commonly agreed definition of what green jobs are (House of Commons Environmental Audit Committee, 2021[53]; Green Jobs Taskforce, 2021[54]; Green Alliance, 2022[55]) or how to measure the green economy. For its report the UK's Green Jobs Taskforce (2021) defines green jobs as: "…employment in an activity that directly contributes to - or indirectly supports - the achievement of the UK's net zero emissions target and other environmental goals, such as nature restoration and mitigation against climate risks".

In estimating the number of jobs in the green economy in the UK, the ONS currently uses two surveys:

- the environmental goods and services sector statistics provides an estimate of 394,900 full-time equivalent (FTE) employees in 2019[56], and;
- the Low Carbon and the Renewable Energy Economy (LCREE) survey, focusing on 17 sectors, gives an estimate of 202,100 FTE employment also in 2019[57].

These surveys are focused on sectors that make up what might be termed a 'purist' version of the green economy. Any transition to a net zero carbon future will need to encompass all if not most jobs rather than just the jobs in the narrowly defined 'green

[53] House of Commons Environmental Audit Committee (2021) Green Jobs. Third Report of Session 2021–22.

[54] Green Jobs Taskforce (2021). Annex: Sectoral transitions to net zero.

[55] Alvis, S. et. al. (2022) Closing the UK's green skills gap. Green Alliance.

[56] ONS (2022): UK environmental goods and services sector (EGSS): 2019. The EGSS framework follows the UN System of Environmental-Economic Accounting (SEEA). It measures 17 activities across the economy that produce goods and services for environmental protection and resource management purposes: energy saving and sustainable energy systems; environmental charities; environmental consultancy and engineering services; environmental construction; environmental education; environmental low emissions vehicles, carbon capture and inspection and control; in-house environmental activities; insulation activities; management of forest ecosystems; managerial activities of government bodies; organic agriculture; production of industrial environmental equipment; production of renewable energy; recycling; waste; wastewater; and water quantity management.

[57] ONS (2021) Low carbon and renewable energy economy, UK: 2019. The majority of low carbon and renewable energy activity in 2019 took place in businesses classified (according to SIC 2007) within manufacturing, energy supply and construction industries. Businesses within these three industries accounted for 82% of all LCREE turnover and 74% of employment.

sector'. New definitions and methodologies to capture the broader range of jobs involved in the transition are being developed. These studies show that a significant number of jobs not in the narrow green sector or occupations but those that are 'greening'. That is, they are 'traditional' jobs with enhanced green skills and knowledge requirements.

5.2.1. Drivers of and demand for green skills and jobs

In response to climate change, the Paris Agreement has been adopted in 2015. As a signatory, the UK has adopted a range of domestic polices and strategies to support this aim, the most recent ones being 'The Ten Point Plan for a Green Industrial Revolution' (HM Government, 2021[58]) and the 'Net Zero Strategy' (HM Government, 2021[59]).

It is estimated that the Net Zero Strategy will, along with environmental regulations: "…support up to 190,000 jobs by 2025, and up to 440,000 jobs by 2030" (HM Government, 2021). Some of these jobs will be tied to certain regions (e.g. where nuclear power plants or wind farms are located). Most of the expected jobs are related to generic activities which will take place in every area of the UK such as: improving the energy efficiency of buildings; boiler upgrades; and installing heat pumps etc. It is expected that clean energy production, homes and insulation, and the domestic transport sector will support the largest number of jobs by 2030.

SYMCA has committed to reaching net-zero emissions by 2041[60], and this is likely to impact on expected job growth through the implementation plans supporting this goal. To support this strategy links between local businesses and education providers will be advantageous (Green Skills Alliance, 2022) to help meet the required skill demands.

As part of its work published in 2021, the Green Jobs Taskforce put together information on occupations, skills requirements and qualification levels in 17 sectors. The Taskforce particularly noted significant existing shortages for retrofit designers, co-ordinators and overhead lines people[61].

More recently, Green Alliance (2022) provided an overview of future skill needs and primary skills gaps in green jobs, as shown in Table 20. These are jobs and skills directly or indirectly related to reaching climate and environmental goals in the UK. For example:

- in the building sector (which accounts for 16% of UK greenhouse gas emissions) a number of jobs will be created to improve the energy efficiency of buildings. Within this sector, the report identifies primary skill gaps for specific

[58] HM Government 2021) The Ten Point Plan for a Green Industrial Revolution. Building back better, supporting green jobs, and accelerating our path to net zero.

[59] HM Government (2021) Net Zero Strategy: Build Back Greener.

[60] Sheffield City Region (2021): Our Strategic Economic Plan 2021-2041.

[61] Green Jobs Taskforce (2021); Green Jobs Taskforce: Annex (2021)

occupations such as installers and those involve in retrofitting, especially energy efficiency installers, retrofit co-ordinators, heat pump installers and digital professionals, passive house designers.

- In the transport sector there is also reference to specific occupations (charge point installers and operators, vehicle scrappage and recycling experts, battery manufacturers and operators, and electrification engineers) (Green Alliance, 2022).

The Green Alliance report (2022) expects that 'significant skills gaps' need to be addressed across many sectors to achieve net zero emissions by 2050. This will require a range of interventions to upskill and reskill existing employees, as well as equipping new entrants to the labour market with the requisite skills.

Table 20: Green jobs: Future jobs market and primary skills gaps 2025-2050

Sectors	Green jobs / areas within these sectors	Future skills and job requirements	Primary skills gaps
Building (16%[a])	Installing Manufacturing Maintenance Digital skills	Heat pump installers, manufacturing Heat networks Upskilled workers in building retrofit	Energy efficiency installers, retrofit co-ordinators, heat pump installers and digital professionals, passive house designers
Transport (31%[a])	Sustainable aviation Electric vehicles Active travel Public transport	Auto manufacturing – reskilling Battery manufacturing Aviation and rail, sectors Decarbonising transport Substantial reskilling in automotive manufacturing	Chargepoint installers and operators; vehicle scrappage and recycling experts, battery manufacturers and operators, and electrification engineers
Circular economy (6%[a])	Reuse Repair Remanufacturing Recycling	Jobs and skills relate to reuse; repair; remanufacture; and recycling	Waste sorting and reprocessing, repair and manufacturing, circular economy business planning and the material sciences
Agriculture and land use (12%[a])	Sustainable farming Agroforestry and agroecology	Sustainable food systems, conservation, planning, natural environment restoration, forestry, improving environmental	Specific skills listed for agriculture, land use and forestry; wider skills needed for some groups (e.g. land

	Farming advisory Nature restoration	landscapes, farm advisers	managers, surveyors and farmers)
Power (11%[a])	Manufacturing Construction and engineering Maintenance Data analysts and digital specialist	Manufacturing, installation, operations and maintenance: offshore wind, tidal power, hydrogen, carbon capture	More research required in new sectors (e.g. hydrogen); Upskilling in some areas likely; no perceived skills gaps in the wind, tidal, nuclear or solar industries
Heavy industry (15%[a])	Green steel Hydrogen production Carbon capture and storage Green infrastructure:	Hydrogen, carbon capture, decarbonisation R&D Infrastructure upgrades	Some upskilling

Source: Based on Green Alliance (2022)

Key:

[a] In backets % of contribution to UK greenhouse gas emissions

There is a great deal of uncertainty about the implications for jobs and skills of green economy developments, as the full level of application and utilisation of some of the technologies (e.g. hydrogen and carbon capture) is not yet known. The House of Commons Environmental Audit Committee[62] suggested ongoing monitoring of employment demand will be required as technologies are developed and adopted.

The Green Skills Alliance provides a commentary on the main skills gap implications in the short- (2020-25) and longer term (2025-35) of a narrowly defined green economy, and this is presented in Table 21. Most of the implications for skills gaps are at Level 4+, especially in research and innovation (R&I), and design.

Table 21: Description of key skill level gaps for individual sub-sector (by NVQ Level)

Sub-sector		Commentary on skill gap areas	Time scale
Low-carbon electricity	Solar	Supply chain considered relatively secure, however an uptick in demand would require technicians to be trained at **NVQ level 3** equivalent to develop a larger installer base to deliver grid connected solar for utility scale/ decentralised generation.	2025-35

[62] House of Commons Environmental Audit Committee (2021) Green Jobs. Third Report of Session 2021–22.

	Nuclear	Entire supply chain in need of upskilling to meet emerging demand; **NVQ level 1 – 3** for construction; **NVQ level 4+** for design and	**2020-25**
Low-carbon heat	Heat pumps	Key skills gap area to meet increasing demand is in the design, specification and installation of heat pumps; **NVQ level 2 – 3**	**2020-25**
Alternative fuels	Anaerobic digestion	To meet forecasted demand, higher skill levels would be required **NVQ 4+** to design and connect AD plants to the grid and ensure outcoming biomethane is of sufficient quality**.**	2025-35
	Hydrogen fuel cells	Highly skilled jobs (**NVQ level 4+)** for R&I required in future; a good stock of technicians expected to be available from existing automotive sector to meet manufacturing demand (i.e. NVQ 1–3).	2025-35
Energy efficient products	Smart controls	Highly skilled **NVQ level 4+** in software engineering is considered as a key skill to enable future innovations within the sub-sector; good stock of manufacturing technicians expected to be available (NVQ 1–3) for manufacturing demands.	2025-35
Low-carbon services	Consultancies and financial	Highly skilled **NVQ level 4+** demand is ongoing and required to ensure service sector organisations can exploit emerging opportunities.	**2020-25**
Low emission vehicles and infrastructure	Electric vehicles	Sector is expected to preserve jobs across all NVQ levels as existing, large automotive capacity in UK switches to ULEV technology. Ongoing R&I activities demands highly skilled researchers **NVQ Level 4+.**	2025-35

Source: Green Alliance (2022)

A broader approach to defining 'green jobs' is apparent from the US Occupational Information Network (O*NET). O*NET has identified three types of green jobs. Some of which will require new skill sets whilst others will need skills updating or adapting[63]:

- green new and emerging occupations. O*NET identifies 91 specific occupations either entirely new (such as carbon capture and sequestration systems installers) or emanate from existing occupations (e.g. Automotive Engineers);
- green increased demand occupations. O*NET identifies 64 specific occupations which are existing occupations whose demand will increase but whose skills are unlikely to, for example, electricians, bus drivers and chemical engineers;
- green enhanced skills occupations: O*NET identifies 62 specific occupations where the demand for these job roles may be unaffected but the tasks or

