



Why is LMI important?

The purpose of this labour market bulletin is to inform young people, and those that advise young people, including teachers, parents, carers, careers advisors and others, of the employment trends and job opportunities available locally, now and in the future. As our economy grows, there is increased demand from local employers for people to fill jobs, alongside an increasing number of people who succeed in self-employment. Our aim is to broaden young people's knowledge and understanding of our labour market, raise their aspirations and help them plan their career pathways based on high quality, locally relevant information.

This bulletin cannot prescribe a route to the 'perfect job'. What it can do is help the reader to make informed choices, challenge preconceived labour market perceptions, encourage the consideration of alternative routes into a career, or inspire new career options not considered before. It aims to provide a better understanding of the local job market - what jobs are currently in demand, where shortages occur and how jobs are changing. It may help in making career decisions that are not solely based on potential earnings or prospects but on aligning interests, skills, aptitude, educational attainment and enjoyment to the right career choice.

If your organisation would like a specific LMI briefing please contact the Skills team at the Oxfordshire Local Enterprise Partnership at skills@oxfordshireLEP.com.

An overview of the Oxfordshire economy

Oxfordshire has the most innovative economy in the UK, according to recent research.

Oxfordshire has one of the strongest economies nationally. To continue to succeed in a globally competitive world and be a beacon of sustainable economic growth it needs a well trained workforce. Oxfordshire is a 'knowledge-based' economy where the use and application of knowledge is a key feature.

The Oxfordshire Strategic Economic Plan (SEP)¹ sets an ambition for Oxfordshire to 2031 to drive accelerated economic growth to meet the needs of our science and knowledge rich economy placing Oxfordshire at the forefront of the UK's global growth ambitions.

The SEP 2016 states an ambition for up to 85,600 new jobs to 2031 – many of which have yet to be 'invented' – reflecting the pace of change and effects of new and emerging technologies on the labour market.

Growth brings challenges – a key challenge is our extremely tight labour market with low levels of unemployment (0.7 per cent out-of-work benefit claimants) and high job density at 0.96 – i.e. there are 96 jobs available for every 100 residents of 'working age'. With minimal growth in the working age population in coming years and a child population (0-18 years) that is expected to contract, this will present further challenges.

Table 1: Oxfordshire overview

Total population, 2016	683,200
Age 16-64 population, 2016	434,800
Total output (GVA), 2015	£21.9 billion
Number of 'employee' jobs Jun 2016	358,200
Number of self-employed, Jun 2017	63,500
Economically active, Jun 2016	370,700
Claimants of Out-of-Work benefits, Sep 2017	0.7%
Number of enterprises, 2017	31,130
Average median gross weekly earnings (full-time), 2016 provisional	£605.50
Population with a HND or above, 2016	51.7%
With no qualifications, 2016	5.1%

Did you know?

Oxfordshire is the tenth least deprived area in the UK (142nd out of 152)

Multiple deprivation indices, 2015

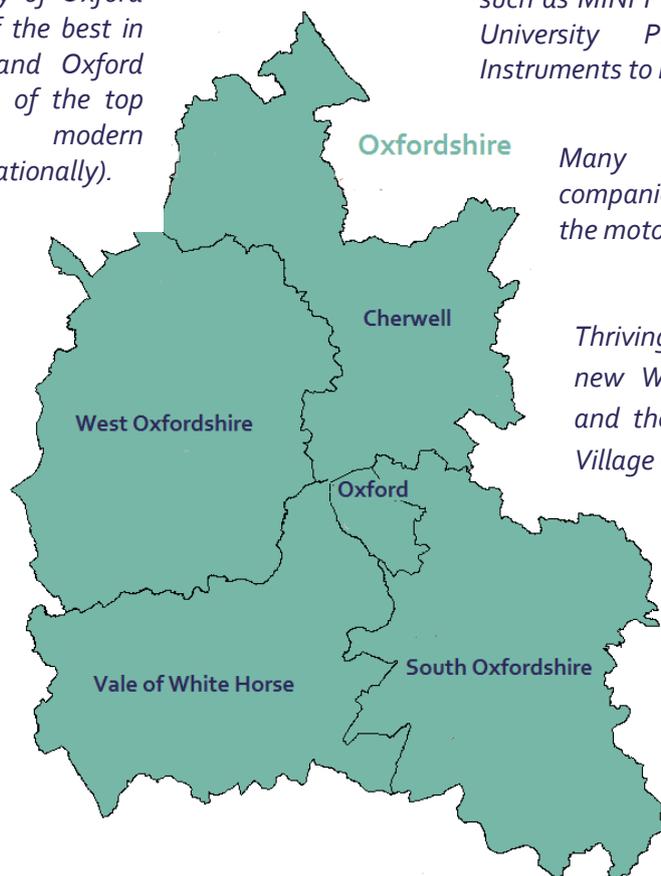
¹ Oxfordshire Strategic Economic Plan, Oxfordshire Local Enterprise Partnership, 2016.

What might explain Oxfordshire's growing economic confidence?

Oxfordshire has a number of distinctive features:

Two leading universities - the University of Oxford (rated one of the best in the world) and Oxford Brookes (one of the top performing modern universities nationally).

Home to globally recognised companies such as MINI Plant Oxford, Oxfam, Oxford University Press, Siemens, Oxford Instruments to name a few.



Many high-end manufacturing companies (such as those supporting the motor industry).

Thriving retail economy with the new Westgate Centre in Oxford and the world-renowned Bicester Village Outlet Centre.

Third highest concentration of research and development workers in the country.

A strong tourist economy feeding the accommodation, food and beverage, arts, heritage and entertainment sectors.

Home to a group of large science and research facilities that includes Harwell Oxford Innovation & Science Campus (home to the Rutherford Appleton Laboratory, Diamond Light Source and the gateway to the space sector – including the newly established European Space Agency and the Satellite Applications Catapult Centre), and the UK Atomic Energy Authority Culham Centre for Fusion Energy - home to the UK's national fusion research laboratory.

Nearly three quarters of the country is land managed agriculture, with over 1,600 farms. This makes it the most rural county in the South East.

Innovation

Due to Oxfordshire's proximity to London and Berkshire, and its links to Higher Education, it has created an economy that is competitive and proved resilient during and following on from the last recession. A report by the Enterprise Research Centre (ERC) published in May 2017 positioned the county top in three of the ten innovative metrics: for marketing innovation; new to market products and services; and sales of innovative products. Oxfordshire scored above London on every measure. According to the innovation map of England, produced by the ERC², Oxfordshire has one of the most innovative economies overall. It forms part of the 'arc of innovation' stretching from Cambridge through the southeast Midlands and along the M4 corridor to Oxfordshire and Gloucestershire and is part of the 'Golden Triangle', encompassing the universities of London, Cambridge and Oxfordshire. For example, only 19% of London businesses undertook research and development compared to 29% in Oxfordshire.

Oxford City is third out of all UK cities for patent applications widely used to measure innovation: 79.9 applications per 100,000 residents, behind Cambridge and Coventry.

Industry

According to the Cities Outlook report for 2017 produced by the Centre for Cities³, Oxford is a top performing city for exports and productivity. However, it is particularly reliant on one industry for exports, its car industry, with an estimated 62 per cent of exports coming from that industry alone. The BMW MINI plant, based in Cowley, Oxford, is the third largest exporter of vehicles in the UK.

The UKTI and the Local Enterprise Partnership work together to promote exports and aim to get an additional 100,000 firms exporting by 2020, increasing export revenue to £1 trillion.

Oxford is unique in that it has almost the same number of private and public sector employees, mainly as a result of its universities.

In fact, it is a city with one of the lowest proportions of private sector jobs. This highlights that higher levels of publicly-funded jobs do not necessarily mean a less successful economy.

UK innovation hotspots



² Benchmarking local innovation – the innovation geography of England, Enterprise Research Centre, May 2017, <https://www.enterpriseresearch.ac.uk/wp-content/uploads/2017/06/Benchmarking-Innovation.pdf>

³ www.centreforcities.org/publication/cities-outlook-2017/

Economy

Gross Value Added (GVA) is a measure of the goods and services produced in an area. Put simply, it is the grand total of all revenue, which is income into businesses. It is measured at current basic prices (this includes the effect of inflation, excluding taxes on products (e.g. V.A.T)). GVA plus taxes on products is equivalent to Gross Domestic Product (GDP).

Figure 1: Percentage growth in GVA (income approach), 1998-2015



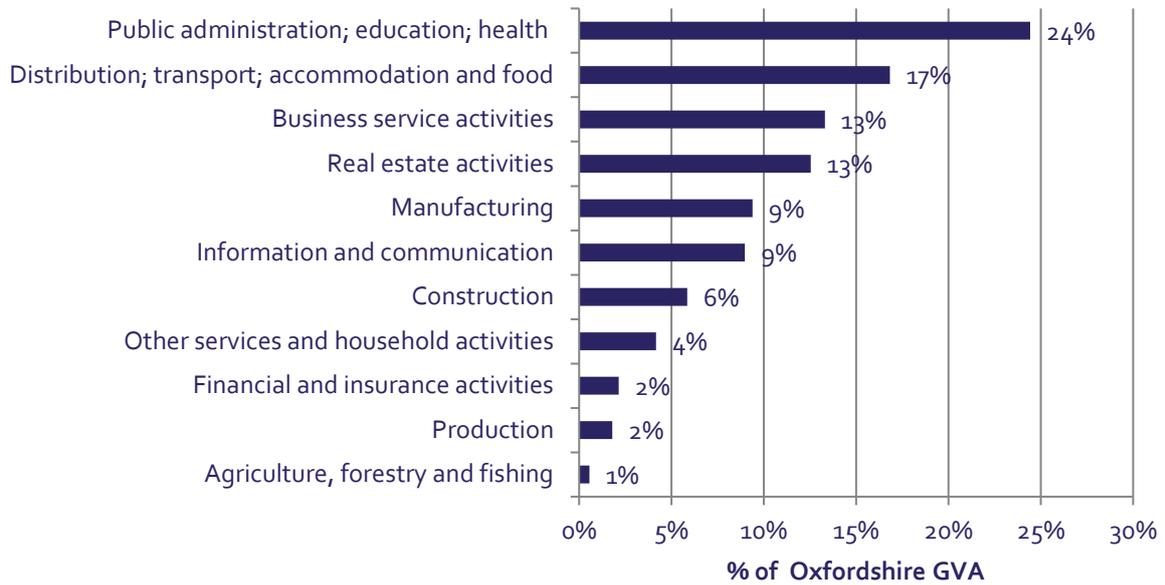
Oxfordshire has a strong economy. Our GVA contribution to the UK economy was £21.9 bn in 2015, growing by 5.3 per cent on the previous year and higher than the UK growth of 2.6 per cent and South East at 3.2%

This increase has made us the 14th fastest growing of 173 NUTS₃ areas. Among our close geographic or statistical neighbours, Swindon was 5th, Wiltshire 28th and Cambridgeshire 31st.

The largest contributions to our growth came from public administration, education and health (24%), distribution, transport, accommodation and food (17%), business activities and property (both 13%)⁴.

⁴ ONS, Regional Value Added (Income Approach), 2015 data
<https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/regionalgrossvalueaddedincomeapproach>

Figure 2: Percentage of GVA (income approach) by industry, Oxfordshire, 2015



GVA per head of the population is also high at £32,291 in 2015 compared to £27,847 in the South East. This equates to 4.5% growth from the previous year ranking it 12th out of 173 NUTS3 areas (highest growth was 7.9% in Solihull).

Gross Domestic Product is a measure of all final goods and services produced in a period. It is a good indicator of economy performance. Nominal GDP estimates are commonly used to determine the economic performance of a whole country or region. The UK, a global economy, was affected by the global economic downturn in 2009.

Figure 3: Growth Domestic Product – National quarterly growth⁵



⁵ GDP, quarterly growth, UK
<https://www.ons.gov.uk/economy/grossdomesticproductgdp/timeseries/ihyo/ukea>

Economic activity

Mid-year 2016 population estimates show there are 683,200 people living in Oxfordshire (51.2% female/49.8% male). The population has increased by just under a per cent (0.8%) each year for the last ten years and growing at a slightly slower rate than the rest of the South East region (0.9%). 63.6 per cent of the population, or 434,800, are aged 16 or over⁶. Most working age adults in Oxfordshire (83.1 per cent) are economically active and in work.

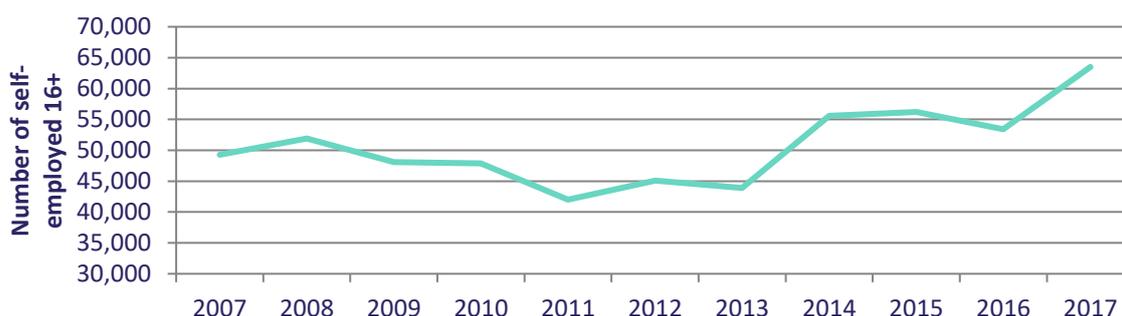
Oxfordshire has, proportionally, a marginally larger working age population than the South East and England. Yet, rates of economic activity are the highest they've been⁷ and both economic activity and employment in Oxfordshire are well above regional and national rates.

There is a significant proportion of the population not in work. In 2017, 12,500 people are registered unemployed (with latest figures in September 2017 showing 2,950 people claim Job Seekers Allowance/Universal Credit benefits), and an additional 16,600 are economically inactive, not claiming anything from the state, but would like a job. This is up by 1,200 on 2016.

68% of those in employment work full-time rather than part-time. Three quarters of part-time workers are women.

Self-employment is at its highest point in the last 10 years at 63,500 and is also above regional and national rates: 12.8 per cent of the Oxfordshire population are self-employed compared to 12.3 per cent in the South East region and 10.6 per cent nationally⁸. However, on average, self-employed people are more likely to work part-time, earn less, and be 'underemployed'⁹. Far more men than women are self-employed. 20.7% of men in employment are self-employed, compared to 14.2% of women. Self-employment growth in Oxfordshire over the last decade is slightly more than regional growth, at 2.56% per year compared to 2.06%.

Figure 4: Oxfordshire's self-employed population



⁶ The working age population used here are those aged 16+. Now, young people have to continue in education or training, at least part-time, until they are 18 although this range does take into account those who work beyond retirement age of 65 years.

<https://www.nomisweb.co.uk/reports/lmp/la/1941962886/report.aspx>

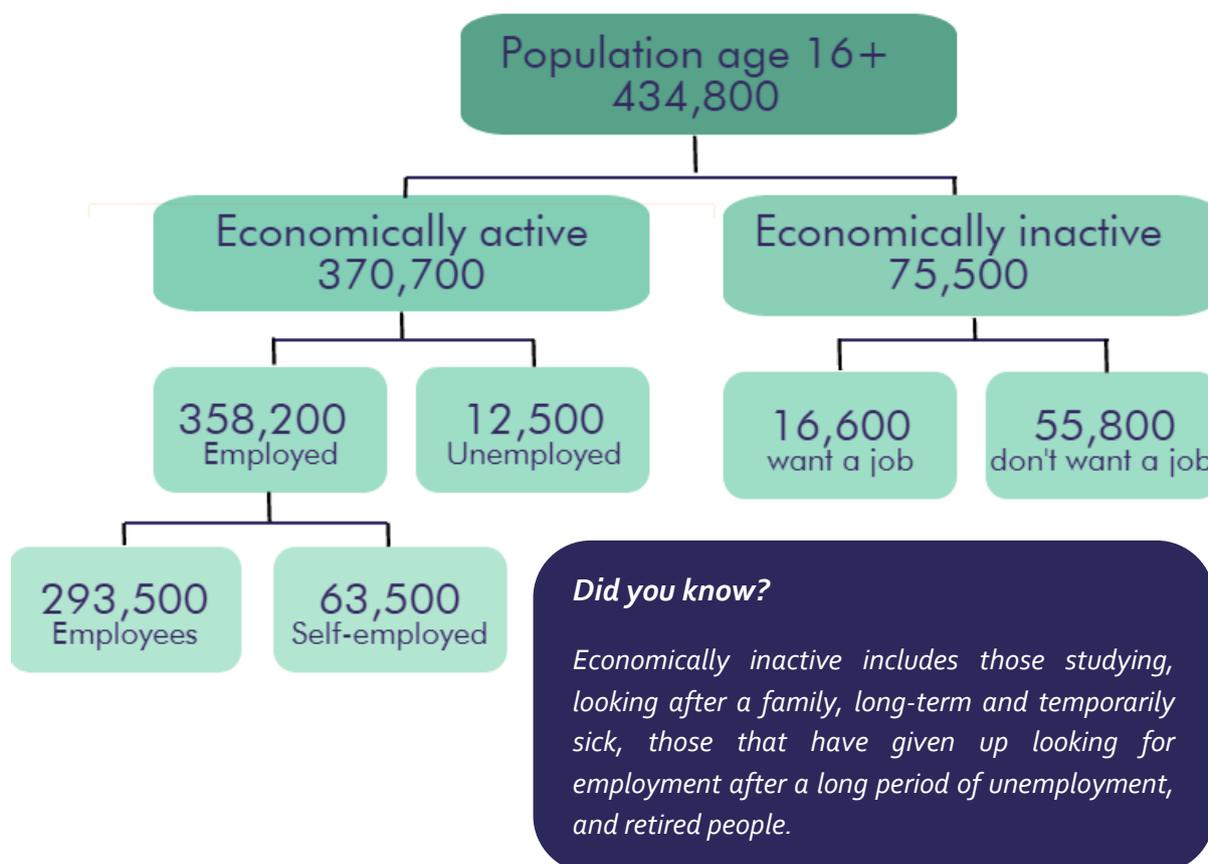
⁷ Economic activity measurements taken from July to June each year

⁸ ONS annual population survey, measurements taken from July to June each year

⁹ <http://www.ft.com/cms/s/0/d8f6c774-d449-11e3-a122-00144feabdco.html#axzz3h66ZcCID>, 6th May 2014

The population count at mid-2017 is shown in figure 5:

Figure 5: Working age population count¹⁰



Oxfordshire has a very tight labour market with many more jobs than there are people. The new £440 million retail development, Westgate in Oxford has struggled to recruit key staff. Its flagship store, John Lewis, who occupy 142 sq foot of retail space, require 300 staff and underwent a recruitment drive in April 2017. Waitrose opened a new store on Botley Road in October 2015 and received 5 applications for every post¹¹. In the adult social care sector, a 2015 report from Oxfordshire County Council recognises an additional 7,500 carers are needed to 2025. This is 750 additional carers a year to add to the 14,000 working in care currently. Many EU nationals are leaving the country as the Pound Sterling falls in value making it less worthwhile to stay. At 417,000 jobs in the country, work is abundant. There are opportunities and many different routes in to careers for the county's young, or those seeking a change in career pathway. However, as a knowledge based economy, these jobs do require specific skill sets.

¹⁰ ONS Annual Population Survey, June 2017. The sum of employees and self-employed will not equal the in **employment** figure due to the inclusion of those on government-supported training and employment programmes, and those doing unpaid family work in the latter.

<https://www.nomisweb.co.uk/reports/lmp/la/1941962886/report.aspx>

¹¹ www.oxfordtimes.co.uk/news/13779427.Five_apply_for_every_job_in_a_phenomenal_Waitrose_rush/

Unemployment

Only 0.7 per cent of the 16+ population in the county were claiming out-of-work benefits in September 2017¹². This equates to 2,950 people and, although this figure is rising, has been relatively stable over the past year.

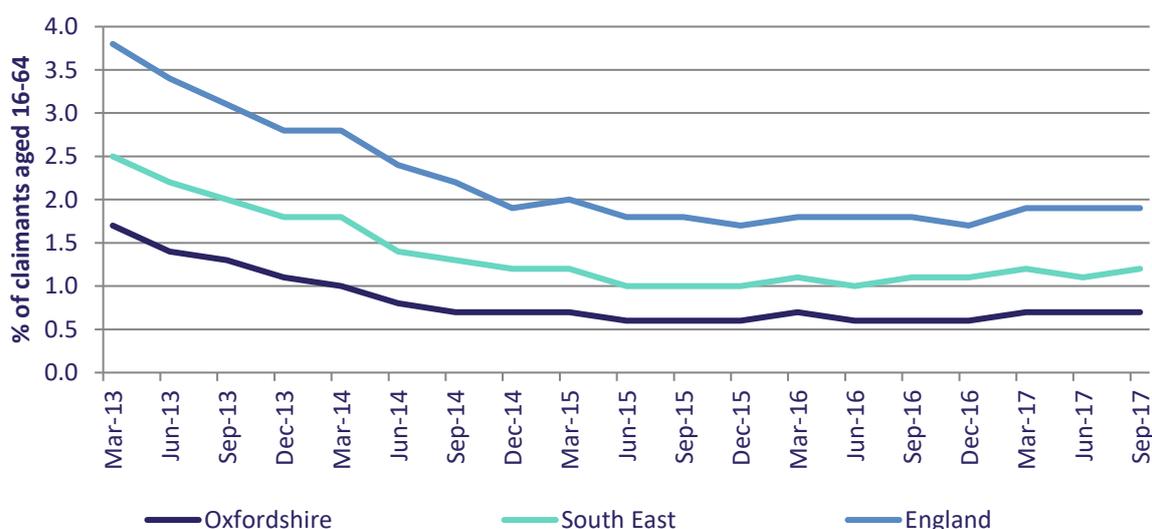
Looking at the broader measures of unemployment, in the year to November 2017, there were 19,420 people claiming the main out-of-work benefits (including job seekers allowance, ESA and incapacity benefits, lone parents and other income related benefits) in Oxfordshire or 4.5 per cent of all economically active people, compared to 8.4 per cent nationally.

In order to streamline job opportunities, a new online site for jobseekers oxajobs.com was created by Newsquest Media Group, parent group of the Oxford dailies to provide a one-stop job board for the Oxford unemployed.

Out of work benefits. September 2017

Age range	Number	Rate %
Aged 16-17	0	0.0
Aged 18-24	505	0.7
Aged 25-49	1,575	0.7
Aged 50+	865	0.7

Figure 6: Out of work claimant count



Did you know?

Oxfordshire has the lowest youth unemployment (for those aged 16-24) in the South East region (joint with Wokingham in Berkshire).

