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social and economic research

Gloucestershire Countywide Business Survey

August 2018

Wavehill Ltd.

- West England office: 217 Paintworks, Arnos Vale, Bristol, BS4 3AQ
- London office: 52 Cecile Park, Crouch End, London, N8 9AS
- Wales office: 21 Alban Square, Aberaeron, Ceredigion, SA46 0DB

Contact details:

Tel: 01545 571711
Email: info@wavehill.com
Twitter: @wavehilltweets

More information:

www.wavehill.com
https://twitter.com/wavehilltweets

Authors:

Andrew Engeli
Anna Burgess
Paula Gallagher

Any questions in relation to this report should be directed in the first instance to Andrew Engeli (andrew.engeli@wavehill.com)

Date of document: 27th September 2018
Version: Final draft

Client contact: Angela Presdee

List of abbreviations

HTFV / HTF vacancies	Hard to Fill Vacancies
SSV	Skills Shortage Vacancies
ESS	Employer Skills Survey
ONS	Office for National Statistics
BIG	Broad Industrial Group
RD&I	Research Development and Innovation

Glossary

Skills Shortage Vacancy	A type of vacancy caused by a shortage of skills or experience required by an employer
Hard to fill vacancy	Job vacancies that prove difficult to fill
Incidence	The **incidence** of vacancies is the proportion of **businesses** surveyed who report they have any vacancies
Density	The **density** of vacancies is the number of vacancies as a proportion of the total number of **employees** in all businesses surveyed
Skills Shortages	Skills shortages are the shortfall in the supply of skilled labour available to businesses within the labour market
Skills gaps	Skills gaps exist where a member of staff of a business is not fully proficient in their job role

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Executive summary

In October 2017, Gloucestershire County Council (GCC) commissioned Wavehill to undertake a representative business skills survey of the business population across the county of Gloucestershire. The survey was commissioned to explore the patterns of vacancies, recruitment, skills needs, and training provision across Gloucestershire and to gather intelligence on the recruitment, employment and skills needs of local businesses. This intelligence will inform the Council's future strategies, policies and plans regarding local employment and skills systems by helping to identify how to better support local businesses.

The survey results are framed by the key finding that Gloucestershire is experiencing vacancy rates slightly above the UK average (evidenced in the Employer Skills Survey 2017). These vacancy rates are apparent across the Gloucestershire economy but are particularly prevalent in certain sectors. We found high vacancy rates in **high skills** sectors such as *Finance and insurance*, **medium skills** sectors such as *Health* and e*ducation*, and **low skills** sectors such as *Accommodation and food services* and *Wholesale* which have a higher proportion of lower skilled occupation groups and a high degree of seasonality and variable hours contracts. Thus, we conclude that skills shortages alone are not the sole driver of vacancy rates across Gloucestershire. Work readiness continues to be a major concern for employers, particularly for new workforce entrants.

The research conducted for this study found that there are a **limited number of sectors - *Construction*, *Property* and *Retail* – that are experiencing lower than (national) average vacancy rates**. We observe that these are typically low skills sectors that may not have the equivalent seasonality observed in the high vacancy/low skills sectors such as *Accommodation and food services*.

We looked at the proportion of vacancies reported as hard to fill (HTFV) and found that **HTF vacancies are higher in terms of both the incidence and density than the latest reported UK average**. This finding is consistent with the notion that there is a relatively high rate of churn in the labour market in Gloucestershire – and that high rate of churn characterises some high skill sectors in particular.

A key element of the research was to understand the relationship between HTF Vacancies and Skills Shortage Vacancies (SSV). Once again, we found that SSV rates are higher in Gloucestershire than elsewhere; in 2017, the ESS found that 67 per cent of all HTF vacancies across the UK are SSV, whereas in Gloucestershire, we found that 78.3 per cent vacancies can be classified as such. **Almost four in five employers that are struggling to fill vacancies identify that skills shortages are inhibiting their ability to recruit**.

Hard to fill vacancies pose staffing and productivity challenges for businesses and create drag on the economy. While the proportion of business feeling *any* impacts of HTF vacancies in Gloucestershire (94 per cent) is identical to the national rate reported in ESS 2015 (94 per cent), the **intensity of those impacts is lower in Gloucestershire**.