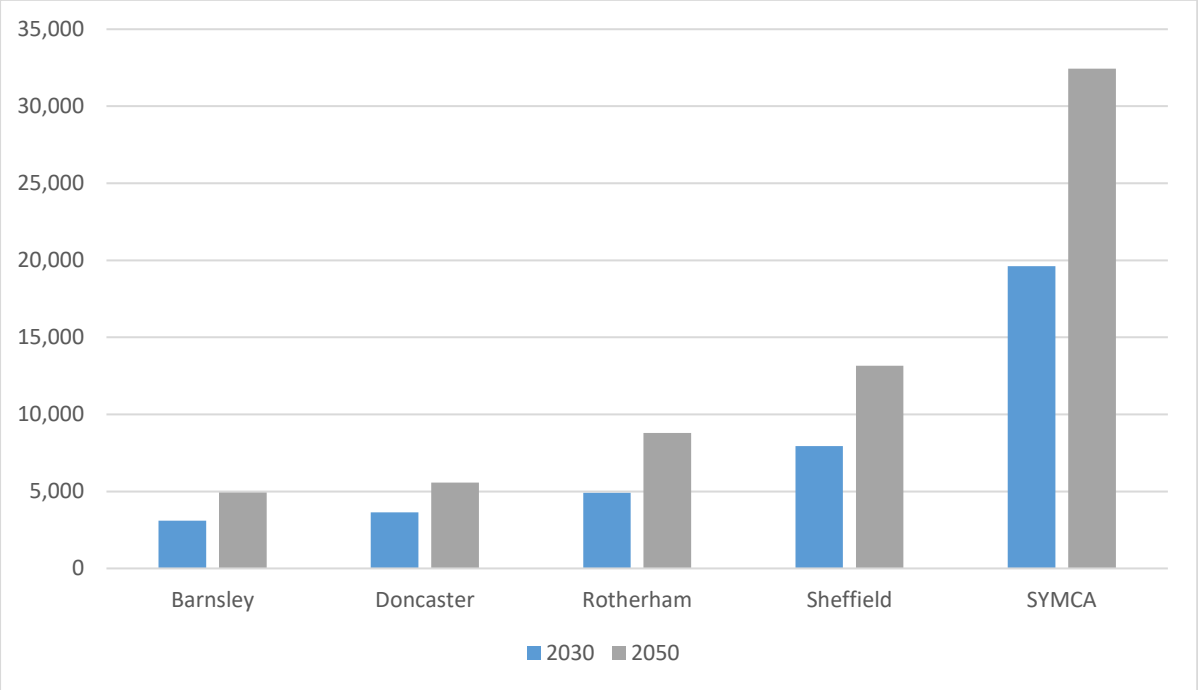
[63] https://www.onetcenter.org/green/emerging.html; https://www.onetcenter.org/green/demand.html; https://www.onetcenter.org/green/skills.html

requirements for skills, knowledge or certificates may be change, such as, financial analysts, urban planners and roofers.

5.2.2. Demand for low carbon jobs in SYMCA

Figure 60 provides data on the number of low carbon jobs within SYMCA, based on a study commissioned by the Local Government Association (LGA)[64].

Figure 60: Estimated low carbon jobs in SYMCA - 2030 and 2050 by district



Source: LGA: Local green jobs

Based on the estimates in Figure 61, there are forecast to be around 19,500 jobs in low carbon industries[65] in SYMCA in 2030 (around 3% of total employment). Employment in low carbon industries (a subset of the green economy but central to it) is forecast to increase by +63% to 32,500 in SYMCA by 2050 (around 5% of total employment). The increase within the four districts from 2030-2050 is expected to be similar. Therefore, the effects of the green economy are more likely to be felt by those sectors and occupations that are affected by it rather than central to it.

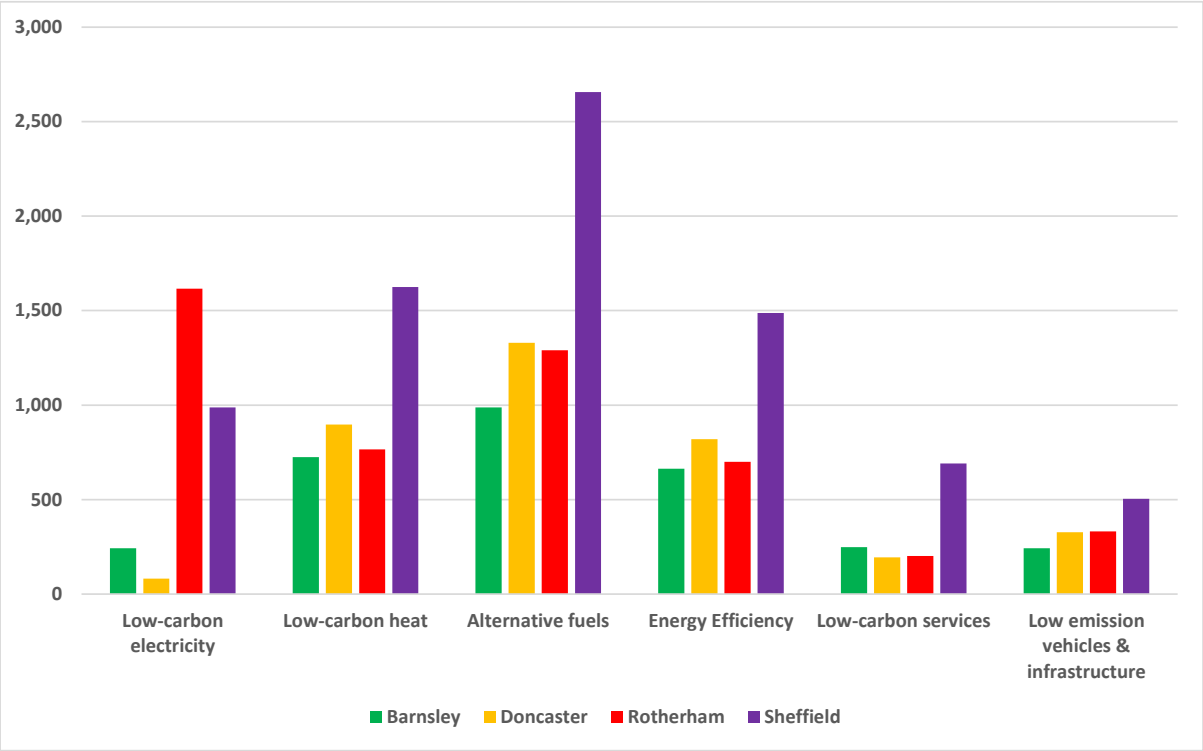
Figure 61 shows that the largest number of jobs in 2030 are expected to be in the alternative fuels sector, followed by low-carbon heat and energy efficiency. Sheffield, as the largest local economy, is expected to have most jobs in all but one of the six

[64] Ecuity (2021) Local green jobs – accelerating a sustainable economic recovery. Local Government Association.

[65] The authors used the ONS classification of low-carbon jobs and identified six high-level sectors ranging from low-carbon electricity to energy efficiency and low-emission vehicles and infrastructure. These six sectors were split further into 23 sub-sectors to ensure broad coverage of the low-carbon energy spectrum. See https://gemserv.com/wp-content/uploads/2021/06/Local-green-jobs-accelerating-a-sustainable-economic-recovery_final-1.pdf

low carbon subsectors. But there are differences between the districts, for example, Rotherham is forecast to have the largest number of jobs in low carbon electricity.

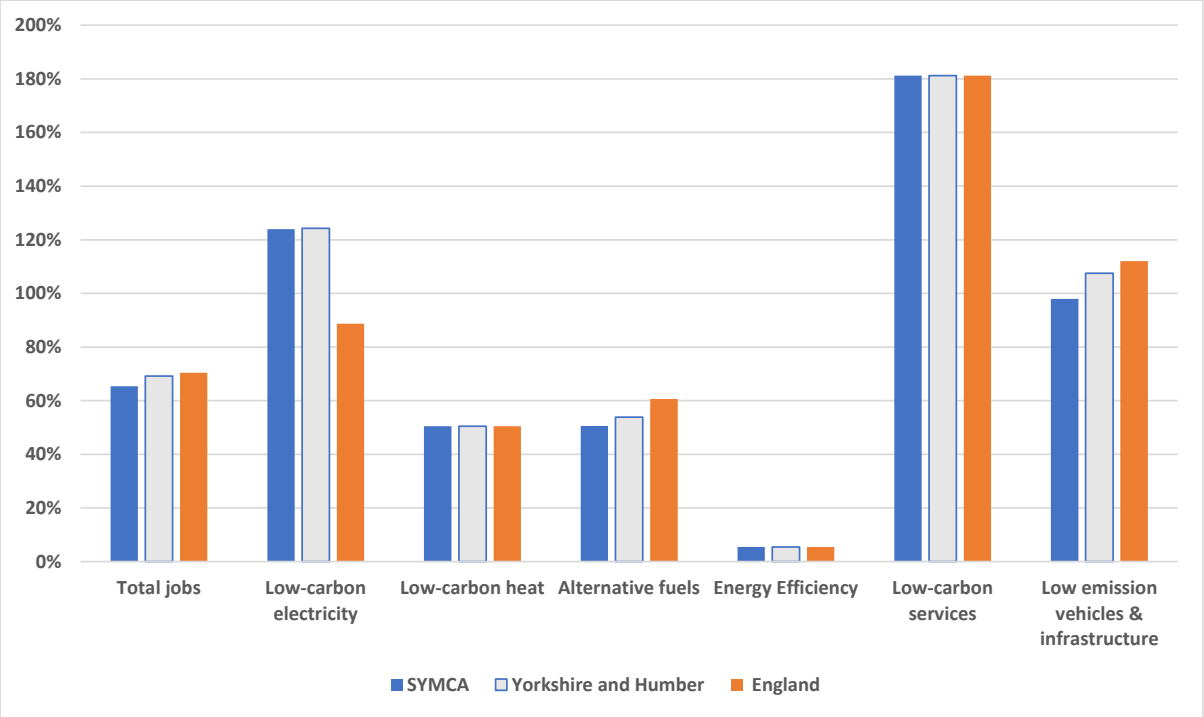
Figure 61: Estimated low carbon jobs in SYMCA in 2030 and 2050 by district



Source: LGA: Local green jobs

Figure 62 shows that low carbon sector jobs growth (2030-50) in SYMCA (66%) is predicted to be lower than the region (69%) and England (70%). This is mostly due to lower growth in alternative fuels, and low emission vehicles and infrastructure jobs. In the other low carbon sectors, SYMCA performs as well as the region and England.

