SHEFFIELD CITY REGION ECONOMIC EVIDENCE BASE

Skills and Employment

MAY 2019

Sheffield City Region

Contents

Skills and Employment

The focus of this section is to provide an overview of the skills profile, labour market and employment picture in the Sheffield City Region, drawing national or LEP comparisons where appropriate, and highlighting key conclusions important to the development of economic policy at SCR.

The section is also supported by SCR's comprehensive LMI report (2016) which explores labour market, employment, skills supply and demand data in detail. This has been supplemented with additional research focused around key specific areas including:

- The Science and Innovation Audit (2016)
- Research of the Skills Gap within SCR (2012)
- SCR's Digital Action Plan Evidence Base (2018)

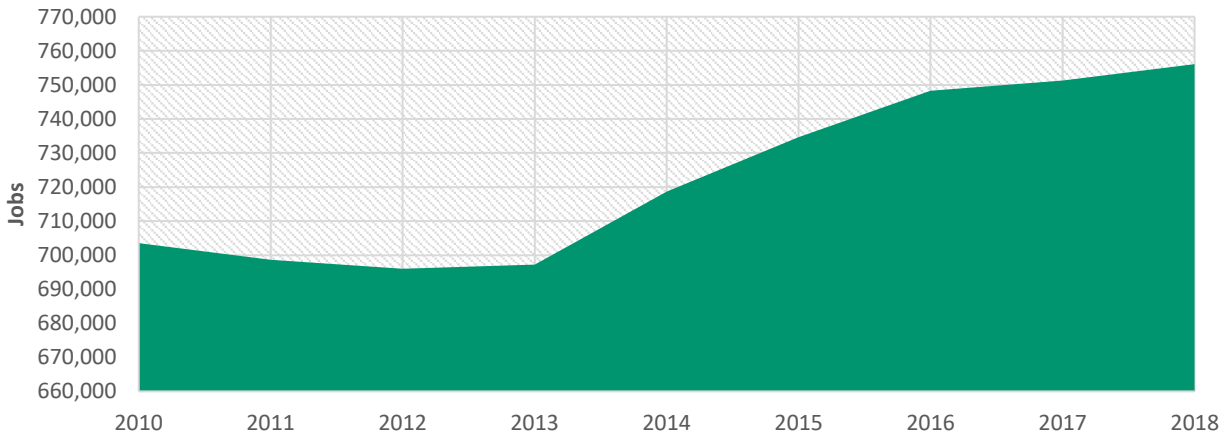
Employment & Jobs

Economic recovery since the 2007/08 global recession in the UK has been accompanied by notably rapid job creation. At latest figures, national employment is at its highest ever level, at 31 million, a rate of 73.2% and more than 1 million above the pre-crisis peak in 2008. However, most employment creation since the end of the recession has been in part-time or jobs with fewer hours. The economy at a local and national level has only very recently begun to generate well-paid, full-time jobs in significant numbers.

Creating jobs and raising incomes is crucial for economic development. The relationship between economic growth and employment is one of the most debated issues in policy. There is increasing evidence that jobs that are 'productive' and 'remunerative' are more important than 'any' job and economic growth should result from a suitable combination of employment growth and productivity growth.

Data from ONS and private data providers shows that there has been an increase in jobs in SCR, latest figures from ONS show that there are 744,000 employee jobs in SCR. Overall, SCR has seen 8.2% growth in employment since 2011 (compared to 13% in England). All local authority areas have seen periods of employment growth. However, some local areas across SCR have seen rapid year upon year growth and others have seen more changeable conditions.

Figure 87: SCR Jobs 2009-2018

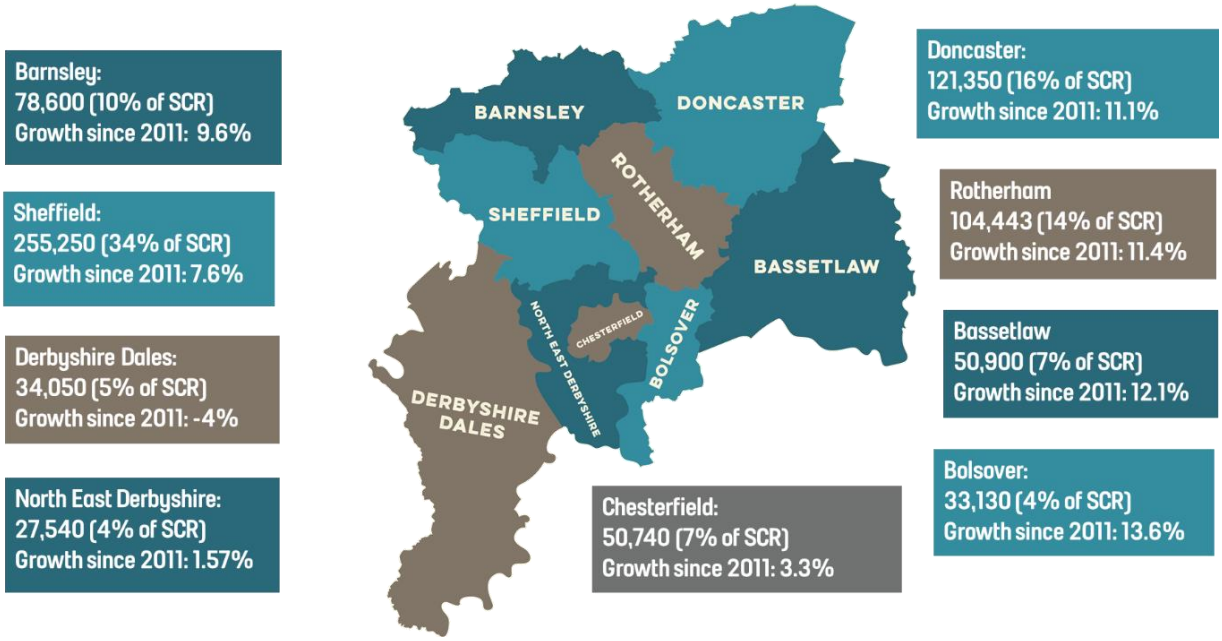


Source: EMSI 2018

The diagram below shows that most areas have seen higher numbers of employment since 2011 with only Derbyshire Dales seeing a contraction in its employment base. Only Doncaster, Bassetlaw and Bolsover

have seen employment growth in line with the England average (13%). Several local areas have seen slower growth since 2011 (North East Derbyshire, Chesterfield and Sheffield).

Figure 88: Employment Growth



Source: EMSI 2018

Employment growth is driven by several factors related to the constituent parts of net jobs growth:

- New jobs created from business growth, new businesses and businesses moving to SCR
- Job losses, displacement (movements) and replacement demand

A report in 2019 by the Resolution Foundation highlighted that South Yorkshire recorded the strongest level of jobs growth in the decade since the financial crisis with jobs growth driven by comparatively low-employment areas. However, this raises question about the profile and quality of jobs created.

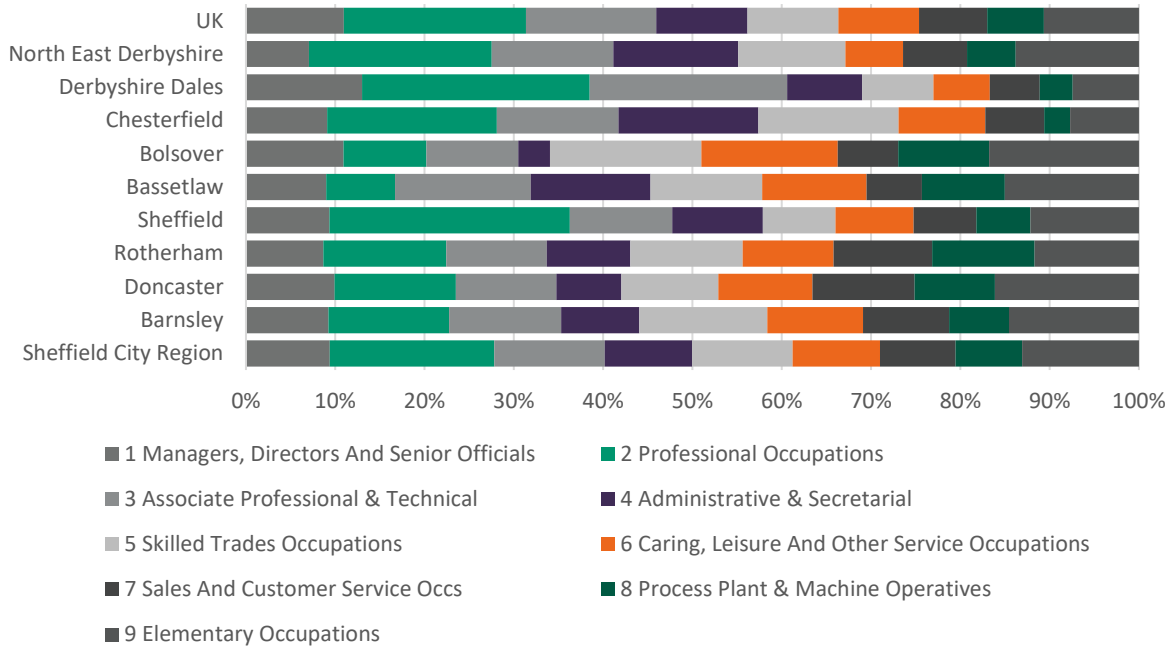
Key messages:

- Job creation in SCR has been good (8.2% since 2011) but not as strong as the national average (13%) figures.
- Several local areas have driven employment growth, whilst some areas have seen more sluggish growth in their employment figures.

Occupational Change

SCR's occupational profile is skewed towards lower skilled occupations, which also influences the below average wage profile. SCR has fewer Managers, Directors And Senior Officials, Professional Occupations and Associate Professional and Technical Occupations than the national average. These occupations are often seen as the higher skilled occupations, requiring higher level qualifications (Degree or equivalent and above). The occupational profile illustrated below suggests that lower skilled jobs account for a third of all employment in SCR compared with 26% nationally, whilst highly skilled occupations are underrepresented (36% in SCR and 44% nationally).

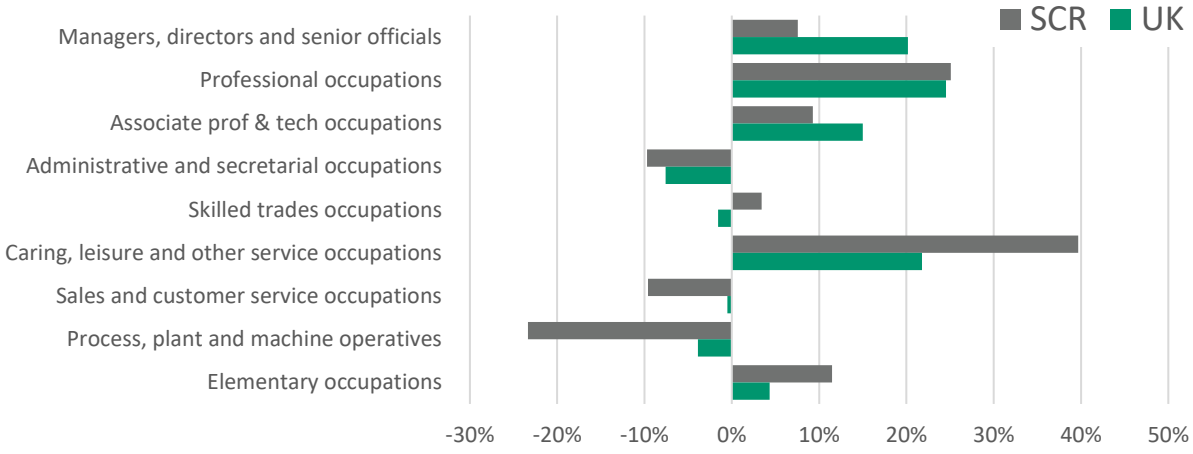
Figure 89: Occupational profile



Source: Annual Population Survey 2018

Over the last decade, the decline of the industrial base and a shift towards services has resulted in changes in the occupational structure of all areas in the UK. The proportion of employment in occupations associated with higher-level skills has generally increased over time in SCR (as it has in the UK overall). However, there are also changes within other parts of the occupational structure which highlight other trends (see figure 90 below).

Figure 90: Change in employment by occupational group in SCR and UK, 2007-2017



Source: Annual Population Survey 2018

Professional Occupations have increased particularly significantly over the period 2007 to 2017, from 11.5% to 13.5% of employment (slightly more than the increase experienced in the UK overall, meaning that the SCR area has closed the gap with the national average).

Occupations associated with intermediate levels of skill have remained stable (despite decreasing in the UK as a whole). Skilled Trades saw a small increase (which is the opposite to what was experienced nationally), whilst Administrative and Secretarial Occupations saw a decline of in the SCR area.

Employment in Elementary Occupations has increased in SCR, which could indicate that there continues to be a strong demand for unskilled labour and that more new jobs created over recent years have been unskilled compared to elsewhere in the country. This highlights further challenges and considerations for SCR around continued low pay industry, migrant labour, the changing nature of certain sectors (e.g. retail and logistics) and where employment sites are located.

Several occupations closely related to SCR's industrial strengths in traditional and advanced manufacturing have seen growth and are relatively overrepresented in SCR. These include higher and higher-intermediate skilled occupations (equivalent to qualifications at Level 3 and 4) such as Science and Technology professionals, accounting for 4.9% of employed residents. The linkages between occupations and sectors are explored later in this section but they indicate that several important sectors have a lower proportion of higher-level occupations than the national average.

There are several ways of interpreting the current occupational profile for SCR and the changes seen over the past ten years. Analysis of the occupational trends and profile can be linked to the productivity challenges, business base, wage progression and economic conditions. There is also a key link between occupational profile and skills. Employer demand for skills can be indicated by the relative proportion of people in certain occupations; a local area or sector, with a lower proportion of employment in occupations requiring higher levels of skill, could reasonably be said to have a relatively low demand for skills. There are also wider and less obvious issues with an occupational structure skewed towards lower skilled occupations, with academic work linking it to young people's ambition and achievement[1]. There is also evidence that high skilled occupations of such sectors are located outside of SCR, highlighting SCR's relative position within the wider economy and supply and value chains.

Key messages:

- SCR has a lower proportion of higher skilled occupations but has seen growth in higher skilled occupations.
- Low skills occupations make up a larger proportion of the workforce and some (elementary and care, leisure and service) have seen growth since 2007.