Almost all of the businesses reporting vacancies have recruited in the last twelve months. Over two thirds (70 per cent) of businesses recruiting reported that one of the drivers for doing so was **staff turnover**, corroborating the portrait of an economy with significant churn. Further confirmation of this is provided by difficulties in staff retention, which is higher than the national average. Ten per cent of businesses surveyed reported that they had **difficulties retaining staff** (compared to the national incidence of approximately eight per cent).

Skills shortages capture the shortfall in the supply of talent available to businesses through the labour market, whereas skills gaps refer to the lack of skills within a businesses' existing workforce. The research revealed that not only are SSV higher than elsewhere in the UK, but that **skills gaps are also more prevalent in Gloucestershire**. Overall, 7.9 per cent of the businesses in the sample identified a skills gap, compared to 4.4 per cent reported in the UK. We found an alignment between the occupational sectors that are experiencing the highest SSV and skills gaps within Gloucestershire, which are *Care, leisure and other occupations, Professional occupations*, and S*killed trades*. We also found that there are **particular needs in Science, Technology, Engineering, or Mathematics (STEM) with almost one in four (22 per cent) of all respondents reporting that they have specific skills needs in this area**.

Despite general concerns about the labour market and skills impacts of the impending UK withdrawal from the European Union, **the majority of businesses in the survey (65 per cent) report that they do not expect to see Brexit impact on their skills needs**. It appears that the concern with skills shortages and gaps is more immediate and located in current labour market conditions.

Gloucestershire businesses continue to invest in skills and training for their existing workforce. Over two-thirds of employers in Gloucestershire say that they have an annual appraisal process that considers the workforce development of their staff, suggesting that upskilling and Continuous Professional Development is an essential part of their business planning. **Sixty-seven per cent of businesses in the sample have funded or arranged training for their existing staff in the last twelve months**, which is comparable to the rate reported in the 2017 ESS. Job-specific training remains the most commonly provided type of workforce training accessed.

In terms of where businesses turn to in order to provide that training, around a quarter of the estimated £73 million spent on training in Gloucestershire goes to FE or HE training provision, (approximately £16.8 million). **Employers responding to the survey report a relatively high rate of satisfaction with that training provision**. For those employers who are not currently providing workforce development and training, the most commonly cited reason for not doing so is the perception that external training is too expensive.

We also examined regional knowledge and understanding of the Apprenticeship agenda and found that just over half of employers report that they are aware of the Apprenticeship levy. We also found that only one in five (19 per cent) of those aware of the levy are also aware that employers pay ten per cent of the cost of training Apprenticeships. Thus only **one in ten employers can be considered to have relatively high levels of knowledge about how the Apprenticeship levy operates**.

The survey shows that 17 per cent of employers in the sample report using Apprenticeships. We found a **higher than average take-up rate of Apprenticeship in the Education and Public administration and defence sectors** which mirrors national aspirations for those sectors. However, our research also revealed a **lower-than-sample average take up rate for Apprenticeships in the Health sector** in the Gloucestershire area which indicates that there is progress to be made there if national projections are to be reflected in local trends.

In 2016, UK businesses invested £22.2 billion in Research, Development, and Innovation (RD&I) activities, with over 200,000 FTE being generated in R&D orientated businesses through these activities. **We found that RD&I rates reflect a healthy culture of entrepreneurship in Gloucestershire; almost a quarter of businesses sampled report engaging in RD&I activities**.

Finally, the survey reveals that in early 2018 **business optimism is high in Gloucestershire**, with almost half of the businesses sampled (45 per cent) telling us that they expect their turnover to increase in the next twelve months. Only one in twenty employers said that they expect their turnover to decrease over that period. Turnover optimism is highest in the *Business administration and support services* and *Wholesale* sectors and lowest in the *Education* and *Health* sectors.

1 Introduction

Wavehill were commissioned by Gloucestershire County Council (GCC) in October 2017 to undertake a representative business skills survey of the business population across the county of Gloucestershire. The survey was commissioned to explore the patterns of vacancies, recruitment, skills needs, and training provision across Gloucestershire and to gather intelligence on the recruitment, employment and skills needs of local businesses. This intelligence will inform the Council's future strategies, policies and plans regarding local employment and skills systems by helping to identify how to better support local businesses.

The survey follows the UK wide Employer Skills Survey (ESS) which has been conducted biennially since 2011 in design. It also aligns with more locally focussed business skills surveys conducted in cities and counties throughout the UK including several conducted by Wavehill in recent years.