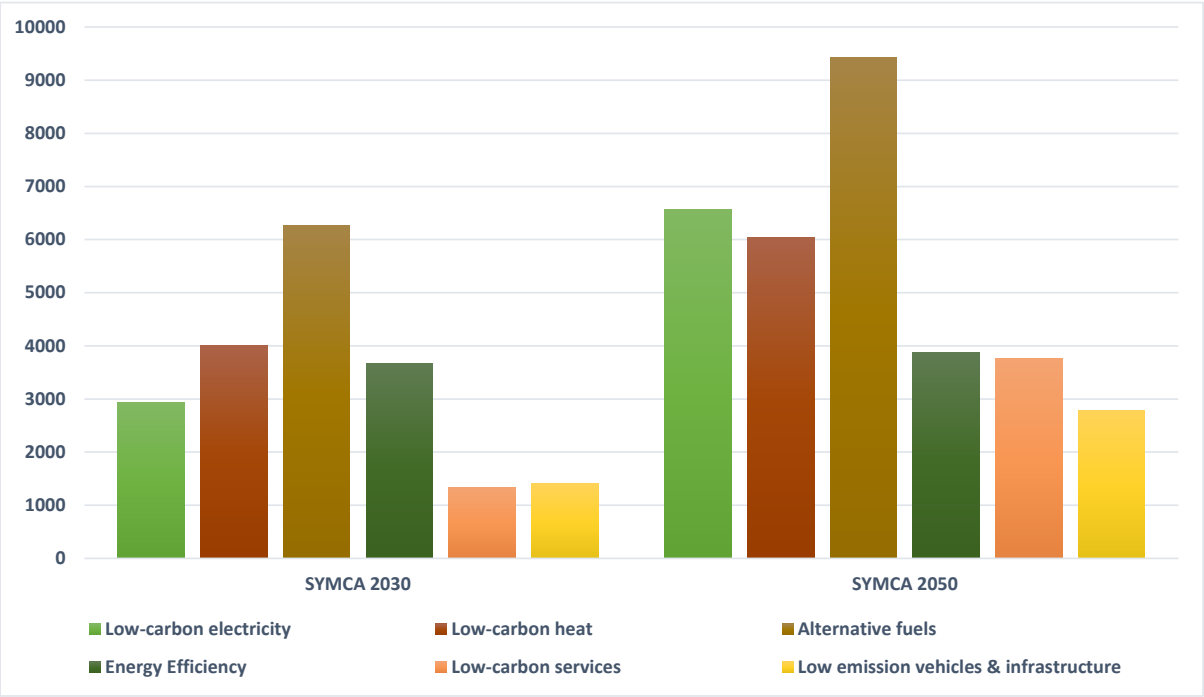
Figure 62: Estimated percentage low carbon sector jobs growth – SYMCA, Yorkshire and the Humber, and England 2030-2050



Source: LGA: Local green jobs (authors' calculations)

Figure 63 shows that within SYMCA between 2030 and 2050, the number of jobs in low carbon sectors is forecast to grow by +66% from 19,588 to 32,440. The largest percentage growth is expected to be in low carbon services (+181%) and in low carbon electricity (+124%). Some subsectors, such as energy efficiency are likely to see more modest changes.

Figure 63: Estimated low carbon jobs in SYMCA in 2030 and 2050



Source: LGA: Local green jobs

5.3. Digital economy

As with the green economy, there is no agreed definition of the digital economy[66]. Furthermore, when a particular definition is used it is difficult getting information about its size and characteristics because conventional definitions and datasets are often not appropriate (NIESR, 2013).[67]

The Department for Digital, Culture, Media & Sport (DCMS) states that employment in the digital economy comprises both those working in firms whose main activity is in the digital sector and those working in digital occupations outside of the digital sector[68]. Using the DCMS definition, a report estimated that in 2020 1.6 million people were employed in the digital sector[69]. This is equivalent to 5% of total employment in the UK. The latest data shows that the numbers working in the digital sector had increased to nearly 1.79 million (in the year October 2020-September 2021), an increase of 13%[70].

During the period 2010 to 2019, employment growth in UK digital occupations has been far greater than total UK employment growth (53% compared to 12%)[71].

The digital sector is one of SYMCA's 'Sectors with potential'. Using the SIC footprint agreed with SYMCA[72] the digital sector employed just under 20,000 people in 2020. This is 3% of the SYMCA workforce ranging from 2% in Barnsley, and Doncaster to 5% in Sheffield. SYMCA's digital sector workforce is half that of England's (6%) but the same as in the comparator MCA areas. Between 2015 and 2020, however, the number of digital sector jobs in SYMCA grew by +24% which was much greater than in England (+6%) and the comparator MCAs.

5.3.1. Drivers of and demand for digital sector and the digital economy skills and jobs

Digital technologies are omnipresent and evolving fast, supporting innovation in many areas. Artificial intelligence (AI) and 'big data' had been identified as industries of the future and identified as one of the four grand challenges in the UK's previous Industrial

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[66] International Monetary Fund (2018). Measuring the digital economy.

[67] National Institute of Economic and Social Research (NIESR) (2013). Measuring the UK's digital economy with big data.

[68] Department for Digital, Culture, Media & Sport (2016). Digital Sector Economic Estimates. Statistical Release. This includes a more detailed definition of the digital sector and the digital occupations.

[69] Steer Economic Development (2021). Assessing the UK's Regional Digital Ecosystems. Department for Digital, Culture, Media & Sport.

[70] DCMS (2022). Sector Economic Estimates: Employment October 2020 to September 2021.

[71] Steer Economic Development (2021), Assessing the UK's Regional Digital Ecosystems. Department for Digital, Culture, Media & Sport.

[72] This is the digital sector and does not include those working in digital occupations I other sectors e.g. a software engineer or website designer employed by a retailer. The digital sector covers the creative and digital sectors SIC 26, 58, 59, 60, 61, 62, 63, 90, 91 and 95.

Strategy[73]. Recently, the government has issued a national AI strategy to help maintain and increase the UK's leading role in this area with a vision of AI permeating large parts of the economy[74].

Beyond the digital sector, digital technologies are also increasingly used in the wider economy. Changing customer behaviour and expectations, and a changing competitive landscape have been identified as key drivers alongside digital shifts in the industry and regulatory changes[75]. Similarly, the OECD reports that technological change is taken up by organisations as a form of cost saving e.g. providing public services online, rather than over the phone or face-to-face (OECD, 2021)[76]. Digital technologies played a vital role during the pandemic, enabling many to work, learn and shop from home and this has accelerated digital transformation (HM Government, 2021).

Therefore, the impact on jobs and skills will be pervasive having negative and positive impacts on all occupations, sectors and skills levels.

The UK government is keen to support the development of digital skills. Skills initiatives announced as part of the recent Levelling up White Paper (e.g. through the lifetime skills guarantee) can be used to support the development of digital skills[77].

Furthermore, the success of the UK's digital sector is dependent on attracting venture capital investments. In 2020, almost two thirds of venture capital investment in the digital sector came from overseas (63%), which was an increase from 50% in 2015, but slightly lower compared to 2019[78].

Whilst digital technologies will create jobs and transform others, it is uncertain how many and what types of jobs might be replaced by, for example, through robotisation and automation.

The European Digital Skills Survey (of six EU Member states, including the UK) found that there will be a net increase in employment through the digitisation of workplaces[79]. A survey of business leaders (focusing on recent investments in new technology) found that job losses and job creation may cancel each other out due to AI[80]. An

[73] HM Government (2017). Industrial Strategy. Building a Britain fit for the future.

[74] HM Government (2021). National AI Strategy.

[75] Osmundsen, K., Iden, J. and Bygstad, B. (2018). Digital Transformation: Drivers, Success Factors, and Implications. MCIS 2018 Proceedings. 37.

[76] OECD (2021). The OECD Framework for digital talent and skills in the public sector. OECD Working Papers on Public Governance No. 45.

[77] HM Government (2022). Levelling up.

[78] Tech Nation (2021). The future UK tech built. Tech Nation.

[79] Curtarelli, M., et. al. (2017). ICT for work: Digital skills in the workplace. Luxembourg, Publications Office of the European Union.

[80] Hunt, W., Sarkar S. and Warhurst, C. (2022). Measuring the impact of AI on jobs at the organization level: Lessons from a survey of UK business leaders. Research Policy, 51:2.

analysis of online job vacancies found that jobs requiring higher level skills (i.e. NVQ Level 6-8) carried a lower automation risk than those with lower skills requirements[81]. Furthermore, those jobs requiring specialised digital skills are also less likely to be affected by automation compared to those jobs requiring basic digital skills (e.g. using Microsoft Office applications).

Underlying these debates is the understanding that technology can be deployed to augment human skills or to replace them. Some argue that it is tasks and competencies which will be affected by digitisation rather than jobs[82]. Brown (2021) argues that 'technological change' is often presented as a force of nature (for example, in the reports of the World Economic Forum)[83], even though countries can make their own decisions about how to go about digitalisation[84]. Others point out that "...the skills impacts of digitalisation are not simply creating new issues they are also revitalising or re-focusing many pre-existing debates within education"[85], for example:

- the importance of basic skills (Maths and English);
- the role of STEM within the curriculum at various stages and levels of education;
- the importance of generic/employability skills, and which overarching competencies, knowledge, capabilities, dispositions and attitudes will be required for workers and citizens to perform effectively in a digitally focused world;
- the scale, nature and funding of lifelong learning provision to support people in a rapidly evolving digital world which will involve more frequent career changes;
- inequalities in access to and outcomes from education. The pandemic has highlighted 'digital poverty', for example, the inability of many students to shift to online learning and home schooling.

Table 22 shows those digital skills which are most sought in online job adverts in the UK in 2019. It differentiates between universal baseline digital skills and specific digital skills. What the report refers to as productivity software cluster skills[86] are required in most (four out of five) jobs advertised online.

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[81] Burning Glass (2019). No Longer Optional: Employer Demand for Digital Skills.

[82] Frey, C.B. and Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? Technological Forecasting and Social Change. Volume 114, January 2017.

[83] Brown, P. (2021). Education, Technology and The Future of Work in the Fourth Industrial Revolution. Digital Futures of Work Research Programme, Working Paper 2.

[84] Schwab, K. (2016). The Fourth Industrial Revolution, Geneva: World Economic Forum.

[85] Keep, E. (2021). Initial thoughts on Policy Issues for the Future of Work. Digital Futures of Work Research Programme, Working Paper 3.

[86] : Digital literacy skills that employers ask for in the vast majority of jobs across all sectors in the UK labour market. Includes spreadsheet and word processing tools like Microsoft Excel and Microsoft Word, as well as enterprise management software like Oracle or SAP.

As far as specific digital skills are concerned, programming skills are most required (58%), more than twice as many as the next competency of computer and network support (32%). As a proportion of high skill jobs, data analysis has the highest share of high skill levels (RQF level 6-8) (92%), followed by computer and networking support (77%) and programming (71%).

Projected to grow fastest among specific digital skills are data analysis (often used by management consultants, economists, statisticians or business analysts), digital marketing and customer relations management. Whilst programming (often used by programmers, software developers and database administrators) is projected to grow at a slower rate, it already has the highest share of demand so is likely to also generate considerable future demand.

Table 22: Digital skills by percentage share of demand and projected future skills demand in the UK - 2019

Digital skills clusters	% share of demand[1]	Future demand for skills (5 years) [2 3]	% of high skill jobs within digital skills clusters[4]
Baseline			
Productivity software	80%	Stable (+7%)	47%
Specific			
Programming	58%	Stable (+4%)	71%
Computer and networking support	32%	Declining (-	77%
Data Analysis	25%	Fast (+33%)	92%
Digital Marketing	20%	Fast (+26%)	27%
Customer relations management	17%	Fast (+15%)	31%
Manufacturing & machining technology	11%	Stable (-8%)	55%
Digital Design	9%	Stable (-9%)	53%

Source: adapted from Burning Glass (2019) p..51

Legend:

[1] Percentage share of digital demand is calculated as the number of job adverts in digital occupations focusing on the respective digital skill cluster divided by the total number of all job adverts in digital occupations.