ONS Claimant count by sex and age, Sep 2017

¹² ONS claimant count, 2017

<https://www.nomisweb.co.uk/reports/lmp/la/1941962886/report.aspx>

Housing and the cost of living¹³

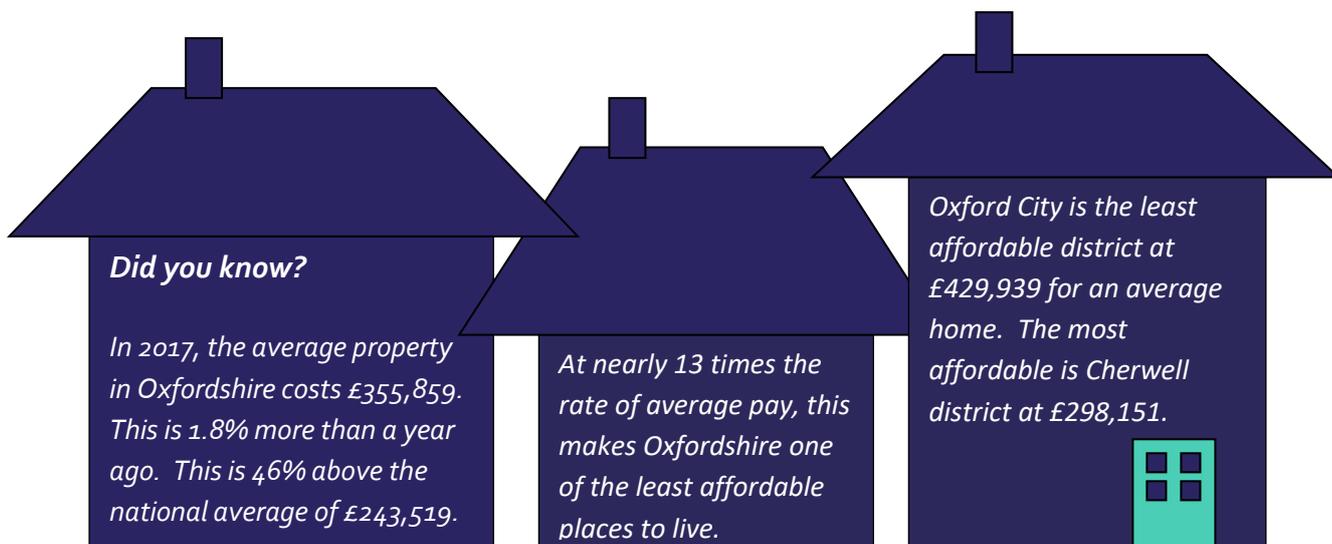
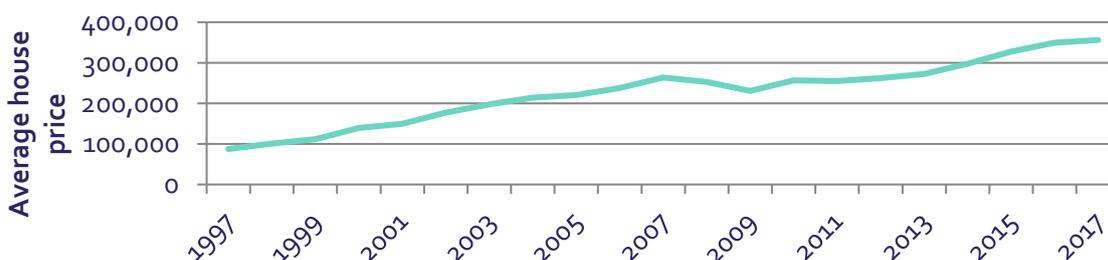


Figure 7: Average house price over time, Oxfordshire



The cost of living in Oxfordshire is one of the highest in the country and is a contributing factor putting people off working in Oxfordshire. Rents are also very high. In the city, the average rent for a room in a shared house is £510 per calendar month. For an average studio flat it is £681 and for an average 2-bedroom flat it is £1,100. London is the most expensive place to rent, however, Oxford City accommodation is only £97 less. Prices for a shared room are £128 above the England average.

House type	Oxfordshire Average
Detached	£562,061
Semi-detached	£364,308
Terraced	£301,389
Flat	£222,295

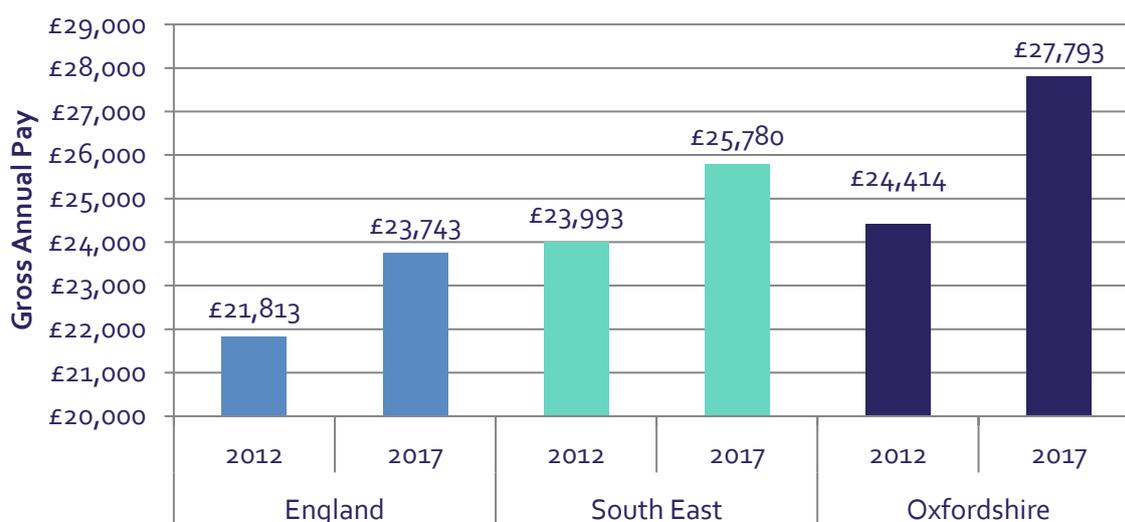
Oxfordshire generally, and Oxford City specifically, lacks affordable homes. A fifth of new homes built in the £60 million Templar Square regeneration in Cowley will be affordable homes. This is not deemed to be enough to meet the demand. Prices are likely to stay high as demand continually outstrips supply.

¹³ UK House Price Index, August 2017
<https://www.gov.uk/government/statistical-data-sets/uk-house-price-index-data-downloads-august-2017>

Pay¹⁴

The median annual pay for employees resident in Oxfordshire in 2017 is high at £27,793⁶. Oxfordshire has seen nearly 14 per cent growth in the median annual pay since 2012 and much more growth than the South East at 7% growth and England with 9%. Employers have to pay more to attract the best candidates given the high cost of living in the county.

Figure 8: Median* gross annual pay, 2012 and 2017



* Median income (the middle pay point of the range of pay rates being sampled), is used to avoid the picture being skewed by individual incomes of very high earners.

Gross annual income for full-time employees is £32,964 and for part-time employees it is £9,682. In all cases, this is above the regional and national averages.

Pay has increased at its fastest pace since February 2009 and growth in average earning across all sectors is faster than reported¹⁵.

Looking at full-time employees only, the median annual pay is highest in South Oxfordshire at £37,292 (up 8.4%) with the Vale of White Horse close behind at £35,065. The lowest average pay is West Oxfordshire at £31,087, which is below the regional average of £31,664 but above the national average of £29,085.

Minimum wages increased from 1st April 2017

Age range	£ per hour
Under 18	£4.05
18-20	£5.60
21-24	£7.05
National Living wage 25+	£7.50
Apprenticeships	£3.50

¹⁴ Annual survey of hours and earnings, 2016

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/bulletins/annualsurveyofhoursandearnings/2017provisionaland2016revisedresults>

¹⁵ Business dashboard 2015

Business and enterprise

The largest industry group in Oxfordshire is Professional, Scientific and Technical with 22 per cent share of all registered enterprises. This sector has grown by a fifth in the last five years. Most other sectors have also grown; ICT, transport and storage and property considerably so. Only wholesale and retail

have seen a reduction in the number of business enterprises in Oxfordshire over the last 5 years. A drop in retail enterprises could be attributed the closure of major retail centres (like the Westgate, for example) for major reconstruction or refurbishment. Businesses related to the arts, entertainment, recreation and other services have remained stable in this period.

It should be noted that although Education enterprises make up 2.3 per cent and Health 3.9 per cent of the county's enterprises, these are large organisations employing the biggest shares of the county's employees.

Did you know?

89% of enterprises employ 9 people or fewer.
0.4% employ 250 people or more but they employ a significant percentage of the workforce.

Table 2: Count of enterprises, 2017 There are about 31,130 enterprises¹⁶ in the county¹⁷.

Broad sectors	Count of enterprises	% of enterprises	% change from 2012 to 2017
Professional, scientific & technical	6,790	21.8%	19%
Construction	3,590	11.5%	13%
Information & communication	2,990	9.6%	18%
Business administration & support services	2,560	8.2%	15%
Arts, entertainment, recreation & other services	2,250	7.2%	-0.2%
Retail	1,790	5.7%	-4%
Agriculture, forestry & fishing	1,650	5.3%	8%
Accommodation & food services	1,530	4.9%	1%
Manufacturing	1,380	4.4%	5%
Health	1,240	3.9%	27%
Property	1,090	3.5%	22%
Wholesale	1,080	3.4%	-3%
Motor trades	880	2.8%	7%
Transport & storage (incl. postal)	860	2.7%	50%
Education	720	2.3%	19%
Financial & insurance	440	1.4%	6%
Public administration & defence	190	0.6%	72%
Mining, quarrying & utilities	130	0.4%	30%
Oxfordshire total	31,130	100%	14%

¹⁶ An enterprise is defined as a business with the smallest combination of legal units (legal unit = a factory or a shop).

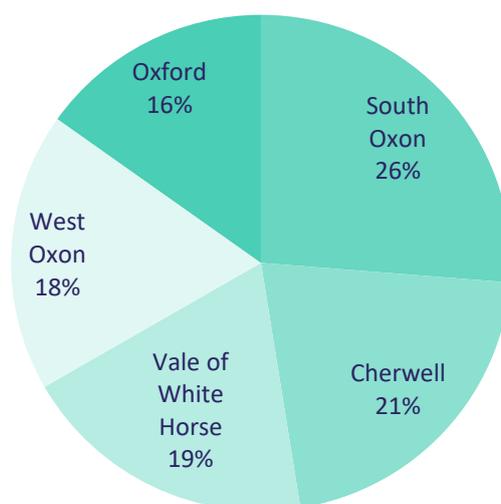
¹⁷ ONS NOMIS UK Business Counts, 2012 - 2017. Rounded to the nearest 10.

<https://www.nomisweb.co.uk/reports/lmp/la/1941962886/report.aspx>

Business growth in Oxfordshire is very strong

South Oxfordshire is home to just over a quarter of the county's business enterprises¹⁸. The majority of these are small companies and many are based on the business and science parks in the area. While there are fewer businesses in the City, enterprises here are bigger; 40 businesses in the City employ 250 or more people compared with 20 businesses in South Oxfordshire.

Figure 9: Location of enterprises, 2017



- Professional, Scientific and Technical (PST) enterprises dominate the Oxfordshire districts. 93 per cent of businesses in this sector (approx. 6,340) are micro enterprises with 9 employees or fewer. This sector makes up a fifth of all businesses.
- All districts, except Oxford City, also have high instances of construction, ICT and business administration organisations.
- Oxford City is unique in the county with particularly high instances of the arts, accommodation and food services required to accommodate the large number of visitors to the city. It has low instances of agriculture, manufacturing, construction, motor trades and business administration enterprises.
- The largest businesses county-wide are in the Education, PST and Manufacturing sectors.

What is the Professional, Scientific and Technical sector?

Legal and accounting activities ◦ Activities of head offices, management consultancy ◦ Architectural and engineering activities, technical testing and analysis ◦ Scientific research and development ◦ Advertising and market research ◦ Veterinary activities

¹⁸ ONS Inter-Departmental Business Register, 2017. An Enterprise is the smallest combination of legal units (generally based on VAT and/or PAYE records) which has a certain degree of autonomy within an Enterprise Group). <https://www.nomisweb.co.uk/reports/lmp/la/1941962886/report.aspx>

Business births and deaths

Business growth is very strong. In 2015 (the latest data), over 3,615 new businesses started up in the county – retaining the strongest growth over the past two years¹⁹. 2,595 businesses closed in the same period.

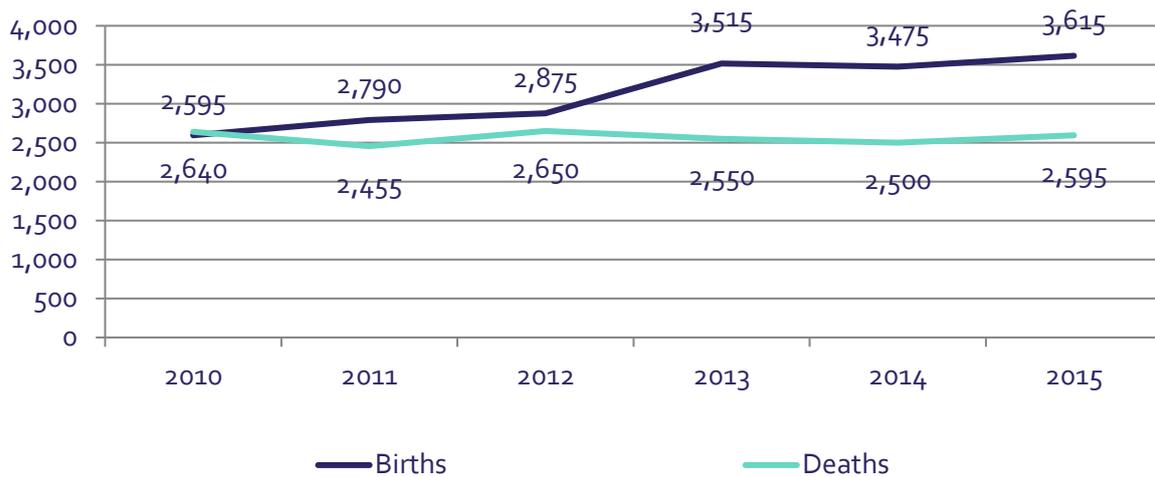
South Oxfordshire had the most start-ups in the county with 930. West Oxfordshire had the least at 590. However, fortunes are also reversed for both districts with South Oxfordshire also seeing the most business closures in 2015, with 610, and West Oxfordshire having the least number of business closures at 460.

Did you know?

96% of homes and businesses in the county will be covered by superfast broadband (speeds of 24 Mbps and above) by the end of 2018. 95% is already covered. This is essential to business prosperity and assists the social inclusion of rural communities. The remaining 4% not covered equates to around 9,000 homes and businesses.

Oxfordshire County Council

Figure 10: Business births and deaths



A report by the Enterprise Research Centre²⁰ shows Oxfordshire has 2,745 new registered businesses in 2016. This is 41 start-ups per 10,000 of the population. 58 per cent of 2012 start-ups survived to 2016.

¹⁹ Business Demography, 2016

<https://www.ons.gov.uk/businessindustryandtrade/business/activitysizeandlocation/datasets/businessdemographyreferencetable>

²⁰ Enterprise Research Centre, <https://www.enterpriseresearch.ac.uk/uk-local-growth-dashboard-2017/>, p.5, 2017

A final word on the economy: Brexit – Britain’s exit from the EU

On 23rd June 2016, Britain voted on whether it should remain in, or leave, the European Union (EU). With a 70 per cent turn-out, 70 per cent of Oxfordshire voters voted to remain in the EU. The country, as a whole, did not and plans are underway to “take back control” from Brussels and take the UK out of the Union we have been a part of since 1972.

Article 50 of the Lisbon Treaty was triggered on 29 March 2017. This leaves the UK two years to agree a deal for Britain’s exit from the EU. Once it ceases to be a member, the UK is no longer subject to EU treaties and its laws.

The short term reaction to the Brexit vote saw the Sterling fall to a 30 year low against the US Dollar. This in turn has caused a surge in the number of EU citizens, and especially Polish nationals, returning home as the Sterling fell. Net EU migration is holding strong with Romanian and Bulgarian nationals coming to the UK to work. Anecdotally, construction companies in Oxfordshire saw some key, skilled workers resign, leaving them with skill shortages. Many EU nationals resident in the UK have applied to the Home Office for permanent residence to alleviate uncertainty over their legal status. The number of applications for permanent residency has risen since the vote.

In the long term, the long process begins to decide which EU laws, if any, will continue to apply to the UK. The UK must separate, or renegotiate a new deal, with the EU common market. It is currently not clear what will be offered to big businesses to persuade them the UK remains an attractive market. Many large corporations²¹ such as Goldman Sachs, Lloyds of London, Microsoft, Deutsche Bank, Barclays Bank, Diageo drinks and many games companies have either threatened to move their operations to the EU or already have. Oxfordshire has a large gaming sector, which is likely to be affected. Many companies in Oxfordshire, and across the UK, are waiting for the final deal before making decisions on their future. Some business and union leaders are concerned a bad Brexit deal could threaten thousands of jobs. BMW Oxford employs 4,500 from over 20 countries and union leaders there have expressed their concern. Numerous companies, including JET at Culham, are funded by the EU.

Decisions must also be made on the rights of UK citizens living in the EU, and EU citizens living in the UK. 40,000 EU migrants were estimated to be living in Oxfordshire in 2014 (about 6 percent of the total population of Oxfordshire). Around 24,000 of these are from Austria, France, Germany, Greece, Italy and the Netherlands. 15,000 are thought to be from Eastern European countries of Czech Republic, Poland and Romania. The parliamentary constituency of Oxford East has the highest contingent of EU nationals and Wantage has the least. Many EU nationals work in Oxfordshire’s hospitals, the construction industry and in the higher education sector, with many business and research collaborations between the EU and the county’s top universities and science parks. These are skilled EU workers when Oxfordshire is already experiencing skills shortages in skilled trade sectors. The UK is in the midst of successive rounds of talks and it is clear the aim is to protect key investments where possible. It remains to be seen the effects and opportunities of a full Brexit.

²¹ <https://www.verdict.co.uk/which-companies-could-leave-the-uk-because-of-brexit/>

Current jobs in Oxfordshire

Oxfordshire employees have no shortage of job opportunities. This highly-skilled and engaged workforce is spoilt for choice.

There are challenges to the Oxfordshire labour market. With low unemployment there is a limited market for new jobs within Oxfordshire and insufficient resident skilled workers to fill existing jobs. There are skills shortages in professional, caring and skilled trades and conversely many are not working to their full potential.

This section looks primarily at Oxfordshire's current labour market and job opportunities. It considers the current employee and employer structure of Oxfordshire. It uses vacancy data from *Labour Insight* to assess online job postings and summarises the current apprenticeship position.

Sectors and employment

Table 3, overleaf, shows that the largest proportion of the workforce is in the Education sector despite the enterprises²² in education only making up 2.3% of all enterprises in Oxfordshire. The University of Oxford alone (not including OUP or those employed solely by colleges) employs 13,000 in teaching, research, administration, ICT and other service roles and higher education teaching professionals are four times more likely to be found living and working in Oxfordshire than nationally.

The Professional, Scientific and Technical sector is also buoyant, above the national average, with 43,000 employees and scientists are over three times more likely to be found in Oxfordshire. The health sector has 42,000 employees with the two big hospitals, John Radcliffe and Churchill, at its heart. These top 3 sectors have seen very little change in the number of employees between 2015 and 2016. The Business Administration and Support Sector has seen the biggest rise over this period, up from 21,000 to 29,000. Transport and Storage and Property sectors have also seen moderate growth.

After quadrupling its workforce between 2010-2015, the smallest sector of workers in the agricultural sector has lost that growth, seeing the biggest losses of employees down from 700 in 2015 to 125 in 2016. Whether this is due to a reclassification of jobs or working conditions, the cause of this loss is not clear.

Sectors like retail and accommodation and food services have more instances of part-workers than full-time. Many jobs in these sectors provide starter jobs or stop-gap jobs for young people, or for those with caring responsibilities that require flexible working conditions. Sectors that traditionally employ men, such as manufacturing, wholesale and the motor trades, are largely made up of full-time workers.

²² An enterprise is defined as a business with the smallest combination of legal units (legal unit = a factory or a shop).

Table 3: Employees by sector, 2016

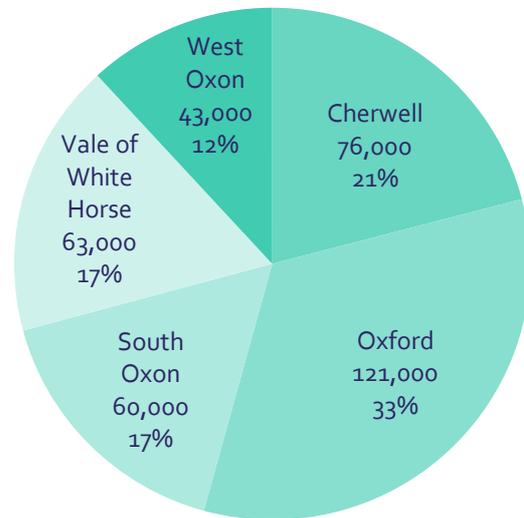
Broad Sector	Count of employees*	% Oxfordshire employees	% England employees	% difference over 1 year period (2015-2016)	FT/PT split
Education	58,000	16.0	9.0	No change	56/44
Professional, scientific and technical	43,000	11.8	9.0	No change	77/23
Health	42,000	11.6	12.8	Down 2.3%	59/41
Retail	31,000	8.5	9.4	Down 3.1%	45/55
Business admin and support	29,000	8.0	9.2	Up 38.1%	62/38
Manufacturing	25,000	6.9	8.0	Up 4.2%	92/8
Accommodation and food services	24,000	6.6	7.3	Down 4.0%	46/54
Information and communication	21,500	5.8	4.4	Up 5.0%	84/16
Construction	18,500	5.2	4.5	Up 11.8%	86/14
Wholesale	14,500	4.1	4.1	Up 7.1%	90/10
Transport and storage (including postal)	13,500	3.9	5.0	Up 16.7%	81/19
Arts, entertainment and recreation	14,000	3.9	4.5	Down 12.5%	57/43
Public administration and defence	9,800	2.8	4.0	No change	82/18
Real estate activities	7,000	1.9	1.7	Up 16.7%	71/39
Motor trades	5,900	1.7	1.8	No change	85/25
Financial and insurance	4,300	1.1	3.6	Down 20.0%	81/29
Mining, quarrying and utilities	3,100	0.8	1.1	No change	96/4
Agriculture, forestry and fishing	100	0.1	0.6	Down 78.6%	60/40
Total	363,000	100	100		68/32

* Employee counts refer to the number of work-based employees in an area and not those resident in an area. Rounded to the nearest 100.