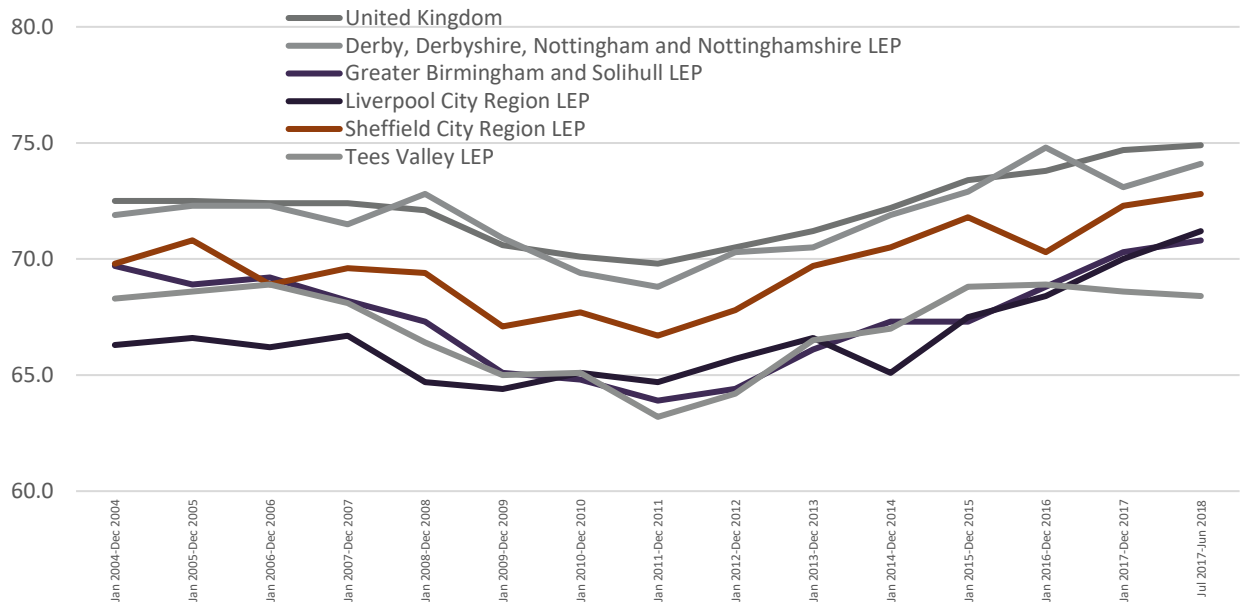
Employment Rate

The most widely used measure of labour market engagement and the relative supply of workers in an area is the employment rate. This is a sub-set of economic activity, referring specifically to those who are in employment or self-employment.

Analysis of the employment rate over time shows that SCR has had a lower than national average employment rate, but the rate is higher than some of our comparator city-region areas and has improved over time. A change in the overall employment rate is important for SCR residents, showing that they are benefiting from the additional jobs created.

[1] https://www.tandfonline.com/doi/abs/10.1080/02671520701755424?src=recsys&journalCode=rred20

Figure 91: Employment Rate

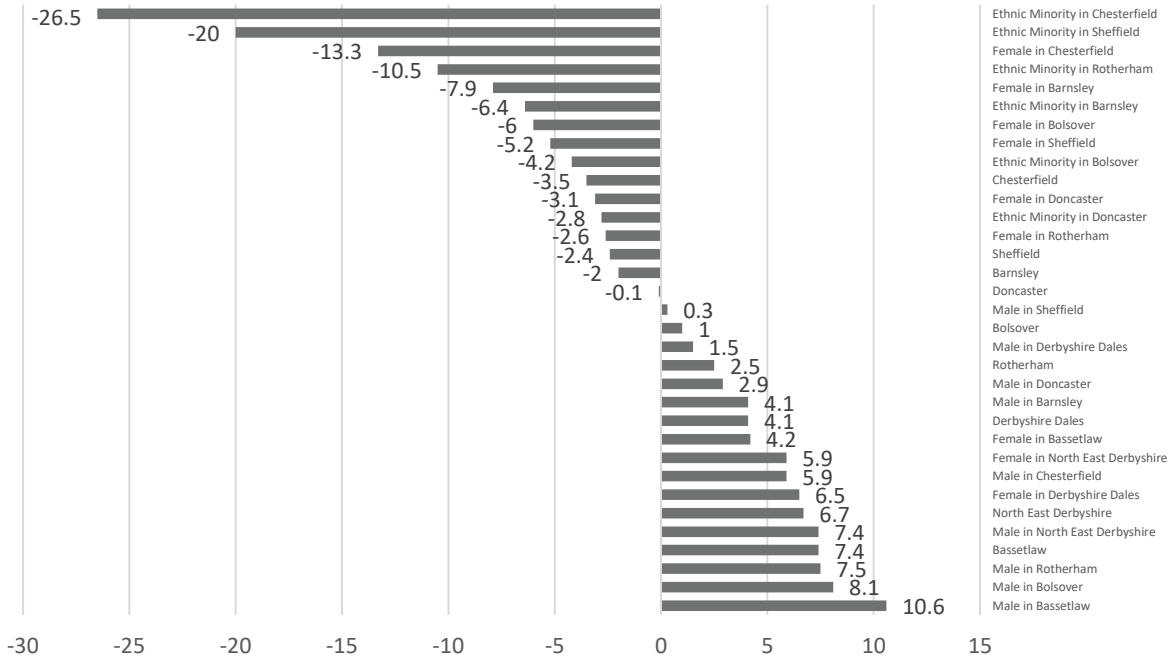


Source: Annual Population Survey.

The employment rate in SCR is 73.2% and this is generally in line with the regional average, although it has been consistently lower than the national average (currently 74.9%.)

There is significant difference within the employment rate amongst communities within SCR. The graph below shows how different demographic features impact on the employment rates of different cohorts. Using SCR's Employment rate as the baseline (72.8%) the graph shows the employment rates for different ethnic and gender characteristics, highlighting that some groups and communities are more likely to be employed than others.

Figure 92: Employment rate difference to SCR average by demographic characteristic (2018)



Source: Annual Population Survey 2018

Analysis of employment rates shows that ethnic minorities and women typically have lower employment rates. Further analysis of demographic characteristics shows that the employment rate for individuals with

a disability is even lower. A combination of disability and gender or ethnicity often reduces the employment rate by 50% in comparison to the SCR average.

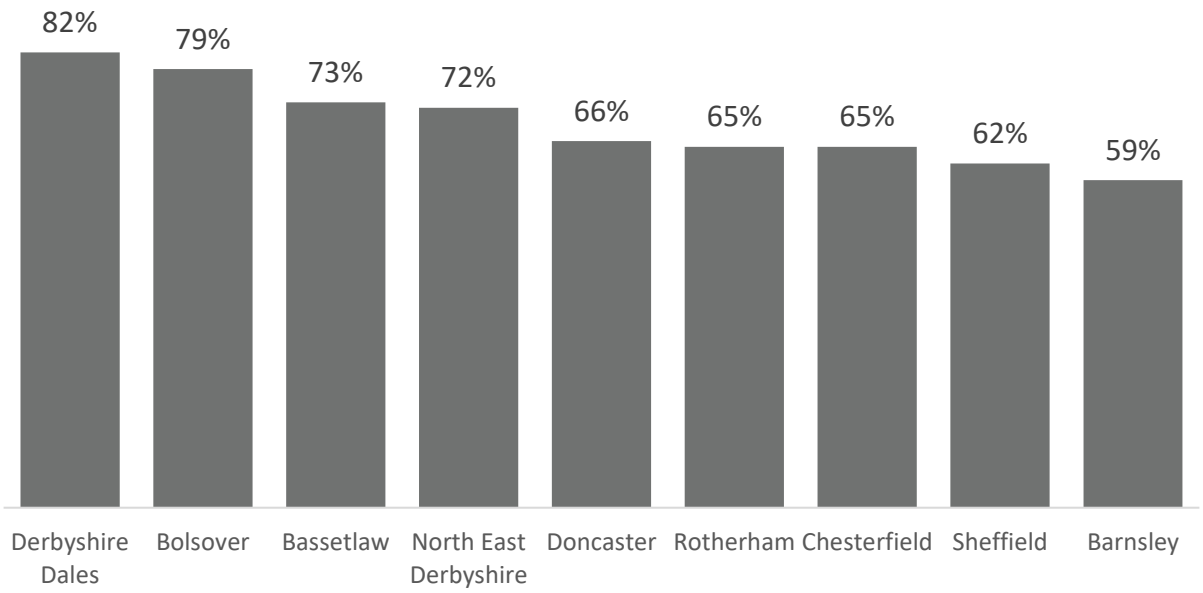
The employment rates for students after finishing their studies is also of importance. Employment outcomes for college and university students are increasingly explored through longitudinal datasets. Sheffield Hallam University and Sheffield University have 94% and 95% respectively in work or further study within six months of graduation[2].

Within this, there is variance across subject area, type of work and geographic location. Furthermore, after time there is often change as graduates seek to improve their position in the labour market. The universities resource employability agendas for students with similar variance in employment outcomes for learners across SCR. Generally, the universities have high employment rates for their graduates, although the dynamics of this are complex and related to the job market, economic conditions and movements of students. This is explored later in this section.

Employment outcomes vary depending on several factors. DfE Outcome Based Success Measures highlight that higher-level apprenticeships (levels 4 and 5) see improved earnings, whilst intermediate level apprenticeships in certain subjects, specifically Engineering, Manufacturing and the Built Environment, see improved earnings after finishing their apprenticeship.

Analysis of the Longitudinal Education Outcomes (LEO) Study shows that Further Education students in Barnsley and Sheffield have a lower sustained employment rate than the UK average (65%), which demonstrates challenges for students in these local authority areas who are seeking to enter the labour market in SCR.

Figure 93: % Sustained Employment Rate after FE.



Source: Longitudinal Education Outcomes (LEO) Study

Key messages:

- The employment rate is lower in SCR compared to the national average. There are several population groups which are disengaged from employment.
- Several factors impact upon employment rates with level of qualification and subject identified as important to employment and future earnings.

[2] https://www.hesa.ac.uk/news/05-07-2018/employment-of-leavers-tables

Part-time and Full-time Employment

Across SCR there is a slightly lower proportion of full-time jobs compared to the UK. Full-time employment is an important component of job stability and in-work progression, whereas part-time employment largely provides more flexibility and balance between other priorities.

Table 16: Employee Jobs (2017)

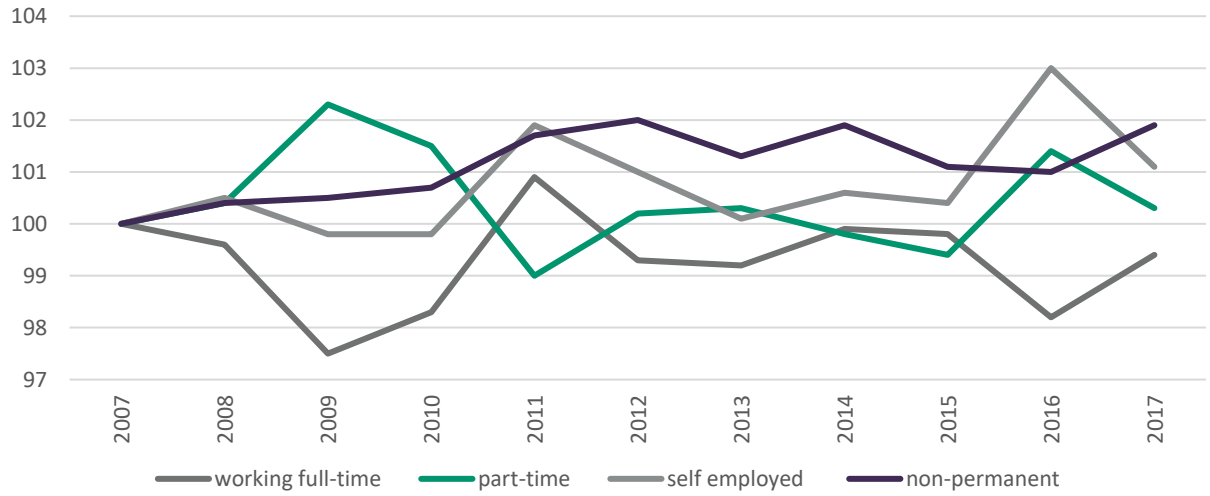
	Sheffield City Region (Employee Jobs)	Sheffield City Region (%)	UK (%)
Full-Time	499,000	67.1	67.5
Part-Time	245,000	32.9	32.5

Source: BRES 2019

Despite advantages of full-time and part-time employment, there are concerns around the characteristics of full-time and part-time work in the modern economy.

Full-time work is now often characterised by contracts and is no longer linked to wage progression and job safety as it once was. Part-time work is also characterised by temporary and casual work, where online platforms and apps provide workstreams and ways to source clients, manage commitments and take payments. Again, there are advantages and disadvantages of these changing forms of employment.

Figure 94: Types of employment in SCR 2007-2016 (indexed; 2007 level = 100)



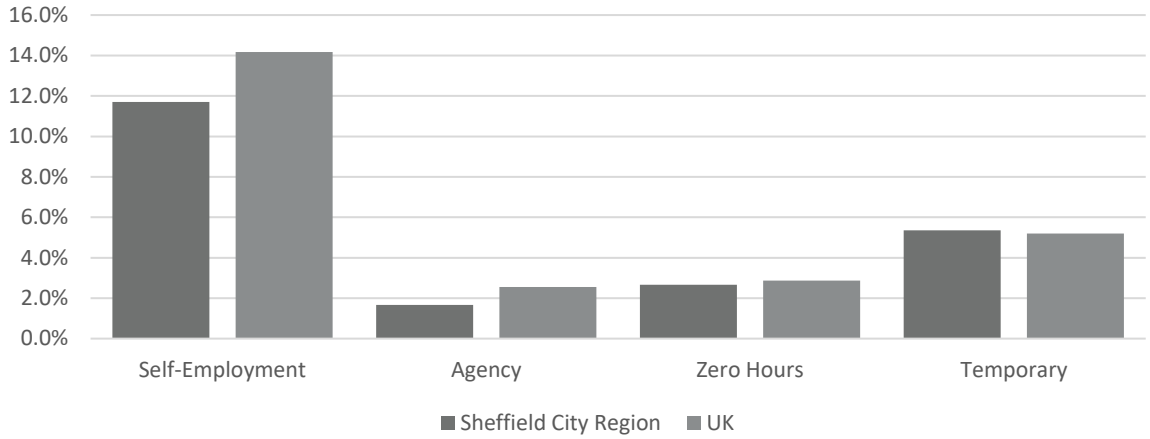
Source: BRES 2018

Over the past decade, levels of full-time employment have recovered since the recession but are still slightly below pre-recession levels. It is estimated that self-employment accounts for 71,500 people in SCR and non-permanent employment, which includes agency, temporary, casual and fixed term work, is estimated to be 81,500. These types of employment have all seen significant increases in the number of workers in SCR post-recession.

SCR differs from the UK in having lower rates of self-employment and fractionally higher rates of temporary work.

Assessing atypical work is difficult in national statistics. The various categories of atypical work include sole-trading, freelancing, fixed-term contracts, zero hours contracts, agency, self-employment and the gig-economy, to name a few. These often overlap, creating the risk of double-counting. However, the chart below provides an indication into the levels of atypical employment in SCR.