[2] Declining growth: defined as reducing by more than 10%; Stable: ranges from 10% projected decline to 10%; Fast growth: ranges from 10% to 50% projected growth.

[3] The data are based on an econometric model developed by Burning Glass, using their own and external data. It uses (trained and validated) historical data which are then applied to current data to make future predictions.

[4] i.e. jobs requiring levels 6-8 of the Regulated Qualifications Framework (RQF).

The inclusion of some digital occupations in the government's skill shortage list is an indication of skills shortages in this area[87]. Current shortage occupations included are: IT business analysts, architects and systems designers (SOC 2135), Programmers and software development professionals (SOC 2126); Web design and development professionals (SOC 2137), cyber security specialists (SOC 2139). These are all professional occupations.

DCMS commissioned research found that among the top 10 roles employers are currently recruiting for which require data skills are: data analyst; head of data; data manager; chief technology officer; data protection officer; chief information officer; data scientist; data technician and chief data officer[88]. These are also highly skilled professional, associate professional or managerial occupations.

Analysing UK job vacancies posted online in 2020 and 2021 in the job search engine Adzuna, Tech Nation reported that among the top jobs advertised in digital employment were: Software Developer, Engineer, Java Developer, Front End Developer, DevOps Engineer, NET Developer, Full Stack Developer, IT System Architect[89]. Some non-tech roles in digital sectors were also in high demand, such as, Project Manager, Business Analyst and Consultant. The report also published regional salary figures. Posts in Sheffield tended to attract lower than UK average wages, and also lower than in nearby regional centres such as Manchester and Leeds.

Calculation of the extent of 'digital' jobs tends to be focused on sectors that make up what is called the 'digital economy'. Such jobs require advanced digital skills such as programming and networks. However, requirements for digital skills now infuses jobs beyond this narrowly defined digital economy. Most, if not all, jobs, involve some use of digital equipment or resource. Thus, as we note above, the impact of digitalisation will be felt in all sectors and occasions. The skills of this broader range of 'other' jobs are now being enhanced by this need. In other words, they are old jobs whose skillset is being augmented but not by advanced digital skills but intermediate and, in some case, only basic digital skills needs[90]. Factoring in the changes to these other jobs – and its skill demand and skill development implications – is also important.

5.3.2. Regional and local demand

Research findings on the demand for digital skills are often presented at a regional level (Burning Glass, 2019, Steer Economic Development, 2021) or selectively at a local or city level (Tech Nation, 2021a). It is arguably easier to match digital skills

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[87] https://www.gov.uk/government/publications/skilled-worker-visa-shortage-occupations/skilled-worker-visa-shortage-occupations

[88] DCMS (2021). Quantifying the UK data skills gap.

[89] Tech Nation (2021). Jobs and skills. Key statistics. https://technation.io/jobs-and-skills-report/#key-statistics

[90] Kispeter, E. (2019) What digital skills do adults need to succeed in the workplace now and in the next 10 years. London, DCMS.

demand and supply at the local/regional level, with MCAs, LEPs and local authorities often co-ordinating these efforts.

The digital sector in Yorkshire and the Humber, although relatively small, has been growing faster than in any other region, and compared to any other sector of the regional economy (Steer Economic Development, 2021). Moreover, across the region, there was stronger demand for digital occupations than for digital sector employment. West Yorkshire had the strongest demand for digital occupations followed by South Yorkshire. The study's indicative modelling shows potential for a substantial increase in employment in the digital sector in the region by +46% (or +42,000 jobs) between 2019 and 2025. The highest demand reported was for software developers (just under a quarter of job adverts for digital occupations in 2019-2020). Compared to other regions there was a relatively higher demand in Yorkshire and the Humber for Text/IT Support Analysts.

Whilst basic digital skills are required universally, specific digital skills vary from region to region, therefore there is a need for skills policies to match local demand (Burning Glass, 2019). The study found there was a 19% higher demand concentration in Yorkshire and the Humber for machinery technology skills compared to the UK average. But a lower demand concentration in all other specialised digital skills areas, ranging between 3% (CRM) to 10% less (data analysis).

As we have seen, there are relatively lower pay rates in Yorkshire and the Humber. Qualitative evidence found that there were difficulties retaining IT staff in South Yorkshire, other areas in the North of England were seen as more attractive and pay higher wages[91]. However, the increase in remote working due to the pandemic may also create more local jobs opportunities in the IT sector. About one fifth of IT jobs are advertised on this basis (GOV.UK, 2021)[92]. This could benefit both residents and employers.

DCMS has funded the creation of Digital Skills Partnerships (DSPs) in seven areas, including West Yorkshire Combined Authority (WYCA), designed to tackle local digital skills challenges, from basic to advanced level[93]. These have been successful and there are calls to create DSPs in other areas. The DSPs were found to enhance the digital skills capacity of people and enabled people to move into digital roles[94].

Growing a 'nationally significant tech cluster' was a key aim of Sheffield City Region's Digital Action Plan (2018). Sheffield is listed as one of the top 15 tech cities in the UK but must compete with other regional centres such as Cambridge, Manchester, Leeds

[91] East Midlands Chamber (2021). Skills for recovery in South Yorkshire.

[92] GOV.UK (2021) Press release. UK tech sector achieves best year ever as success feeds cities outside London.

[93] DCMS (2018). Digital Skills Innovation Fund: Guidance for Local Enterprise Partnerships and Combined Authorities.

[94] DCMS (2021). Evaluation of the Local Digital Skills Partnerships.

and Birmingham[95]. In Sheffield, there is a forecast increase in digital economy employment[96] of 2% between 2021-2025, which is similar to Leeds but lower than Manchester (6%)[97].

Sheffield's 'substantial digital sector' was reported to have benefited from Sheffield Digital, a local organisation whose mission it is to bring together local businesses in the digital sector and articulate their interests. However, further efforts are required for the digital sector to continue its work to sustain the growth it achieved over the last couple of years, according to Steer Economic Development (2021).

Development of digital skills are also likely to be a key local focus of the South Yorkshire Skills Improvement Plan Trailblazer targeting Science, Technology, Engineering, Arts and Mathematics (STEAM) related industries.

A newly launched Unit for Future Skills at the Department for Education, announced in the 'Levelling up' White Paper (HM Government 2022), is expected to produce better local labour marked intelligence over time, including data on the quality of jobs and (future) skills demand and skills available.[98] This data enhancement is intended to improve understanding of jobs and skills for all levels of government and so should help support future SYMCA skills strategies.

5.4. Engineering (advanced manufacturing)

Engineering (or advanced manufacturing) is identified as a 'Growing sector' in SYMCA[99]. In 2020, just over 24,000 worked in this sector in SYMCA or 4% of total employment. Rotherham had the largest percentage of people working in the engineering sector (7% of the Rotherham workforce) and Doncaster the fewest (2%). The engineering sector in SYMCA employs a slightly higher proportion of people than in England 4%), the same as in WMCA, and more than in LCR and TVCA (2% and 3% respectively). Between 2015 and 2020, the number of engineering jobs grew in SYMCA by +2%, the same as in England. Engineering employment fell in the comparator MCAs by more than -10%.

5.4.1. Drivers of and demand for engineering skills and jobs

[95] DCMS (2021). UK tech sector achieves best year ever as success feeds cities outside London.

[96] The 'digital economy' was defined as businesses and organisations producing products and services in digital sectors, plus those job roles in sectors not classified as digital but which require digital skills and activity (e.g. a software developer working for a logistics company). Thus, when looking at the digital economy, the study considered both the 'digital sector' and 'digital occupations', which is in line with DCMS' definition of the digital economy.

[97] CBRE (2022) Exploring Tech Cities.

[98] https://www.gov.uk/government/groups/unit-for-future-skills#:~:text=The%20Unit%20for%20Future%20Skills%20is%20an%20analytical%20and%20research,stakeholders%20and%20the%20general%20public.

[99] Defined as SICs 24, 25, 26, 27, 28, 30 and 72.

There are two main drivers of jobs and skills within engineering, the move to the green economy and the impact of digitisation.

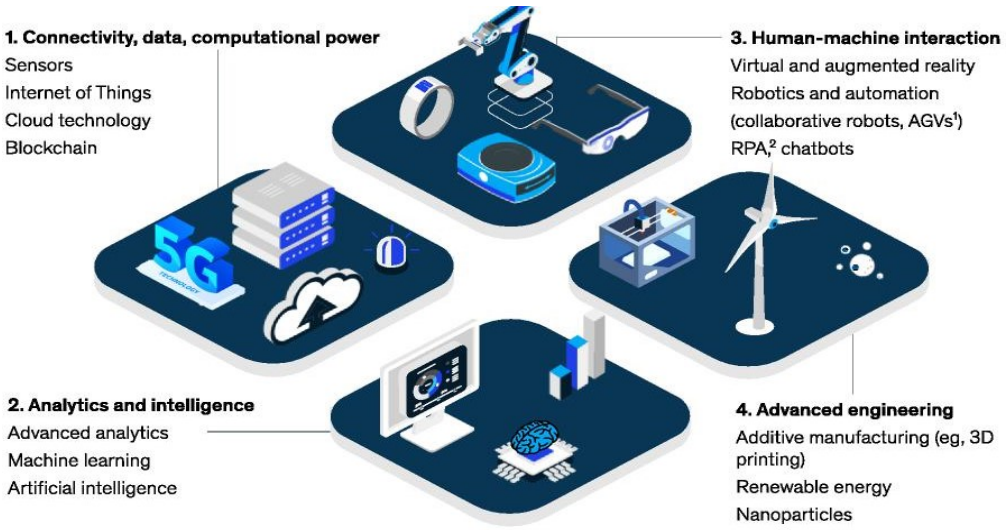
Engineering skills will be vital to achieving key environmental goals through the green economy, the circular economy and the decarbonisation drive to achieve net zero by 2050. This will require the development of renewable and alternative energies and manufacturing processes that support the reuse, repair, and remanufacture of new products. However, given that many of these products and techniques are in their infancy it is difficult to gauge the size and nature of their impact on employment and skills.

Similarly, the impact of the digital economy is difficult to assess. The only certainty is that it will be pervasive across all sectors and occupations and that its impact will be unclear especially at the subregional level.

The 4th Industrial Revolution, often synonymous with Industry 4.0, will be a key driver of changes in the engineering sector. First conceived for the manufacturing sector but applied increasingly to services, "…its digitisation of production involves a 'cyber-physical system' of machines and humans" (Beyond 4.0, 2021:2)[100]. Four foundational technologies have been identified for Industry 4.0 as shown in Figure 64. All of these will impact on engineering either in terms of developing and implementing the digital infrastructure; building digital hardware (machines and components); utilising that digital hardware to create other goods and services; and data handling and analytics.