As the hub of Oxfordshire, and home to the biggest city in Oxford, it is no surprise Oxford City district has the most employees, of 121,000. Cherwell district, home to Banbury and Bicester, has the second most. West Oxfordshire, the most rural district, has the least employees.

It follows then that Oxford City district should have the highest proportion of part time jobs – at 39,000. West Oxfordshire has the lowest at 14,000.

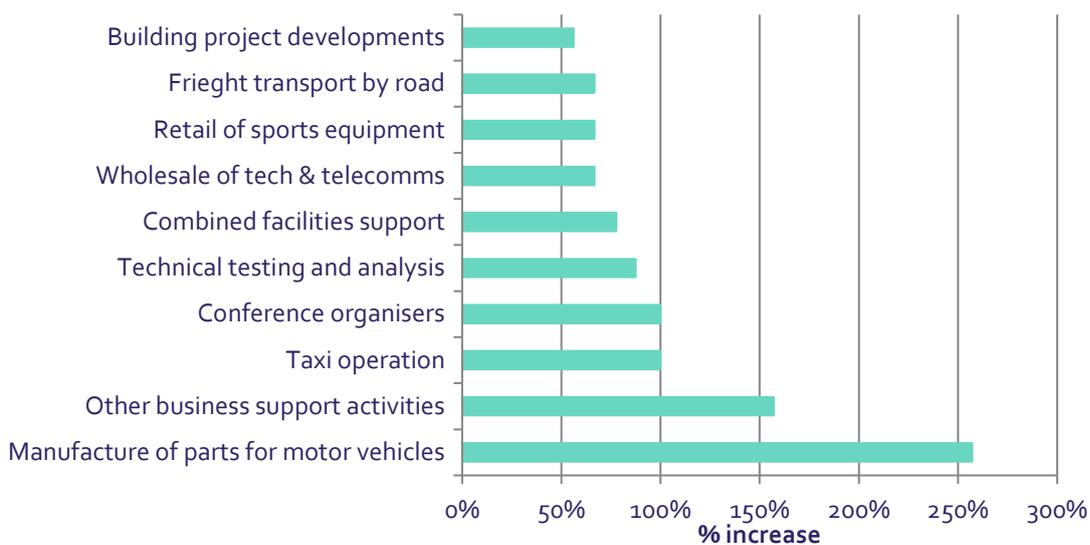
Figure 11: Employees by district, 2016



Sub-sectors and employment

Looking at the lowest granularity of sub-sectors, the sub-sectors which have seen the most growth over a 1-year period (from 2015 to 2016), and where there were more than 500 employees in 2016, manufacture of parts for motor vehicles sector, which has seen the biggest rise in employee numbers from 350 to 1,250. The number of taxi drivers and conference organisers has doubled in this year. The top 10 sub-sectors with most growth are shown in the figure 13 below.

Figure 12: Sub-sectors that have seen most growth, where employees >500, 2015-2016²³



²³ BRES, 2017

Occupation types

Table 4: % of Oxfordshire resident workforce by occupation type, 2017²⁴

% all in employment who are (SOC2010 and type):	Oxfordshire	England	Male	Female
11: corporate managers and directors	8.8	7.9	10.8	6.5
12: other managers and proprietors	3.3	3.1	3.6	3.1
21: science, research, engineering, tech professions	9.3	5.6	10.8	7.5
22: health professionals	6.3	4.3	2.0	11.4
23: teaching and educational professionals	7.7	5.0	7.5	8.1
24: business, media and public service profs ²⁵	6.7	5.5	7.0	6.3
31: science, engineering and tech associate profs	3.0	1.8	4.1	1.7
32: health & social care assoc. professionals	0.9	1.5	1.0	0.8
33: protective service occupations	1.6	1.2	2.5	-
34: culture, media and sports occupations	3.6	2.5	3.7	3.6
35: business & public service assoc. profs	7.2	7.5	6.3	8.3
41: administrative occupations	6.4	8.1	4.0	9.3
42: secretarial and related occupations	1.9	2.2	-	3.5
51: skilled agricultural and related trades	1.0	1.0	1.5	-
52: skilled metal, electrical & electronic trades	2.8	3.6	5.2	-
53: skilled construction and building trades	3.7	3.4	6.9	-
54: textiles, printing and other skilled trades	1.2	2.1	1.9	-
61: caring personal service occupations	5.6	7.1	1.7	10.2
62: leisure, travel & related personal service occs	1.1	2.0	-	1.7
71: sales occupations	3.5	5.6	3.0	4.1
72: customer service occupations	1.5	1.8	0.8	2.3
81: process, plant and machines operatives	1.8	2.6	2.4	1.0
82: transport & machine drivers/operatives	1.8	3.7	3.3	-
91: elementary trades and related occupations	1.4	1.6	1.8	1.0
92: elementary administration & service occs	7.9	8.9	7.3	8.7

²⁴ ONS Annual population survey – mid 2017 figure

²⁵ 'profs' = professionals

- = estimate not available as figure is too small or disclosive

Table 4 shows the percentage of people in employment broken down by their occupation type. It shows what makes Oxfordshire unique compared with nationally and the types of occupations chosen by each gender. So for example, 8.8% of those in employment are managers and directors of corporations across all sectors. This equates to 31,600 people. The highest percentage of workers are in science, research, engineering and technical professions, at 9.3% of those in employment (equal to 33,300 people).

58.4% of the working population are in the top eschelons of positions (soc2010 codes 1-3) compared with 45.9% in England. There are proportionately nearly twice as many science, research, engineering and technical professionals in Oxfordshire as there are nationally with 9.3% in Oxfordshire and 5.6% of those in Employment in England.

Men in the workforce tend to have the top roles in business and science, research, engineering and technical professions with 10.8% of men working in these areas. Very few men opt to work in secretarial or tourism and leisure roles and there are low percentages of men working in health roles. Only 2% are health professionals, a further 1% are health and social care professionals and 1.7% are in caring occupations. For women, health care roles make up the largest percentage of roles, with 11.4% of working women in health professional roles and 10.2% in caring occupations. Admin roles are also popular with women. This is possibly because they offer more flexibility in working conditions

Table 5 shows an overview of the employee breakdown by district.

Table 5: % of Oxfordshire resident workforce by occupation type and district, 2017²⁶

% all in employment who are (SOC2010 and type):	Cherwell	Oxford	South Oxon	Vale of White Horse	West Oxon
1: managers, directors and senior officials	14.9	8.1	15.3	8.4	16.1
2: professional occupations	21.7	41.5	33.6	28.1	20.6
3: associate prof & tech occupations	18.6	15.3	19.7	15.3	12.5
4: administrative and secretarial occupations	12.5	5.4	7.8	5.6	11.5
5: skilled trades occupations	8.9	6.6	7.6	10.2	11.3
6: caring, leisure and other service occupations	3.9	6.6	4.9	10.0	8.4
7: sales and customer service occupations	4.6	2.9	2.0	9.4	6.5
8: process, plant and machine operatives	6.9	2.0	2.6	3.3	2.7
9: elementary occupations	7.9	11.5	6.4	9.7	10.4

²⁶ BRES, 2017

Oxford City has the highest concentration of high-skilled workers with 47 per cent occupying the highest-skill roles (appendix 1 shows full details on how occupations are grouped).

Oxfordshire has job specialisms in science, education and creative jobs.

Table 6: Job specialisms prevalent in Oxfordshire

Biological scientists and biochemists Laboratory technicians Natural and social science professionals Physical scientists Research and development managers
Senior professionals of education Higher education teaching professionals Further education teaching professionals
Graphic designers Photographers, audio-visual and broadcasting equipment operators
Market research interviewers Clergy

Source: EMSI Analyst, 2014

The job specialisms listed in table 6, show the occupations (as opposed to occupation types) in which there are a higher concentration of workers in Oxfordshire compared to the UK as a whole. Given the large Education and Professional, scientific and technical sectors the results are not surprising with a high incidence of science and research based roles. Many of the jobs identified are high-skill roles that require higher level qualifications.

Oxfordshire's largest occupations: Top 5

Occupations	No. of jobs
Sales and retail assistants	14,400
Other administrative occupations	9,100
Cleaners and domestics	8,200
Nurses	7,200
Care workers and home carers	7,100

Source: EMSI Analyst, Q1 2015

The number of market research interviewers has risen significantly in the last 5 years, although it is unclear why.

Largest employers

Table 7: Oxfordshire's largest 25 private sector companies, ranked by turnover, 2014²⁷

Rank	Company name	Employees 2014	Nature of business	Head Office Location
1	TI Automotive	18,425	Car parts manufacturer	Oxford
2	University of Oxford	16,500	University	Oxford
3	Unipart Group	7,521	Logistics provider	Oxford
4	Oxford University Press	4,500	Publishers	Oxford
5	Hook 2 Sisters	448	Poultry Farming	Bampton
6	Opus Energy	443	Energy supplier	Oxford
7	Sophos	1,687	IT security systems	Abingdon
8	Geos Group	9	Marine Fuel Sales	Henley on Thames
9	Fresh Holdings	862	Fresh fruit wholesaler	Bicester
10	Oxford Brookes University	2,577	University	Oxford
11	W Lucy	872	Power distribution products	Oxford
12	Stan James (Abingdon)	348	Bookmaking	Wantage
13	Prodrive	593	Motorsport manufacturer	Banbury
14	Grundon Waste Management	645	Waste Management	Wallingford
15	Owen Mumford Holdings	752	Medical device manufacturer	Woodstock
16	Timbmet Group	293	Wood Products	Oxford
17	Farol Holdings	142	Agricultural machinery	Thame
18	Harrison HD Holdings	2,631	Catering services	Thame
19	Bybox Holdings	373	Electronic locker manufacturer	Wantage
20	Lister Wilder Group	157	Agricultural machinery	Wallingford
21	European Electronique	144	IT hardware & software solutions	Eynsham
22	Kingerlee Holdings	134	Residential developer	Kidlington
23	Airtanker Services	116	Tanker aircraft manufacturer	Carterton
24	KJ Cherry and Sons	139	Animal feedstuffs & property	Banbury
25	Imago Holdings	150	Printing and publishing	Thame

²⁷ Thames Valley 250, 2014, <https://1drsrxqtd7m2evqfd1qfsgd1-wpengine.netdna-ssl.com>

Missing from table 7, of the private company rankings, are several large employers that operate in the public sector. The most notable of these are Oxfordshire County Council, a local authority, employing over 10,000, the Ministry of Defence, who employ around 11,000, while Oxford University Hospitals and Oxford Health NHS Foundation Trust employ another 15,000 in the county.

Did you know?

In 2017, five companies with Headquarters in Oxfordshire made The Sunday Times Best Employers lists in various different categories. These were:

Bibby Financial Services in Banbury;

Peach Pub Company in Bicester

OEE Consulting in Oxford

Nominet Internet Registry in Oxford; and

Wrap, a sustainable charity organisation in Banbury

www.appointments.thesundaytimes.co.uk/article/best100companies/

Largest employer vacancies

While most job postings online are posted via recruitment agencies (especially small companies looking for finance, marketing, administration and human resource positions to be filled), the table overleaf gives an indication of the type of employers that were recruiting during 2017, directly and online.

Labour Insight by Active Informatics is an online labour market tool that scans and collates online job postings. However, it should be noted that the data is limited to web based postings and therefore may not be representative of all vacancies – a good number of vacancies are filled informally but it does provide a broad overview of the job market.

Did you know?

The three occupations most in demand in 2017 in Oxfordshire were:

Programmer and Software Development professionals, with top programming languages being Java, C#, C++, Asp.Net, Python and Ruby on Rails;

Nurses, with registered and staff nurses, nurse practitioner and paediatric nurses most sought after; and

Other administrative occupations including administrative assistants covering a variety of sector jobs.

Table 8: Employers with most online job postings, 2017

Rank	Company name	No. of job postings	Nature of business
1	National Health Service	2,690	Health
2	University of Oxford	2,568	Education
3	Travelodge	429	Hotelier
4	Bicester Village (Value Retail Mgt)	236	Retail
5	Oxford Brookes University	226	Education
6	Amey	214	Infrastructure support services
7	Greenwich Leisure Ltd 'Better'	173	Lesiure centres
8	Diamond Light Source Ltd	153	Synchotron science facility
9	Oxford City Council	150	City council
10	Barchester healthcare	149	Adult social care
11	Relx Ltd (formerly Reed Elsevier)	149	Publisher
12	Invesco income growth trust	145	Finance
13	Sophos	145	Cyber security
14	Oxfordshire County Council	143	Local authority
15	Olymel S E C / L P	138	Meat process and distribution

Source: Labour Insight, Burning Glass Technologies

There are also lots of health, skilled trades and elementary jobs advertised via recruitment agencies like ATTB, Indeed, Champion, Selection Matters, Corriculo, ID Medical and Allen Associates.

Job vacancies

Job vacancies data gives a good indication of the current labour market in Oxfordshire; showing what employers are looking for, as well as which occupations are potentially hard-to-fill. The table below shows the number of job postings over the last 5 years. They averaged 17,000 per quarter in 2012 and 27,000 in 2017.

Figure 13: Number of job vacancies posted online, 2012-17, Oxfordshire



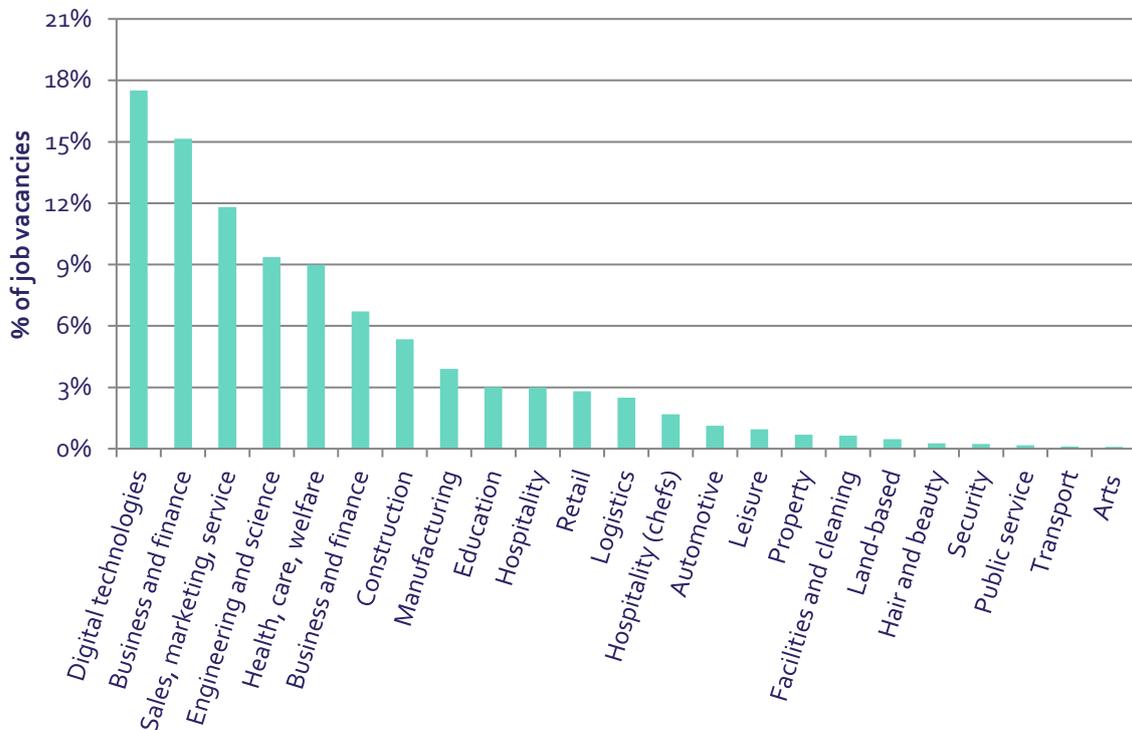
Table 9: What occupation groupings are currently most in demand in Oxon in 2017?

Rank	Occupation group (based on SOC2010 code)	No. of Job Postings	Job family (grouped by similar skill sets)	ONS Skill level ²⁸	Mean advert — ised salary
1	Programmers and software development professionals	7,519	Digital technologies	High-skill	£48,836
2	Nurses	2,903	Health, care and welfare	High-skill	£34,782
3	Other administrative occupations n.e.c.	2,620	Business and finance (administration)	Service-intensive	£20,770
4	Business Sales Executives	2,562	Sales, marketing and customer service	Middle-skill	£29,094
5	Web design and development professionals	2,231	Digital technologies	High-skill	£42,963
6	IT business analysts, architects and systems designers	1,897	Digital technologies	High-skill	£52,196
7	Managers and directors in retail and wholesale	1,798	Retail	High-skill	£29,983
8	Managers and proprietors in other services n.e.c	1,138	Various	Middle-skill	£47,687
9	Chefs	1,724	Hospitality (chefs)	Middle-skill	£23,905
10	IT user support technicians	1,682	Digital technologies	Middle-skill	£28,016
11	Sales accounts and business development managers	1,665	Sales, marketing and customer services	Middle-skill	£43,056
12	Marketing associate professionals	1,635	Sales, marketing and customer service	Middle-skill	£27,886
13	Chartered and certified accountants	1,622	Finance	High-skill	£35,480
14	Sales related occupations	1,617	Sales, marketing and customer services	Low-skill	£30,627
15	Care workers and home carers	1,597	Health, care and welfare	Service-intensive	£21,659

²⁸ Skill levels are explained in further detail in the LMI Skills and Qualifications section pdf

When looking at all job postings grouped by job family (grouped by similar skill sets) for Oxfordshire job vacancies for the first three quarters of 2017 we find:

Figure 14: Job vacancy demand by job family, Q1-3 2017



Source: Labour Insight, Burning Glass Technologies

- Nearly 18 per cent of job vacancies form part of the Digital Technologies job family. Programmers and Software Development professionals have consistently topped the occupational vacancy chart in Oxfordshire.
- 15 per cent of jobs are Business and Finance and 12 per cent are in Sales, marketing and customer service.
- The top 3 broad sectoral groups for job postings consistently top in Oxfordshire over the past four years are 'ICT'; 'Legal, Financial, Property and Other Business professionals'; 'Retail and Sales'.

It should be noted some sectors do not advertise online, using more informal or traditional methods, and may explain low vacancies in some areas.

What job titles lead demand in job vacancies?

It is job titles, and not occupation groupings, that head the job advert.

In this analysis for example, it is evident that in the Digital Technologies job family, the occupation group Programmers and Software Developers encompass a number of varied job titles.

In fact, there can be numerous titles for similar types of jobs due to the specificity of the work being reflected in the title and many job titles straddle sectors – Assistant Manager for example. Job titles also change over time as the nature of the work involved also changes.

The table to the right shows the top 20 job titles in Oxfordshire to give an indication of the standardisation and popularity of job titles.

Table 10: Number of postings for job titles, quarters 1-3 2017, Oxfordshire

Rank	Title	Job family	Job Posts
1	Sales Executive	Sales, marketing and customer service	2,559
2	Registered Nurse	Health, care and welfare	1,229
3	Software Developer	Digital technologies	1,047
4	Assistant Manager	Business and Finance / Sales / Hospitality	1,007
5	Java Software Developer	Digital technologies	952
6	Account Manager	Sales, marketing and customer service	838
7	Software Developer	Digital technologies	794
8	Chef	Hospitality (chefs)	782
9	Net developer	Digital technologies	635
10	Accountancy Assistant	Sales, marketing and customer service	587
11	Quantity Surveyor	Construction	568
12	Business Development Exec.	Business and finance	560
13	Business Analyst	Business and finance	552
14	Customer Service Advisor	Hospitality (chefs)	545
15	General Labourer	Associate professionals and technical	545
16	Store Manager	Retail	544
17	Auxiliary Nurse	Health, care and welfare	534
18	Receptionist	Business and finance (administration)	509
19	Sous Chef	Hospitality (chefs)	504
20	Accountant	Business and finance	492

Job vacancy salary

Nearly a fifth of online job vacancies postings in Oxfordshire advertised a mean average salary of between £20,000-£25,000. Many of these were in administrative posts, as care workers and home carers, sales and retail assistants, chefs and elementary construction work and customer service occupations.

Did you know?

The mean real-time average salary for online job vacancies over 2017 was £31,194 (based on where salary is known). It was £31,690 in 2016 and £31,820 in 2015.

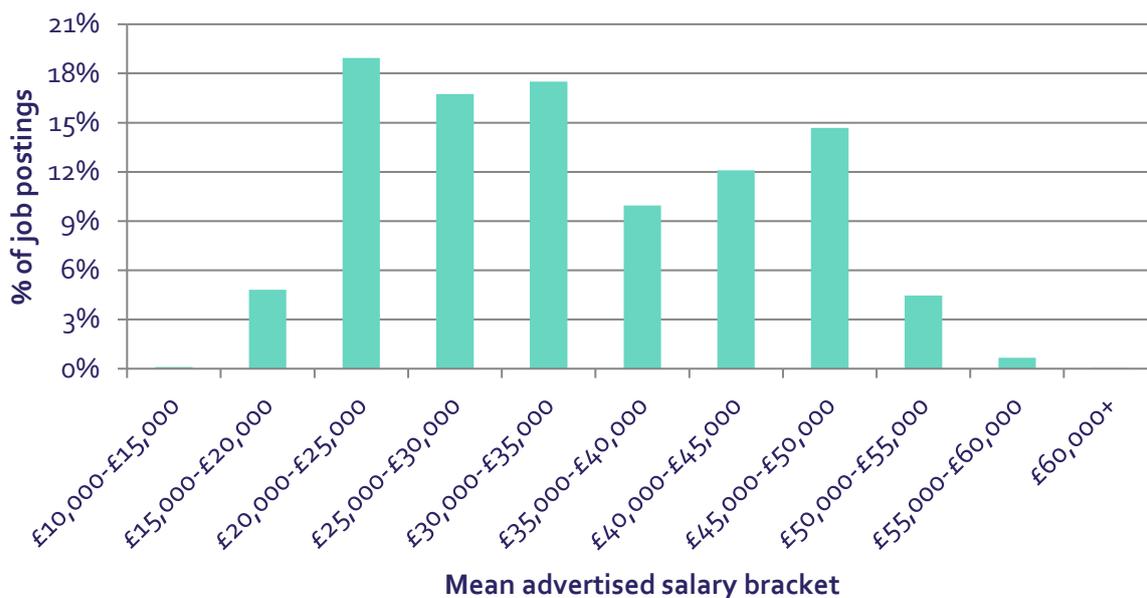
Labour Insight, Burning Glass Technologies

There were no occupations advertised with a mean average salary of less than £10,000. Jobs in the £10,000 to £15,000 salary bracket were hairdressers and barbers. Receptionists, teaching assistants, nursery nurses and catering assistants were found in the £15,000-£20,000 range.