1.1 Survey Methodology

Following the award of this contract, Wavehill met with the contract management team from GCC to gain an understanding of the requirements from this research.

This survey features a number of key questions important to local economic growth and draws on questionnaire tools utilised in previous national research into employer skills needs undertaken by the ESS. Where possible, the wording structure was retained from the national ESS survey in order for direct comparisons to be drawn between them. In addition, the survey includes a further set of questions on firmographics (i.e. the size, sector and nature of businesses), apprenticeships and placements, STEM needs, R&D investment, and business climate. These were areas of particular interest to the GCC and provides insights into, among other things, the relevant sectors, growing sectors and support required for the provision of apprenticeships.

The GCC Countywide Business Skills Survey sampled 909 businesses located in Gloucestershire using a mixed telephone/push to web protocol. Intentionally, only 20 per cent of the sample were businesses with between 1-9 employees, in order to prevent the results being dominated by micro businesses and thus preventing the within group comparison of SME and large businesses to be made. Thus micro businesses ended up comprising 48 per cent of the final sample of respondents (see Table 1.1 below) and those with 0-4 employees, just 17 per cent of the final sample. All telephone interviews were undertaken by the Wavehill Research Team, based in Aberaeron, Ceredigion, using an industry-standard Computer Assisted Telephone Interviewing (CATI) protocol.

Table 1.1 Sample profile

	No. of Interviews
Establishment size	
Micro	435
SME	466
Large	8
Total	909
Sector (Broad Industrial Group)[1]	
Accommodation & food services	69
Agriculture, forestry, and fishing	25
Arts, entertainment, recreation, and other services	53
Business administration and support services	27
Construction	77
Education	147
Finance and insurance	7
Health	80
Information and Communication	34
Manufacturing	171
Mining, quarrying & utilities	18
Motor Trades	29
Professional, scientific, and technical	59
Property	12
Public administration and defence	3
Retail	51
Transport and storage	19
Wholesale	28
Organisation Type	
Plc, Ltd Company, LLP etc.	715
Public & Third Sectors	164
Other	30
Total	909

[1] We use Broad Industrial Group rather than SIC sections in this report, as BIG represent a more 'functional' approach to understanding patterns of economic activity.

1.2 Analytical Approach

The analytical approach used in this report mirrors the reporting of the ESS national research in order to place the findings from this research in the national context. We make comparisons in each section, where appropriate, with findings from the national skills landscape captured in the ESS in order to identify and explain local trends in Gloucestershire. The survey was designed and fielded prior to the publication of the 2017 ESS and so the questions aligned with the 2015 iteration of that survey. Where questions were unaltered between 2015 and 2017, the benchmarks in this report have been updated to reflect the 2017 ESS findings that were published in August 2018.

Finally, we explored how each of the issues covered in the survey differ by company demographics. The skills and training needs are likely to vary greatly from sector to sector and depending on the size of the company. As such, we cross-tabulate the data according to:

- Business size (based on standard ONS-compatible bandings); and
- Primary sector of economic activity (based on Broad Industrial Groups)

In this report, we have undertaken the following analytical approach:

- We begin by mapping the pattern of vacancies across Gloucestershire, in particular identifying vacancies classified as HTFV.
- Within those HTFV, we then identify the proportion of vacancies that are caused by skills shortages (SSV).
- We then explore how businesses are attempting to both recruit for those vacancies and to retain their existing workforce and focus especially on the additional burdens imposed by hard to fill openings.
- Next, we address business' skills needs and quantify the skills gaps that respondents have identified in their existing workforce.
- We then turn to training and skills provision and examine how employers are attempting to reduce those skills gaps through upskilling and external training provision. This also includes an assessment on the skills impact from the UK's decision to leave the EU.
- We then explore apprenticeships and internships as an avenue for engaging a skilled workforce.
- Finally, we outline business firmographics (i.e. the characteristics of businesses in terms of size, sector and primary markets) within Gloucestershire.