Figure 64: Industry 4.0 technologies applied along the value chain

[100] Beyond 4.0 (2021). Policy Brief #4. Skills for the Digital Transformation.



Source: Agrawai, M. et. el. (2020). Industry 4.0: Reimagining manufacturing operations after COVID-19. McKinsey & Company.

There have long standing been debates about unmet employer demand in the area of STEM skills, with the Industrial Strategy acknowledging 'particular shortages of STEM skills' (HM Government 2017).

An Engineering UK report, drawing on a specially commissioned analysis of Working Futures data covering the period 2014 to 2024, estimated an annual shortfall in engineering during this period of between 37,000 to 59,000 for 'core' engineering roles (requiring a Level 3 qualification) and 83,000 to 110,000 for 'core' and 'related' engineering roles (also requiring Level 3)[101]. However, most UK demand was expected to be in London and the South East (18% and 16% respectively), with demand in Yorkshire and the Humber projected to be 7%, which is lower than the neighbouring North West region (10%).

Most of the specific engineering professional occupations (such as, mechanical, electrical and design and development engineers) are currently listed as shortage occupations on the Home Office website[102], indicating great demand in this area. But no associate professional engineering or skilled craft (except welding) occupations are currently listed. Prior to Brexit much of the demand would have been met by EU students and applicants (Engineering UK, 2018).

The reasons for the shortfall are thought to be multifactorial, including: uneven access to STEM teachers; careers advice or STEM related taster activities; and the need to

[101] Engineering UK (2018). The state of engineering.

[102] https://www.gov.uk/government/publications/skilled-worker-visa-shortage-occupations/skilled-worker-visa-shortage-occupations

better promote apprenticeships as alternatives to higher education (Engineering UK 2018, 2020)[103]. Ways of addressing these barriers include:

- widening the talent pool by increasing diversity (more women and BAME workers) in the sector is also a route to help address shortfalls[104];
- promoting more recent education routes (e.g. degree apprenticeships in engineering); and
- creating new career opportunities aimed at achieving environmental goals (for example, a new degree apprenticeship leading to a through-life engineering services specialist) (Engineering UK 2018).

Technology, however, will have positive and negative impacts on engineering occupations. Technology will impact on the tools, machines and processes of engineering, which will in turn impact on work organisation (for example, 3D printed parts or goods produced in situ rather than in a large factory). Automation will replace some tasks currently undertaken by engineers; it may enhance the work of lower skilled workers to undertake engineering tasks (such as vehicle monitoring, maintenance and repair), but will add new jobs to the sector from the significant investments and changes due to the green and digital transformations[105].

Cedefop's Skills Panorama expects an increase in skill levels. Whilst generally high skilled occupations already, engineering jobs in the future will require those currently with medium level skills to increase to higher level skills. There will also be increased demand for generic or transferable skills such as communication, collaboration, critical thinking and customer service skills.

A new employer-led Institute of Technology in South Yorkshire, to be launched with financial support from the Department for Education, is expected to help to drive up the provision of higher level specialist skills in this geographical area, including in engineering/manufacturing and digital, enhancing the supply in the region over time.[106]

Industry 4.0 also has implications for human resource management within engineering as it will affect job roles, and internal and external working relationships. Although based on manufacturing generally, an extensive literature review by Ozkan-Ozen et

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[103] Engineering UK (2020) Educational pathways into engineering.

[104] See National Audit Office (2018) Delivering STEM skills for the economy; All-Party Parliamentary Group (APPG) on Diversity and Inclusion in STEM (2020) The state of the sector: Diversity and representation in STEM industries in the UK; APPG on Diversity and Inclusion in STEM (2021) Inquiry into Equity in the STEM Workforce; and Engineering UK 2018 and 2020 op. cit.

[105] Skills Panorama (2019). Science & engineering technicians: skills opportunities and challenges; Skills Panorama (2019). Electroengineering workers: skills opportunities and challenges; Skills Panorama (2019). Researchers & engineers: skills opportunities and challenges. All Cedefop.

[106] https://www.sheffield.ac.uk/city-region/news/south-yorkshire-wins-ps12million-bid-establish-institute-technology

al. (2021)[107] identified a number of challenges related to lack of skills in certain areas (e.g. system, complex or analytical thinking; digital skills), the need to embrace change, openness to learn, cost of training or the need to embrace changes in the organisational structure (e.g. a need for decentralisation). Liboni et. al. (2019)[108] argue that supply-chain and departmental managers in manufacturing need to develop close links with human resources departments to understand key skills and training needs, calling for an 'adapted and well-equipped HRM' also referred to as ''HRM 4.0'.

5.5. Transport and storage

Transport and storage employed around 1.5 million people in the UK 2021 representing 5% of overall employment (ONS 2022a)[109], and contributed £81bn to gross domestic product in 2019[110]. The transport sector also generates the largest amount of the UK's greenhouse gas emissions: a total of 27%[111].

Transport and storage has been identified by SYMCA as a 'sector with potential'[112]. In 2020, 5% of the SYMCA were employed in this sector, equivalent to just under 30,000 people. Doncaster had the highest level of employment in this sector (10% of jobs in Doncaster) and Sheffield the fewest (3%). SYMCA had slightly higher levels of employment than England (4%) but the same as in the other comparator MCAs. Between 2015-2020, employment grew significantly by +27% which was much higher than in England (+17%), and higher than the other MCAs, except for TVCA (also +27%). Wally

5.5.1. Drivers of and demand for transport and storage skills and jobs

The transport and storage sector has an important contribution to make to help achieve net zero by 2050 with policies currently being developed to support this goal, including strategies for decarbonising transport[113], buses[114] and rail[115]. There is therefore a significant national strategic focus on making transport 'greener' using new or alternative technologies. COVID-19 has heavily impacted public transport through

[107] Ozkan-Ozen, Y.D. and Kazancoglu, Y. (2021). Analysing workforce development challenges in the Industry 4.0. International Journal of Manpower, ahead-of-print.

[108] Liboni, L.B., et. al. (2019). Smart industry and the pathways to HRM 4.0: implications for SCM. Supply Chain Management, 24 (1), pp. 124-146.

[109] ONS (2022a). EMP13: Employment by industry.

[110] Department for Transport (2022). Labour Market & Skills. Call for Views & Ideas.

[111] Department for Business, Energy & Industrial Strategy (2021) 2019 UK Greenhouse Gas Emissions, Final figures.

[112] Defined as SICs 49-52.

[113] Department for Transport (2021). Decarbonising Transport: A Better, Greener Britain.

[114] Department for Transport (2021). Bus Back Better. National bus strategy for England.

[115] Department for Transport and Williams Rail Review (2021). Great British. Railways The Williams-Shapps Plan for Rail.

increased home working and people's confidence in using public transport following the pandemic.

Investment in transport is also seen as an important mechanism to drive the levelling up agenda through better connectivity. Transport for the North (created in 2018) is England's first cross-regional Transport Body, whose role is negotiating budgets with central government and developing future travel demand scenarios for the region (Transport for the North, 2020)[116]. However, budget expectations for these transport strategies and bodies may be disappointing following the experience of funding included in the Government's Bus Back Better strategy.

There are accelerated changes to be expected in the transport sector:

> "The transition to net zero and recovery from COVID will require the whole transport sector to gear up for transformational change and at an unprecedented pace. This includes changes to every aspect of the transport sector – from planning, design, construction, operation and decommissioning to the emergence of new and different job roles. The impact of the pandemic and the move to a better, greener Britain has accelerated the need for skills and jobs that are fit for the future". (Department for Transport, 2022)

To help address long standing skills challenges in the transport sector the government set up the Strategic Transport Apprenticeship Taskforce (STAT) to increase skill levels and diversity in order to meet the Department of Transport's ambitious infrastructure plans[117]. Targets have been set for numbers of apprentices and diversity within the sector's workforce. However, after four years, the apprenticeship target was reduced by around half. Up to this point most of the starts had come from one apprenticeship (the Advanced Train driver apprenticeship). Whilst BAME diversity targets had been met, gender targets had not (ibid.).

In response, the Government has initiated a consultation (just closed) to assess future skill needs, ways of meeting them and to increase diversity. The Government is also establishing a new industry-led Transport Employment and Skills Taskforce (TEST) with five sub-groups supporting the Department for Transport's strategy. These groups will focus on helping to understand future skill needs in the sector, barriers and opportunities to train and work in the sector, promote careers, enhance diversity, and create and evaluate the evidence base (Department for Transport, 2022).

Based on the planned procurements and levels of investment in the National Infrastructure Strategy, the Infrastructure and Projects Authority (IPA) has developed a model forecasting workforce demands[118]. The IPA estimated that on average,

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[116] Transport for the North (2020) Future Travel Scenarios. Summary.

[117] Strategic Transport Apprenticeship Taskforce (2020). Transport infrastructure skills strategy: 4 years of progress.

[118] Infrastructure and Projects Authority (2021). Analysis of the National Infrastructure and Construction Pipeline.

425,000 workers in the UK would be needed to deliver the planned investments up to 2024/25. The model provides useful information broken down by sectors, but not area.

Travel restrictions during the pandemic led to airlines laying off large numbers of staff in response to low passenger demand. According to anecdotal evidence, staff being made redundant had to quickly find alternative ways of making a living and may have ended up forging new careers in other sectors. Now that businesses are reviving, airlines report difficulties in recruiting staff to meet increased passenger demand. Staff shortages can be compounded by the lead time required for training and security clearing.[119]

There are also shortages in some parts of the sector that existed pre-COVID. In particular, shortages of heavy goods vehicle (HGV) drivers were highlighted[120] and continued to be a problem during the pandemic leading to supply issues (Department of Transport, 2022). The reasons for the shortage are multifactorial, with working conditions, lack of investment in drivers training playing a key part (House of Commons Transport Committee, 2016). There are currently some efforts to both help to reduce the shortage of HGV drivers and increase diversity by offering a tailored training programme to women (Manpower, 2022). While this can help to widen the pool of HGV drivers, working conditions may still affect retention over the short to medium term.

Autonomous vehicles (AVs) will be a major disrupter to the sector, but their widespread deployment will not take effect in the short- to medium term. Their adoption will be gradual and will become more commonplace in larger urban areas first[121]. When fully adopted, their impact on employment is likely to be negative, with a significant reduction in lower skilled roles, such as, driving based jobs. There will be an expansion in some occupations, such as, the remote management of vehicles and these will be higher skilled roles. There will be opportunities but workers are likely to require digital literacy, communication, interpersonal, critical thinking, and creativity skills[122].