Figure 95: Principal forms of atypical work in SCR compared to UK



Source: BRES 2018

The evidence presented here highlights the prevalence of atypical work. However, due to counting and definition issues there is a possibility of undercounting. Time-series trend data suggests that atypical employment may have peaked. As employment changes in SCR and the UK, there is potential for atypical employment to impact upon prosperity, productivity and earnings.

Key Messages:

- There have been rises in atypical work which has benefits and challenges for residents and workers in SCR.
- The full picture is not understood and there is potential for the rise to impact upon prosperity, productivity and earning.

Economic Inactivity & Unemployment

Economic inactivity and unemployment[3] can have significant costs to individuals and society:

- Unemployed people often experience a decline in their living standards and are worse off out of work. This leads to a decline in spending power and an increasing risk of falling into debt problems.
- Negative multiplier effects can exist where the loss of income and disposable income can lead to a drop-in demand for local services, housing and supply chains.
- Unemployment can affect national economy and damage the economy's growth potential. The Government can also lose out from a fall in tax revenues and higher spending on welfare payments.
- Higher unemployment is linked to social deprivation. Areas that suffer from persistently high long-term unemployment see falling real incomes and a widening of inequality of income and wealth.

Inactivity

Sheffield City Region has the tenth highest economic inactivity rate across all LEPs, with 23.1% of people aged 16 to 64 being economically inactive. This equates to around 266,500 individuals. The economic inactivity rate for SCR has remained higher than the level for the UK since 2004 although it is fairly stable.

The main categories of economically inactivity is presented below.

[3] All are distinct; the unemployed population comprises people who are out of work but seeking work. The economically inactive population which is those without a job who have not actively sought work in the last four weeks, and/or are not available to start work in the next two weeks.

Table 17: Economic Inactivity by reason (%) - 2018

	Sheffield City Region	Barnsley	Doncaster	Rotherham	Sheffield	Bassetlaw	Bolsover	Chesterfield	Derbyshire Dales	North East Derbyshire	England
Inactive student	21.0	10.8	16.1	20.8	30.8	11.4	30.4	15.2	22.5	-	27.1
Inactive looking after family/home	25.6	26.5	29.9	25.6	25.4	21.7	21.9	21.5	18.8	30.5	25.3
Inactive temporary sick	1.7	3.3	2.1	2.1	1.4	-	-	-	-	-	2.1
Inactive long-term sick	29.0	30.8	32.6	26.3	24.3	40.8	26.7	38.1	18.4	36.3	21.1
Inactive discouraged	0.2	-	-	-	-	-	-	-	-	-	0.4
Inactive retired	13.5	18.3	10.1	13.5	9.1	18.7	-	19.0	31.9	24.6	13.0
inactive other	8.9	9.8	9.3	11.1	8.6	7.3	11.7	6.1	-	-	11.0

Source: ONS & DWP (2017)

SCR has a high proportion of people who are economically inactive for health-related reasons. Long-term health conditions account for 29% of individuals who are not seeking employment. When combined with the proportion of individuals with temporary sickness, poor health is a barrier to employment for 30.7% of those who are economically inactive. This is over 5% higher than the national average.

Just over a quarter of economically inactive people cited care responsibilities or looking after the home as the reason for not seeking employment (25.6%). Full-time education accounts for 21.1% of economically inactive individuals.

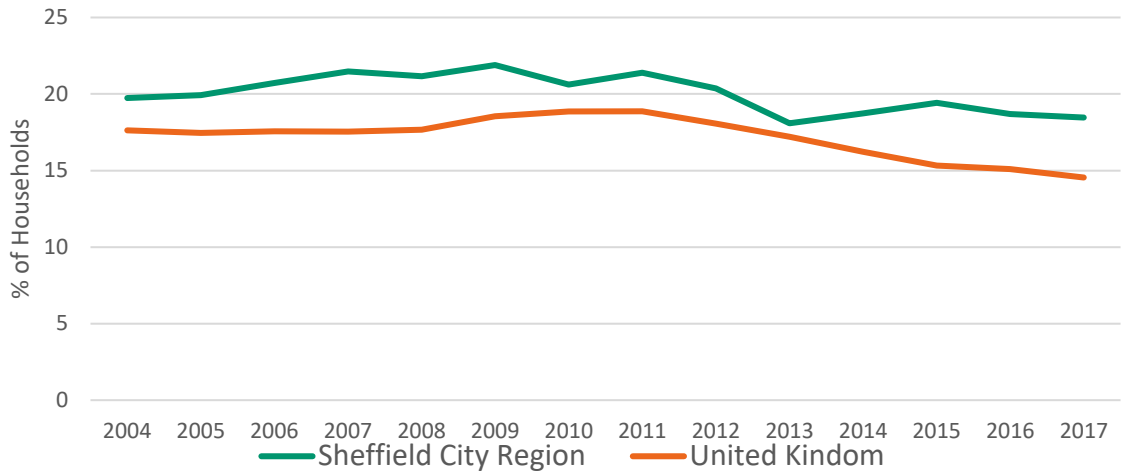
Economic inactivity levels are balanced between characteristics of the local economy. For example, Sheffield has a higher proportion of students due to the universities, whilst Derbyshire Dales has a high proportion of people inactive due to being retired. This suggests more tailored and local approaches to worklessness and raising the employment rate further.

A larger proportion of economically inactive people in SCR want a job (31%) compared to the national average (22%) demonstrating the desire for employment from inactive residents. Achieving a lower inactivity rate is achievable if the right employment opportunities and support are available to groups seeking work. However, inactivity is complex and the range of topics listed below shows the need for joined-up support.

Workless Households

A profile of worklessness at the household level shows that SCR has a high share of households where there is at least one working age adult than the national average (4% points higher than the UK average).

Figure 96: Percentage of Households that Are Workless



Source: ONS APS 2018

About 16.5% of children in SCR are in workless households. This equates to around 61,100 children, and it has implications for future employment and educational attainment given the impact of role models upon local people[4]. There is an observed link between skill levels and worklessness, with a close alignment between areas that have poor educational outcomes, high deprivation and higher levels of worklessness. This exists in all local areas within SCR.

Unemployment

Persistently high unemployment creates huge costs for individuals and for the economy as a whole. Some of these costs are difficult to value and measure, especially the longer-term social costs. SCR has a higher unemployment rate (5.3%) than the UK average (4.3%).

Table 18: Unemployment rate across LEP and CA areas.

LEP/CA	Unemployment rate - aged 16-64	Unemployment rate males - aged 16-64	Unemployment rate females - aged 16-64
Tees Valley LEP/CA	6.3	7.2	5.3
Humber LEP	5.3	4.9	5.7
North East LEP	5.3	6.1	4.3
Sheffield City Region LEP/CA	**5.3**	**4.5**	**6.2**
Greater Manchester CA/LEP	4.6	4.8	4.4
United Kingdom	**4.3**	**4.4**	**4.2**
Liverpool City Region CA/LEP	4.2	4.8	3.6
Greater Lincolnshire LEP	4.1	3.7	4.6

Source: APS 2018

[4] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/695090/workless-households-and-educational-attainment-statutory-indicators-web-version.pdf

Female unemployment rates are generally higher but have improved. At a UK level, 26% of women aged 16-64 were economically inactive in 2017, compared to 45% at the start of the 1970s. A continued higher rate of female unemployment in SCR can be linked to stereotyped gender roles in homes, childcare, economic traditions and ethnic composition. This highlights the need for detailed consideration around unemployment interventions and overcoming complex challenges to accessing work.

With the exception of the 16-19 age group (which is a statistically small), SCR has a higher than average unemployment rate for young people aged 20-24 and every other age group. This shows how entrenched unemployment challenge is and highlights focused and multiple agency working to address the multiple drivers.

Figure 97: Unemployment by age group

Source: ONS APS 2018

Claimant count helps us understand more about benefit claimant profile and type. The largest shares of claimants at last count (2016) in SCR were around out of work benefits (10.3%) and Employment and Support Allowance (ESA) and incapacity benefit (7.4%). The impact of Universal Credit[5] is being closely monitored by many organisations. Data is important to understanding unemployment and benefit claimants in more detail, and future monitoring of this area is requiring new datasets.

Young People not in Education, Employment or Training (NEET) and Youth Unemployment

The transition from education to employment is crucial to economic growth. Evidence suggests that those who experience a period of unemployment at an early age continue to suffer poorer outcomes throughout their working lives and is linked to long-term reductions in wages, increased chances of subsequent periods of unemployment, and poorer health outcomes. High levels of youth unemployment also have wider social and economic costs. For example, there is a cost to business and to the prosperity of the UK from a lack of job applicants in skill shortages areas, fewer leaders and innovators.

At the end of 2017, there were around 2,000 young people not in education, employment or training (NEET) in SCR, a small contraction on the previous year. This equates to 6.2% of all young people who are known to the local authorities, which is slightly higher than the national rate (6.0%). Despite SCR's stronger

[5] The move to Universal Credit will affect the monitoring of benefit claimant data around unemployment and claimant count. Universal Credit states a broader span of claimants are required to look for work than under Jobseeker's Allowance. As Universal Credit Full Service is rolled out across the UK, the number of people recorded as being on the Claimant Count is therefore likely to rise.

employment rates, many disadvantaged young people not engaging with employment, education or training.

Health of the Workforce

Healthy workforces are often more productive and less of a burden upon public services. SCR LEP's decisions have a significant impact on the health and wellbeing of local populations.

A healthy population is one that has the potential to be productive. Significant evidence exists to support the link between wellbeing at work and productivity – with wellbeing including physical health and mental wellbeing. Good quality work or jobs is associated with better physical and mental health and less absenteeism and presenteeism[6].

A healthy workforce is key to attracting and retaining businesses and developing dynamic and diverse communities that are sustainable for the future. Many people live within a relatively short commute to their place of work (this is explored in the section on Infrastructure) so the connection between workplace health in local businesses and population health across SCR is also important.

Local areas have levers to manage some of these issues and support a healthy workforce. SCR LEP is well-placed to work collaboratively with employers, local authorities and other stakeholders to improve employment opportunities and health for local people. The diagram below encapsulates how health plays a role in economic development.

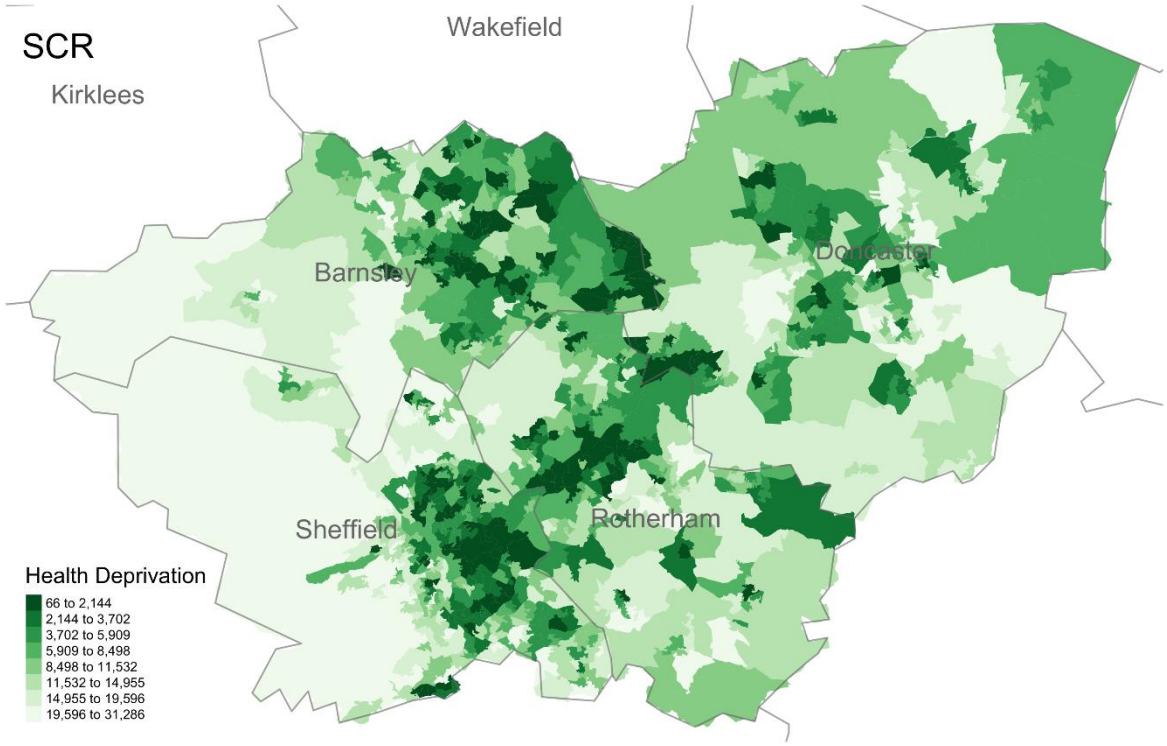
Figure 98: Health and work cycle

Source: PHE

SCR is the seventh most deprived LEP Area in terms of Health Deprivation and Disability with differences across the geography. The map below shows the variations in health deprivation across South Yorkshire, with some areas within the top 10% most deprived in the country for health.

[6] For example, see the What Works Centre for Wellbeing evidence here: https://whatworkswellbeing.org/evidenceresources/

Figure 99: Map of Health Deprivation in South Yorkshire



Source: MetroDynamics 2018

Businesses are increasingly focusing on the health of their workforce, offering membership of gyms, rewards and health checks as employee benefits. Despite this, absenteeism and presenteeism continue to challenge and cost the economy. It is estimated that at a regional level, 131 million working days are lost to sickness every year (4.4 per worker) in Yorkshire and the Humber. This is equivalent to 1.8% of working days compared to 1.5% England average.

Looking across SCR, there are large variances in the proportion of employees who have recorded sick days, with people in Barnsley, Chesterfield, Rotherham and Sheffield more likely to have had a day off in the previous week compared to the national average.

Table 19: Sickness absence - % of employees who had at least one day off in the previous week (2014-16)

Area Name	Value	Lower CI	Upper CI
Barnsley	3.1	2.2	4.3
Bassetlaw	1.8	0.6	5.1
Bolsover	1.9	0.5	6.5
Chesterfield	2.6	1	6.5
Derbyshire Dales	1.6	0.4	5.5
Doncaster	1.9	1.3	3
North East Derbyshire	0.8	0.2	3
Rotherham	2.3	1.5	3
Sheffield	2.3	1.6	3.3
England	2.1	2.1	2.2
SCR (CA)	2.4	2	2.9

Source: PHE 2018

Key Messages:

- Health inequalities are a significant concern in SCR and are potentially a significant driver behind lower productivity.
- Addressing health related economic challenges requires joined up solutions.