At the upper end of the scale, and fewer in number, were jobs advertised with mean advertised salaries of over £50,000. These were in management consultant and business analyst roles, legal professionals, doctors and dentists, IT and telecommunications directors. There were also some military roles that commanded a larger salary.

Figure 15 shows the distribution of mean advertised salaries for online job postings in Oxfordshire for 2017. Seventy per cent of online job vacancies in Oxfordshire offer salaries above those set out in the regional annual salary data from the Office of National Statistics reflecting the high cost of living in the county.

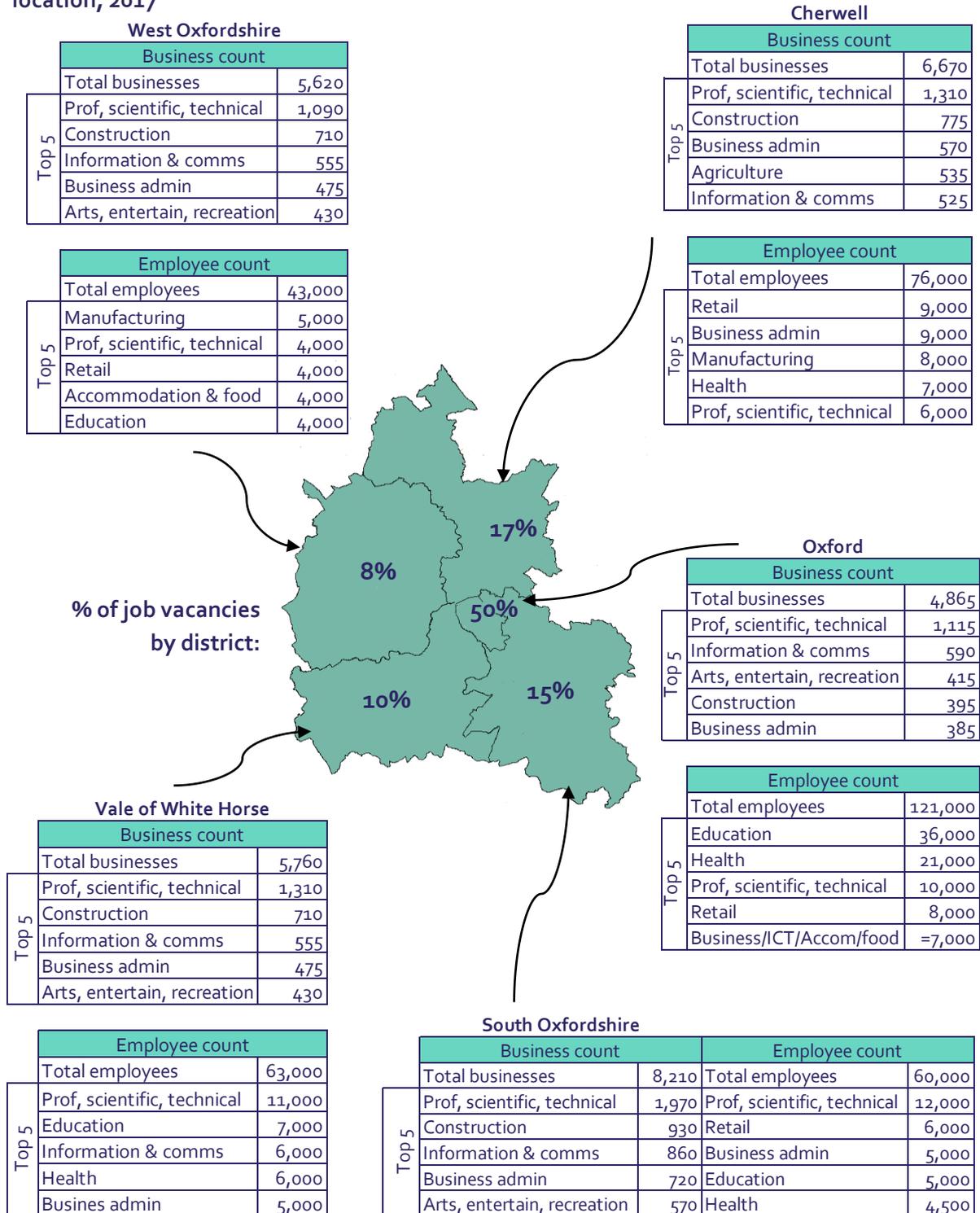
Figure 15: % of job postings by mean advertised salary bracket, 2017²⁹



²⁹ Labour Insights, Burning Glass technologies

What is hot and where?

Figure 16: Percentage of job postings and largest sectors of businesses and employees by location, 2017



Apprenticeships

Apprenticeships provide an opportunity for young people to start paid work in an occupation of their choosing while receiving on and off the job training. They also provide opportunities for adults to retrain in a new area. A successful apprentice will receive a nationally recognised qualification on completion of their contract.

Apprenticeships, and vocational training generally, have been given a big boost with significant announcements from the Chancellor in his summer Budget 2015.

These include:

- A pledge to create three million apprenticeships by 2020 across the UK
- Give the term 'apprenticeship' legal protection to strengthen its reputation and to ensure the same legal status as university degrees.

Also high on the agenda are new funding mechanisms aimed at driving more apprenticeships and the creation of higher apprenticeships.

The Apprenticeship Levy was introduced in April 2017. Employers with a pay roll bill of more than £3 million have to contribute towards the funding of Apprenticeships to help the government meet their target of 3 million apprentices by 2020. There are approximately 450 Oxfordshire based businesses that now must pay into the levy to varying degrees, either by introducing apprentices to their workforce for the first time, expanding into new areas, or some may decide not to use the levy at all. However apprenticeship figures are down this year suggesting many find the levy confusing, or have yet to utilise them. Oxfordshire also has many more apprenticeship places than people wanting to take these places. This lack of interest may encourage employers to find other routes to fill their roles.

Did you know?

*-Apprentices are likely to **earn more** during their lifetime than contemporaries with fewer qualifications;*

*-Just **5%** of apprentices are unemployed a year after starting their job hunt compared with 16 per cent of graduates and 13 per cent of those with A-levels*

*-Over **1/3** of apprentices who found employment were working **in the skilled trades** in jobs such as electrician or plumber.*

Source: UK labour market insights - the entry-level dilemma. A Totaljobs.com report

Did you know?

***69%** of businesses in Oxfordshire say employee skill gaps have an impact on their businesses performance.*

UKCES ESS, 2015

Figure 17: Apprenticeships in Oxfordshire, 2015/16

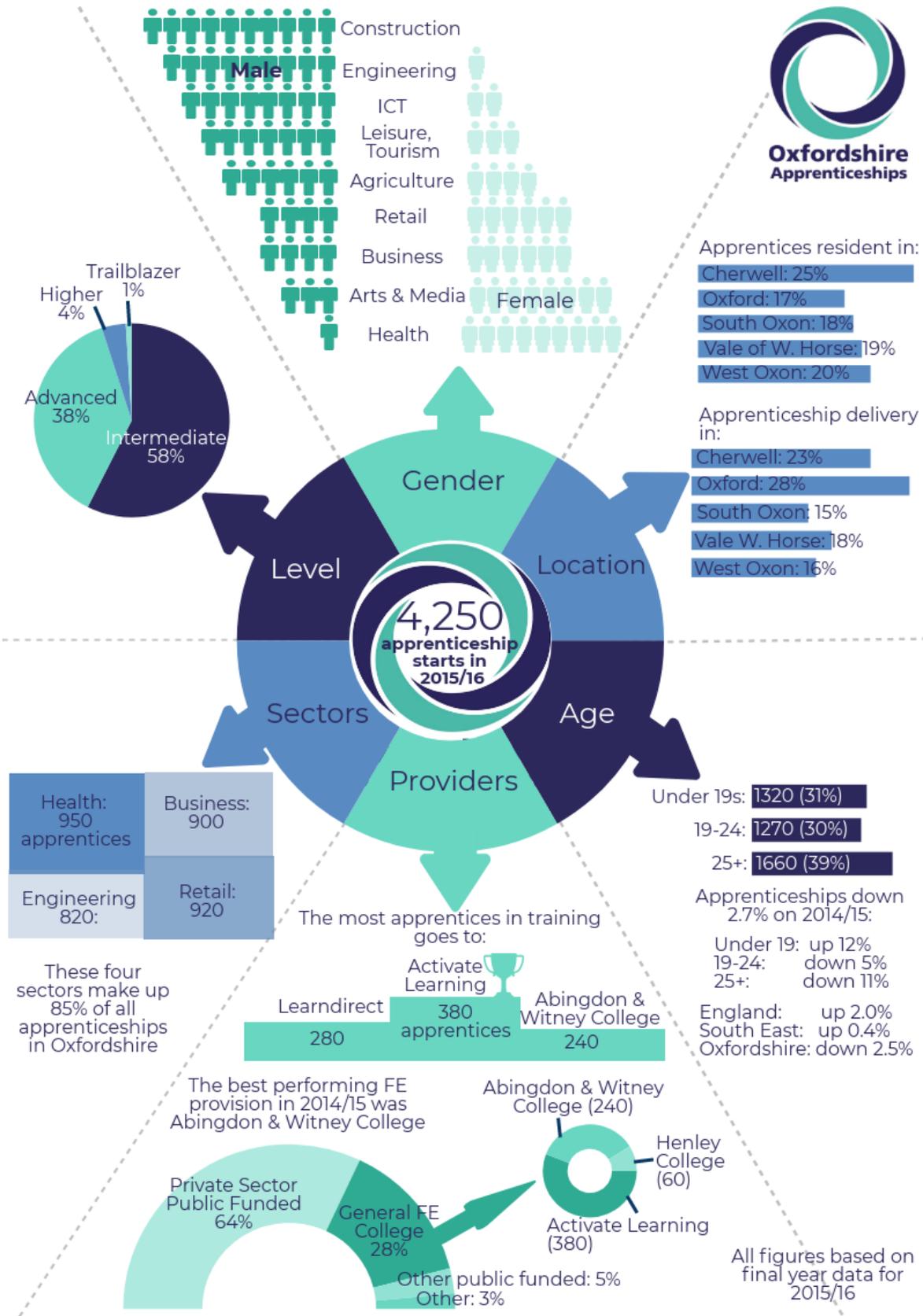
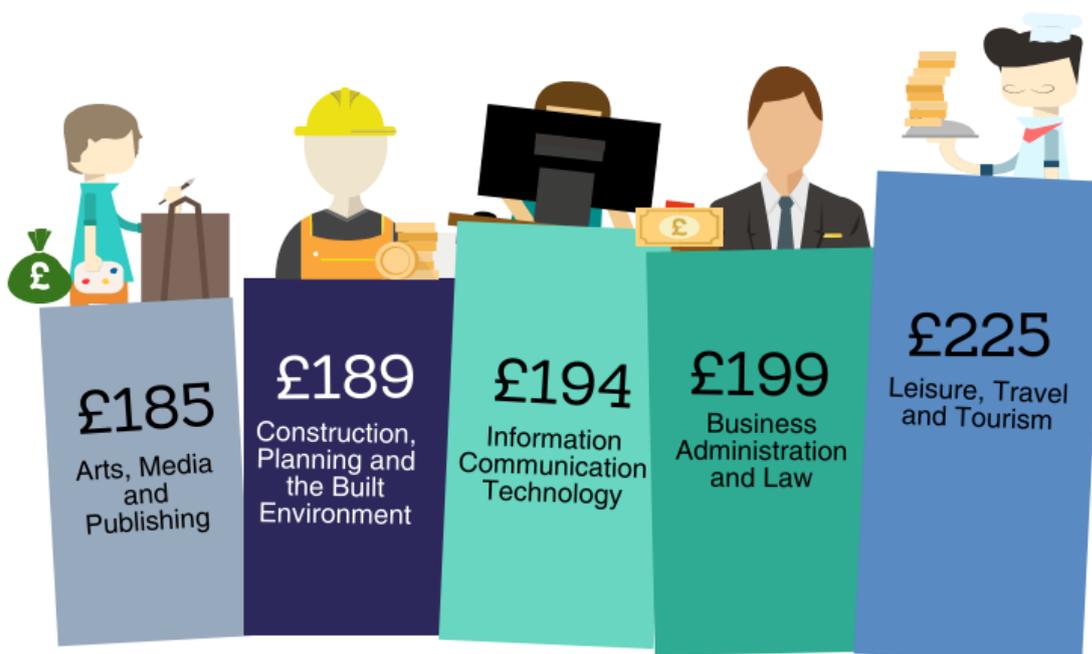


Figure 18: Apprenticeship average wages in Oxfordshire, 2017



Oxfordshire Apprenticeships Average wages per week



Did you know?

The national minimum wage for apprentices rises by 20 pence to £3.70 an hour on 1 April 2018, which gives a 37 hour weekly wage of £136.90.



Current apprenticeship opportunities

In October 2017, there were 260 unique apprenticeship vacancy adverts that were open to applications³⁰. Please note that one advert may be advertising for many posts and this data is based on adverts only.

Table 11: Top 12 frameworks (tier 2) with most apprenticeship job vacancies, October 2017, Oxfordshire

Apprenticeship framework advertised	No. of adverts
Business Administration	65
Retail and commercial enterprise (including chefs, hairdressing)	49
Engineering and manufacturing technologies (service technicians)	24
Hospitality (Bar and waiting staff)	24
Health, public services and care (childcare and retail optical)	15
Leisure, travel and tourism	15
Digital industries	11
Construction (Bricklayer, carpenter, plumber etc.)	10
Customer service	9
Hair and beauty	8

Source: National Apprenticeship Service for Oxfordshire,
<https://apprenticeshipvacancymatchingservice.lsc.gov.uk/>

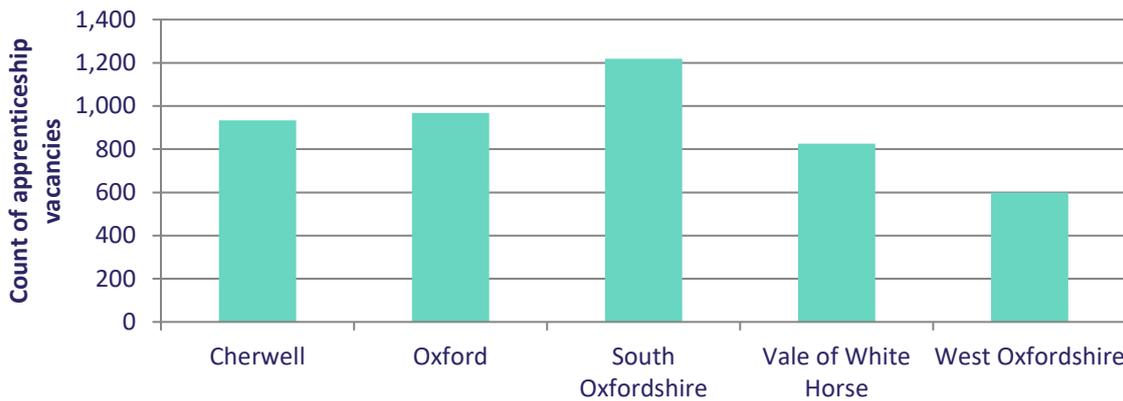
- Administrative assistants and chefs are the top the apprenticeship roles.
- 76 per cent of vacancies were at intermediate level, 24 per cent were advanced, less than 1 per cent higher.
- Weekly wages ranged from £101.25 to £361.53, with the median average at £159. The pay goes up as the level goes up³¹. Intermediate level can expect a weekly average wage of £160, Advanced £163, whilst higher levels can commands £253.
- The average national minimum wage for apprentices has risen to £3.50 per hour from April 2017. Oxfordshire already pay their apprentices more than this with the average hourly wage at £4.30 in 2017.
- 30% of apprenticeship vacancies were based in Oxford City; Abingdon was the next highest location of vacancy with 11 per cent and Banbury third with 8 per cent.

³⁰ These figures are all based on those vacancies posted to the National Apprenticeship Service website by training providers and may not include all vacancies.

³¹ Intermediate level is the educational equivalent to 5 GCSE passes at grades A*-C; Advanced level is equivalent to 2 A level passes; Higher level is equivalent to a Foundation degree and above.

From July to October 2017 there were 4,546 apprenticeship postings (this is not unique postings and it is likely the same vacancies are posted for a number of weeks). South Oxfordshire had the most with 1,219. West Oxfordshire had the lowest number at 600.

Figure 19: Apprenticeship vacancies in Oxfordshire, July to October 2017



The Oxfordshire apprenticeships website (www.oxfordshireapprenticeships.co.uk) provides a live vacancy feed for the current apprenticeship vacancies in Oxfordshire.

Future jobs in Oxfordshire

The Oxfordshire labour market of the future will present a very different picture from that of today.

This section considers Oxfordshire up to and including 2038. It considers the impact of population and demographic changes, how the labour market is predicted grow through net job growth and replacement demand and the risk of automation.

We look at the local initiatives that will change the Oxfordshire landscape and detail our growth sectors that will help to meet the demands of the future. We consider how each of the sectors is likely to be affected in the future.

First, it considers global trends and how we will fare in a competitive and volatile world where the skills base of a nation will be crucial to a country's success in delivering innovation, enterprise and sustainable growth.

Key global trends

An hour-glass shaped, two-tiered labour market

- *Highly skilled minority enjoy strong bargaining power, low skilled do not*
- *Decline of traditional roles in middle of the skills and earnings range e.g. admin, manual*
- *New jobs fill the middle ground, different entry routes and skills requirements*

Interconnectivity and collaboration

- *Fluid, interconnected, network-oriented jobs*
- *Challenge of developing the skills of a virtual, flexible workforce*
- *Convergence between sectors, stimulates innovation between disciplines and hybridisation of skills*



Increased individual responsibility

- *Greater worker flexibility means individuals shoulder responsibility, including skills development*
- *Self-management skills*
- *Personal agility and resilience vital, especially for young people*

Technology will pervade every work environment

- *Digitalisation impacts on jobs and skills at all levels, all sectors*
- *Winners and losers*
- *Continuous up-skilling and adaptation fundamental*

Digitisation and Technology

Digitisation and associated technological development will continue to transform our working lives in ways that cannot be completely predicted. We do know however, it will be fast and a step change greater than when the internet was invented and adopted with 'Generation Y' – those born 'plugged in' - in the driving seat³².

How digitisation might impact on jobs:

- Health Sector: Care workers assisting with home-based diagnostic and monitoring devices. Doctors and consultants using the output of scanning machines and bio-chemistry to diagnose illness. Diagnostic and monitoring devices used in the treatment and care of patients.
- Construction sector: Increasingly sophisticated building technologies, such as home automation, will demand new installation, maintenance and repair skills, while architects and building managers use cradle-to-grave digital modelling in their projects, to both design and build physical structures.
- Retail: Online shopping more prevalent. Reduction in the number stores. Stores used as showrooms rather than selling points. Warehousing and logistics supporting online activity to increase.

It has been suggested that 30% of tasks and 60% of occupations could become computerised. This does not mean jobs will disappear and it is clear thus far that technology has created a lot more jobs than it has wiped out. It has also increased productivity, but what is clear is that jobs will be redefined. New skill-sets will be required to keep at the same job. In order to prepare for this change, futurists believe we must become agile in our outlook and abilities, be open to change and diversify our skills as much as possible. It could mean that workers work for several companies simultaneously rather than working for one big corporation³³.

Automation

Many digitisation and technological advances still require a human input to the workforce. However, the mass replacement of humans by machines is called automation and experts³⁴ now say up to 35% of all jobs in the UK could be replaced by machines by as early as 2030. Producers are looking at ways to cut costs and automation is cheap. Often a poor economic outlook accelerates automation.

³² Ernst & Young, The digitisation of everything, 2011

³³ What jobs will still be around in 20 years?, The Guardian, 26 June 2017, <https://www.theguardian.com/us-news/2017/jun/26/jobs-future-automation-robots-skills-creative-health>

⁷ The future of employment: How susceptible are jobs to computerisation?, 2013, Frey and Osborne

The postal service, car assembly and banking are just three of many operations that have already moved to automation. Slowly other occupations are following. Meter readers are no longer required due to the installation of smart readers. These workers are either being redeployed or lose their jobs. Telemarketers, cashiers, legal assistants and many other administrative roles are being taken over by robotics or computerisation.

In fact, it is occupations that mainly consist of tasks following well-defined procedures that can easily be performed by sophisticated algorithms that are vulnerable to automation. Computers learn quickly and learn from their mistakes immediately. Already we are seeing the decline of jobs in our manufacturing industries.

The consequences of a high level of automation will be huge. Some predict mass unemployment and collapse of capitalist system but others see this as a chance to reduce working hours and permit better quality of life, so long as wages do not diminish at the same time as the hours of work are lost. Customers on the receiving end of automation may rebel and choose services with a human delivery, especially where social intelligence is called for (as some have with automated call centres). Not least, work for many is not just about earning a living, but sociability and a sense of worth. Technological progress has been slowed before due to cultural obstacles and could yet again.

The local risk of automation

In the short term, it looks like many Oxfordshire jobs will be safe from automation. Approximately 110,000 job postings were posted online in 2017 in Oxfordshire. These have been assessed for the level of risk of automation³⁵. This risk is assessed by the probability of computerisation over the next twenty years. When grouped by skill level, it is evident that middle-skill and labour-intensive jobs are assessed as most at risk. By this assessment, 14% of all jobs posted in 2017 in Oxfordshire were at high-risk of automation. However, many jobs that are to be automated, may have not been invented yet and therefore not included in the figures of today. It seems the high-skill and service-intensive output of the Oxfordshire labour force may protect it from the future.

Table 12: % of Oxfordshire job postings by skill level at risk of automation, 2017

Job family	High risk	Medium risk	Low risk
High-skill	4%	3%	93%
Middle-skill	33%	64%	3%
Service-intensive	5%	35%	60%
Labour-intensive	36%	50%	15%

³⁵ Burning Glass technologies automation probability

When the same measure of risk is applied to jobs that are grouped by job family, that is jobs that may not sit in the same sector but have similar skill sets, we can get an idea of which types of occupation may be more susceptible to the risk of automation. Overall, Oxfordshire is not in immediate danger of automation but middle skill jobs in administration look set to suffer.

Table 13: % of Oxfordshire job postings by job family and level of risk of automation, 2017

Job family	High risk	Medium risk	Low risk
Arts			100%
Automotive	20%	80%	1%
Business and finance	27%	21%	52%
Business and finance (administration)	75%	19%	5%
Construction	21%	34%	45%
Digital technologies		13%	87%
Education		15%	85%
Engineering and science	1%	23%	76%
Facilities and cleaning	20%	45%	34%
Hair and beauty	0%	61%	39%
Health, care and welfare	1%	21%	78%
Hospitality	24%	57%	19%
Hospitality (chefs)			100%
Land-based	5%	41%	54%
Leisure		24%	76%
Logistics	9%	91%	
Manufacturing	26%	58%	16%
Not assigned	4%	19%	77%
Property	40%	60%	
Public service*		10%	51%
Retail	6%	29%	66%
Sales, marketing and customer service	3%	32%	65%
Security	12%	73%	15%
Transport	15%	66%	19%

* 39% of jobs in public service are considered not applicable to rate for risk. These are jobs in the armed forces for NCOs and other ranks.