2 Vacancies and Recruitment

One of the major policy drivers behind this skills mapping exercise is understanding the full scope of skills gaps in the workforce, whereby we identify HTFV and then how many of those HTFV were because of skills-based shortages or issues (SSV). We will also look at the incidence of vacancies (i.e. the number of businesses that are experiencing them) and the density of vacancies (i.e. the volume of vacancies themselves).[2]

Table 2.1 below outlines the conceptual approach used to assess the recruitment challenges and skills shortages among businesses in Gloucestershire. It follows the national approach used by the ESS so that results in Gloucestershire can be contextualised against the national averages.

Table 2.1: Incidence and density of vacancies

	Vacancies	Hard to Fill Vacancies	Skills Shortage Vacancies
Incidence	Proportion of establishments experiencing at least one vacancy	The proportion of establishments reporting at least one hard to fill vacancy	The proportion of establishments reporting at least one skills shortage vacancy
Density	Vacancies as a proportion of all employment	Hard to fill vacancies as a proportion of all reported vacancies	Skills Shortage Vacancies as a proportion of all vacancies

The incidence of vacancies is simply the proportion of businesses reporting they have any vacancies measured against the whole sample as the base, while density is the volume of those vacancies as a proportion of all employment (measured as the total number of employees in all businesses in the sample). The second column considers the incidence of all businesses who have vacancies and at least one has been hard to fill, and the density of those HTF vacancies as a proportion of all vacancies.[3] Finally, the third column considers the incidence of all businesses who have vacancies, where at least one has been hard to fill for reasons related to skills shortages. It also considers the density of those SSV as a proportion of all vacancies. We asked businesses to cite the main reasons that vacancies were hard to fill and all businesses where responses pertained to a lack of appropriate skills, qualifications or experience were classified as SSV.

[2] Density has the additional merit of being a largely standardised measure that is less sensitive to fluctuating and uneven response rates across sectors.

[3] For analysis purposes we use all vacancies as the base (denominator), the question wording used is slightly different in the Wavehill survey compared to the ESS (2015); we ask about vacancies in the last 12 months, whereas ESS asks about current vacancies. The Wavehill approach yields a higher positive response rate for this item which allows comparisons to be made and inferences drawn from a much larger sub-sample than would be possible with the ESS approach. Recalculating the base against vacancies, rather than overall employment, essentially standardises the two approaches and produces a comparable statistic.

We also classify businesses in the sample by the average skills levels of their employees. We do this by calculating the proportion of their overall number of employees who fall into the three highest skills occupational categories and the three lowest skills occupational categories.

Table 2.2: Classification of sectors by skills levels (survey sample)

Sectors with High skills (proportion of all employees in higher skills occupational groups)[4]		Sectors with low skills (proportion of all employees in low skills groups)	
Information and Communication	77%	Accommodation & food services	67%
Public administration and defence	72%	Retail	57%
Professional, scientific, and technical	63%	Transport and storage	55%
Business administration and support services	53%	Wholesale	51%
Finance and insurance	48%	Agriculture, forestry, and fishing	42%