Wages & Earnings

SCR is a low wage economy. Workplace earnings are significantly lower than the national and regional averages. The average pay in SCR is 10.5% lower than the national average. It is also lower for females (12.5%) than males (10.1%) evidencing a gender pay gap.

Table 20: Wage Rate

	SCR		UK
	Resident	Workplace	Resident & Workplace
2014	£477.1	£474.2	£518.3
2015	£480.3	£478.3	£527.1
2016	£496.1	£492.0	£538.6
2017	£505.8	£499.5	£550.0
2018	£517.0	£507.9	£569.0
Growth Rate	1.6%	1.4%	1.9%

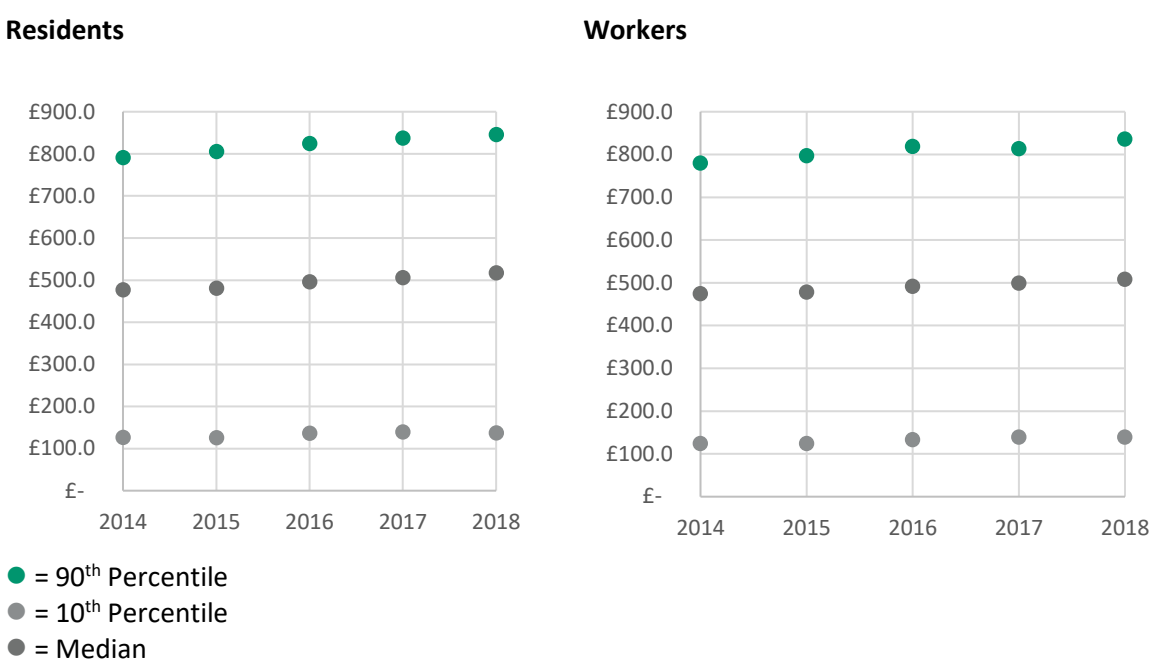
Source; ASHE 2019

Low wages arise from the economic base in SCR which is skewed towards low paid sectors including Logistics and Retail. Low wages are a drag on SCR's productivity.

The differential between workplace and resident earnings is perhaps influenced by the high level of out-commuting amongst the top earners, and conversely, relatively high levels of in-commuting amongst the lowest paid. Although the absolute numbers are low, it suggests that the high quality of life SCR offers in terms of culture and the environment, attracts residents who are prepared to travel out of SCR for better paid jobs elsewhere (e.g. London, Leeds, Manchester, Birmingham). This is likely to include 'super-commuters' who travel over 1 hour 30mins to their place of work.

Looking at highest and lowest salaries in SCR, there has been a growth in the gap between workplace earnings for the lowest quintile and highest quintile earners between 2014 and 2018 (6%). The gap between workplace earnings has also grown by a similar amount.

Figure 100: Highest and lowest earnings in SCR



Source: ASHE 2019

Salaries, wages and earnings across sectors differ greatly and drive the economic development of areas. Areas that have concentrations of highly paid sectors such as Financial Services, have seen their economies accelerate. There is often a correlation between highly paid sectors and the qualification profile of their workforces. However, this is not always the case with experience and skills also important to the Manufacturing, Construction and Transport sectors.

The table below is an extract of average salaries for industrial sectors in SCR. This information is often used at a broad level but as it is an average, high and low salaries in all sectors are hidden.

Table 21: Average Salaries by Sector

SIC	Industry	Average Wages
D	Electricity, gas, steam and air conditioning supply	£39,762
B	Mining and quarrying	£38,101
J	Information and communication	£31,800
K	Financial and insurance activities	£29,902
F	Construction	£29,412
C	Manufacturing	£27,280
O	Public administration and defence; compulsory social security	£26,983
M	Professional, scientific and technical activities	£26,743
H	Transportation and storage	£26,049
E	Water supply; sewerage, waste management and remediation activities	£24,823
P	Education	£23,038
Q	Human health and social work activities	£21,467
L	Real estate activities	£21,406
A	Agriculture, forestry and fishing	£21,203
G	Wholesale and retail trade; repair of motor vehicles and motorcycles	£18,335
N	Administrative and support service activities	£17,286
R	Arts, entertainment and recreation	£15,764
S	Other service activities	£15,031
I	Accommodation and food service activities	£10,992

Source: EMSI 2018

This average salary by sector is constrained by available information but also concerningly shows that several sectors are below the national average. Several large employing sectors in SCR, specifically Retail and Administration, have annual salaries which are well below the average rate.

The information on wages lends weight to economic development initiatives and policy to focus upon raising earnings, reducing inequality and focusing upon high wage sectors. However, there are significant complications and considerations in doing so. For example, a focus upon growing high wage sectors may not align with the current sector strengths or could be the focus for competition from other better placed city-regions.

Pay and Qualification Levels

In general, the better an individual's qualifications, the longer they spend in education and the higher earning they have. People with higher qualification often benefit from demand rising for highly skilled people and growth in sectors. There is also some evidence that highly skilled occupations are less likely to be replaced by technology in future. Those with lower qualifications face challenges but can benefit from progression, increased flexibility in the labour market and potential automation by technology in future.

Given the gaps in SCR's qualification base (see section XX), understanding which qualifications can lead to higher earnings is of importance. In-depth research by DfE and New Economy has explored this. Overall, this highlights that undertaking higher level qualifications (degree or equivalent) has a positive impact upon earnings, but there is variance depending on the subjects studied.

Other findings show that undertaking high level qualifications (Level 4 and above) are economically worthwhile up to the age of about 45, but after that age the economic benefits reduce. However, for qualifications at Level 2 and Level 3, the earnings potential reduces at a younger age (age 25 for Level 2 and age 30 for Level 3) and the uplift is lower overall. The work also highlights that gender and ethnicity can vary income levels. This provides a useful steer for interventions but further work is needed to test and verify this.

Recent work has looked at apprenticeship earnings and it similarly shows that the subject and level of apprenticeship qualification determines the greater earning potential. The work also highlights that subjects which have some of the largest apprenticeship figures (e.g. Administration, Health and Social Care and Child Development) are not necessarily related to sectors and careers where earnings are greater.

Key messages:

- SCR is a low wage economy. The economy has seen growth in sectors that are both traditionally seen as high and low wages.
- Qualifications and skills progression is one of the most important drivers of higher wages, although the interactions between the sectoral mix and labour force is also important.

Demand for skills

Demand for skills is difficult to capture definitively, which is why matching skills supply and demand can be challenging. There are various data sources and approaches which can be used to identify demand for skills. These include sector or occupational composition of the labour market, employer surveys and the numbers of job adverts or vacancies.

One illustrative way of identifying skills demand is through overlaying occupations and sectors. The table below identifies the difference in the proportion of employees between SCR and UK, showing that in some sectors, lower skilled occupations are more dominant in Sheffield City Region. Furthermore, in SCR there are a lower proportion of Managerial and Senior, Directors and Senior Officials in all sectors compared to the national average.

Table 22: SIC by SOC (difference between SCR and UK average)

Occupation	A, B, D, E Agriculture, energy and water	C Manufacturing	F Construction	G, I Distribution, hotels and restaurants	H, J Transport and communication	K, L, M, N Financial, Real Estate, Professional and Administrative activities	O, P, Q Public administration, education and health	R, S, T, U Other
1. Managers, directors and senior officials	-1.5%	-1.6%	-1.1%	-1.6%	-2.4%	-3.0%	-0.5%	-1.1%
2. Professional occupations	-2.5%	-2.9%	-1.0%	-0.9%	-6.4%	-4.5%	-1.5%	-2.4%
3. Associate professional and technical occupations	-1.7%	-2.6%	-0.4%	-1.0%	-4.8%	-2.5%	-1.0%	-3.3%
4. Administrative and secretarial occupations	-1.4%	-0.8%	-0.8%	-0.7%	0.0%	0.1%	0.1%	0.1%
5. Skilled trades occupations	-0.2%	0.5%	-0.4%	-0.4%	0.7%	1.0%	-0.2%	0.0%
6. Caring, leisure and other service occupations	-0.3%	0.0%	0.1%	-0.1%	-0.7%	0.5%	1.7%	4.1%
7. Sales and customer service occupations	-1.1%	-0.2%	0.0%	1.8%	2.7%	4.2%	0.2%	0.9%
8. Process, plant and machine operatives	9.5%	4.5%	2.4%	0.8%	7.0%	1.1%	0.1%	-0.1%
9. Elementary occupations	-0.9%	2.9%	1.2%	2.1%	3.8%	3.1%	1.1%	1.8%

Source: Annual Population Survey 2018. A minus proportion highlights where the national proportion is more than the SCR share.

This analysis suggests that certain occupations within sectors do not feature in the City Region. For example, decision-making, leadership and innovation in the Transport and Communication sector happens in areas outside of SCR, whilst sales and processing occupations in this sector are based within the City Region.

Whilst the SCR labour market has people in every occupational group and sector, the analysis above highlights that current skills demand from businesses is likely to be pitched at mid-lower level occupations. However, whilst it demonstrates some aspects of demand, this analysis does not indicate where high level occupations are aspired or recruited. For example, there could be vacancies in professional occupations within the Transport and Communications sector which are unfilled, meaning this is artificially high.

The 2017 Employer Skills Survey provides an indication of skills demand from employers. The survey is available at a LEP level and highlights that a slightly lower proportion of businesses in SCR (16%) have skills gaps or skills shortages compared to the national average (17%). Again. this highlights some aspects of skills demand but does not provide the full picture; it is not clear whether this is due to economic conditions, satisfaction with skills providers or the occupational profile.

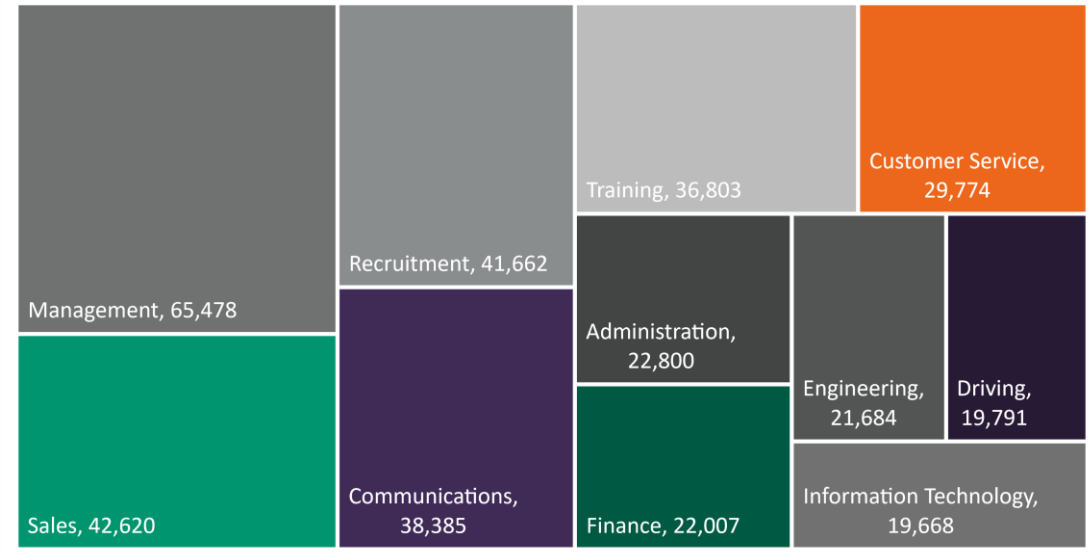
In addition to the skills shortages and gaps which are experienced by firms, the survey highlights the skills identified by employers from new recruits and exiting workers. It shows that firms in SCR have some skills constraints which differ from the national average in the following areas:

- A higher proportion of employers in SCR cite a need for Sales and Customer service skills but a lower proportion cite Management and Leadership skills.
- Recruitment is harder for SCR firms at a Service-Intensive and Labour-Intensive level compared to the national average.

The information is challenging to interpret as skills required may be a function of a dominance of positions or sectors or features of the labour market, supply of skills or employer operations. It is also possible that some employers may be unaware that their business could benefit from other skills, such as Management and Leadership.

The findings around Sales and Management skills are complicated by collated evidence around job postings. There is no one single source of information for job postings and as such, any analysis identifies a partial assessment of skills demand. The information below is collated by EMSI, highlights in-demand or referenced skillsets[7] within job postings in 2018 in SCR.

Figure 101: Top in-demand skills in SCR



Source: EMSI 2018th analysis highlights constraints with recruitment not necessarily a skill and perhaps reflecting recruitment consultancy activities.

There are clear alignments with the in-demand skills in SCR and the business base (e.g. Engineering and Advanced Manufacturing, Driving and Logistics, and Digital and Communications sectors). However, clear alignment with educational and training outcomes are challenging, given that several of the in-demand areas are broad or unclear. The data above is contradictory as the demand evidence from the survey and occupations highlights managerial skills as important, when occupational and skills survey evidence suggests that this is an area that is not in demand.

Future demand

Further demand evidence can be inferred from forecasts and projections. There are various providers of economic forecasts and projections highlight similar trends, based on past performance, policy interventions, forecasting and macro-economic changes.

There are several sectors of forecast employment growth; with a continued trend in the balance between industrial and service-based employment in the economy. However, forecasts of this nature do not often consider planned interventions or technological change.

The table below presents the top five sectors that are predicted to grow and decline in SCR based on employment forecasts produced by EMSI[8]. The detail of this, matches some of the wider trends but also suggests some contraction of industrial activities.

[7] Further work is ongoing as several of these appear to be linked to recruitment consultancies and some are perhaps not skills sought but rather experience or job title related.
[8] This analysis highlights detailed sectors with over 150 job changes expected and does not break down into replacement demand and 'new' job growth.