5.5.2. Regional and local jobs demand

Employment in transport and storage in Yorkshire and Humber is projected to grow slightly by 0.5% per annum between 2022 and 2027 or a total of around 4,000, which is about double the figure compared to five years prior[123]. It needs to be noted though that these projections predate the COVID-19 pandemic and there are currently no updated projections. The latest figures from the Office for National Statistics (ONS)

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[119] https://www.bbc.co.uk/news/business-61460378

[120] House of Commons Transport Committee (2016). Skills and workforce planning in the road haulage sector. Fourth Report of Session 2016-17.

[121] Leonard, J.J. et. al. (2020). Autonomous Vehicles, Mobility, and Employment Policy: The Roads Ahead. MIT Work of the Future.

[122] Alexandros, N., et. al. (2021). Autonomous vehicles and employment: An urban futures revolution or catastrophe? Cities. Volume 114, July 2021, 103203.

[123] Working Futures. Sub-regional workbooks. Ind, T2; Ind. T4

show that transport and storage has been increasing the fastest among all industry sectors between 2019 and 2021 in terms of number of business premises, with Yorkshire and the Humber having seen a considerable expansion, with transport and storage having become the largest industry in terms of business premises (ONS, 2022a). The rise in business units in this sector has been driven by Brexit and more online shopping during the pandemic[124].

While transport and storage will continue to remain a male dominated sector, the share of women in the sector is expected to increase slightly from 26.2 % in 2022 to 29% in 2027 (Working Futures, sub-regional workbooks, Ind, T5).

5.6. Summary and conclusions

This section has focused on four priority sectors within SYMCA: the green economy; the digital economy; engineering/advanced manufacturing; and transport and storage.

These sectors are national as well as subregional priorities. There are a number of national strategies, policies and programmes which are driving developments within these sectors. Likewise, there are a number of subregional and cross-regional (Northern Powerhouse) strategic priorities, activities and funding which align with national ones that provide a local perspective and direction.

There are issues in defining the green and digital economies because their definitions and footprint (sectoral and occupational) are being debated. In part, it is because their full development and impact are still yet to be played out. The only certainty appears to be that the implications of these two sectors will be pervasive affecting all sectors, occupations and skill levels, and that the true level and characteristics of their impact are as yet unknown.

Within the green economy there are a number of data sources identifying trends in jobs and skills. The main sectors affected by the green economy are: construction, transport, agriculture, power generation, heavy industry (including engineering) and the circular economy. The impacts on occupations will be keenly felt within those that manufacture, install, maintain, recycle, reuse, refit, service and support such products and infrastructure. In addition, occupations involved in R&D and digitisation will also be affected. Whilst there will be a requirement for many new jobs and skills, the greatest effect will be on the greening of existing jobs and skills, either through increased demand or skills enhancement. Within the low carbon sector, jobs growth in SYMCA (and the region and UK) is forecast to be greatest in low carbon services, low carbon electricity and low emission vehicles and infrastructure.

The overall impact of digitisation on the number of jobs is expected to be positive, but there will be profound changes. Digitisation is expected to affect competencies within occupations. This means that more jobs are likely to be changed than lost or created. The digital sector within SYMCA has grown strongly in recent years but is relatively

[124] ONS (2022b) The rise of the UK warehouse and the “golden logistics triangle”.

smaller than the England average. Most jobs now require 'digital literacy' skills. Within digital occupations, programmers, and computing and network support jobs are most prevalent. A variety of sources currently identify a range of occupations in the digital economy facing skill shortages in the UK, these tend to be professional, associate professional or managerial occupations. Local demand for jobs in the digital economy are forecast to grow in the short- to medium term, with high demand for software developers, and Text/IT Support Analysts. There was also high demand for machinery technology skills in non-digital sectors. SYMCA employers may, however, find it more difficult to recruit and retain staff as pay rates in the region are lower than competitor city areas.

Engineering/advanced manufacturing will be significantly affected by developments in both the green and digital economies. Engineering employs more people in SYMCA than in England and most of the comparator MCA areas. Skill shortages in most engineering occupations are forecast with professional engineering occupations currently seeing the most demand. Labour shortages are due to a number of factors including a lack of diversity, and the need to promote new progression routes into the sector. In the future, there is likely to be an increase in the skill levels required across all engineering occupations requiring upskilling for existing employees. In addition, there will be increased demand for generic skills such as communication and team working.

The transport sector is also expected to be highly impacted by developments in the green and digital economies. There is likely to be significant investment in transport and its infrastructure due to digitisation and de-carbonisation. This will affect a range of jobs in transport and other sectors (e.g. construction) in planning, designing, manufacturing, constructing, operating and decommissioning vehicles and the infrastructure. This will range from traditional transport (e.g. buses and trains) to innovations such as AVs, and public, commercial and personal transport. There are currently a number of recruitment problems within the transport sector as the country has emerged from the pandemic. As with engineering, increasing diversity within the transport sector provides a short- and medium-term opportunity to address skill shortages.

6. Conclusions

The data analysis and assessment produced for SYMCA provides an overview of the demand for, and supply of skills, and the extent of any skill mismatches. In doing so, it provides a snapshot of the current position and, where time-series data allow, the direction of travel of the current position. Any pathway to improving the current situation will need to be undertaken in a manner which is consistent with current national skills policy but in a way that responds to local circumstances and needs.

The following section provides an overview of the core themes from the preceding analysis of the SYMCA economy and labour market. There is then a discussion of the state of play of skills supply, demand and mismatch, and the current economic environment this is being played out in. Finally, there is the presentation of key components for a skills agenda moving forward.

6.1. Overview of the SYMCA economy and labour market

The report has analysed a wide variety of data on the background economic and labour market characteristics, and skills demand and skill supply of the City Region and its four composite local authorities.

As with other areas, the SYMCA population is getting older and over the next quarter of century more people are likely to leave the labour market than enter it. This demographic shift can pose challenges for employers in a tight labour market post COVID-19 pandemic but is also likely to create employment opportunities for young people.

In a number of respects, the economy and labour market of the SYMCA area is very similar to the rest of England and comparator MCA areas. The structure of business by size and sector, the number and growth in high performing businesses, employment by sector, recent employment growth, the distribution by occupation, forecast employment growth and skill level, and job postings. In some respects, it has performed better than other areas, such as in the growth in the number of businesses.

On a range of measures, SYMCA is more disadvantaged and deprived than the English average but tends to perform better than comparator MCA areas.

However, on a number of key variables SYMCA underperforms compared to the national average. SYMCA performs below the national average, as well as relative to the comparator MCA areas on productivity, wages and numbers working in high skilled occupations (often within the same sector). It is often these variables that underpin more successful regional economies. This underperformance is not because employers do not invest in the skills of their workforce any differently than in other areas. The most recent ESS from 2019 shows that on a range of training measures, employers in SYMCA perform as well as other regions have.

Working Futures forecasts that most net job requirements across every sector and occupation will be driven by replacement demand (as people leave the labour market), rather than any sectoral or occupational changes. This replacement demand, along

with the population changes identified in the previous section, will create a number of job opportunities for young people and those not currently in employment.

The pandemic has undoubtedly impacted on the local economy and labour market of SYMCA but this impact appears to have been temporary, and when the lockdowns were eased, the economy appears to have bounced back to pre-COVID-19 levels. On some indicators SYMCA is now performing better economically than before the pandemic. However, as far as employment is concerned, compared to England and the comparator MCA areas, SYMCA's top employment sectors and occupations were more affected, resulting in larger employment falls.

One particular labour market challenge is economic activity. An important effect of the COVID-19 pandemic has been the withdrawal of people from the labour market into economic inactivity. Across the UK, there has been a significant increase (from before the pandemic) in the number of economically inactive people, a key factor is people reporting that they have left the labour market due to long term health reasons. This rise in economic inactivity general compounds existing problems in SYMCA. Even before the pandemic SYMCA was untypical in having rising economic inactivity. Over the last year SYMC has experienced above average increases in inactivity. This contrasts with SYMCA's relatively similar changes in employment levels and better than average changes in unemployment.

Focusing on young people specifically, on most measures of skills supply, the position for young people is consistently below the England average, and the gap has not closed in recent years. Whilst on destinations at KS4 and KS5 the large majority of young people in every area progress into positive destinations, young people in SYMCA are less likely to enter HE.

As far as apprenticeships are concerned, the 2017 reforms led to the continuation of existing trends with regard to older and higher level apprenticeships. However, the reforms have also brought about a reduction in the number of apprentices taken on by smaller firms which tend to be non-levy payers.

The pattern for the claimant count and the impact on SYMCA funded learning provision during the pandemic was similar across the four districts.

Sheffield stands out in a number of regards because of the location of the sub-region's two universities. This presence affects the higher levels of Level 4+ in the Sheffield population and the higher in-migration rates of non-UK people.

Relative to comparator MCA areas, on supply side indicators, SYMCA performs well. However, as previous sections have shown, this does not necessarily translate into economic performance. Compared to England, SYMCA underperforms on several key supply side variables. Within SYMCA, Doncaster tends to rank lowest on most indicators.

6.2. The State of Labour and Skills Demand in SYMCA

Employment in SYMCA has increased recently. Between 2014 and 2019 it increased by +7%, which is more or less in line with England as a whole, but is lower than some

MCAs with comparable economic profiles. Although employment has grown in line with that in England, employment growth has been uneven across the SYMCA: Doncaster and Barnsley have recorded relatively high rates of growth compared with the SYMCA average, while that of Sheffield has been below average.

In keeping with the rest of the country there has been an increase in economic inactivity since 2019. However and untypically, this inactivity was increasing in SYMCA prior to the pandemic. Nationally this increase is due to people leaving the labour market due to long term health conditions[125]. It is more difficult to re-engage economically inactive people compared to those unemployed.

It also apparent that the pandemic has impacted on SYMCA with employment falling by -4% compared with that of -1% for England. This difference suggests, other things being equal, that the region may be particularly susceptible to external shocks of one kind or another. This susceptibility may rest in the fact that SYMCA has fewer people working in higher skill level occupations and more working in lower skills ones compared with England. The evidence points to those working in managerial, professional, and associate professional jobs being at less risk of job loss as a consequence of the pandemic.[126] The authors estimate that if jobs in SYMCA displayed the same occupational profile as England, there would be around 38,000 fewer people working in lower skilled occupations and 44,000 more in higher skilled jobs.

Although recent evidence suggests a complex relationship, skills demand is related to the product market strategies of businesses. Where employers follow product market strategies, producing relatively high value goods and services, they tend to have high skill demands.[127] The evidence on productivity is indicative, employers in SYMCA are less likely to pursue relatively high value product markets. Over the past two decades, productivity – defined with reference to GVA per hour - in SYMCA has been persistently lower in England at around 80% of England's. Sheffield has the highest levels of productivity in SYMCA but even here productivity is lower than the national average. While productivity *growth* has been able to keep pace with that in the country as a whole, the *gap* is not being closed. Over the period since 2015 in SYMCA there has been an increase in high growth businesses – measured with reference to either output or employment growth – but only at the same rate as the country as a whole. Between 2015 and 2020, the percentage of high growth businesses has remained stable at around 4-5% of all businesses. In summary, SYMCA has been successful

[125] House of Commons Library (2022). Will more economic inactivity be a legacy of the pandemic?