What's safe from automation?

Lord Roberts Skildelski, lead Economist³⁶, predicts 'the more lousy or lovely the job, the safer it is'. Any job requiring dextrous or physical skill that can't be done by computers is deemed safe, as computers would be 'clumsy'. Genuine creativity is also unlikely to be replicated by robots, although there is some aspects of creativity can be learnt by computers and some have already shown evidence of producing creative originality – like original works of art.

This perception/manipulation plus creativity and social intelligence - where originality, negotiation, persuasion and care are required, all need a human element and therefore not all jobs will be at risk. Also, if a job is unpredictable, such as workers that are on-call to attend various locations (e.g. plumbers), it will be safe.

Finally, there are many jobs where a relationship is built, such as those between therapists, nurses, carers and social workers and even in business between companies and clients, and these too will be safe from automation.

What's not safe?

The Frey and Osborne study model⁸ predicts the at-risk jobs are likely to be most workers in transportation and logistics occupations, together with the bulk of office and administrative support workers, and labour in production occupations.

Those most at risk will be those in low-skill jobs that are routine, repetitive and predictable.

Other drivers of change

What must also be considered is other drivers of change that are not technologically based. Risks to the UK labour market is likely to come from other sources, such as the emergence of middle-class families in countries such as China, Thailand and Vietnam and other large, productive Asian economies. Governments in these countries are becoming less reliant on a low cost workforce and are diversifying to become knowledge based economies. Climate change; the ageing population, the changing nature of work and flexible working patterns will affect the labour market with workers looking for better work/life balance.

76% of UK employers believe future workforce planning is a leadership priority and have put strategies in place to deal with change. The most popular being 48% of employers who will invest in re-skilling current employees, 38% who will support mobility and job rotation and 36% who intend to target female talent to fill gaps³⁷.

³⁶ Featured on the Jeremy Vine show on Radio 2, January 2016

³⁷ The future of jobs, World Economic Forum, 2016 <http://reports.weforum.org/future-of-jobs-2016/united-kingdom/>

The future population

Over the next twenty years the population is predicted to rise by 11% from 693,500 in 2018 to 771,400 in 2038. This is an annual growth rate of 0.5%.

Figure 20: Projected Oxfordshire resident population³⁸



Published projections from the Office of National Statistics indicate the working age population, those aged 18-65 will only grow by 1.7% over the twenty year period to 2038. What is more, the child population, defined as aged 0-18 in this case, also see low growth and even decrease between 2028 and 2033, before stabilising. The age group that will see the largest growth is the over 66 year olds. This group will grow by 53% to 2038 from 119,100 to 182,130.

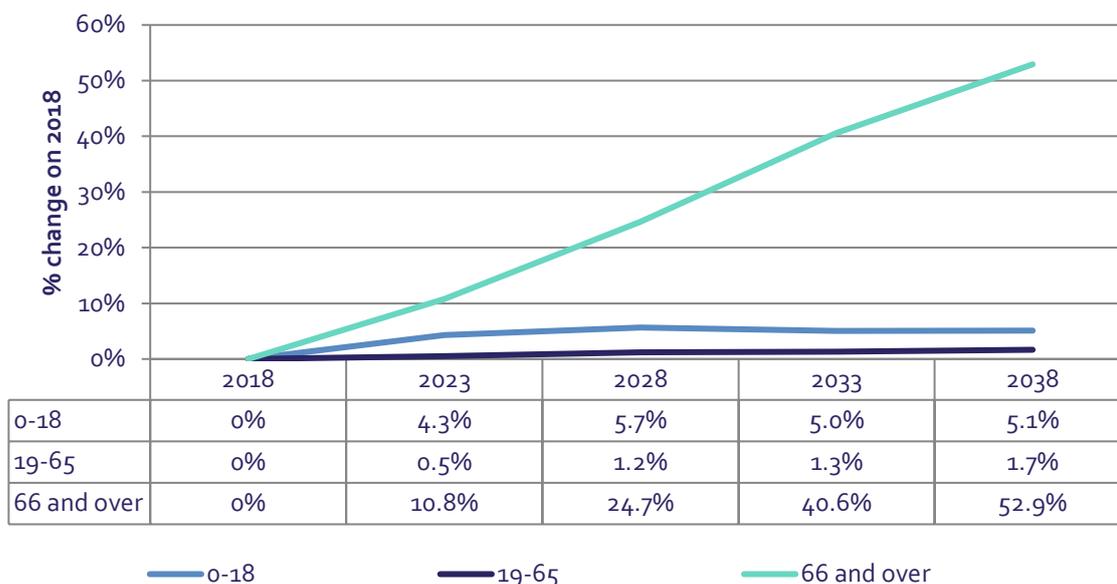
Employment characteristics of older workers

- *Less likely to change job*
- *Less geographically mobile*
- *Lower levels of participation in education and training*
- *Less likely to be unemployed*
- *More likely to take longer to return to work if unemployed*
- *Usually better paid than their younger colleagues*

Labour Market Trends: Implications of population ageing for the labour market, ONS report 2003

³⁸ Source: ONS subnational population projections (2014-based, published in 2016)
<https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandz1>

Figure 21: % Projected Oxon resident population change by age group*



Published ONS projections³⁹ indicate that the 15 to 19 age group is expected to peak in 2027 to 47,300 from 40,000 today.

Of Oxfordshire’s adult age groups, the 30-39 year olds are likely to decrease over this period from 92,000 to 89,000, with fluctuations in growth throughout, and the 40-49 age group will increase marginally over the 20 year period from around 88,000 to 91,000. However, the older worker age group, from 50-64 will peak at 143,000 in 2024 and only see marginal increases to 2038.

Age and demography undoubtedly affect the labour market with a rising incidence of ill-health and/or early retirement with age. An ageing working population will increase an employer’s wage costs and, potentially, training costs in order to hold onto experienced workers and maintain the relevance of their skill sets.

Did you know?

The older generation (66+) is set to equal the number of the youngest in our county (0-18 years old) for the first time by 2032 where the 66+ are predicted to count 164,000 and the 0-18 year olds will count 161,000.

Those aged 90+ are projected to more than double from 6,900 in 2018 to 20,000 in 2038.

ONS sub-national population projections, 2016

³⁹ Source: ONS subnational population projections (2014-based, published in 2016) <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationprojections/datasets/localauthoritiesinenglandz1>

The Future Labour Market

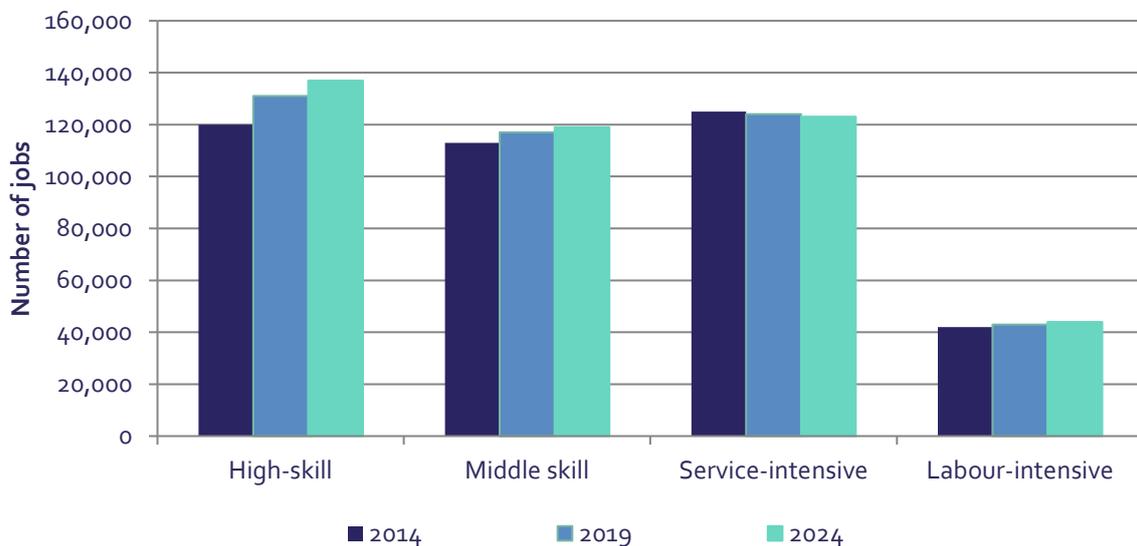
The UKCES Working Futures⁴⁰ project was created to model the labour market of the future to provide detailed projections of employment by occupation and industry. For Oxfordshire, it estimated there will be around 21,000 additional net job growth by 2024 compared with 2014. This is the creation of new jobs. There are around 417,000 jobs⁴¹ in Oxfordshire now.

Working Futures suggest:

- a continued trend in favour of more highly skilled occupations High-skill jobs have been consistently above national and regional averages in Oxfordshire;
- a shrinking of service-intensive roles in administration, secretarial, sales and machine operatives;
- But growth in other service-intensive occupations such as caring, leisure, travel and personal and customer service jobs.

Certainly, there will be new jobs that have yet to exist, and others, largely middle-skill occupations such as administration and some skilled trades, will disappear as more job functions become automated. The following figure shows the direction of travel of new jobs and not those that will be affected by replacement demand (where jobs are created by people leaving the workforce).

Figure 22: Projected direction of travel of jobs in Oxfordshire by skill level, 2014-2024

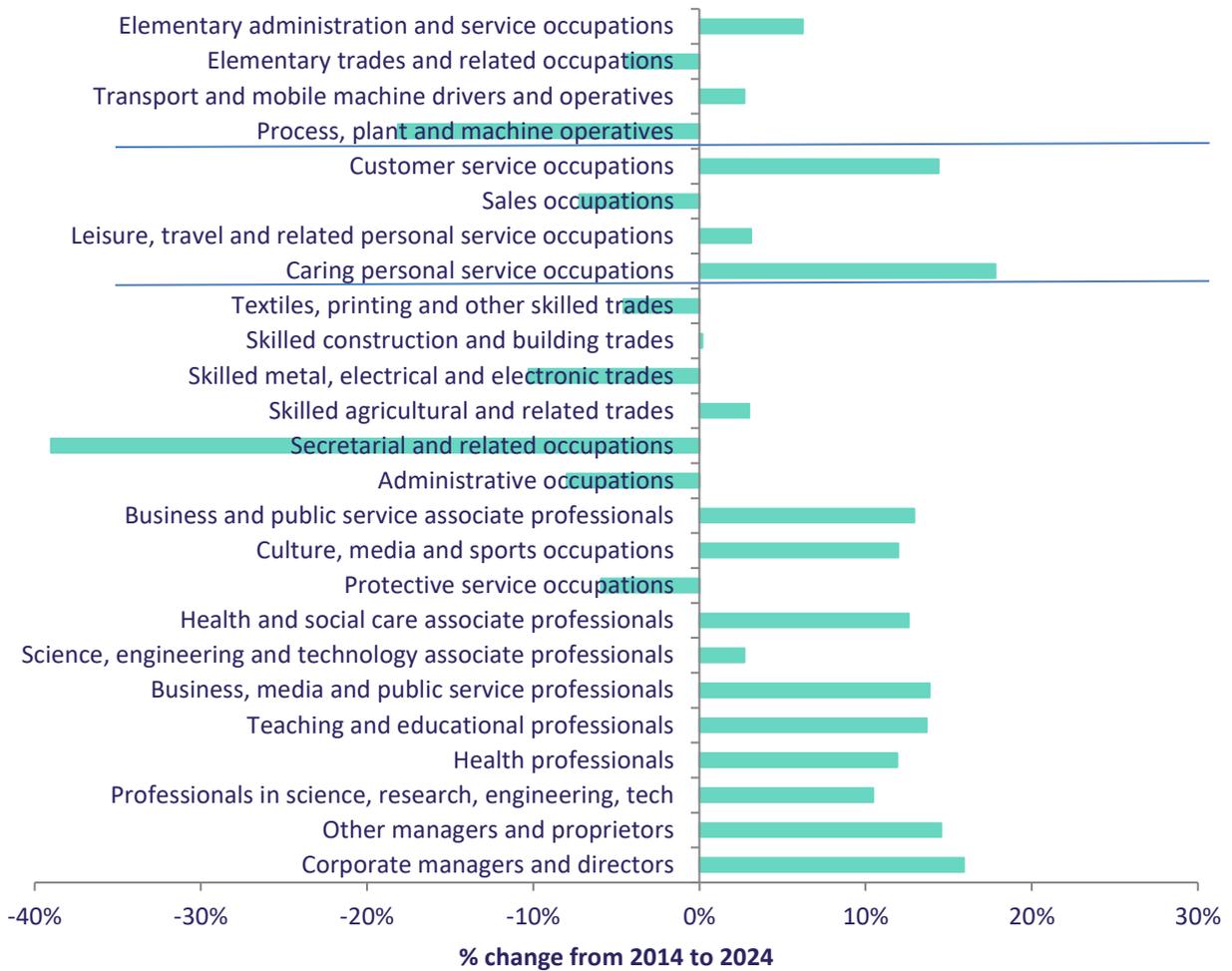


⁴⁰ UKCES Working Futures 2014-2024 and The Future of Work: Jobs and skills in 2030, Evidence Report 84, February 2014, UKCES Some key trends that will shape jobs and skills

⁴¹ ONS job density for 2015 including self-employed, government-supported trainees and HM Forces. N.B. Employees may have more than one job or conversely share a job.

Future occupation employment

Figure 23: Projected % change in Oxfordshire by occupation type, from 2014 to 2024⁴²



Occupation types that are likely to see the most growth to 2024 in Oxfordshire are caring and personal service occupations, customer service occupations, corporate managers and directors and business and public service occupations. Those set to decrease in number are secretarial and clerical occupations (by just under 40% loss of jobs), process plant and machine operatives and skilled metal, electrical and electronic occupations – these are all likely to succumb to automation.

⁴² UKCES Working Futures 2014-2024. NB. This data does not take in account local idiosyncrasies such as investments or closures and projections are based upon survey data that were not originally designed or developed to produce precise estimates at this level of disaggregation.

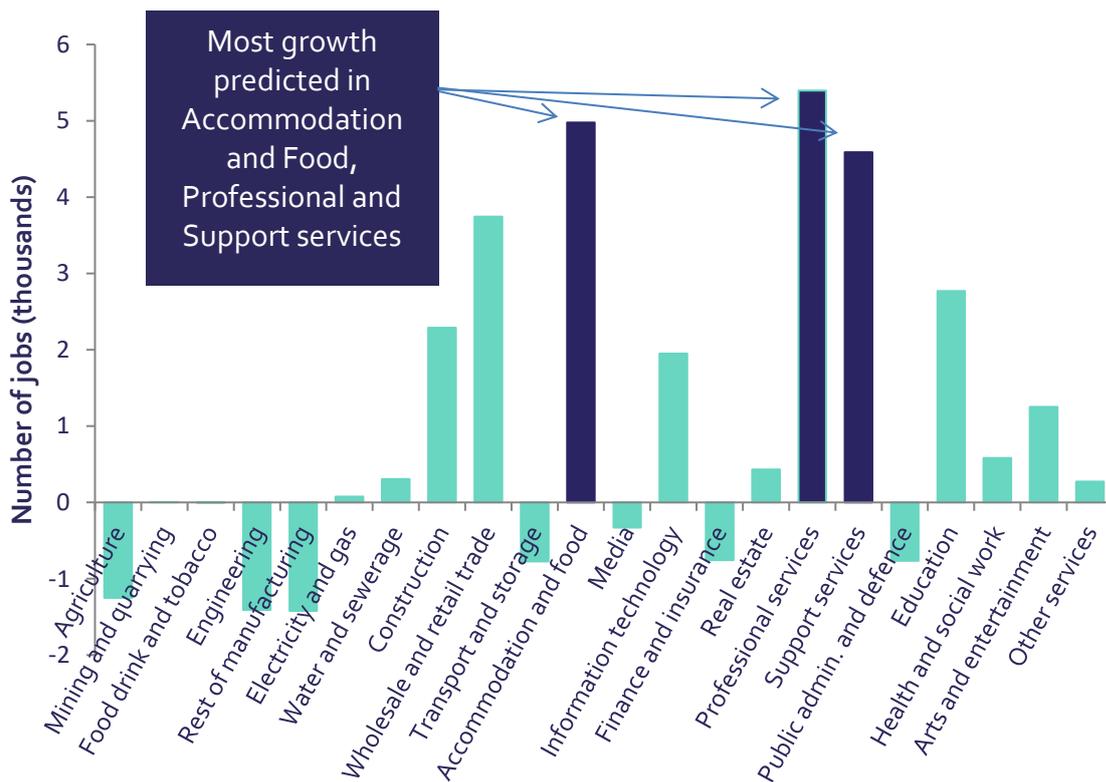
Future sector employment

Net job growth will be most prominent in IT, professional and support services in Oxfordshire.

As the government has introduced measures to reduce the amount of debt and borrowing that has been run up during the economic downturn; we will see further cuts to public services.

The rebalancing of the economy towards more private sector jobs does appear to be happening. It should be noted growth in Engineering is projected to see a decline in the Working Futures analysis. In fact, this is unlikely to be the case due to huge investment and job specialisms in this area. As aforementioned Working Futures projections do not take local investments into account.

Figure 24: Projected growth in employment (not including replacement demand), 2014-2024 (Working futures)

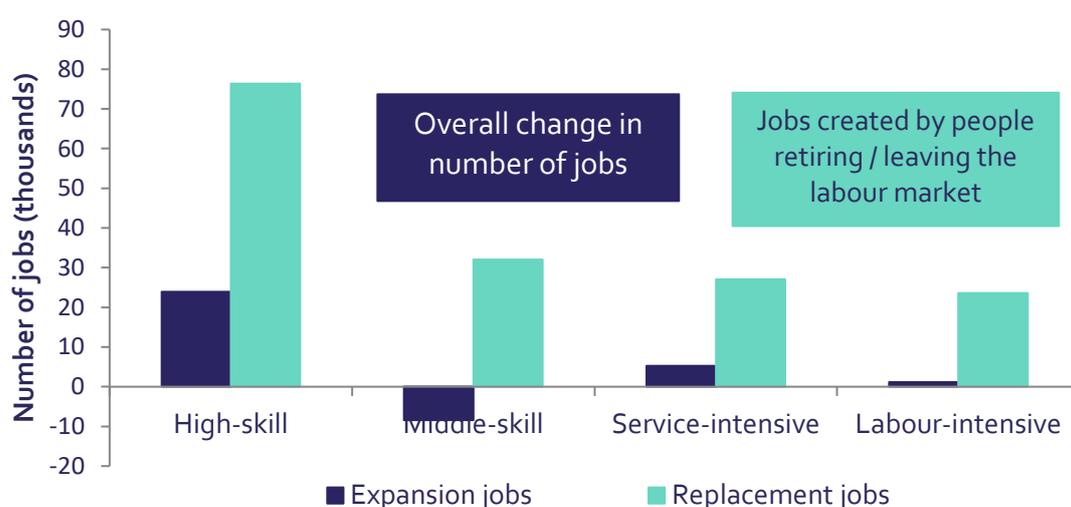


Expansion and replacement demand

Net job growth is nothing compared to the impact replacement demand⁴³ will have on the labour market. It is anticipated that over 160,000 jobs will be available due to people leaving the labour market. This will, in some way, account for any loss of net job growth in the medium term.

Occupations that will see the biggest impact are in health (carers), education (teaching professionals), administrative and managerial roles.

Figure 25: Expansion and replacement demand, 2014-2024⁴⁴



Expansion demand - emerging sectors

Looking ahead to the jobs that may arise over the next decade or longer is of course fraught with challenges as some changes cannot be predicted. The Working Futures project that this section is based on does not take into account local idiosyncrasies; policy influences on economic growth, infrastructure investments, inward investments and closures. However, emerging sectors that commentators say will change how we work include:

- Low carbon – goods and services in response to climate change
- IT – cloud computing, 3D printing and big data
- Healthcare – technological advancements
- Social care – responding to demographic changes
- Creative and digital industries – driven by continued creative innovation

⁴³ Replacement demand occurs when people leave the labour market due to retirement, mortality or other reasons.

⁴⁴ UKCES Working Futures, 2014-2024

What else of the future?

Part-time working

Employees working part-time are projected to continue to rise to 2024 with 36% of employees in part-time roles (30% in 1990 and 34% in 2016).

Figure 26: Part-time employee count and projections, 1990-2024⁴⁵

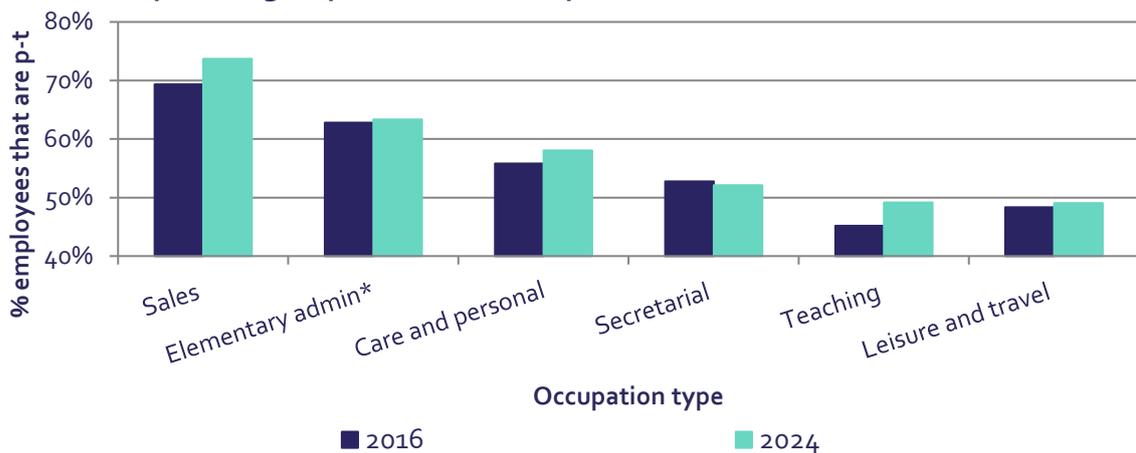


Did you know?

Just under nearly four in ten of all jobs will be part-time by 2024. Just under half of women in the workforce will be working part-time, taking 71% of all part-time jobs

More than two thirds of the sales occupations (such as retail assistants) work part-time. This occupation type employs the highest number of part-time workers in Oxfordshire and this is set to continue to rise to nearly three-quarters of sales occupation workers by 2024.