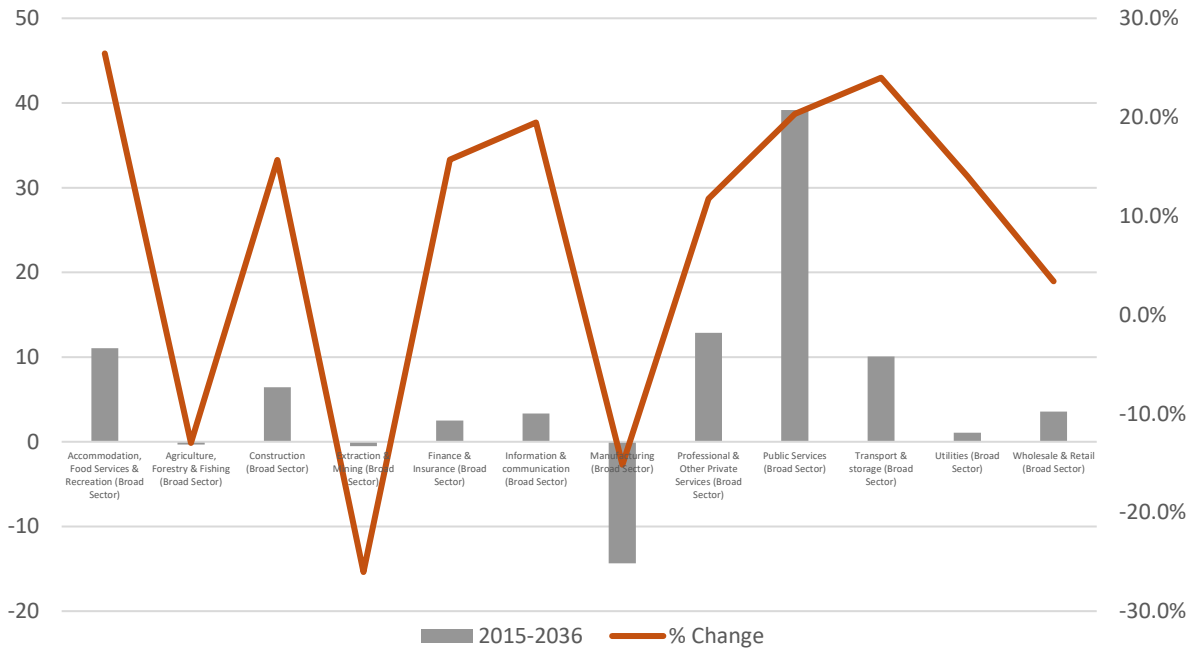
Table 23: Top 5 and Bottom 5 Sector forecasted employment change (2018-2026)

Sector	% Change
Wholesale of sugar and chocolate and sugar confectionery	25.91%
Repair of computers and peripheral equipment	24.46%
Motion picture, video and television programme production activities	22.47%
Silviculture and other forestry activities	20.49%
Physical well-being activities	16.72%
Manufacture of wire products, chain and springs	-24.08%
Casting of steel	-24.30%
Technical testing and analysis	-27.06%
Production of electricity	-28.50%
Manufacture of electric lighting equipment	-30.37%

Source: EMSI 2018

Other forecasts from the Regional Economic Model at a broader level, indicate that sectors like Manufacturing and Mining/Extraction may continue to see contraction in employment for a few more decades. This matches the historical regional and national trends, however manufacturing jobs have held more consistently in SCR since the economic recession of 2008.

Figure 102: REM Forecasts by absolute and share (2015-2036)



Source: Regional Economic Model

Key messages:

- Demand for skills is complex, there is certainly a move towards higher level skills and for sectors which require STEM skills.

Supply of Skills & Qualifications

A functioning skills system is seen as a prerequisite for economic growth. The UK Government has committed to change aspects of schooling, further education and higher education including supporting three million apprenticeship starts by 2020.

At a local level, the City Region has well regarded skills assets and advantages but persistent qualifications and skills gaps. The implication of low skills or qualification attainment is clear, with the OECD highlighting that low educational attainment is a:

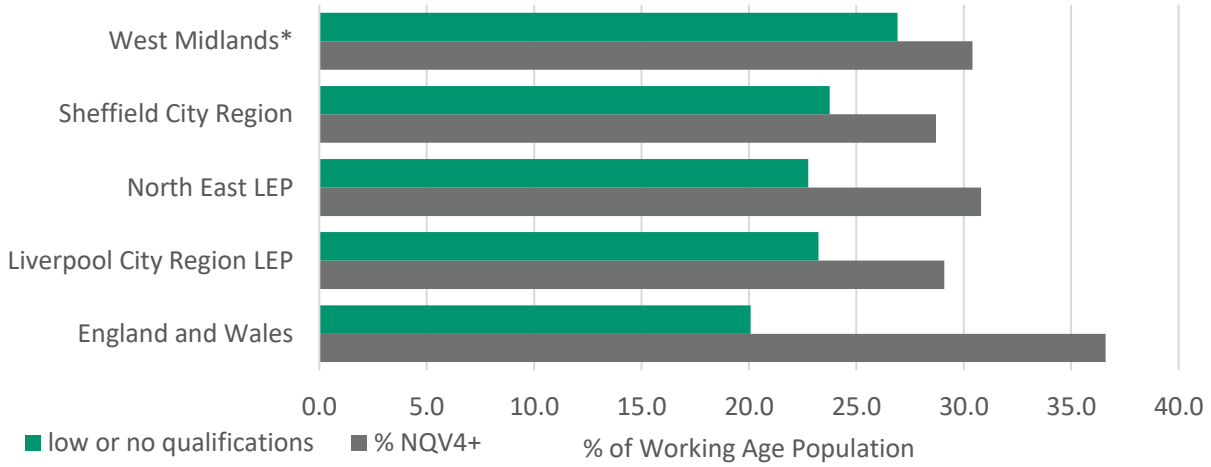
"powerful predictor of the wealth that countries will produce in the long run. Or, put the other way around, the economic output that is lost because of poor education policies and practices leaves many countries in what amounts to a permanent state of economic recession"

Skills is not static and demand is evolving with economic shifts, technological advancements and change in business models. In the future, it is expected that the City Region will seek increased powers to influence skills provision and employer demand.

Qualification levels

Sheffield City Region has a comparatively low proportion of its workforce and population with high-level qualifications (degree or equivalent) compared to the national average and other city regions.

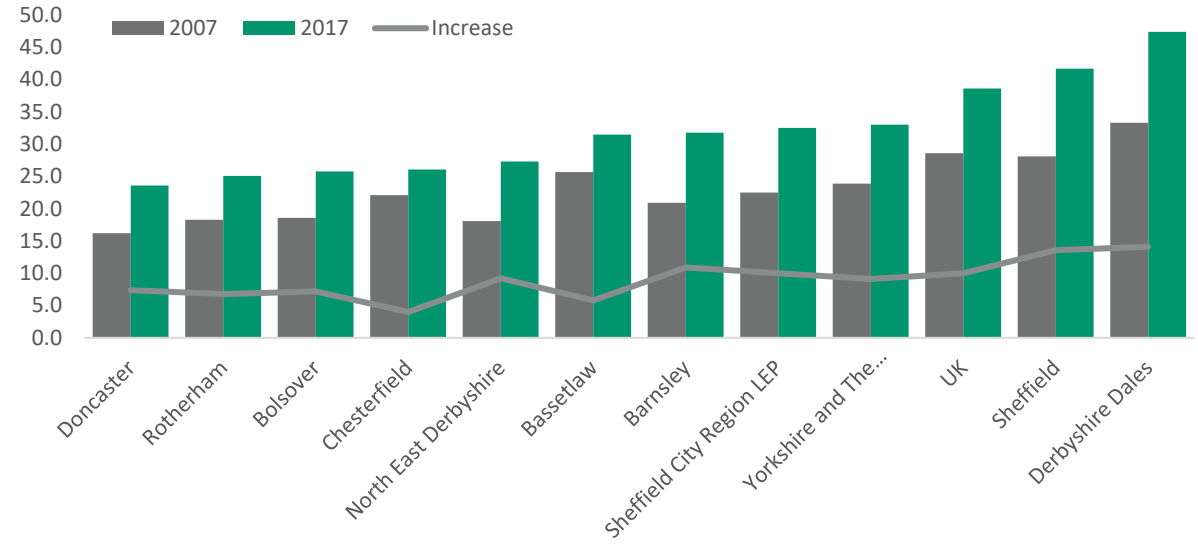
Figure 103: % of population (16-64) across City Region Areas



Source: APS 2018 *

There is an uneven spread of areas with highly qualified people within SCR, as illustrated in the chart below. All areas have improved over the last decade but some have increased faster than others.

Figure 104: Proportion of population with Degree or equivalent (2007 and 2017)



Source: Annual Population Survey 2017

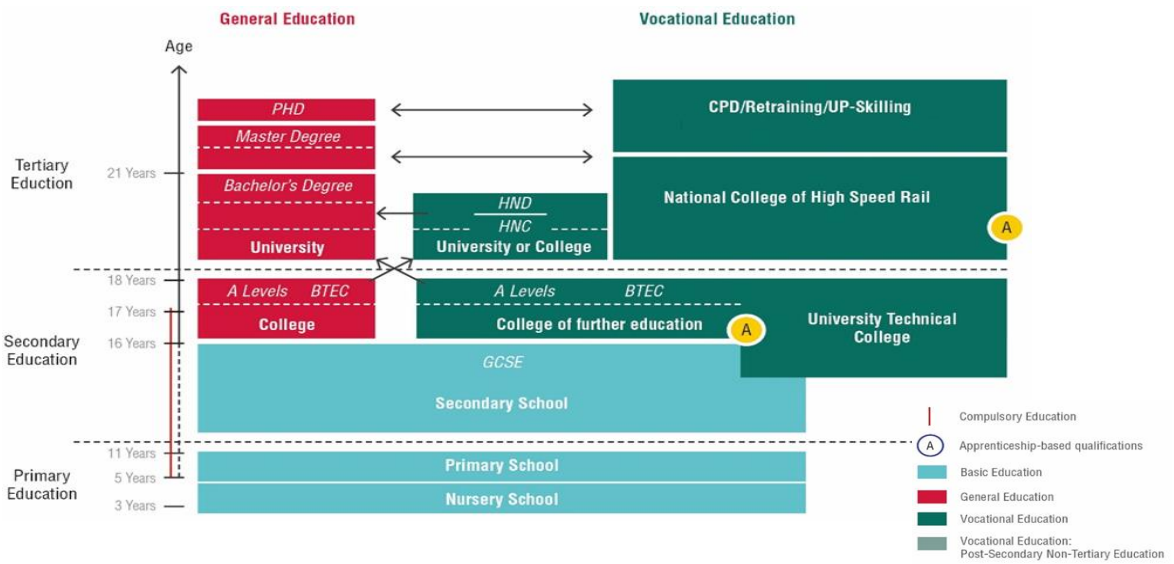
Key Messages:

- SCR has a lower proportion of workers with degrees or equivalent and a higher proportion of those with no qualifications. There is a variance in where highly qualified people live, with a higher share of people with higher levels skills in Sheffield and Derbyshire Dales.

Skills Delivery in SCR

The supply of skills in Sheffield City Region is demonstrated by Figure 105 below which is a simplified representation of the general and vocational education system in SCR. It attempts to identify paths to skills progression and employment. In reality, there is significant complexity around the landscape for providers and learners.

Figure 105: Skills System in SCR



Source: Atkins & Mott

MacDonald 2017

The diagram does not capture employers or private training providers who play an important and responsive role in skills delivery, particularly around vocational education.

Early Years, Primary & Secondary Schooling

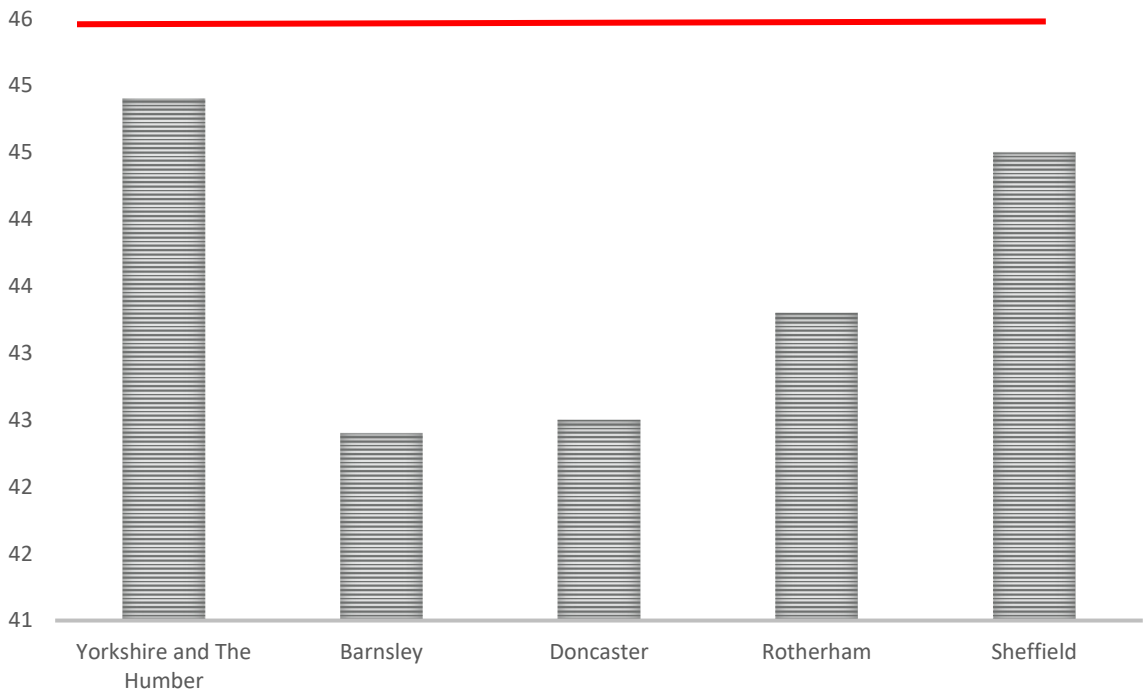
This does not go into detail on Early Years, Primary and Secondary Schooling but explores issues of attainment, progress and aspiration. This is because whilst the subject matter and data is detailed, LEPs and Combined Authorities do not currently have the policy levers to enact change in mainstream pre-16 education.

Attainment

There are two useful measures of attainment which can provide an indication into attainment and progress. Attainment 8 scores measure the achievement of a pupil across 8 qualifications including Mathematics, English, the English Baccalaureate (EBacc) measure (and 3 further GCSE or EBacc subjects) and any other non-GCSE qualifications. Each individual grade a pupil achieves is assigned a point score, which is then used to calculate a pupil's Attainment 8 score.