[126] Pouliakas, K. and Branka, J. (2020). EU jobs at highest risk of Covid-19 social distancing: Is the pandemic exacerbating the labour market divide? Luxembourg: Publications Office of the European Union (Cedefop Working Paper N°.1)

[127] Mason, G. (2004). Enterprise product strategies and employer demand for skills in Britain: evidence from the Employers Skills Survey. Oxford & Warwick Universities: ESRC Centre on Skills, Knowledge and Organisational Performance (SKOPE)

in keeping pace with changes at the national level but has not been able to accelerate the growth of high value businesses to close the productivity gap.

Projections of future employment demand undertaken before the COVID-19 pandemic suggested that employment would grow by around 3% over the period between 2017 and 2027 with much of that growth in relatively high skilled jobs. Real-time analysis of vacancy data for the region over the past three years suggests a disproportionately large share of job openings are in professional and associate professional jobs. A more recent projection suggests that employment growth between 2020 and 2030 will be around 1% which indicates, other things being equal, a substantial slowdown in growth in SYMCA. Even with a slowing of jobs growth, it is important to bear in mind that there will be replacement demands as older workers retire from their jobs and need to be replaced. The population of SYMCA, in keeping with other areas, is an ageing population indicating the importance of considering replacement demands when looking to the future. The impact of replacement demand is more predictable because the age composition of workers by sector and occupation is known.

Thus, in recent years, SYMCA has been able to keep pace with changes taking place in the national economy, as indicated by the overall growth in employment and share of high skill, high value employment. However, SYMCA has not been able to close the productivity gap with the national average which ultimately is dependent upon a higher share of employers pursuing high value product market strategies and which has implications for skill demand.

The developing green and digital economies will affect labour demand in every occupation and sector. However, their true impact is still not fully known. As far as green jobs are concerned, the biggest effect will be in the 'greening' of existing jobs, although new occupations will emerge as well. Similarly, digitisation will create a range of new occupations but the main impact will be on underpinning competencies transforming occupations, some of which will be enhanced and others made redundant by the digital revolution. At the moment, the increased demand for green and digital posts tends to be for professional, associate professional or managerial occupations. However, digital literacy skills are required for most jobs.

The engineering and transport sectors will both be at the forefront of changes wrought by the green and digital economies. As such, the impacts are likely to be pervasive with the greatest demand for higher level skills occupations. But all jobs will require digital and green 'literacy' skills.

6.3. The State of Labour and Skills Supply in the SYMCA

If a higher share of employers were to pursue high value product market strategies, it would have implications for skill demand i.e. an increased demand for people to work in relatively high skilled jobs. If so, the key question would be whether skills supply would be able to keep pace. The COVID-19 pandemic appears to have reduced skills supply through various pathways, including those funded by the Adult Education Budget. Aside from the pandemic, it is evident that there is a need to boost skills

supply in some instances. Compared with the situation in England, skills supply is at a lower level in SYMCA. While the percentage of the working age population (16-64 year olds) with no qualifications in SYMCA (at 7%) is almost identical to that in England (6%), people in England, on average, tend to be qualified at a higher level. This is especially at NVQ Level 4 and above. In SYMCA, 38% cent of the working age population have this level of educational attainment compared with 43% in England. Moreover, the attainment gap with England appears to be persistent.

Apprenticeships provide a high quality alternative to education routes into the workforce for young people. Across many countries, apprenticeships appear in Government policies as the preferred vocational pathway into employment. The Apprenticeship Levy, introduced by the UK Government in 2017, was designed to boost employer investment in skills development. Over the last decade, the number of apprentices in SYMCA initially rose but then halted in 2016/17. With the introduction of the Levy (along with other reforms), the number of apprenticeship starts began to fall and has continued to do so ever since. In 2020/21, apprenticeship starts in SYMCA had halved from their 2014/15 levels. The COVID-19 pandemic further reduced the number of apprenticeship starts (by around -25%).

There were two key trends which pre-dated the 2017 apprenticeship reforms: (i) a reduction in the number of 16-18 year old apprentices and an increase in the number of those aged 25 years and over; and (ii) a fall in the number of people working towards completion of an intermediate level apprenticeship (i.e. at NVQ Level 2), and an increase those working towards an Advanced (NVQ Level 3) or Higher level (NVQ Level 4+) apprenticeships. Both of these trends were exacerbated by the reforms introduced in 2017. Just as in England, SYMCA apprenticeships are increasingly serving higher level skill needs, and an older population of learners who are existing employees. These changes raise questions about the availability of high quality learning opportunities to enter Intermediate apprenticeships for 16 to 18 year olds.

At higher levels, there is a well-established higher education (HE) provision in SYMCA. In 2020/21, there were 65,551 higher education (HE) students studying in the SYMCA area primarily at the two universities based in Sheffield: 51% at Sheffield Hallam and 47% at Sheffield University. In addition, there are five FE colleges offering HE courses accounting for 3% of SYMCA's HE students. More than half of all students were studying subjects allied to medicine, business and management, engineering and technology, and social sciences.

The data indicate a shift towards higher level provision, in SYMCA and the rest of the country, in skills supply which reflects the change in the demand for skills in the local labour market. At the same time, there are signs that the overall volume of skills training in the post-compulsory school system may be in decline. This decline is observed, for young people, in: the number of apprentice starts; the decline of training activity funded through the AEB; and employer funded provision. Training may be being squeezed at lower levels. One potential consequence is that the vocational

pathway diminishes for people to gain qualifications at higher levels, especially for those who left full-time education with lower level or no qualifications.

Changes in the supply of skills has implications for the extent to which the region's skill needs are met, as the following section discusses.

All four priority sectors discussed in the report are seeing increased skills demands. Whilst meeting this demand will have implications on skills provision, approaches to increasing diversity within the sectors, especially engineering and transport, will help address employer skill shortages.

6.4. Skills Mismatches in SYMCA

There are a number of different means of measuring skill mismatches of one kind or another.[128] Analysis of the results from the ESS 2019 - undertaken before the pandemic, the war in Ukraine and the UK's exit from the EU - provides an indication of the extent to which labour demand and supply are in balance. The ESS provides two measures of skill mismatches:

- external mismatches – the extent to which employers face difficulties recruiting people from the external labour market, often referred to as skill shortages;
- internal mismatches – the extent to which people are fully proficient at their current jobs, often referred to as skill gaps.

The extent to which employers faced recruitment problems in SYMCA is more or less the same as for England: in SYMCA 19% of vacancies were difficult to fill because applicants lacked the skills, qualification or experience required. In other words, skill shortage vacancies. This rate is lower than that for England at 25% in England. In SYMCA, skilled trades (22%), professional occupations (21%), caring, leisure and other service occupations (18%) and associate professional (16%) were the occupations where the highest number of skill shortage vacancies were reported. The ESS also provides an indication of the extent to which the skills of those in employment were matched to the tasks they had to undertake. Here SYMCA and England fare similarly: around 4% of all employees in SYMCA were considered to be not fully proficient in their current job compared with 5% in England.

The point at which skills demand and supply are in balance (or equilibrium) is also of interest. An indication can be obtained by comparing the level of skills attainment in the population as a whole (an indicator of supply) and the skill level specified in vacancies (an indicator of demand). This comparison lends itself to a skill equilibrium taxonomy:

1. skills surplus – high supply and low demand for skills;

[128] Skill mismatches can be measured with reference to, amongst other things: (i) differential levels of occupational wage growth; (ii) the extent to which people in an occupation or sector have qualifications in advance of the average; (iii) employees' reports of the extent to which their skills are matched to the needs of their job; and (iv) employers' reports of skill shortages and skill gaps.

2. high skills equilibrium – high supply and high demand for skills;
3. low skills equilibrium – low supply of and low demand for skills;
4. skills gaps and shortages – low supply and high demand for skills.

Data for SYMCA indicates that on a range of measures of skills demand (vacancies, hard to fill and skill shortage vacancies, and skills gaps) and supply (qualifications levels of young people and the working age population, HE participation, and school leaver destinations), the region is situated in the low skills equilibrium i.e. it has a relatively low supply of, and low demand for, skills. This situation for SYMCA brings the analysis back to the point made earlier, that skill demand is ultimately dependent upon employers (or a certain share) adopting relatively high value product market strategies. Following this line of logic, last year's SYMCA LMI Report, suggested the need to boost skills demand and enhance skills supply by linking workforce development (e.g. though skills and training) to organisational development (e.g. through revamped work, employment and management practices) to business development (e.g. through a shift into new high value markets). This approach, it was argued, could create a mutually reinforcing virtuous circle of increased skill demand and supply.

6.5. The Changing International, National, and Regional Environment

Last year's LMI Report reflected upon both the longer-term changes affecting the SYMCA's economy and the shorter-term impacts of the COVID-19 pandemic and exit from the European Union. At that juncture the situation seemed relatively optimistic compared with the current one. In 2021 the economy seemed to be rebounding from the calamitous fall in output wrought by the pandemic while problems in global supply chains, alongside the nascent signs of rising inflation, were thought to be short-term inconveniences. The signs were that the economic recovery was commencing in earnest.

Jump forward 12 months and situation seems very different. The confluence of Russia's invasion of Ukraine, renewed COVID-19 related lockdowns in China and the cost of living crisis have destabilised the global economy. The immediate impact on the UK has been that of rising inflation which stood at a 40-year high of 9% in May 2022 with further increases anticipated.[129] Inflationary pressures stem, for the most part, from the cost of energy in the global market. In other words, price rises are being driven by factors outside of UK policymakers' spheres of influence such that raising UK interest rates may have little impact over the short-term, other than dampening demand and increasing the likelihood of the economy contracting. Even if inflation is largely externally driven there are concerns that domestic wage demands could exacerbate inflationary pressures. Although there is little sign of wage inflation to date (nominal wage increases are below the rate of inflation) the tightness in the UK labour

[129] The Office of National Statistics estimates that the consumer price index would have been higher in 1982, but lower over the intervening period.

market is a cause of concern. In May 2022, the number of job vacancies exceeded the number of people unemployed (though not the economically inactive). The Bank of England has expressed its anxiety about the prospect of future wage push inflation potentially ushering in a period of stagflation. The UK has been here before. In the mid-1970s, inflation reached 25% driven by fuel prices, wage demands, and high inflation expectations, only to be brought under control at the expense of a deep recession and rising unemployment.

At the present time, unemployment rates are relatively low by historical comparison and vacancy levels are high. Labour supply across the UK as whole would seem to have contracted in the aftermath of the COVID-19 pandemic and the country's exit from the EU.[130] The pandemic seems to have led some groups of workers – older workers and the self-employed – to exit early from the labour market[131], and the country's departure from the EU seems to have reduced the number of available workers from mainland Europe. At the same time, the opening up of the economy post-pandemic which gave some people the opportunity to spend at least some of the savings they had accumulated during the lockdowns, boosted economic growth and with it the need for labour.