Figure 27: Occupations groups with the most part-time workers



* Elementary admin encompasses such jobs as postal workers, couriers and delivery, security, cleaning staff and elementary storage roles.

Jobs that have the largest proportion of part-time workers are generally undertaken by women. They are also generally the lower paid types of jobs due to the skill level required.

⁴⁵ UKCES Working Futures, 2014-2024

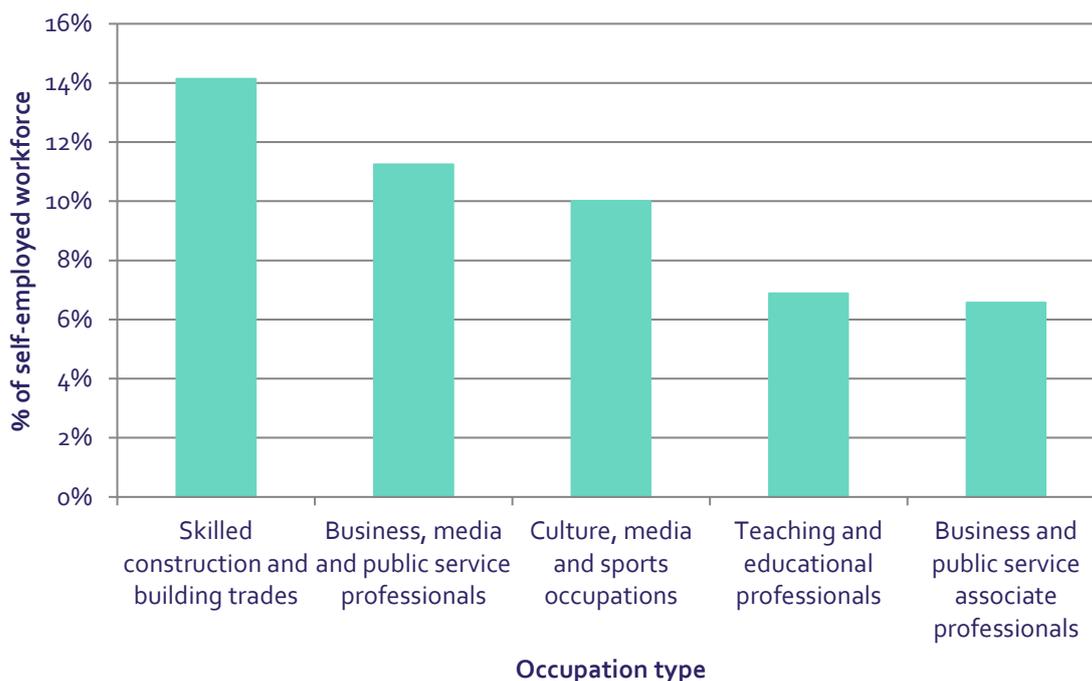
Self-employment

Nearly 13 per cent of the working age population were self-employed in Oxfordshire in 2017, slightly above regional and national averages. While these are healthy figures, the number of self-employed people resident in Oxfordshire has hit a peak in 2017 but there is conflicting evidence about whether self-employment will rise in the future.

The Department of Business, Energy and Industrial Strategy are to launch research in 2017 into the scale and impact of a new phenomenon, the 'gig' economy, due to the rising number of people doing short-term, casual work sought through mobile technology apps filling roles such as driving, delivering items and DIY tasks. The success of this new way of working could have a profound impact on the number of those choosing self-employment.

What is predicted is that by 2024, the largest proportion of self-employed workers are likely to be in the skilled construction and building trades with 14 per cent of the self-employed workforce in jobs such as bricklaying, roofing, plumbing etc. and those working in the finishing trades such as painters and decorators and plasterers.

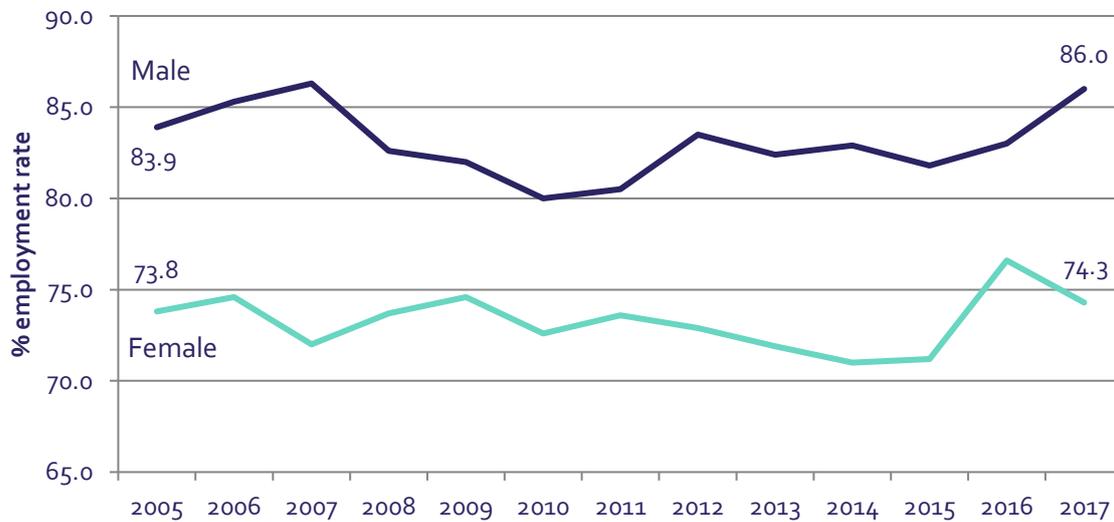
Figure 28: % of self-employed workforce by occupation type, 2024⁴⁶



⁴⁶ UKCES Working Futures, 2014-2024

Growth in the female contribution to the labour market:

Figure 29: Employment rates by gender, 2005-2017



Source: Annual population survey, ONS

Men continue to dominate the labour market although this is changing with more women entering employment, with a marginal percentage rise of 0.5% since 2005. However, this does equate to just under 8,000 more women. 86% of men are in employment in Oxfordshire and 74.3% of women. This growth in the female employment rate coincides with the growth in part-time and service sector roles, where women predominantly work.

Did you know?

The pace of technology change is increasing exponentially

It took more than 70 years for telephones to reach 50% household penetration, compared with 28 years for radio, and 10 for internet access.

Following this trend, the rate of technology adoption should continue to accelerate so that each new technology outpaces the adoption of its predecessor, and the future will see adoption rates measured in weeks and days rather than years.

Google+, the new social media tool from Google, took only 16 days to reach 10 million users, compared with 780 days for Twitter and 852 days for Facebook.

Source: *The digitisation of everything*, Ernst & Young

Growth sectors in Oxfordshire

Oxfordshire's Strategic Economic Plan (SEP) considers local investments, closures and local economic growth. The Plan indicates that up to 86,000 new jobs could be created between now and 2031⁴⁷. The Plan seeks to ensure that Oxfordshire becomes one of the top performing, most innovative areas in England. Key sectors expected to deliver this growth are:

- Life sciences and medical instruments
- Space and satellite applications
- Advanced engineering - including cryogenics (Europe's largest cluster), advanced materials, nano-technology and motorsport
- Electronics
- Creative and Digital
- Also, publishing, energy and environment and tourism

Life Sciences and medical instruments

The life sciences, or BioCluster, in Oxfordshire is one of the largest and most prominent in Europe with over 180 companies in the research and development field, plus more than 150 companies in associated industries, and over 10,000 employed in manufacturing of pharmaceutical or medical instruments and in associated research and development.

Emerging life sciences work in telehealth, regenerative, therapeutic and precision medicine, or Genomics which is sequencing DNA to analyse the function and structure of genomes.

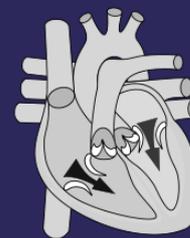
Oxford University is a leading global centre for biomedical research, industry support/collaboration and Oxford University Hospitals NHS Trust operates four primary hospital sites with comprehensive teaching and research capabilities as well as strong industry partnerships.

Did you know?

The University of Oxford and Oxford Brookes University provide an average of just under 3,000 1st and Higher Degree qualifiers in life science, medicine and associated science based subjects.

35% of students in Oxfordshire studied STEM subjects, including medicine, at university.

HESA, 2013/14



⁴⁷ Oxfordshire Strategic Economic Plan, <http://www.oxfordshirelep.org.uk/content/strategic-economic-plan>

Space and satellite applications⁴⁸

The UK has a strategy to quadruple its performance in the Space and Satellite sector by 2030 and the development of the Space Cluster at Harwell Oxford is at the heart of these efforts with local and national partners working together to achieve the UK Space Agency's UK Space Gateway programme.

Space is strategically important, with major potential for economic growth, scientific advancement and societal benefits

Oxfordshire's scientific research and space sectors are leading the way in major collaborative science projects and, within Science Vale UK south of Oxford, have created a unique environment where state-of-the-art publicly funded scientific facilities operate alongside industrial research and development.

The cluster of space activity at Harwell Oxford is expanding rapidly, including STFC's long-established RAL Space centre (and the new R100 facility for thermal vacuum and other testing), the Satellite Applications Catapult, ESA's European Centre for Satellite Applications & Telecoms (ECSAT) and a thriving ESA Business Incubator, serving as a major attractor for a spectrum of companies from start-ups to large corporates.

Did you know?

The space sector has grown by 8.6% per year since 2010 and is now valued at £11.8 billion.

The aim in Oxfordshire is to capture 10% of the global market by 2030 (it's currently 6-7%), taking it to a value of £40bn.

It now directly employs 37,000 people and is estimated to support over 115,000 jobs in total with 10,000 centred in and around Harwell.

This sector are highly qualified with 75% holding a degree or higher.

Source: The Case for Space, July 2015, LSE

⁴⁸ The "Space Economy" comprises several and interdependent economic activities that are required to facilitate the exploration of space and the exploitation of the opportunities that it currently enables – or might enable in the near or distant future. This then covers space manufacture, space operations and space applications.

Advanced automotive & engineering

Eight of the eleven Formula 1 teams are based in the UK, three of these in Oxfordshire in Williams, Lotus and Haas.

Oxfordshire is at the heart of 'Motorsport Valley' and ideally located for car and engine plants. This has led to a wealth of locally based world-class design, precision and high performance engineering companies and the creation of a cluster of supply chain companies to feed the industry.

Innovation in areas such as alternative powertrain and 'lightweighting' are derived from the specialist R&D developments in Formula 1 technologies and local companies are developing new technologies, particularly in electronics, intelligent mobility and lightweight materials.

Both Oxfordshire universities are undertaking world-changing research and development in automotive technology. The Mobile Robotics Group at the University of Oxford has been at the forefront of autonomous vehicle; including the Nissan Leaf electric car and the LUTZ Pathfinder pods. Oxford Brookes University has a strong presence in automotive technology with its Cognitive Robot Laboratory, which has sensor expertise in autonomous vehicles and has considerable expertise in fuel efficiency and low emission engines. Brookes also deliver a range of undergraduate and higher degrees in automotive and motorsport subjects.

Did you know?

BMW has its Mini plant in Cowley, where 2.5 million cars have been produced since the new Mini was launched in 2001.

Over twice the proportion of people in Oxfordshire are employed in the manufacture of motor-vehicles compared to the proportion for England.

There are over 24,000 people employed in manufacturing and 3,700 in motor vehicles.



Electronic – sensors and instruments

There is a well-established electronic industry, with twice the national proportion of optoelectronics employees.

Oxfordshire has a track record of attracting global companies such as Toshiba, CN Innovation and Sharp's European research centre, which are all based locally as well as local spin-out companies such as Oxford Instruments Plc and Oxsensis.

The county's electronic based expertise is in sensors and instrumentation technologies with the market expected to grow to \$154.4bn by 2020. This industry serves a wide range of others from medical devices, consumer electronics, space and harsh environments to automotive.

Commercial activity in Oxfordshire is diverse and encompasses research and development and design and manufacturing in photonics (e.g. lasers, LED and LCD displays) and microelectronics systems.

Did you know?

The University of Oxford is in the Top 10 universities in the world for Electrical and Electronics Engineering .

Creative and Digital

The digital and creative sector is an important part of the Oxfordshire economy. 32,900 people, or 9.1% of employees, currently work in the creative and digital sector in Oxfordshire⁴⁹, which has grown by 54% since 2002.⁵⁰ 17,750 work in creative occupations alone.

Nationally, the sector as a whole is predicted to outperform all other occupational categories⁵¹ with an additional 1.2 million jobs forecast to 2022 in the UK from both growth and replacement jobs.

Oxford City is recognized as one of the UK's top 10 'hot-spots' for creative industries (NESTA, 2012) and is the UK's largest centre of publishing outside London. Digital strengths are cross-sectoral and in cyber security, Big Data, publishing and gaming; medical technologies & medical devices; automotive & Formula 1; space related technologies and electronics.

Did you know?

78% of creative media workforce is educated to degree level – just over half of these were in a creative media related subject.

www.creativeskillset.org, 2014

⁴⁹ ONS, Business Register Employment Survey, 2016. Digital includes, 61-3 & 95 - 2 digit SIC07 codes. Creative is defined as 58-60, 73-4, 90-1.

⁵⁰ Compared to 26 per cent growth across all sectors of the economy, UKCES [Sector insights: skills and performance challenges in the digital and creative sector](#), 2015 [Accessed 15 June 2015]

⁵¹ <http://www.ukspa.org.uk/blog/15/02/digital-%E2%80%99clusters%E2%80%99-driving-growth-across-uk>
Accessed on 23 June 2015

Community Employment Plans

Oxfordshire Community Employment Plans (CEPs) are targets, agreed between the local planning authorities, developers and potential 'end use' occupiers, to provide training and skills development to local residents. The ultimate aim is to optimise opportunities for local residents to access any new jobs that will be created either during the construction phase or when the buildings are occupied.

The developer and occupiers benefit from being able to draw from the local workforce, including those furthest from the labour market, crucial in such a tight labour market.

Three CEP's have been agreed in Oxfordshire since 2014:

- **Westgate Centre redevelopment (Oxford city centre):** Working with Land Securities & Crown Estates there are two CEP's – the first covered the construction phase and the second covers the 'end use' phase, with 700 training and employment opportunities supported across both.
- **Barton Park (Oxford):** The CEP for this garden suburb housing development, providing over 800 new homes, commenced in Autumn 2015. The development is being implemented over six phases and will include a variety of construction, retail and community jobs, with the developer, Grosvenor Estates working as part of a partnership with the City Council.
- **Exemplar, North West Bicester:** The Exemplar is just the first phase of a Masterplan to create up to 6,000 new homes in North West Bicester. This phase is a **showcase of eco-development providing 393** zero carbon homes, a primary school, a local shop, an eco-pub and a community centre. The CEP will be drawn up by lead developers and affordable housing provider A2Dominion, in partnership with Cherwell District Council. It will continue to evolve as NW Bicester is developed further over the decades to come..

Did you know?

A number of other CEP opportunities are currently being discussed including:

- Crab Hill, Wantage*
- Botley, West Way*
- Abingdon North*
- Northern Gateway*
- Templar Square redevelopment*

An example of a CEP for the Westgate Centre development shows the breadth of delivery⁵²:

Developer	Land Securities/Crown Estate
Main contractor	Laing O'Rourke
Number of jobs	<ul style="list-style-type: none"> • Up to 600 jobs during construction • Up to 3,250 jobs end use • ESP will support in excess of 700 training and job outcomes
Timescale	<ul style="list-style-type: none"> • Ground clearance and demolition commenced in January 2015 • Centre will open in Autumn 2017 • 'End use ESP' to run post opening
Examples of outcomes – construction phase:	
Sector Based Work Academies	Over 60 of the most marginalised, 10 of whom were subsequently employed by Laing O'Rourke or a sub-contractor
Work experience for young people	19 young people completed work experience on site
Promote and support local community	50 days per year
Supporting chosen local charities	9 charities during construction phase
Apprenticeships	15 during construction
Supporting employment for young people (between 18-25 years old)	12% of those working on site (full time)
Supporting local Social Enterprise	3 social enterprises supported
Workforce with Oxfordshire postcodes	Over 20%
Jobs created at the Laing O'Rourke manufacturing sites supplying the Westgate	Over 100

⁵² Oxfordshire Local Enterprise Partnership, 2017

Implications for work: Six sectors and technological with other drivers of change

Health and social care

“Significant increase in the number of jobs in health and social care due to demographic factors (ageing population), social trends (working parents requiring childcare), and opportunities that will emerge with investment in medical research and innovation.

Technological innovation within this sector will change the profile of many jobs. Migrant workers are expected to fill high- and low-skilled job gaps. There is an anticipated tension between demand for services and constraints on public spending which may be addressed by technology. For example, the introduction of personal healthcare budgets would enable people to select preferred healthcare options and services.”

* * * * *

“Developments in this sector are likely to be linked closely to globalisation and internationally traded services (growth in the East, for example, creates demand for this sector with new customers and potentially new products).

One of the major influences is likely to be automation of professional jobs and the impact of ICT using smart algorithms. Undergoing constant change, the structure, management and strategies of businesses in, and supported by, this sector are likely to become increasingly flexible, diverse and global.”

Professional and business services

* * * * *

Creative and digital

“Changes in technology are expected to drive productivity and the development of new business models in the Creative and digital sector. The sector will have a significant impact on other sectors as digital and creative solutions are applied in different business processes and field.

It is anticipated that growth in virtual collaboration and outsourcing, together with the increasing need for flexible project management, will also shape the work environment.”

“Jobs and skills in the retail and logistics sector will be impacted by the increased use of ICT in work processes (both back office and customer facing), the continued impact of the Internet in multi-channel retailing, and social consumption patterns (including satisfying ‘green consumer choices’

Retail and logistics

Overall, a growing population will probably drive high growth in the demand for both low- and high-skilled jobs. Data and technology enable new service models for retailers, allowing for increasing sophistication in segmentation and customisation through customer profiling.”

* * * * *

Manufacturing

“Global competition, technology adoption and international trade levels will have a formative influence on this sector to 2030. Whilst a full rebalancing of the economy (where manufacturing re-assumes a larger proportion of the economy) is less likely, a stabilisation in employment levels is plausible. Within a globalised environment, the demand to low-skilled labour in the UK manufacturing will continue to decrease.

A major uncertainty is the degree to which additive manufacturing or 3D printing will revolutionise production and supply chains. The manufacturing sector in the UK will be challenged to upgrade its innovation capacity – and move beyond achieving efficiency (through lean methods). Increasing concern over resilience of supply chains is likely to drive business strategies and may stimulate near- and re-shoring of activity to the UK.”

* * * * *

“The development of market-based and employer focused education is expected to become an increasingly important driver for this sector. Social trends and enabling technologies create a need for increasingly personalised modes (in structure and content) for learners, particularly true for Further and Higher Education, where higher fees focus the minds of learners on employability and return on investment.

Education

Online and blended learning techniques will become more widespread and sophisticated to match the expectations of fee-paying learners. It is anticipated there will be an increase in demand for work-based learning, which offers the flexibility required by employers and individuals. With increasing competition and public spending constraints on core funding in the Higher Education sector, new entrants (private providers) may find it easier to adapt to the new environment, with a different business model, a lower cost base and a very focused curriculum.”

The skills and qualifications landscape of Oxfordshire

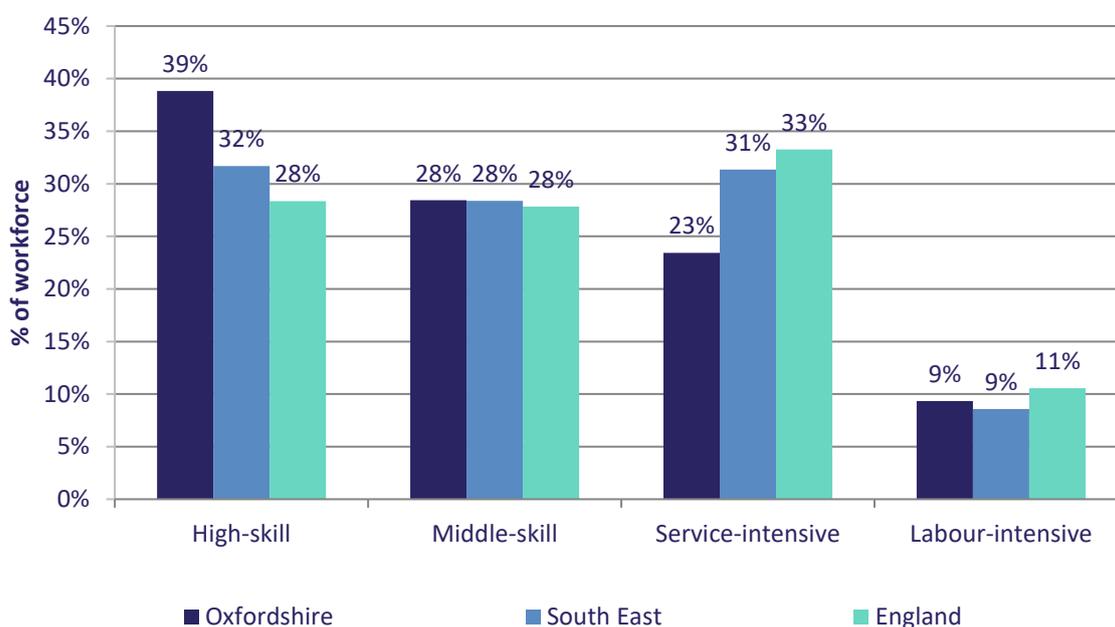
Oxfordshire has a highly skilled workforce and is preparing for the future growth predicted in high-skill occupations

It is recognised that our scarcest commodity in Oxfordshire at present are skills. While Oxfordshire is a highly qualified and highly skilled workforce, there are occupation types and sectors where shortages of skills are and will continue to be a challenge for employers in the region, as employers struggle to find suitably skilled workers including those with specialist knowledge.

This section of the LMI bulletin looks at skills and qualification related areas of the labour market and shows where skills gaps are and will be.

39 per cent of Oxfordshire residents are in the high-skilled⁵³ occupations – well above the regional average (32%) and national average (28%).

Figure 30: Occupation type grouped by skill level, 2017⁵⁴

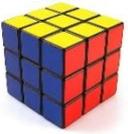
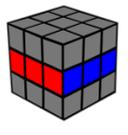


Skill levels are defined overleaf and occupations that fall into each skill role are listed in Appendix 1 of this report.

⁵³ Full details of occupation types and skill levels are in Appendix 1. NB. The definition of what constitutes a high skill role has been revised since the last edition of the LMI bulletin. Skill level definitions are on page 5.