The graph below shows the average Attainment 8 score for South Yorkshire (other SCR districts are covered within wider LEAs where distinctions are difficult to identify) and against the average for Yorkshire & Humber and England. The data shows a concerning lack of progress from students across South Yorkshire, highlighting that attainment and progress in the City Region is behind the national average, even at a younger age (14-16 years olds).

Figure 106: Attainment 8 for South Yorkshire against Yorkshire & England Average



Source: DfE 2018[9]

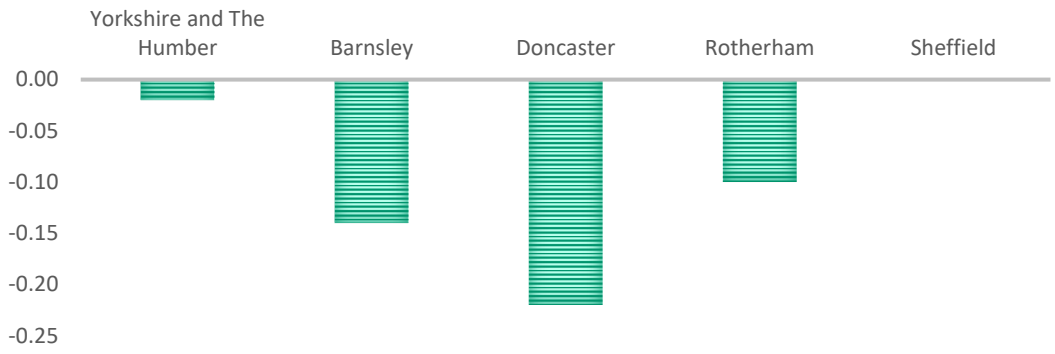
Progress 8 scores capture the progression that pupils make from the end of primary school to the end of secondary school through pupils' results compared to the actual achievements of other pupils with similar prior attainment. A negative Progress 8 score means pupils in the school made less progress than other pupils across England with similar results at the end of key stage 2.

The chart below shows that Sheffield performs slightly better than the Yorkshire average (-0.02) and in-line with the England (0.0) average for educational progress, whilst the other South Yorkshire authorities

[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/561021/Progress_8_and_Attainment_8_how_measures_are_calculated.pdf

perform much worse than the Yorkshire & Humber average. This is already slightly worse than the England average.

Figure 107: Progress 8 for South Yorkshire against Yorkshire & England Average



Source: DfE 2019

Attainment at GCSE[10] is similarly varied but generally lower than the national average in all the South Yorkshire local authority areas, with some areas showing a much lower proportion of its pupil base with 'strong passes' in English and Maths compared to the national and Yorkshire & Humber average. The data for the SCR LEP's North Nottinghamshire and Derbyshire districts is not available at local authority level.

Table 24: Strong Passes in English & Maths

Geography	English and maths GCSEs	
	Percentage of pupils who achieved a strong 9-5 pass	Percentage of pupils who achieved a standard 9-4 pass
England	39.6	59.1
Yorkshire and The Humber	40.7	61.8
Barnsley	38.8	59.7
Doncaster	38.6	58.4
Rotherham	37.1	59.0
Sheffield	39.1	59.5
Derbyshire	42.3	64.9
Nottinghamshire	45.5	65.9

Source: DfE 2017

The table below shows that the next education or employment steps within South Yorkshire vary slightly with young people in Barnsley more likely to enrol on an apprenticeship, and pupils from Doncaster and Rotherham least likely to attend a Further Education College.

[10] DfE 2019

Table 25: Destinations of Pupils (2016/17)

Geography	Number of pupils	Overall sustained education or employment /training destination	Of which: Apprentice-ships	Any sustained education destination	Further education college or other FE provider	School sixth form - state funded	Sixth form college	Other education destinations	Sustained employment and/or training destination	Destination not sustained
ENGLAND	543,290	94	6	90	38	39	13	1	3	5
Yorkshire and the Humber	55,800	93	8	90	39	34	15	1	4	6
Barnsley	2,235	94	14	89	74	8	7	-	4	6
Doncaster	3,215	92	10	87	37	46	3	1	5	7
Rotherham	3,250	93	11	88	37	32	17	1	5	7
Sheffield	5,175	94	9	89	45	35	9	1	4	6
Derbyshire	7,990	94	11	90	47	37	6	1	5	5
Nottinghamshire	8,090	93	8	89	43	43	3	1	4	6

Source: DfE 2019

The different destinations and varied educational attainment across the city region influences choice and aspiration. It may also explain traditional preferences for certain careers.

Performance and progression shapes employment and decision making and it is clear that South Yorkshire lags in educational performance and progression in comparison to the national average from an early age. The Progress 8 and Attainment 8 metrics are not the only metrics which can be used to make this conclusion. Other metrics such as exclusions, Key Stage 2 standards and sustained destinations identify different and more positive trends for SCR.

Aspiration

The aspiration of the existing and future workforce has often been cited as one of the drivers of educational performance, and helps to explain poor engagement with the labour market. Aspiration can be difficult to quantify; an individual might set their aspirations in relation to what they know they can achieve, or they might set aspirations more ambitiously.

Aspirations are shaped and constrained by many factors such as social mobility. This can be shaped by different people in our lives, including parents, guardians, teachers, friends, family, professionals, colleagues and role models. Advice on careers, and the opportunity to encounter a range of employers, can have a strong impact on a young person's aspirations.

Career choices are seen to change with age and is influenced by experiences. This suggests a role for focused career advice and support. Good careers, information, advice and guidance inspires individuals to develop the skills they need to manage their career path. It also helps to establish the flexible and enterprising behaviours that mark out a productive and motivated workforce.

Through a consultation run by SCR, employers have identified effective careers education, information, advice and guidance as a key concern. The desire of employers to recruit well-informed candidates who are equipped with the essential skills that improve productivity (initiative, team working, communication, creativity, versatility) is well documented nationally. Furthermore, a review by the Careers and Enterprise Company (CEC) on schools and their achievement of the 8 Gatsby Benchmarks for good careers advice, found that 61.8% of respondents n South Yorkshire did not feel they met the benchmark for encounters with employers and employees for their pupils[11]. There is also a role for careers advice for young people and those looking to retrain or find alternative career routes.

Key Messages:

- There are attainment and progression (and potentially aspiration) challenges for young people in SCR which are currently out of scope for SCR CA and LEP.
- Careers advice varies across SCR but can shape decision making and benefit skills supply and demand

[11] Careers and Enterprise Company COMPASS assessment 2018

Post 16 Education

Following the conclusion of formal schooling, success and destinations at the following are an important benchmark for the City Region:

- Further Education College
- Apprenticeships
- A-Levels (in colleges or sixth form colleges

This section provides an overview of the routes, noting that there is not a 'right' choice and there is significant cross over. Exploring general trends around these highlight skills challenges and opportunities for SCR.

A-Levels

There are various A-level providers in the City Region supporting students as they prepare to go into work or further study at university. The percentage of students achieving at least 2 A-Levels is lower in all local authority areas in South Yorkshire compared to the national average. However, the average in Doncaster and Rotherham is also lower than the Yorkshire & Humber average.

Table 26: Percentage of students achieving at least 2 A Levels

	Percentage of students achieving at least 2 A levels
England	**77.4**
Yorkshire and the Humber	**71.9**
Barnsley	72.2
Doncaster	63.8
Rotherham	68.3
Sheffield	72.7
Derbyshire	77.6
Nottinghamshire	74.1

Source: DfE 2017/18

In addition to the performance, the destinations of young people post A-Levels, varies across the City Region and is arguably not in line with the national average. This demonstrates potential ambition challenges, barriers to progression and historical trends which still exist today.

Table 27 : Destinations of Students after A-Levels.

Local Authority	Number of students	Overall sustained education or employment destination	Of which: Apprentice-ships	Any sustained education destination	Further education college or other FE provider	Higher Education Institutions	Of which: Top third of HEIs	*Oxford and Cambridge*	*Russell Group (incl. Ox. and Cam.)*	Of which: all other HEIs and other providers
ENGLAND	182,880	91	6	72	9	60	26	1	17	34
Yorkshire and the Humber	16,565	91	7	73	9	62	20	1	17	42
Barnsley	145	90	7	75	5	68	24	x	21	44
Doncaster	1,310	91	9	73	10	61	14	-	11	47
Rotherham	890	92	9	78	9	66	18	1	15	48
Sheffield	1,530	91	4	72	8	59	25	2	22	34
Derbyshire	2,480	93	10	75	11	61	22	1	17	39
Nottinghamshire	2,970	91	8	71	10	58	20	1	15	38

Source: DfE.

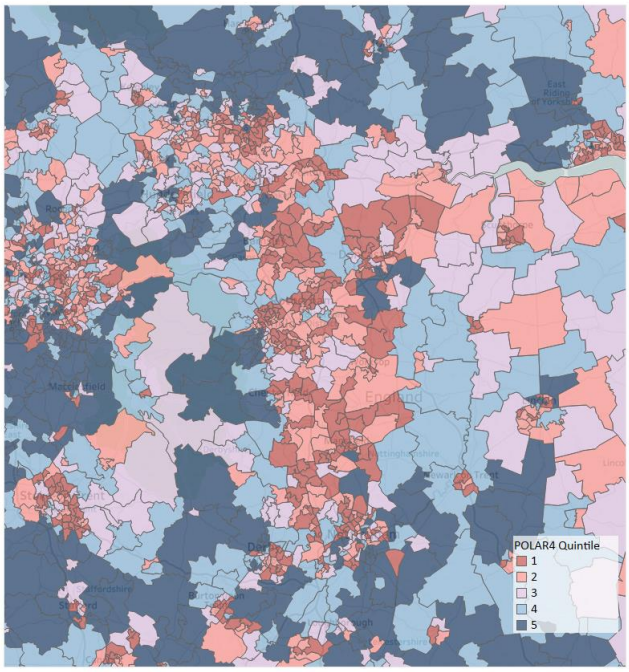
It has been a policy focus for young people to aspire to attend Higher Education Institutions in the past. However, despite focused investment in this area there are some communities in Sheffield City Region where progression rates to higher education are still low. This variance within the City Region is also demonstrated when exploring neighbourhood level data. The map below illustrates the variation.

The map highlights the proportion of young people (15 year olds) who entered higher education by the age of 19 during the 2009-10 to 2014-15 academic years. These are assigned to five groups: the POLAR4 quintiles:

- Areas in red are those in quintile 1 (and have the lowest participation rates)
- Areas in dark blue are those in quintile 5 (and have the highest participation rates)

Across Sheffield City Region there is extreme variation with some areas having a high proportion of students going to university (some parts of Sheffield have over 50% of young people) whilst other areas have low proportions (Doncaster has less than 20% of young people). The reasons for this are varied and include cost, culture, aspirations and other opportunities.

Figure 108: Likelihood that young people are to participate in higher education in SCR



Source: Office for Students 2018

Attending university is not for everyone but providing the opportunity is important for individual choice and equality. The above is illustrative of the differing educational attainments, ambitions and outcomes for people across the City Region, demonstrating that there are complexities and local variations which require focused and nuanced interventions.

Key Messages:

- A lower share of people in many areas do not go into further study after completing their A-levels, with potential barriers to Higher Education perhaps including attainment, culture and cost.

Further Education and Training

There is a range of Further Education provision available within the Sheffield City Region. At latest assessment only one college in SCR (Barnsley) is rated as outstanding by OFSTED although other provision outside of SCR is accessible by learners.

There are around 65,000 full and part-time learners enrolled at colleges in SCR. A snapshot of learning aims by provision type in 2017/18 is provided below. The majority of provision is within Education and Training (28,500), followed by Apprenticeships (27,300) and Community Learning (7,720) settings. A breakdown is provided below:

Table 28: SCR Participation 2017/18

Community Learning	**Total**
Personal and community development learning	6,780
Wider family learning	510
Family English Maths and Language	380
Neighbour learning in deprived communities	50
Apprenticeship	**Total**
Intermediate Apprenticeship	13,330
Advanced Apprenticeship	11,760
Higher Apprenticeship	2,280
Education & Training	**Total**
Below Level 2	12,530
Level 2	11,170
Level 3	3,990
Level 4 Plus	550
Unassigned	330

Source: SFA Localism Dashboard 2017/18

Community learning

The table below shows the breakdown of community learning areas, indicating a link towards the demographic and economic characteristics of areas. For example, Family English, Maths and Language, although limited, seems to be popular in Sheffield; the most ethnically diverse local authority area and Bassetlaw an area of higher EU migration.

Table 29: Community learning by Local Authority and area

Local Authority District	**Personal and community development learning**	**Wider family learning**	**Family English Maths and Language**	**Neighbour learning in deprived communities**	**Grand Total**
Barnsley	840	110	40	10	1,000
Bassetlaw	460	20	110	20	610
Bolsover	330	140	0	0	470
Chesterfield	520	50	0	0	570
Derbyshire Dales	760	0	0	0	760
Doncaster	810	70	30	20	930
North East Derbyshire	510	10	0	0	520
Rotherham	780	10	0	0	790

Sheffield	1,780	110	190	0	2,080

Source: SFA Localism Dashboard 2017/18

Education & Training

The table below presents the proportion of known enrolments by subject area across years, showing the variance in course delivery by year and also overall. The data shows a proportional increase in enrolments in Engineering and Manufacturing Technologies, Health, Public Services and Care and a decline in Retail subjects. It also shows that subject areas make up a rather small proportion of FE education provision e.g. ICT, Science and Maths and Arts, Media and Publishing (all below 2% of all courses) delivered in a year.

Table 30: Enrolments - Adult Skills by Subject by Year

Row Labels	2015/16	2016/17	2017/18
Agriculture, Horticulture and Animal Care	0.8%	0.5%	1.0%
Arts, Media and Publishing	0.5%	0.3%	0.1%
Business, Administration and Law	32.0%	29.8%	28.2%
Construction, Planning and the Built Environment	4.2%	4.4%	4.2%
Education and Training	2.2%	2.1%	1.7%
Engineering and Manufacturing Technologies	18.1%	16.8%	21.8%
Health, Public Services and Care	19.7%	26.9%	27.6%
Information and Communication Technology	1.7%	1.6%	0.9%
Leisure, Travel and Tourism	2.9%	2.9%	2.7%
Retail and Commercial Enterprise	17.8%	14.5%	11.6%
Science and Mathematics	0.1%	0.1%	0.2%
Total	100%	100%	100%

Source: DfE/SfA Datacube 2018

The table below shows that courses up to Level 2 make up 82.9% of Education and Training participation in SCR, whilst Level 4 and above makes up only 2%. This suggests an overwhelming focus on lower levels skills provision, and potential issues with progression across all areas, although Advanced Learner Loans and cuts to the Adult Education Budget may also shape participation rates.