At face value, the problem would appear to be one of a labour supply. By way of response, one might expect a mix of policies which involve a combination of assistance to people currently unemployed to find work, incentives for those who are currently economically inactive to return to the labour market, and opportunities that might attract workers from abroad. There are, however, concerns about future economic prospects not least of which is the effect of rising inflation on consumer demand and thereby employment. As alluded to above, macroeconomic policy might deliberately dampen economic activity in an effort to regain control over price rises.

Macroeconomic policy is largely outside the remit of MCAs. Nevertheless, macroeconomic developments at global and national levels will ultimately have an impact on employment at the local level: the overall number of people in work, sectoral employment levels, skill needs and so on. For the time being, even short-term economic prospects appear to be characterised by high levels of uncertainty. From a local perspective, the question becomes one of how to respond to that unpredictability and, if possible, facilitate local economic resilience.

There are clues from the recent past which might help here. If the past three years have revealed anything it is the importance of being prepared to deal with external shocks. This preparedness has focused attention on the skills individuals need to acquire if they are to withstand potential future shocks and fluctuations in the economy.

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[130] Though there is a degree of uncertainty attached to available statistics, net migration to the UK from the EU has been negative over recent years - see https://migrationobservatory.ox.ac.uk/resources/briefings/eu-migration-to-and-from-the-uk/

[131] ONS (2022). Movements out of work for those aged over 50 years since the start of the coronavirus pandemic.

This has tended to focus attention on resilience i.e. the skills individuals and employers will need to acquire if they are to withstand a period of potentially prolonged uncertainty in the domestic and global economies. It is worth bearing in mind also that the twin green and digital transitions are likely to have longer-term impacts on the demand for skills, the characteristics of which are only beginning to emerge. This dual transition adds a further layer of uncertainty to thinking about skill needs.

6.6. Establishing a Skills Resilience Agenda

There are three challenges which skills policy needs to address over the short- to medium term in SYMCA:

1. increasing skills supply to redress its decline during the pandemic but also some of the longer-term developments in skills provision such as those observed in the apprenticeship system (i.e. fewer apprenticeship starts with more of them being delivered at higher levels to older apprentices who are existing employees);
2. stimulating business demand for higher level skills to help facilitate a move towards a higher skill equilibrium;
3. finding the means to deliver training which will provide the population with the skills that affords them some protection in a changing economy and labour market that are also experiencing global pressures..

The first two challenges were addressed in last year's report[132]. The focus of attention here is the last point, and the training to deal with the uncertainty attached to future skill needs. Equipping employers and employees with the skills that they need can foster local economic and labour market resilience. On the one hand, this training needs to equip people with the skills which will allow them to manage the twin green and digital transitions – which also contributes to the development of the engineering and transport sectors. On the other it is about the wider range of more general skills that will be needed.

Skills related to the green and digital transitions are likely to be manifested in:

- skills which are directly related to the transition to net zero carbon. Some of these skills will be for jobs in the narrowly defined green sector, for example, skill needs related to reducing household and industrial waste, renewables, energy conservation and so on. There are also the new skill and knowledge needs of jobs outside this sector, those which require 'greening' and also contribute to the transition;

[132] In brief, improving skills supply runs the risk of reducing wage levels and skills underutilisation, unless it is undertaken alongside measures to improve organisational, business and wider economic development to raise employers' product market strategies. Stimulating business demand also relies on this latter point. Focusing resources (of both business and workforce development) on priority sectors can be a way of optimising the use of limited resources. The creation of skills escalators so that people can move, within and outside of work, from lower to medium and higher level skills is also a mechanism for raising skill levels.

- skills which are directly related to working in the digital sector and the increasing use of technologies associated with the Internet of Things, Industry 4.0 and so on. Initially, it was argued that this digital technology would substitute human labour. Now it is recognised that it will more likely supplement human labour and that there will be a need for both managers and employees to have the right skills to lever the potential productivity gains from it.[133] These digital skills will be at intermediate and higher levels, supporting jobs in advanced manufacturing for example. There will also be a need for basic digital literacy skills across all jobs, for example from teaching to social care. As such, digital skills will be essential for leading edge, high value-added economic activities as well as the foundational economic activities that support every activities.

Both sets of skills will also support the development of the engineering and transport sectors in SYMCA. These are identified as a growth sector and a sector with potential respectively. Both are sectors that traverse the old and new economies and so continued jobs growth.

Data analysis using text mining algorithms applied to vacancy data and other databases such as patents and scientific papers are increasingly providing insights into the specificities of the skills required by the green and digital transitions. Arguably there is a need to look at the results emerging from these analyses undertaken both within and outside SYMCA. It would be useful if SYMCA drew on the methodologies and results of such analyses as it can help identify which occupations are, for example greening or newly require digital skills and at what level.

Many of the skills required to meet the green and digital transitions are technical ones linked to the undertaking of specific tasks associated with particular groups of jobs. What is noteworthy is that many of these tasks augment existing tasks such that new skill needs are often incremental. Consequently, they do not require new education and training programmes from HE and FE providers but rather new modules within existing programmes and can be offered, for example, as continuous professional development. It is therefore adjustments to existing vocational educational and training within the local skills system that is required rather than wholesale change to provide local workers with residence during the dual transition.

Text mining analyses are also yielding some surprising results about employers' other skills demands in these industries – many of which are soft skills, such as teaming working and communication skills. Such skills will also be needed in the future and, given that they are transferable as they cut cross occupations, will help the resilience of individual workers in a changing labour market. Indeed teaming working and communication skills came out top of employer hiring criteria in an analysis of both

[133] Guest, D., Knox, A and Warhurst, C. (2022). Humanizing work in the digital age: Lessons from socio-technical systems and quality of working life initiatives. Human Relations,

green and non-green occupations.[134] A new report offers communication, teaming working and people skills more broadly as likely to remain critical in the future both as a feature of specific work tasks in the digital, green and other sectors and as the underpinning of necessary cultural shifts within businesses generally to make them more diverse and inclusive.[135]

Such data can be readily translated into the recognition of the broader range of skills individuals will need to possess, a combination of generic or transferable skills and technical skills (new and updated) not just for the dual digital and green transitions but more widely to navigate changing labour markets. There is a pressing need to more fully identify what might be termed resilience skills[136] and ensure that they are embedded within education and training programmes. If the labour market of the future is more fluid with people required to change jobs and change sectors, there will be an urgency with which people need to acquire the panoply of resilience skills not just in SYMCA but across the UK and beyond.

Since the pandemic, and over a relatively short space of time, a consensus has emerged which suggests that global, national, and local economies are likely to be in for a rough ride over the short-term.

It is not simply a case of identifying the skills associated with labour market resilience. A means of effectively equipping people with those skills needs to be explored. In England, over the recent past, there have been policy initiatives which have sought to address this, including:

- programmes which have sought to drive up employers' product strategies and simultaneously equip them with the skills to support that change. For example, in the noughties, the Employer Training Pilots (the forerunner to Train to Gain) utilised employer focused learning and skills brokers which linked skills provision to employers' business strategies (and their corresponding skills needs);
- individual learning accounts (a training voucher rather than actual learning account) which was designed to empower individuals to engage in reskilling and upskilling.

[134] Cardenas Rubio, J. et. al. (2022). Green jobs in Scotland? Workforce and demand research. Skills Development Scotland;

[135] Hofman, J. et. al. (2022). Skills needs in selected occupations over the next 5-10 years, London: DfE.

[136] Resilience skills refers to the generic skills people require to get on in the labour market (team work, flexibility and adaptability, application of one's skills in differing working/sectoral environments, etc.). But it is also apparent that technical skills are required that relate to the digital and green transitions likely to be required in the future labour market. Such skills might include: something above basic digital literacy; being able to work in an on-line environment; bringing environmental awareness to work tasks; updating key technical skill sets in line with these digital and green transitions, etc.

These initiatives were abandoned because of problems associated with their execution, and levels of deadweight. At a national level there seems to be some appetite for these kinds of initiatives once more. The introduction of Skill Bootcamps, Lifelong Learning Entitlements, and the National Skill Fund, along with the devolution of the AEB, provides local funding. Potentially these could be leveraged to meet the specific needs of the SYMCA labour market in the future, though it is not clear how these initiatives are tied into driving up employer demand for skills on their own.

If skill supply is to be boosted, employers need to be persuaded to use the capabilities which will then be available to them (through organisational and business support). Notwithstanding any reservations about these particular initiatives, there is a clear need to use whatever resources are available to ensure that the population is equipped with a broader range of skills than hitherto to give them some protection against future changes in the demand for labour and skills.

6.7. Conclusion

Familiar challenges remain for SYMCA – the need to drive up skill demand and skill supply -and at the same time new challenges have emerged. Some of these challenges are potentially positive, most obviously the dual green and digital transitions. Some are negative such as the cost of living crisis, the cost of doing business crisis and, and tight labour markets. As such, even though the Covid pandemic is receding, some of the tasks for the SYCMA in developing a strategic approach outlined in last year's report are still pertinent: dovetailing local needs and responses with national government priorities and programmes; engaging, mobilising and coordinating local stakeholders within a skill ecosystem approach; and integrating workforce, organisational and business development. An added layer of responsiveness is now also required in relation to the new challenges. In particular the need to identify and provide the skills that would support not just the growth but also ensure the resilience of the regional economy, its businesses and labour force.

Appendix A: Definition of green jobs and skills

The definition of green occupations is based on the 'greening of occupations', which 'refers to the extent to which green economy activities and technologies increase the demand for existing occupations, shape the work and worker requirements needed for occupational performance, or generate unique work and worker requirements' (Dierdorff et al. 2009, p.4).

These green jobs include three types of occupations:

- New and emerging green occupations: occupations that have been directly created by the impact of green economy activities. They are the jobs most closely associated with the 'purist' definition e.g., biomass plant engineers, industrial ecologists, recycling workers, etc.
- Green enhanced skills occupations: occupations for which the green economy has changed the job requirements (tasks, skills, etc.) e.g., financial analysts, soil and water conservationists, environmental engineers, etc.
- Green increased demand occupations: occupations whose labour demand has increased due to a greener economy without altering their job requirements e.g. chemists, electricians, architects, etc.[137] [138]

[137] Dierdorff, E.C., Norton, J.J., Drewes, D.W., Kroustalis, C.M., Rivkin, D. & Lewis, P. (2009) Greening of the world of work: Implications for O* NET®-SOC and new and emerging occupations. National Center for O*NET Development, O*NET Resource Center (onetcenter.org).

[138] Sofroniou, N. & Anderson, P. (2021 forthcoming). The green factor: Unpacking green job growth, International Labour Review, doi.org/10.1111/ilr.12176,