⁵⁴ Annual population survey, 2017

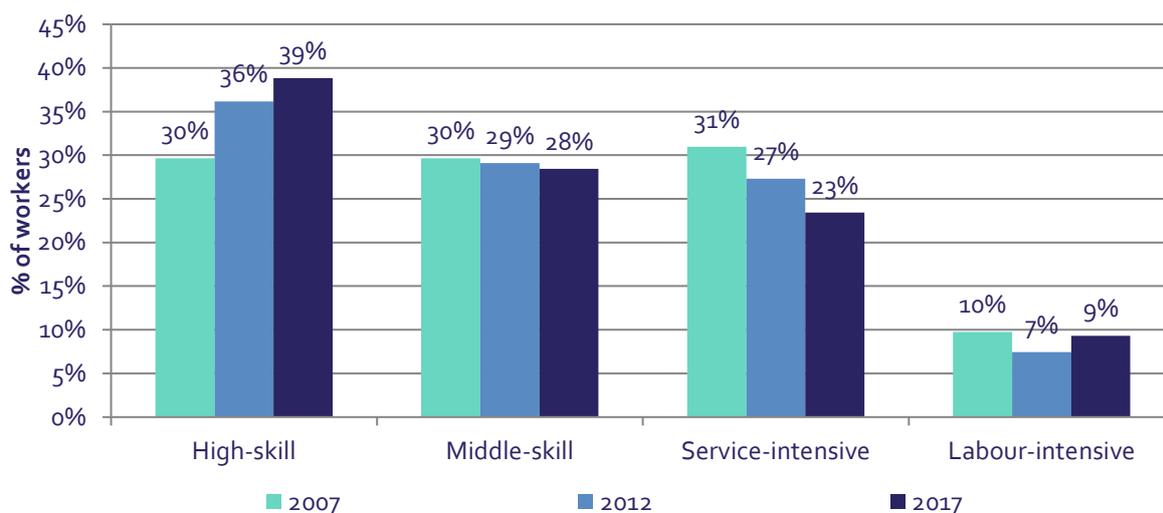
Office of National Statistics skill level definitions

Skill Level	Usual Education/Training Competence	Typical occupations ⁵⁵
<p>High-skill</p> 	<p>A significant amount of knowledge and experience of the production processes and service requirements associated with the efficient functioning of organisations and businesses.</p> <p>Or a degree or equivalent qualification, with some occupations requiring postgraduate qualifications and/or a formal period of experience-related training.</p> <p>Or an associated high-level vocational qualification, often involving a substantial period of full-time training or further study. Some additional task-related training is usually provided through a formal period of induction.</p>	<p>Managers, directors, senior officials and professional and associate professional occupations</p>
<p>Middle-skill</p> 	<p>A good standard of general education. Certain occupations will require further additional vocational training to a well-defined standard (<i>e.g.</i> office skills).</p> <p>Or a substantial period of training, often provided by means of a work based training programme.</p>	<p>Other managers, and skilled trades</p>
<p>Service-intensive</p> 	<p>A good standard of general education. Certain occupations will require further additional vocational training, often provided by means of a work-based training programme.</p> <p>Or a general education and a programme of work-based training related to sales procedures. Some occupations require additional specific technical knowledge but are included in this major group because the primary task involves selling.</p>	<p>Caring, leisure, sales and customer and other services</p>
<p>Labour-intensive</p> 	<p>The knowledge and experience necessary to operate vehicles and other stationary machinery, to operate and monitor industrial plant and equipment, to assemble products from component parts according to strict rules and procedures and subject assembled parts to routine tests. Most occupations will specify a minimum standard of competence and will have a related period of formal training.</p> <p>Or occupations classified at this level will usually require a minimum general level of education (<i>i.e.</i> that which is acquired by the end of the period of compulsory education). Some occupations at this level will also have short periods of work-related training in areas such as health and safety, food hygiene, and customer service requirements.</p>	<p>Process, plant and machine operatives and elementary occupations: Postal workers, hotel porters, cleaners and catering assistants.</p>

⁵⁵ The full breakdown of occupation types and skill level grouping is shown in Appendix 1.

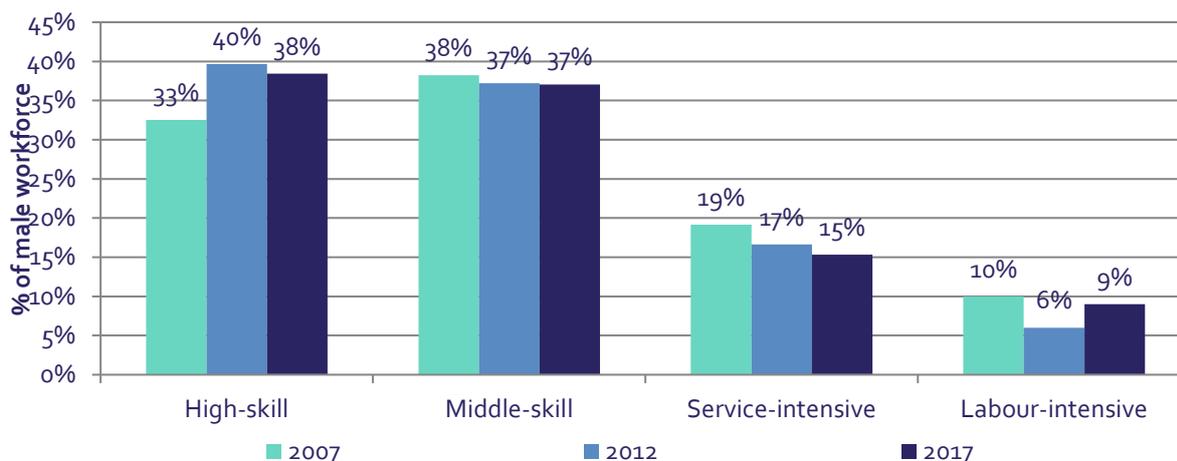
High skill occupations have risen over time with 9 per cent more jobs now requiring high-skills than in 2007. Both middle-skill and service-intensive skilled jobs have declined in the last decade. In the services, 31 per cent were in skilled roles at this level in 2007 and only 23 per cent are today. It should be noted here this decline is largely due to a decline in administrative and secretarial roles. Service intensive roles in the care and leisure sectors continue to rise and are projected to continue to rise.

Figure 31: Occupation types grouped by skill level, 2007-2017, Oxfordshire⁵⁶



For our male workforce, middle-skills and service-intensive roles have seen marginal decreases over time. High-skill jobs have decreased in the last 5 years after a peak in 2012 and labour-intensive roles have been picking up to numbers seen a decade ago.

Figure 32: Males: Occupation types grouped by skill level, 2007-2017, Oxfordshire⁵⁷

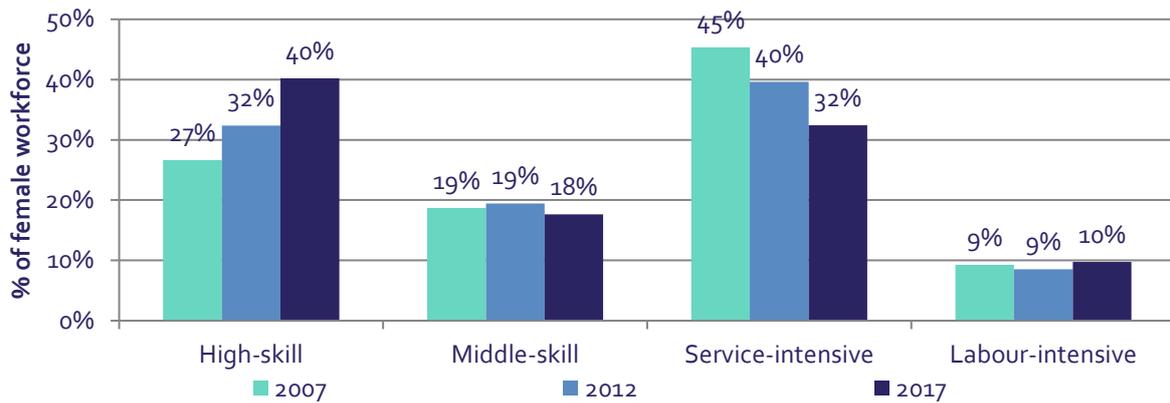


⁵⁶ Annual population survey, 2017

⁵⁷ Annual population survey, 2017

For our female workforce, there have been marked increases in the number of women entering high-skill jobs over the last decade. This equates to 15,000 women in top roles, with the number of women edging towards the number of men (74,000 men and 65,000 women). Women also tend to veer towards service-intensive roles like administrative support, and health and care roles.

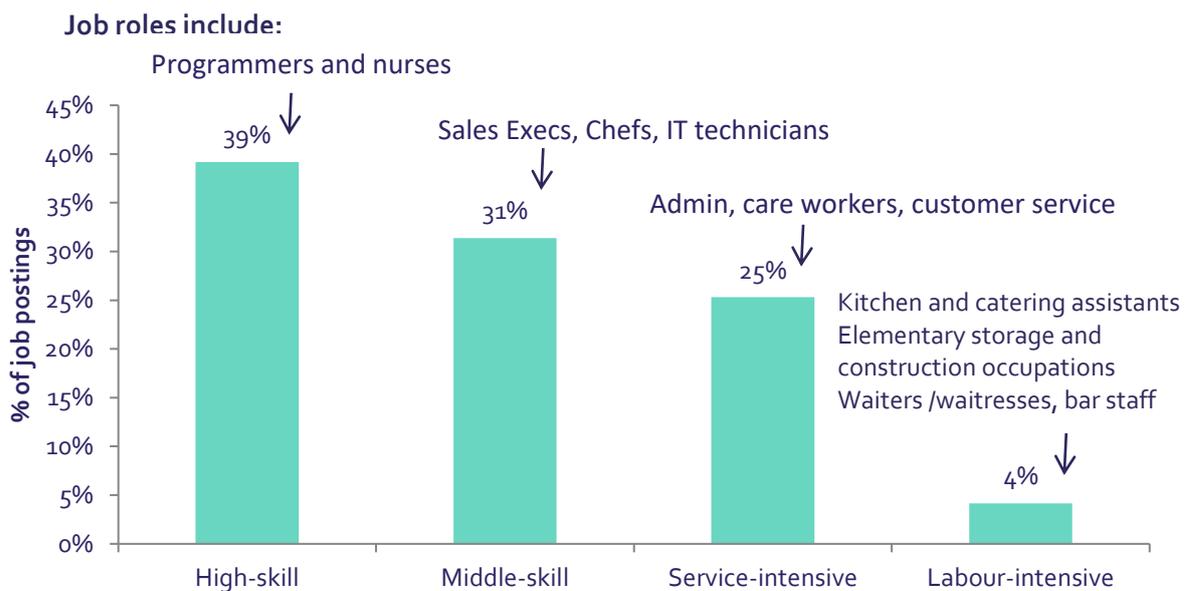
Figure 33: Females: Occupation types grouped by skill level over time, 2007-2017, Oxfordshire⁵⁸



Source: Annual population survey, 2017

Not only does Oxfordshire have a highly-skilled workforce, the largest numbers of job vacancies posted online are for high-skilled jobs. Of the 111,000 jobs adverts posted online in 2017, 39 per cent were in high-skill roles, 31 per cent in middle-skill, 25 per cent in service-intensive roles and just 4 per cent in labour-intensive roles.

Figure 34: Skill level of job postings, 2017, Oxfordshire⁵⁹



⁵⁸ Annual population survey, 2017

⁵⁹ Annual population survey, 2017

The Digital technologies, Education, Engineering and Science, and Retail job families advertised most high-skill jobs during 2017. Administration, Health, Logistics, Manufacturing and Transport are all areas that have required more service-intensive jobs. Some job families have job postings at exclusively one skill level. For example, all arts and transport jobs advertised in 2017 were middle-skill jobs.

Table 14: % of job postings by job family and skill level, 2017⁶⁰

Job family	High-skill	Middle-skill	Service-intensive	Labour-intensive
Arts		100%		
Automotive		74%	26%	
Business and finance	45%	36%	19%	
Business and finance (administration)			100%	
Construction	36%	46%	7%	11%
Digital technologies	78%	22%		
Education	75%	10%	15%	
Engineering and science	64%	36%		
Facilities and cleaning				
Hair and beauty		3%	97%	
Health, care and welfare	54%	16%	31%	
Hospitality		39%	10%	51%
Hospitality (chefs)		100%		
Land-based	40%	30%	21%	8%
Leisure		56%	42%	2%
Logistics	9%		66%	25%
Manufacturing	15%	26%	52%	7%
Not assigned	15%	70%	6%	9%
Property		100%		
Public service	38%	62%		
Retail	60%	1%	38%	1%
Sales, marketing and customer service	7%	49%	44%	
Security				100%
Transport			100%	

⁶⁰ Annual population survey, 2017

Current qualifications

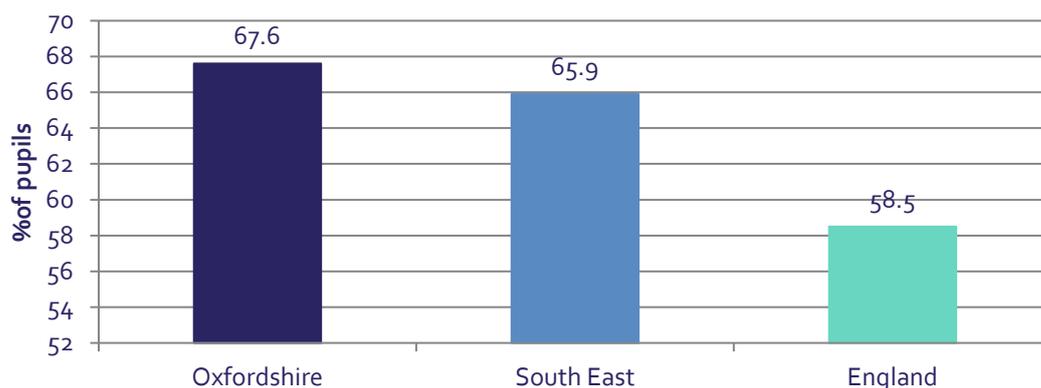
Historically Oxfordshire’s state schools have produced results that are better than the national average (see figure 35) but the county has struggled to match or surpass the regional percentages, except for 2013/14 academic year.

Figure 35: % of pupils achieving 5 A*-C grade GCSEs including English and maths ⁶¹



2016/17 academic year saw the reformation of GCSE gradings, from grades A-G (with A-C considered a pass) to the new grades 9-1 (with grades 9-4 considered a pass⁶²) for English and maths. This makes observing trends difficult. However, when comparing results for English and maths only in 2016/17, Oxfordshire state school results surpass both regional and national figures.

Figure 36: % of pupils achieving 9-4 grade - English and maths GCSEs only⁶³



⁶¹ Department of Education LA table SFR48/2016 GCSE and equivalent results in England, 2015/16 Local authority, region and England figures cover achievements in state-funded schools only. Figures for 2016/17 are provisional and all others are final.

⁶² Grades 9-7 are equivalent to Grade A*-A. Grades 6-4 are equivalent to Grades B-C.

⁶³ Department of Education LA table SFR57/2017, 2016/17 provisional

Independent schools fare better in the county. Two Oxford based schools are ranked in the top 10 of schools with the highest 2017 GCSE results. Magdalen College School and Oxford High School both achieved over 90% grades 9-7 (equivalent to Grades A* - A).

Did you know?

You can leave school on the last Friday in June if you'll be 16 by the end of the summer holidays. You must then do one of the following until you're 18:

- stay in full-time education, e.g. at a college
- start an apprenticeship or traineeship
- work or volunteer (for 20 hours or more a week) while in part-time education or training

Oxfordshire has a very highly qualified population. Those qualified at NVQ level 4 and above (HNC level and above) have risen from 33.4 per cent of the population in 2007 to 51.7 per cent in 2016.

Figure 37: Percentage of Oxfordshire population qualified at NVQ level 4 and above, 2007-2016⁶⁴



Figure 38: Percentage of population qualified at NVQ all levels, 2016⁶⁵

	Oxfordshire	South East	England
NVQ4 And Above	51.7	41.4	37.9
NVQ3 And Above	67.2	60.2	56.8
NVQ2 And Above	80.5	77.5	74.2
NVQ1 And Above	89.1	88.8	85.5
Other Qualifications	5.8	5.8	6.7
No Qualifications	5.1	5.5	7.8

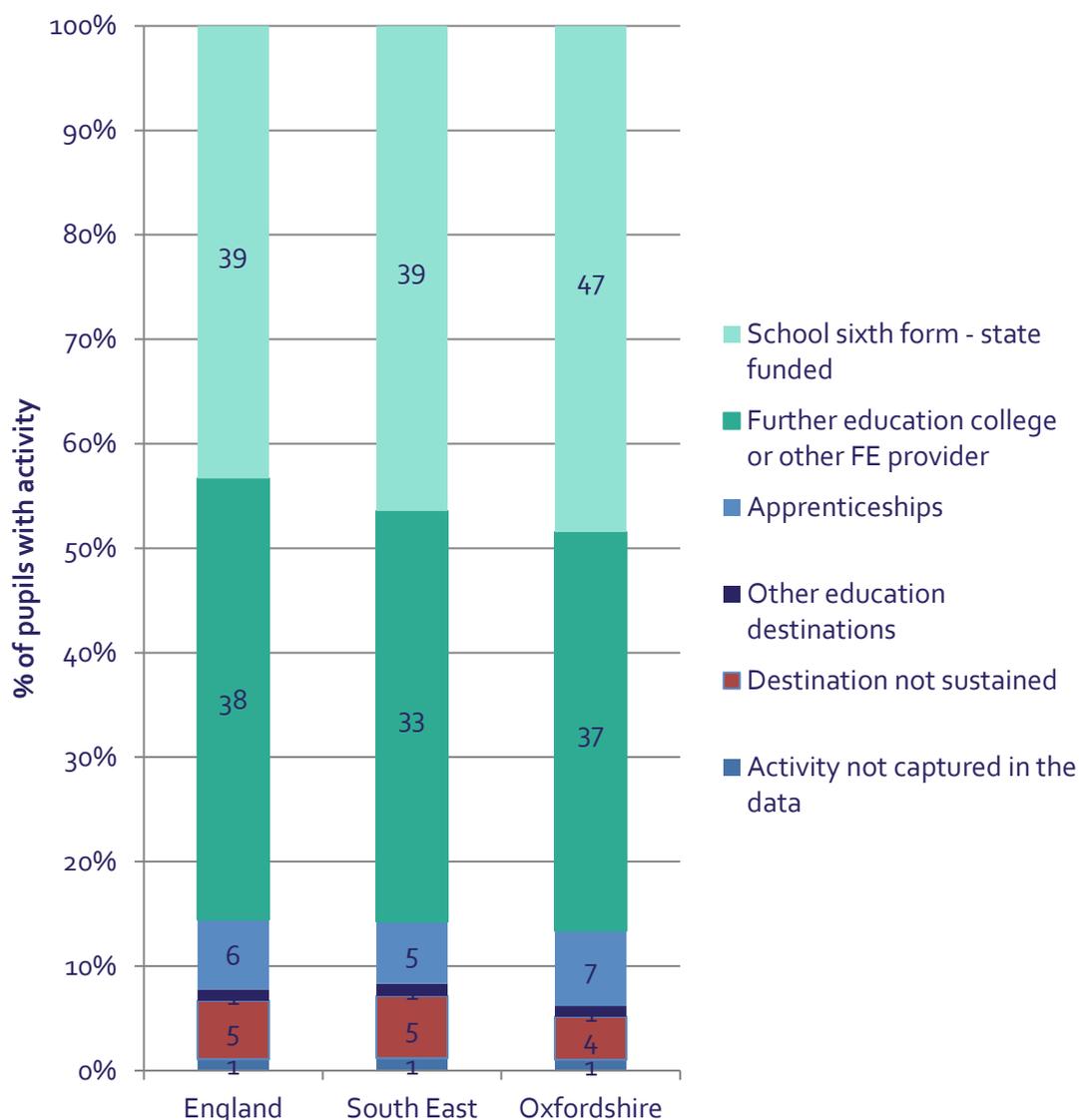
⁶⁴ Annual population survey, 2017

⁶⁵ Annual population survey, 2017

Destinations⁶⁶ – Key Stage 4 and 5

In 2014/15, (the latest data available) year 11 students (key stage 4) predominantly remained in education, as figure 39 shows, with 95 per cent of the cohort in sustained⁶⁷ education or training provision:

Figure 39: Sustained destination of Key Stage 4 cohort, 2014/15 recorded in 15/16

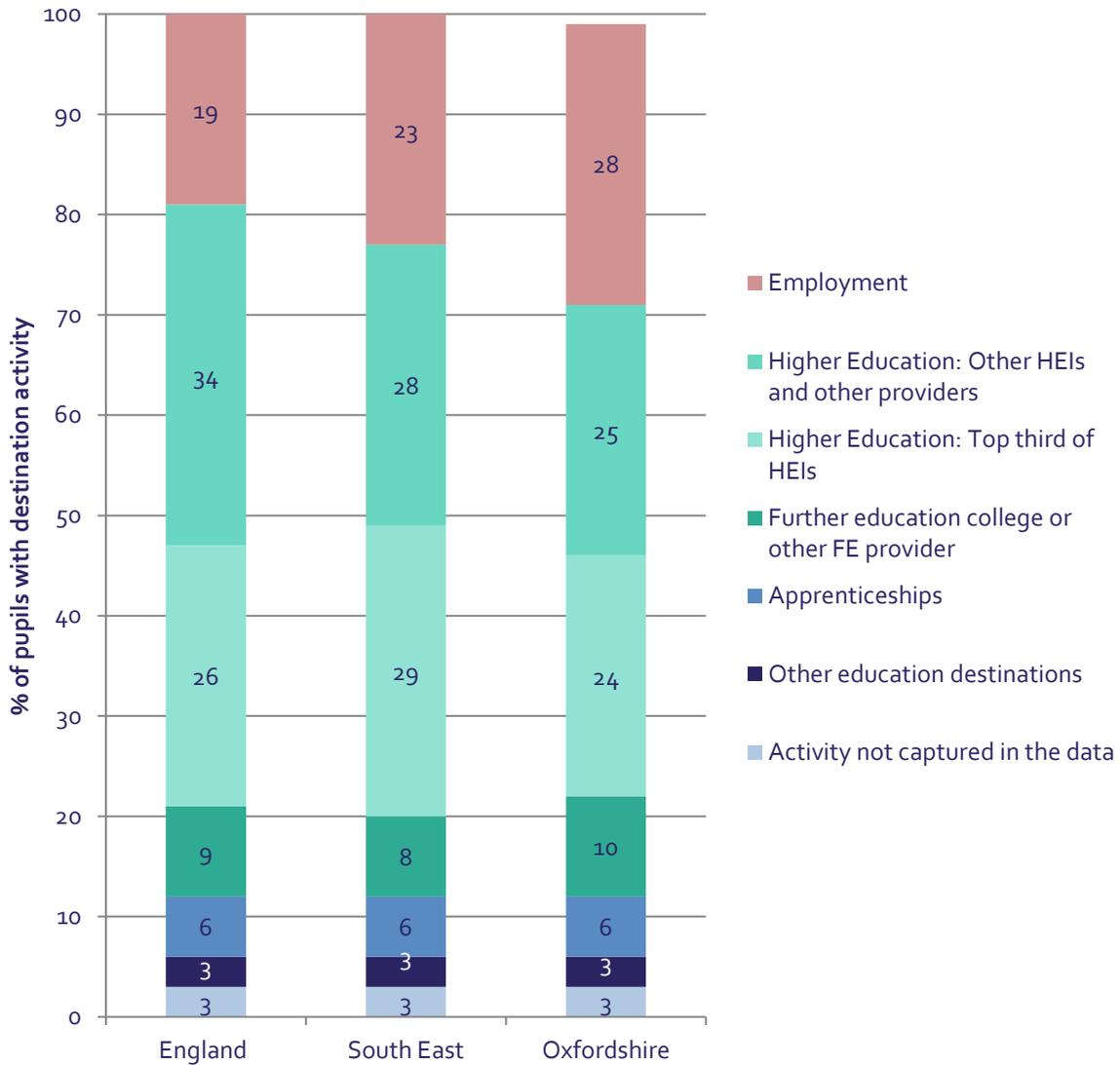


Year 11 pupils are now required to stay in some form of education and training. School sixth form is most popular at this stage with nearly half of the cohort staying on in Oxfordshire compared to 39 per cent regionally and nationally.