Table 31: Participation by Level and Local Authority 2017/18

Local Authority District	Below Level 2	Level 2	Level 3	Level 4 Plus	Unassigned	Grand Total
Barnsley	1,270	1,480	630	100	20	3,500
Bassetlaw	790	590	200	50	20	1,650
Bolsover	360	450	140	20	50	1,020
Chesterfield	360	520	200	40	50	1,170
Derbyshire Dales	150	250	110	20	20	550
Doncaster	3,930	2,960	730	130	40	7,790
North East Derbyshire	240	410	180	20	40	890
Rotherham	1,480	1,540	510	70	20	3,620
Sheffield	3,950	2,970	1,300	110	70	8,400
SCR	12,530	11,170	4,000	560	330	28,590

Source: SFA Localism Dashboard 2017/18

The lack of participation in Level 4 qualifications and above, is highlighted in a review of level 3+ STEM curriculum for the Sheffield City Region. This confirmed that the majority of level 4+ qualifications in STEM

subjects[12] are delivered by Higher Education Institutions, with a small amount of provision in Further Education Colleges.

Furthermore, the work showed that skills progression is a challenge. A significant number of learners at level 3 already possess a qualification at this level indicating that there is a degree of retraining taking place (e.g. learners may be studying programmes to access HE) and there are challenges to progression.

Research so far shows that the introduction of Advanced Learner Loans for adults over 24 years has led to a decline in adult provision and in the number of adults studying priority STEM areas since 2013/14. Research at a national level, suggests that whilst being viewed as positive overall and not affecting some communities as much as expected, Advanced Learner Loans have also resulted in courses being withdrawn. This impact will continue to be monitored and understood[13].

In addition to the traditional FE sector, there are specialist providers (e.g. AMRC) and University Technical Colleges (UTCs) which also offer a range of courses and collaborate with providers across the City Region. These provide a distinct and targeted offer to students and businesses, with successes for these organisations compared to similar offers across the country. SCR is developing a strength in specialist provision, specifically around vocational education and training. Emerging new provision (e.g. Rotherham University Centre, XP School, etc) is providing a wide variety of choice for education but also potentially making the landscape complex. There is also a lack of evidence thus far on participation and the strength of these new players in the education industry.

Key Messages:

- There is varied Further Education provision across SCR, much of it is at levels 1 and 2. Whilst industry and UK leading provision exists, there are concerns about quality of provision, progression and match between subjects studied and the local economy.

Apprenticeships

Getting more people onto Apprenticeship programmes is a Government policy priority given the relatively low level of skills and educational qualifications amongst a large part of the country's workforce. There are several benefits to businesses and the economy from apprenticeships. They provide young people with direct experience in a real working environment, making them more employable and allowing them to gain basic workplace skills before entering the job market.

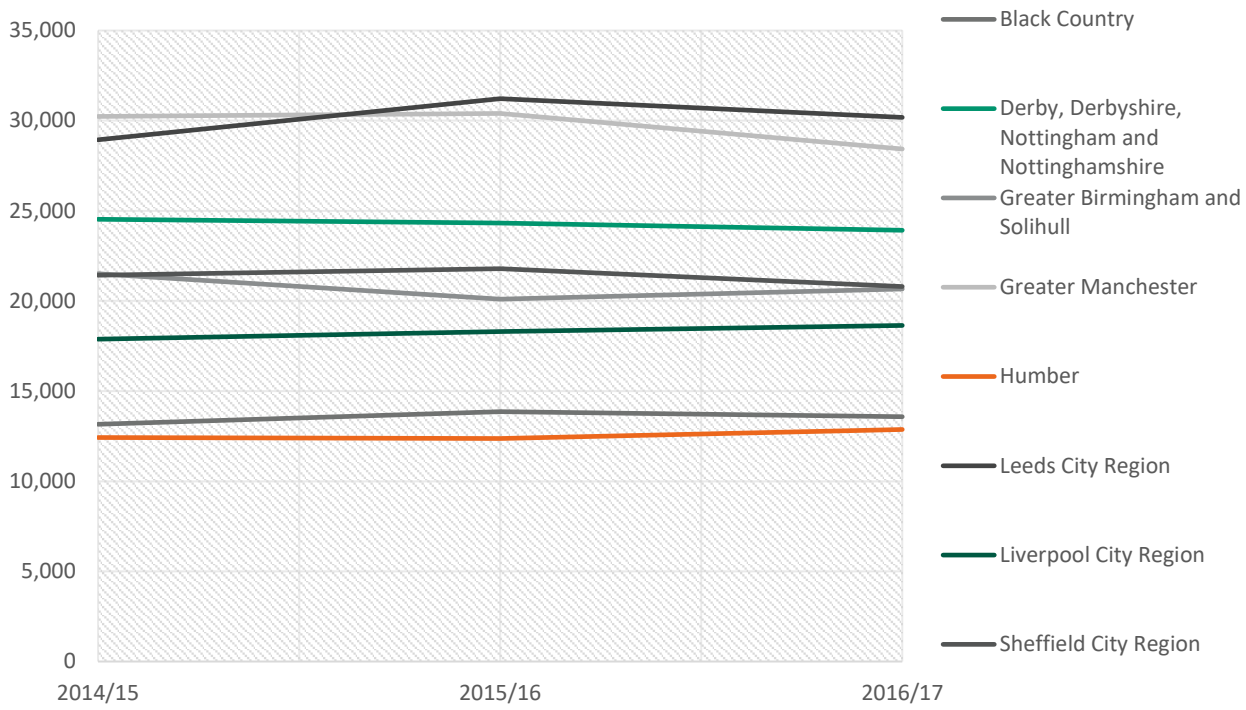
To plug skills gaps, address social mobility and support businesses, the UK Government set a target of 3,000,000 apprenticeship starts in the UK between 2015 and 2020. As part of this commitment, the Apprenticeship Levy came into effect on 6 April 2017; with a charge on all UK employers with a pay bill of over £3 million per year. The levy is set at 0.5% of the value of the employer's pay bill, minus an apprenticeship levy allowance of £15,000 per financial year. The Government has stated that the levy "will allow us to double investment in apprenticeships by 2020 from 2010 levels, to £2.5 billion [per year]".

The graph below shows that apprenticeship take-up between 2014 and 2016/17 was fairly flat, with some areas of the UK, including SCR, showing a decline ahead of the introduction of the levy. Despite this, SCR has a level of apprenticeships which is greater than many larger City Regions; illustrating a long-held tradition in fostering apprenticeships within the local economy.

[12] Core or related.

[13] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/522875/BIS-16-22-evaluation-of-24_-advanced-learning-loans-an-assessment-of-the-first-year.pdf

Figure 109: Apprenticeship take up by year 2014-2016/17

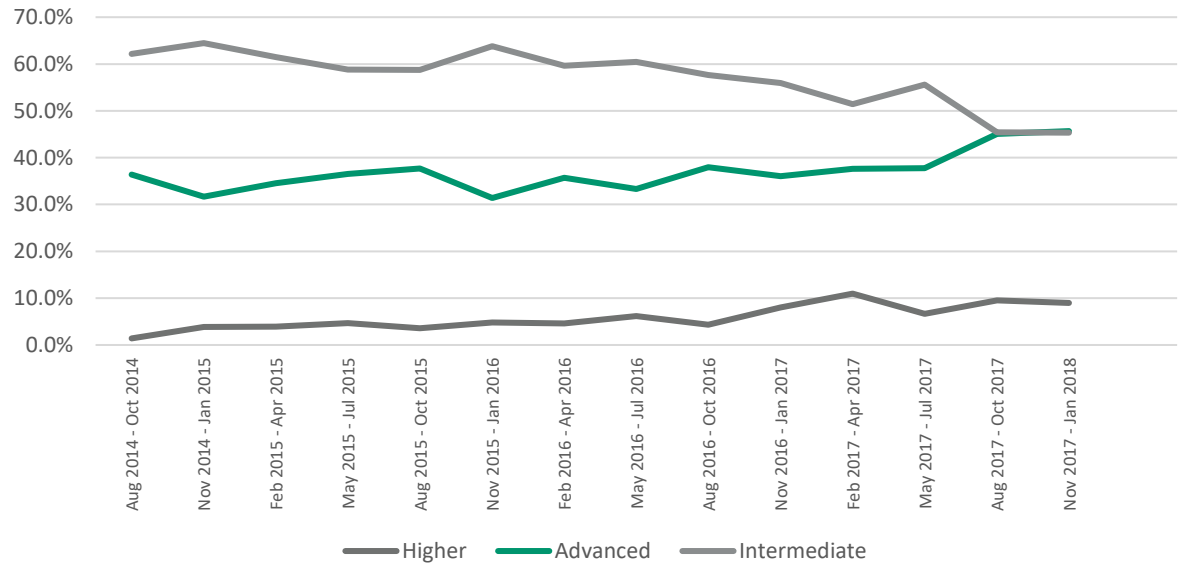


Source: DfE 2018

Some of the recent data for 2017/18 suggests that the initial drop in apprenticeships in SCR has been overcome with an increase in enrolments. This matches other national trends identified by industry commentators. However, there has been no significant increase in enrolments. There are several possible explanations for this including demographics, failure of the levy and associated interventions, adjustment time and competitive pressure from Higher Education.

There is also evidence of some positive trends on apprenticeships for England and SCR. For example, more learners are starting on Higher and Advanced Apprenticeship programmes now compared to Intermediate Apprenticeships.

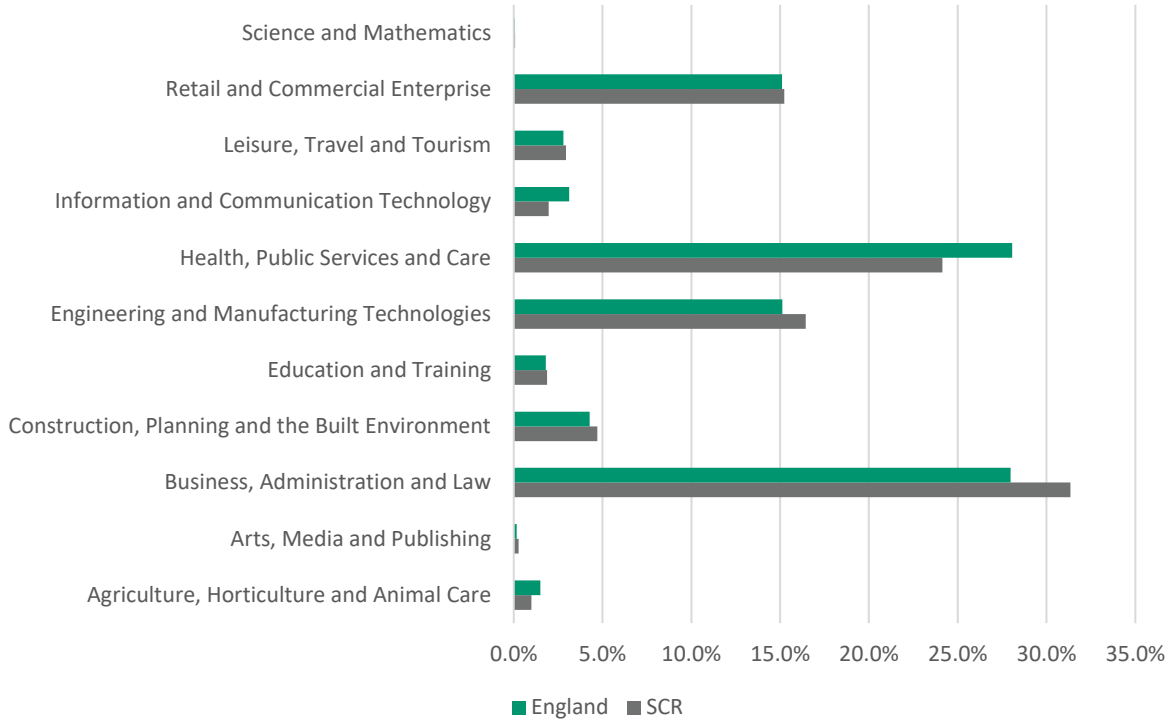
Figure 110: Proportion of Enrolments by Level in SCR



Source: DfE DataCube 2018

A larger proportion of people started STEM aligned apprenticeships in August 2017 (41.4%) compared to August 2014 (38.4%). However, there is evidence that change is slow in relation to some subject areas. The majority of apprenticeships are delivered in non-STEM areas such as Business Administration and Law and Retail and Commercial Enterprise, despite the SCR's business base being focused in other sectors.

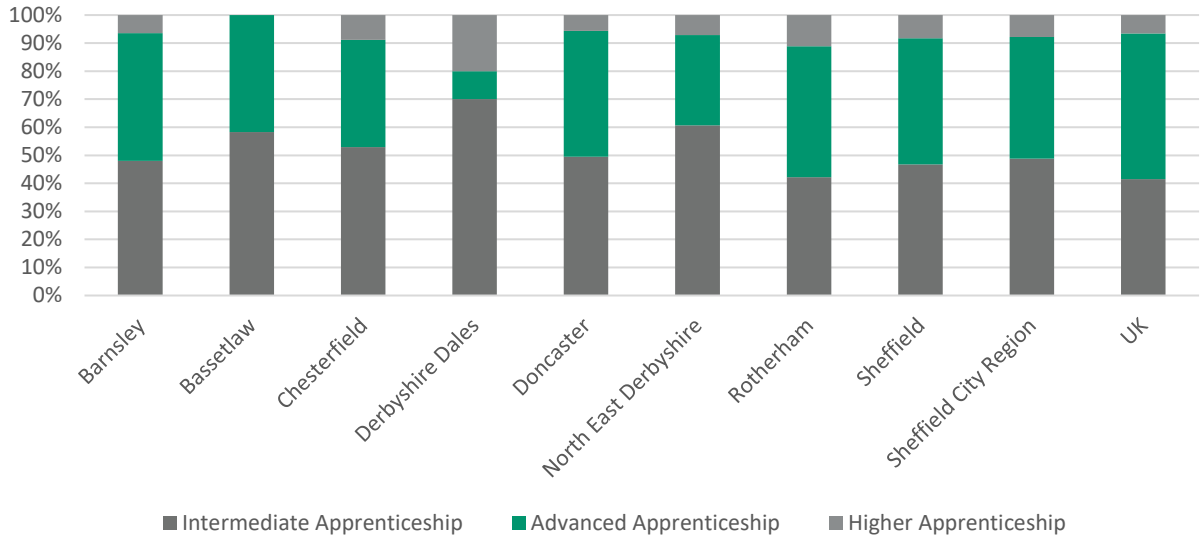
Figure 111: Proportion of Enrolments by course area in England and SCR



Source: DfE DataCube 2018

Looking at the delivery of apprenticeships across the local authorities in SCR, there is again a bias towards lower apprenticeship levels. Higher Apprenticeships make up 7.8% overall (higher than the national average). Higher apprenticeships are slightly more popular in Rotherham, Sheffield and Chesterfield, perhaps reflecting the AMR, positive changes by Colleges or historical trends. There may also be an age bias, although there is no discernible age trend in apprenticeship data with a continued sizeable share of apprenticeships taken up by over 25 year olds.