⁶⁶ Mainstream state funded only. Department for Education destinations data
<https://www.gov.uk/government/statistics/destinations-of-ks4-and-ks5-pupils-2016>

⁶⁷ 'sustained' is defined as destinations that are sustained for at least two terms.

Figure 40: Sustained destination of Key Stage 5 cohort, 2014/15 recorded in 15/16



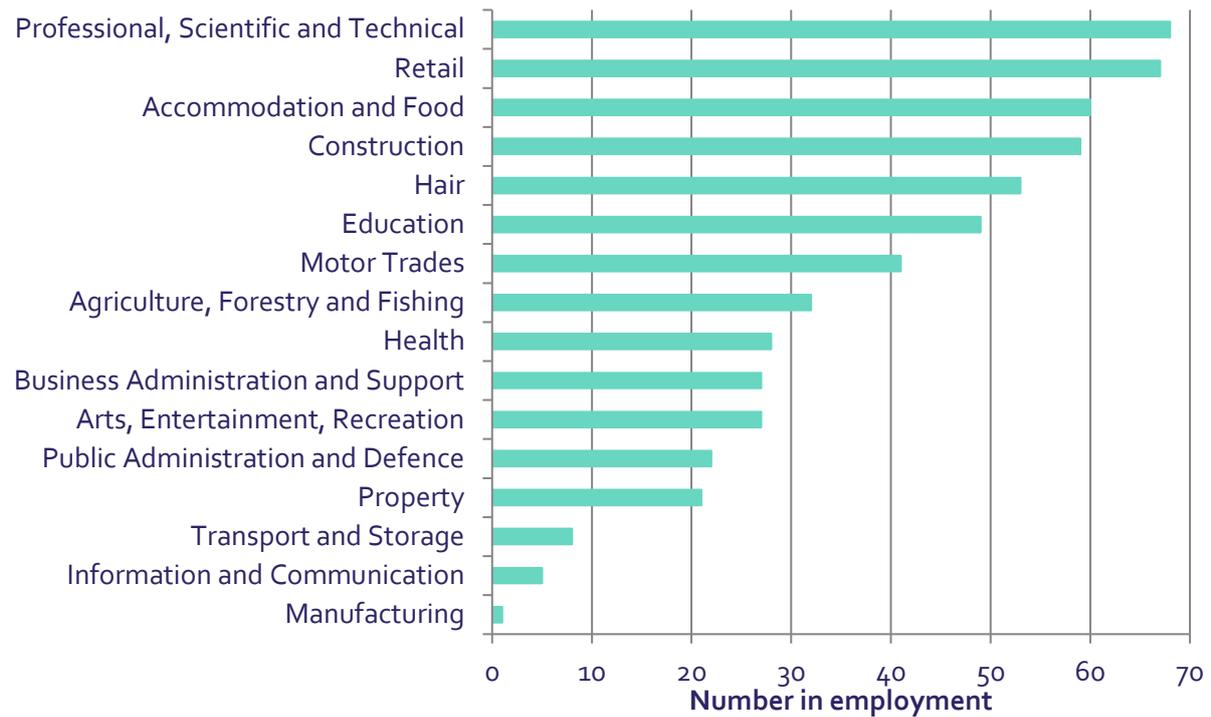
At the end of key stage 5, or year 13, in Oxfordshire, 68 per cent of young people stayed in learning (6% of these in apprenticeships), with 28 per cent going into employment/training, compared to 19 per cent nationally and 23 per cent regionally, which shows the young people of Oxfordshire are taking advantage of the abundance of jobs available in the area. The remainder either not in sustained activity or the activity is unknown.

:

Oxfordshire county council collects data on the destinations of its year 12 and 13 students. They collect information on the sectors students go into employment after leaving full-time education.

Figure 41 below shows students choices are diverse.

Figure 41: Employment destinations of Year 12 and 13 leavers who entered employment where known, 2016⁶⁸



⁶⁸ Children, Education and Families, Oxfordshire County Council, 2017

Future Qualifications

The Working Futures project provides an indication of the future requirements for skilled labour. The most recent predictions are for the period 2014-2024. This is a bi-annual study.

The study predicts that by 2024, 54% of people in employment will be qualified at level 4 and above – this is with qualifications ranging from a Certificate of Higher Education (1st year of a degree course or level 4) to a Doctorate qualification (level 8) as the labour force requires higher-skilled and qualified employees. This is a 42% increase for levels 4-6 and 30% increase at levels 7-8.

What are QCF (Qualification and Credit Framework) levels?

		UNIVERSITY	
LEVEL 8	Doctorate PhD		
LEVEL 7	Master's Degree MA, MSc, MPhil		
LEVEL 6	University Degree BA, BSc		
LEVEL 5		Foundation Degree FdA, FdSc	HND
LEVEL 4			HNC
LEVEL 3	A-Level A2 AS	L3 Extended Diploma (National Diploma)	L3 Diploma (National Certificate)
LEVEL 2	GCSE Grades A-C	L2 Diploma (1st Diploma)	
LEVEL 1	GCSE Grades D-G	L1 Diploma (Foundation)	
ENTRY LEVEL 3	Key Stage 3	E3 Diploma (Foundation)	
SCHOOL / 6TH FORM		F.E. COLLEGE	

Source: <http://www.accreditedqualifications.org.uk/qualifications-and-credit-framework-qcf.html>

Skills:

What skills are in demand for current jobs?

Skills necessary to fulfil job vacancy requirements can be defined as hard and soft. Hard skills refer to the specific knowledge and technical skills set that are often obtained through a period of study, learning or training. The word cloud shows skill clusters that have been requested in Oxfordshire based on an analysis of a range of current job vacancies. Skills in customer service, Microsoft Excel and project and business management are requested most by employers.

Figure 42: Top 20 hard skill clusters required by employers in Oxfordshire job postings, 2017⁶⁹



Source: Labour Insight, Burning Glass Technologies

Did you know?

31% of skill shortage vacancies are in skilled trade roles like Plumbers, Roofers, Electricians, Bricklayers, Technicians and Mechanics.

18% are in professional occupations.

Machine operatives are also sought after.

Source: Employer Skills Survey, 2015

⁶⁹ The size of the skill recorded is proportionate to the number of job postings that have asked for that skill

Soft skills, also known as 'employability skills' refers to the personal attitudes and behaviours required in the workplace. Soft skills are reckoned to be worth over £88 billion in Gross Value Added to the UK economy each year, underpinning around 6.5 per cent of the economy as a whole⁷⁰.

Lacking these skills can not only hold people back but can cause major problems for business and result in diminished productivity, competitiveness and profitability. Furthermore, the UK Commission for Employment and Skills identifies that soft skills are associated with between 33 per cent-40 per cent of all reported skills-shortage vacancies.⁷¹

Where soft skills are listed in job vacancies, communication skills are in demand above all else. Twice as many postings ask for these as organisational skills the second most requested. Being detail-oriented, planning, writing, team work and research skills also feature highly. Every employer rates a 'positive attitude' as an important asset to have.⁷²

Figure 43: Soft skill clusters required by employers in Oxfordshire job postings, 2017



People tend to emphasise their hard skills when applying for a job, however, soft skills are equally, if not more, important as they are innate and harder to learn (although there are many training courses based on the improvement of soft skills).

⁷⁰ The Value of Soft Skills to the UK economy report, January 2015, p.3
<http://www.backingsoftskills.co.uk/The%20Value%20of%20Soft%20Skills%20to%20the%20UK%20Economy.pdf>

⁷¹ The Value of Soft Skills to the UK economy report, January 2015, p.10
<http://www.backingsoftskills.co.uk/The%20Value%20of%20Soft%20Skills%20to%20the%20UK%20Economy.pdf>

⁷² What Employers want report, p.4, <http://www.whatemployerswant.org/wp-content/uploads/2014/10/What-Employers-Want-FINAL.pdf>, [Accessed 16 July 2015]

Did you know?

A fifth of Oxfordshire employers said a poor attitude /personality or lack of motivation was the skill most lacking among 16 and 17-18 year old school leavers recruited in the last 2-3 years.

Only 6% of employers felt this about 17-18 FE college leavers, and 2% for University leavers.

UKCES ESS 2013

Skills Clusters⁷³

1 in 5 employees say they struggle to sell their soft skills - yet 97% of businesses say soft skills are vital to the success of their business.

While soft skills can cover a huge range of attitudes and abilities, six key skill clusters and what is required in each have been identified:

Communication	Accurate and concise communication	Effective oral and written communication	Ask good questions
	Effective listening	Communicate appropriately using social media	Communicate professionally and pleasantly
	* * * * *		
Decision making and problem solving	Take effective and appropriate action	Transfer knowledge between situations	Identify and analyse problems
	Creative and innovative solutions	Realise the effect of decisions	Engage in life-long learning
	* * * * *		
Self management	Dedication to continuing professional development	Sense of urgency to address and complete tasks	Well-developed ethics and a sense of loyalty
	Adapt and apply appropriate technology		
	Self starting	Efficient work habits	Good under pressure

⁷³ The Value of soft skills to the UK economy 2015

* * * * *

Teamwork

Maintains accountability to the team

Punctuality and meets deadlines

Shares ideas to multiple audiences

Aware of and sensitive to diversity

Positive and encouraging attitude

Productive as a team member

Works with multiple approaches

* * * * *

Professionalism

Deals effectively without ambiguity

Trustworthy with sensitive information

Accepts criticism and direction in the workplace

Effective relationships with customers, businesses and the public

Understands their role and has realistic expectations

Selects appropriate mentors and sources of advice

Maintains appropriate decorum and demeanour

* * * * *

Leadership

Sees the 'big picture' and thinks strategically

Respects and acknowledges contributions

Recognises when to lead, and when to follow

Recognises when changes is needed and contributes to the change effort

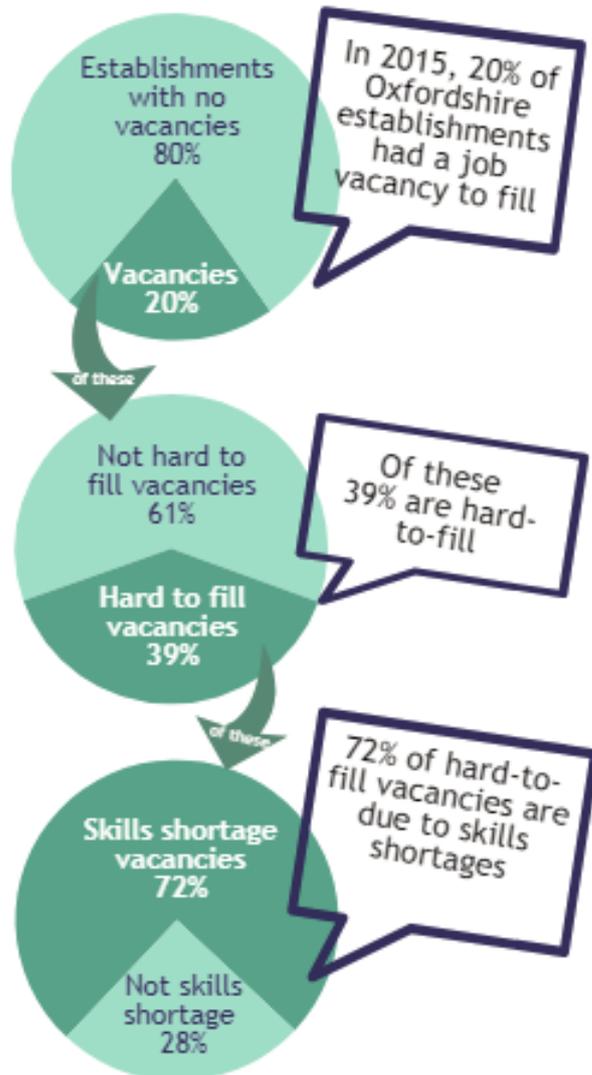
Builds professional relationships

Motivates and leads others

Recognises and deals effectively with conflict

Skills shortages for establishments in Oxfordshire

Base: 21,352



What skills shortages or gaps are there?

In Oxfordshire there are both skills shortage vacancies, and skills gaps. Nearly 4 in 10 vacancies are deemed hard-to-fill and most of these are due to skills shortages⁷⁴. This is above national average.

In Oxfordshire, the impacts of skills shortage vacancies are:

- Increase in workload for other staff (90% of establishments⁷⁵ said this)
- Difficulties in meeting customer service objectives (54%)
- Experiencing increased operating costs (54%)
- Delay in developing new products or services (42%)
- Difficulties introducing new working practices (40%)
- Difficulty meeting quality standards (40%)

Did you know?

A **skills gap** is defined as when an employee does not have the right skills to be fully proficient in their role.

⁷⁴ UKCES Employer Skills Survey, 2015

⁷⁵ An establishment has 2 or more employees

Did you know?

*A **skills shortage** is where a business fails to recruit due to applicants not having the right skills or work experience. Employers state this is due to a number of factors, not least changes to the structure of the economy with more jobs becoming higher skilled and the advances in technology causing jobs to change rapidly.*

Skills shortages are important to the careers agenda because if companies are unable to recruit then they can't function properly and grow and this can result in less output.

Where there are skill-shortage vacancies, these are predominantly found in middle-skill roles such as the skilled trades (electricians, building trades). In fact a third of all hard-to-fill vacancies are in skilled trade occupations. There are also a significant number of skill shortage vacancies in professional (18%) and associate professional (16%) roles such as scientists, engineers, IT technicians but also teaching and health professionals.

Figure 44: Incidence of skills shortage vacancies by occupation skill level

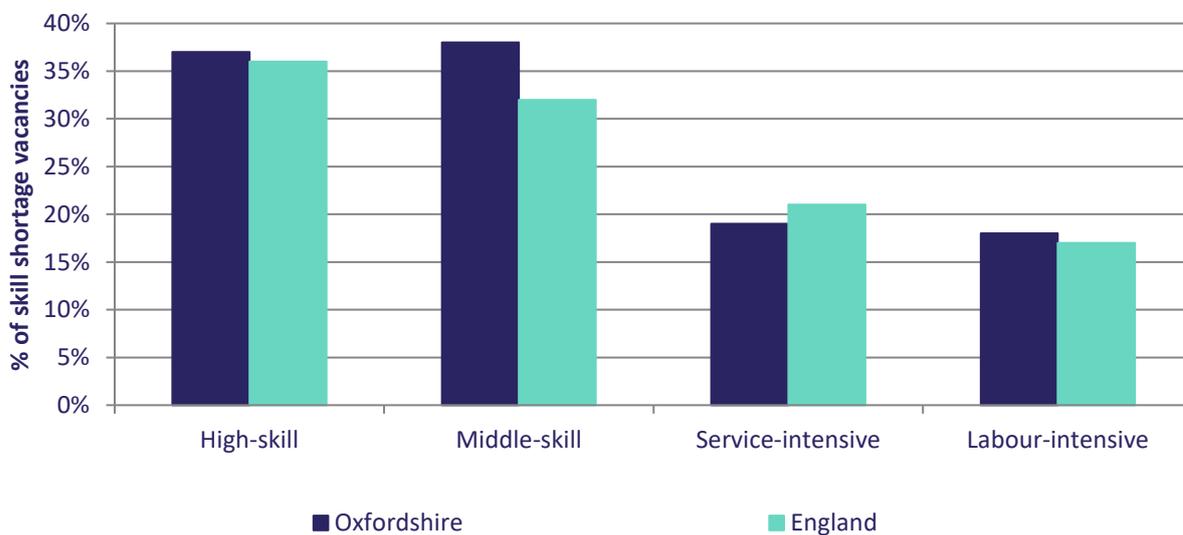
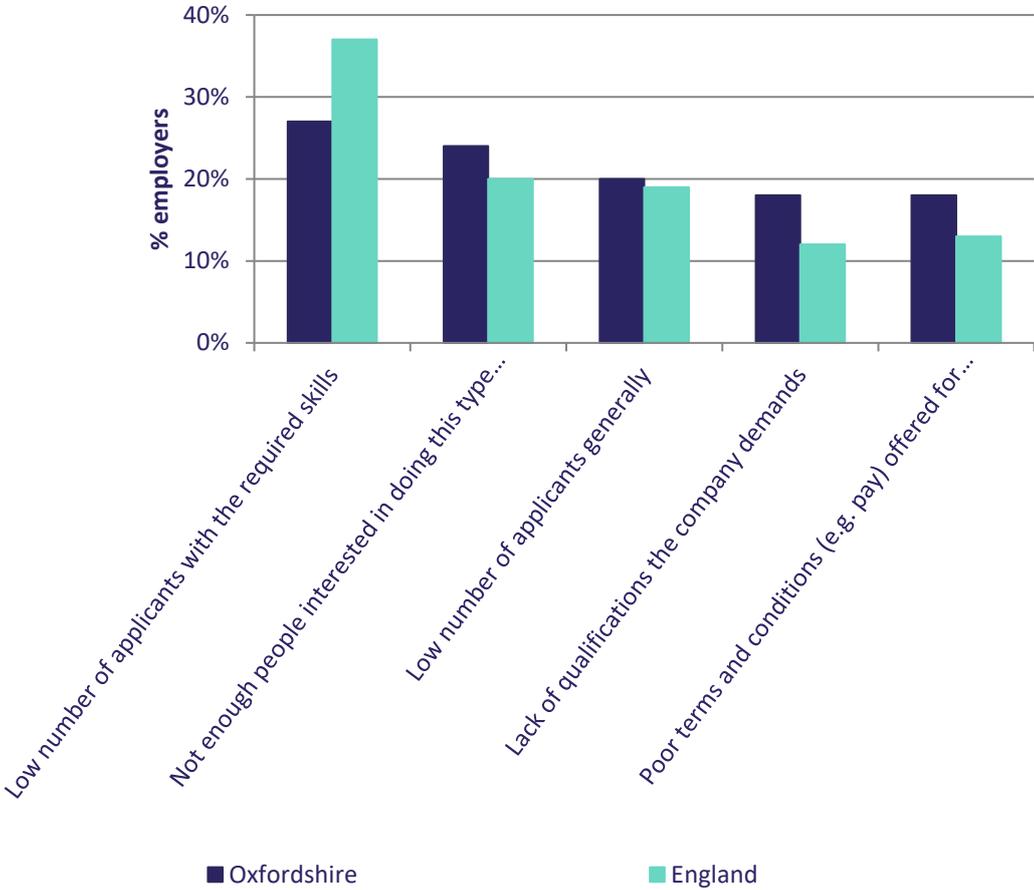


Figure 45: Main causes of having a hard-to-fill vacancy



27 per cent of hard-to-fill vacancies are considered to be due to skills shortages, although this is lower than the national figure, it has risen since the last Employer skills survey when it was 24 per cent.

It is pertinent to note that a significant number of roles that are hard-to-fill are not due to skills shortages but are due to lack of interest.

16 per cent of Oxfordshire establishments have staff that are not fully proficient in their role⁷⁶ and this is most prominent in administrative and professional occupations. Over two-thirds of establishments say this has an impact on how the establishment performs.

The top 5 reasons for skills gaps in Oxfordshire are:

- New to the role (72% of establishments said this)
- Training only partially completed (64%)
- Training completed but performance not improved (34%)
- Staff lack motivation (33%)
- They have not received the appropriate training (29%)

Skills shortages and gaps are concerning for employers nationwide. A recent education and skills survey conducted jointly by CBI and Pearson education⁷⁷ has determined:

- Demand for more people with higher-level skills is expected to be particularly strong in sectors central to growth such as construction (+73%), manufacturing (+69%) and engineering, science and hi-tech (+52%);
- 55 per cent of business are not confident there will be enough people available in the future with the necessary skills to fill their high-skilled jobs;
- There are currently widespread difficulties in recruiting people with STEM skills at every level, from new entrants to train as apprentices (20%) to people with more than five years' experience of STEM related work (32%);
- 52 per cent of businesses expect to see a shortfall in experienced STEM-skilled staff;

While most businesses view the overall skill levels of their present workforces as satisfactory or good, half of businesses report they are aware of problems among at least some of their employees in basic literacy (50%), numeracy (50%) and IT skills (46%).

⁷⁶ UKCES Employer Skills Survey, 2015

⁷⁷ Inspiring growth: CBI/Pearson education and skills survey 2015, Chapter 3, p.18

Appendix 1

High-skill occupations

- 11: corporate managers and directors
- 21: science, research, engineering and technology profs
- 22: health professionals
- 23: teaching and educational professionals
- 24: business, media and public service professionals

Middle-skill occupations

- 12: other managers and proprietors
- 31: science, engineering and technology associate profs
- 32: health & social care assoc. professionals
- 33: protective service occupations
- 34: culture, media and sports occupations
- 35: business & public service assoc. professionals
- 51: skilled agricultural and related trades
- 52: skilled metal, electrical and electronic trades
- 53: skilled construction and building trades
- 54: textiles, printing and other skilled trades

Service-intensive occupations

- 41: administrative occupations
- 42: secretarial and related occupations
- 61: caring personal service occupations
- 62: leisure, travel, related personal service occupations
- 71: sales occupations
- 72: customer service occupations
- 81: process, plant and machines operatives
- 82: transport & mobile machine drivers/operatives

Labour-intensive occupations

- 91: elementary trades and related occupations
- 92: elementary administration & service occupations