Figure 112: Apprenticeships by Level 2017/18



Source: Localism Dashboard 2018

The breakdown of subject areas and levels shows the areas where higher apprenticeships are delivered (primarily Business Management, Health & Social Care and Building and Construction). It also shows areas where potential progression could be focussed. For example, the Administration Apprenticeship is weighted strongly towards Intermediate Apprenticeships (730 out of 1,010).

Table 32: Apprenticeships by subject area and level.

Sector Subject Area	Intermediate Apprenticeship	Advanced Apprenticeship	Higher Apprenticeship	Grand Total
Accounting and Finance	80	160	50	290
Administration	730	250	30	1,010
Agriculture	10	0	0	10
Animal Care and Veterinary Science	30	40	0	70
Building and Construction	420	170	70	660
Business Management	110	370	250	730
Child Development and Well Being	80	190	0	270
Direct Learning Support	80	60	0	140
Engineering	120	360	0	480
Health and Social Care	430	420	130	980
Horticulture and Forestry	20	0	0	20
Hospitality and Catering	200	150	0	350
ICT Practitioners	80	140	30	250
Law and Legal Services	0	20	10	30
Manufacturing Technologies	210	300	40	550
Marketing and Sales	10	30	0	40
Media and Communication	0	10	0	10
Public Services	30	20	0	50
Retailing and Wholesaling	80	70	10	160
Science	0	10	10	20
Service Enterprises	220	110	0	330
Sport, Leisure and Recreation	40	70	0	110

Teaching and Lecturing		10	0	10
Transportation Operations & Maintenance	160	90	0	250
Warehousing and Distribution	150	0	0	150

Source: Datacube 2018

The analysis above echoes much of the findings from the SCR Stem Level 3+ Curriculum Review (2017); specifically that the majority of apprenticeship provision continues to be at Level 2, and Apprenticeships delivered by providers at Advanced and Higher Level are often in health-related areas.

The small proportion of apprentices studying Higher Level Apprenticeships is a challenge but also an opportunity for the apprenticeship agenda and wage progression. There has been a recent surge in attention in this area, due to the peculiarity that a gap in participation and provision exists in the UK (and specifically England) compared with other OECD countries. The evidence above suggests that this is a challenge for SCR as well, although there is disagreement as to whether trends are driven by supply or demand. Overall it is likely that it is a mix of both.

Key Messages:

- SCR is at the heart of the Government's apprenticeship agenda. It has a comparatively high level of apprenticeships and an economic base which could support further apprenticeship growth.
- There has been a lot of change in the apprenticeship landscape recently and trends and implications are continuing to be monitored.
- There appears to be significant benefit around higher level apprenticeships and in course areas which delivery employment and wage progression opportunities. However, the majority of apprenticeships are at lower levels and in subjects with potentially fewer opportunities in the local labour market.

Higher Education

The City Region is home to two universities:

- The University of Sheffield is a member of the prestigious Russell Group of research-led universities and owns the AMRC
- Sheffield Hallam University is the sixth largest in the UK and works closely with businesses, leading the Degree Apprenticeship agenda.

In addition, higher education is delivered at most of the Further Education Colleges across the City Region. There are approximately 70,000 higher education students enrolled at universities and colleges in the Sheffield City Region.

The University of Sheffield:
Approx. 28,700 ± Higher Education Students (approx. 9,200 undergraduate entrants a year)

Sheffield Hallam University:
Approx. 31,000 ± Higher Education Students (approx. 6,000 undergraduate entrants a year)

Sheffield City Region Colleges:
Approx. 3,000± Higher Education Students in Total (approx. 1,600 undergraduate entrants a year)

Origin of students

Sheffield Hallam and the University of Sheffield have approximately 17% of students from other countries (compared to 15% nationally). This demonstrates strong international alumni linkages and relationships between SCR and the rest of the world. The decision to leave the EU could have implications on the student profile of the universities, with recent visa changes meaning that fewer Indian students come to the UK for university. This is a changing agenda and the income provided by international student for universities and their spending within local economies could become vulnerable.

Both universities have different profiles of students to the City Region colleges which deliver higher education. Colleges have a higher proportion of students from the wider Yorkshire and Humber area. Sheffield's universities, and to a lesser extent the colleges, attract a large number of students from other parts of the country, including the East Midlands, North West, East of England and London. However, students from Yorkshire and Humber are the most important source of entrants. Sheffield Hallam sees approximately 45% of its full-time undergraduate students coming from within a 25 mile radius of the University.

Student retention

Sheffield City Region receives one of the highest net inflows of students in the country. Approximately 30-34% of Sheffield City Region's graduates are retained following graduation which compares favourably to several other large city regions.

Whilst high levels of young people move to SCR for university, most of them leave after graduating, resulting in an export of high-level skills. It is estimated that SCR would need to retain an additional 3,850 students to match the graduate retention level of Greater Manchester.

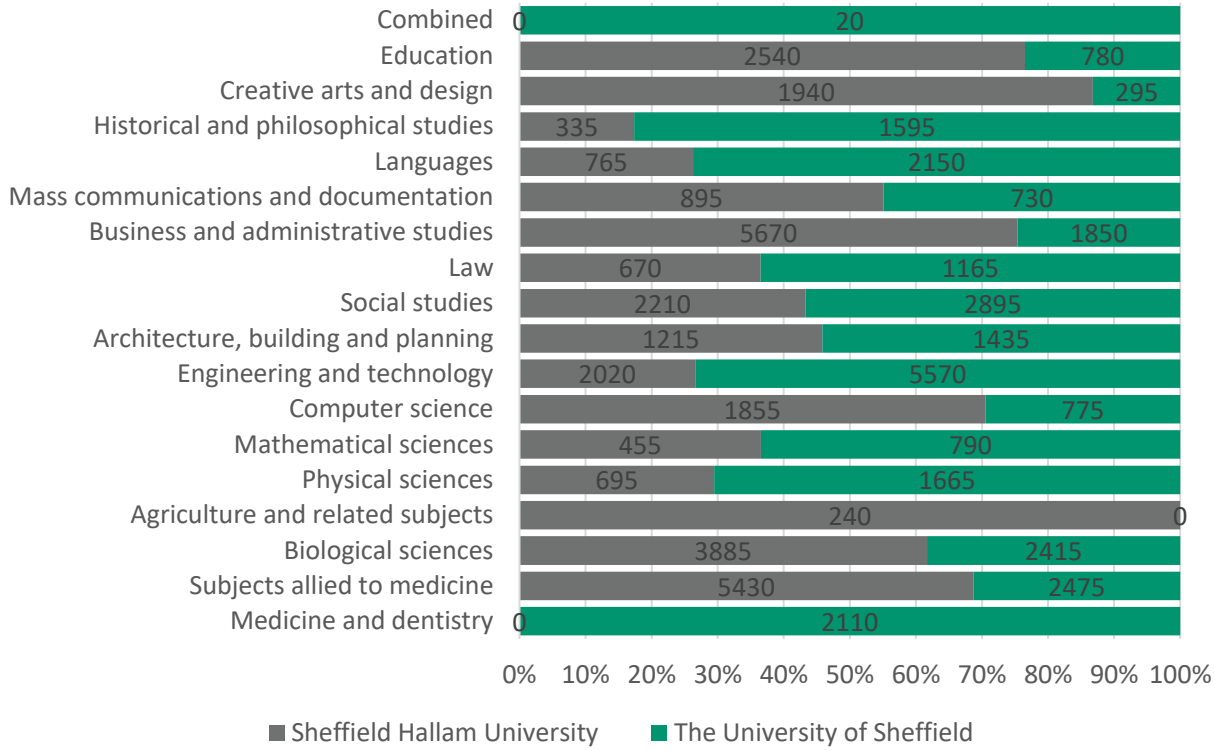
Work from the Destination Leaver of Higher Education Survey, shows that between 2014 and 2017 around 23% of graduates from the University of Sheffield were working in South Yorkshire, and 56% of graduates that went on to further study remained in South Yorkshire. At Sheffield Hallam 36% of graduates are working in South Yorkshire and 65% of graduates that went on to further study remained in the South Yorkshire.

Evidence from historical data from Higher Education Statistics Authority indicates a drop of around 30% of graduates working in Yorkshire and Humber, between 6 months after graduating and after 3.5 years. Research for Yorkshire and Humber and in Sheffield suggests this is due to the 'stop gap', where graduates take on part-time or lower paid work to remain in the region. There are a few possible reasons for this. Graduates may be unable to secure graduate level roles and seek employment elsewhere. Graduates remaining in the City Region in the short-term may also seek employment outside the City Region in order to progress their career. Concerns have been raised about the number of graduates that leave the region for their second or third job, suggesting a lack of career progression opportunities.

Students by Subjects

Both universities have distinct subject strengths in relation to research (this is explored in the section on Innovation). The diagram below shows the number of students by broad subject area.

Figure 113: SHU and UoS student population by subject of study in Sheffield (2016/17)



Source: HESA 2017

Sheffield Hallam and the University of Sheffield therefore produce highly qualified students for several sectors in the economy. Challenges exist around matching graduates to jobs, retaining people in the area longer and ensuring that there are progression opportunities. These highlight areas where talent attraction and retainment may be focused.

Graduate employment for students is an important driver of local economic growth. On average graduates earn significantly more than non-graduates (an average £10,000 more each year according to DfE 2018). Furthermore, graduates have a significantly higher employment rate and significantly lower unemployment rate than non-graduates (HECSU, 2017). The challenge for SCR is related to the industries and occupational levels that graduate jobs are found. These are often service based and towards the higher end of the occupational profiles and tend to be based elsewhere in the UK.

Key Messages:

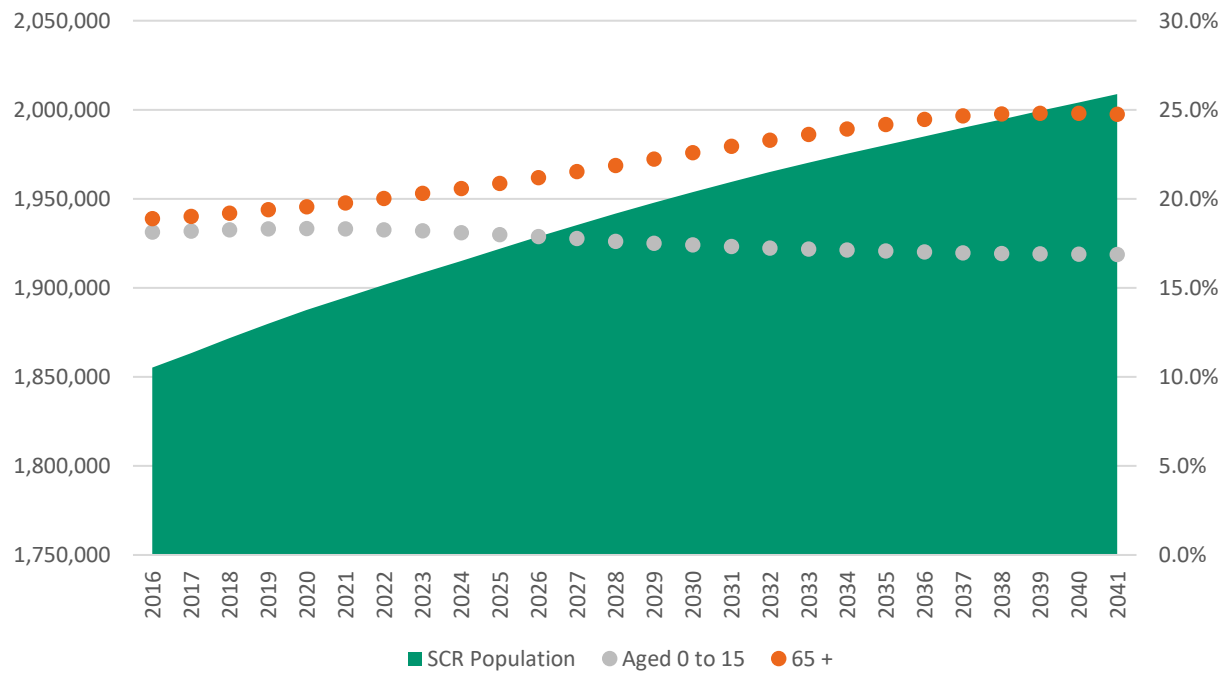
- SCR has some huge Higher Education strengths.
- The universities collectively produce a large number of graduates in several subject areas relevant for the local economy. However, SCR and specifically Sheffield struggles to retain graduates for longer periods of time. Other areas of SCR do not see graduates base themselves there after graduating.
- The universities have different roles in the local economy and also have varied student intakes including international and local students.

Future Skills Requirements

The future of the labour market and economy is likely to be more highly skilled and related to technology. Forecasts and future fore sighting provide an indication of the future growth areas.

Demographic trends for SCR show that the population is growing. Growth is projected to be driven by the over 65 age group with the of 0-15 age group projected to remain steady in the medium to long term. This represents a challenge for SCR, and other parts of the country in terms of the supply of labour and new skills, and the challenges presented by an ageing workforce.

Figure 114: Future Demographic Change in SCR



Source: ONS Population Projections 2018

Forecasts and trends highlight that the current workforce may require upskilling to meet digital needs and that replacement demand within an ageing workforce could be a major challenge for local economies. Depending on the future demographics and national immigration policy; English as a foreign language could become more or less important. Whilst there is a need for greater levels of high level skill, there is a need to ensure that workers are equipped with basic skills and are able to access training and job opportunities to progress in work and through the skills system.

There are expected impacts from the fourth industrial revolution (Industry 4.0) which will drive fundamental changes in the labour market, economy and the demand for skills. The jobs of the future are more likely to require higher level skills, and the supply and retention of these skills will be critical to future success.

The adoption of automation and technology in areas of the economy which are not highly digitised is expected to have an enormous impact. Predictions about the epochal changes that digitisation will make to the nature of many jobs are likely to be less dramatic than announced. However, the changes foreseen are likely to be important. For example, the growth of the internet during the 2000s has not led to a large scale remote working revolution, instead it has led to more work being delivered flexibly, such as through remote working. Similarly, automation of work is likely to change jobs in law and retail but and create jobs elsewhere, such as maintenance. The nature of jobs and what their function is will likely change.

It is important that people are prepared for the changing world of work. Clear priorities set out by the Industrial Strategy, and shared by stakeholders across the City Region are ensuring inclusive access to employment and training, creating a world-class technical education system, increasing STEM skills, and equipping people for high quality jobs in the future.

Key messages:

- There are several expected trends for the future of the economy with digital and high-level skills expected to be the largest demand areas. Ensuring that people have a basic level of skills can help to ensure there is a foundation to build upon.