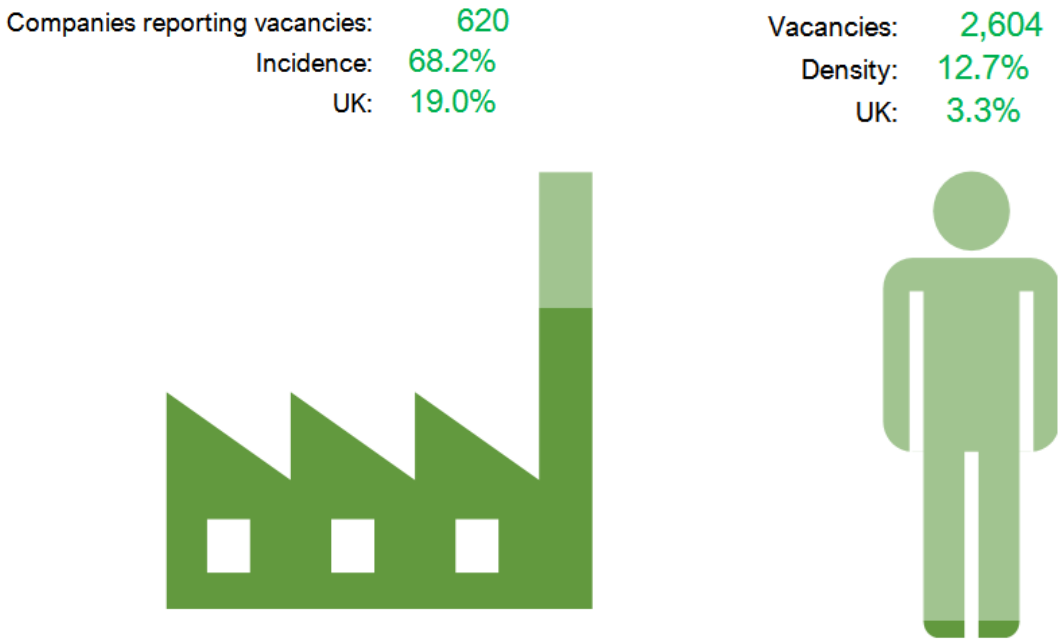
2.1 Vacancies

The density of vacancies reported by businesses we surveyed in Gloucestershire is notably higher than the UK average, as illustrated in Figure 2.1 below, however it is important to note that, as explained above, our approach was to ask businesses about their vacancies over the last 12 months as opposed to current vacancies. A little over 2,600 jobs out of the 20,579 based at the sites interviewed have been vacant over within the last twelve months. Over two-thirds of employers report having had vacancies during that period.[5]

[4] High skills sectors are determined by the relative proportion of workers in occupational groups in which high levels of skills are required (see the ESS for more information). Conversely, low skills sectors are those with a higher proportion of workers in lower skilled occupations.

[5] While the UK average is substantially lower, this is a product of the different question wording/reporting period (vacancies in the last 12 months versus current).

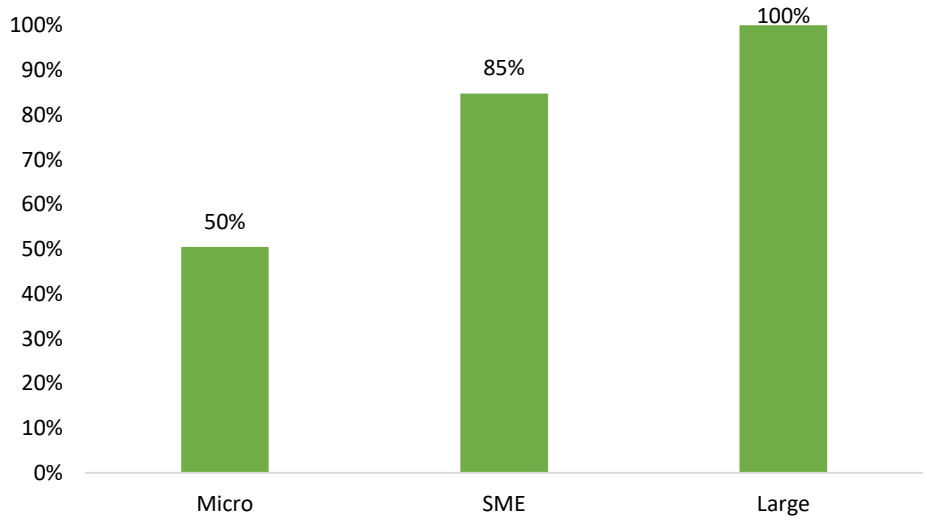
Figure 2.1: Vacancies in the last 12 months (Incidence and Density)[6]



Base: (left) All businesses, (right) All vacancies

While it appears that churn is a feature of the Gloucestershire economy, that churn (as measured by vacancy rates) is not distributed evenly across employers. Large businesses are twice as likely as micro enterprises to be experiencing vacancies, with all the large businesses in the sample reporting that they have done so (Figure 2.2).

Figure 2.2: Vacancies in the last 12 months (Incidence), broken down by size



Base: All businesses

[6] Whilst ESS also calculates a UK average for vacancy, this is not an effective comparator due to the non-comparability of size demographics.

The ESS (2017) found that the highest vacancy rates exist across the UK in the service sectors of the national economy. Figure 2.3 reports the incidence of vacancies in Gloucestershire broken down by Broad Industrial Group (BIG). Just as for the UK, the vacancy rate in the labour market in Gloucestershire is not evenly distributed across sectors; the survey finds that certain sectors (Finance and insurance, Health, Accommodation and food services, Education, and Wholesale) lie above the sample average (of 68 per cent), while others (Construction, Property, and Retail) lie significantly below it. We will return to this point below in the report, but for the time being make the following observations:

<u>High vacancy rates</u>

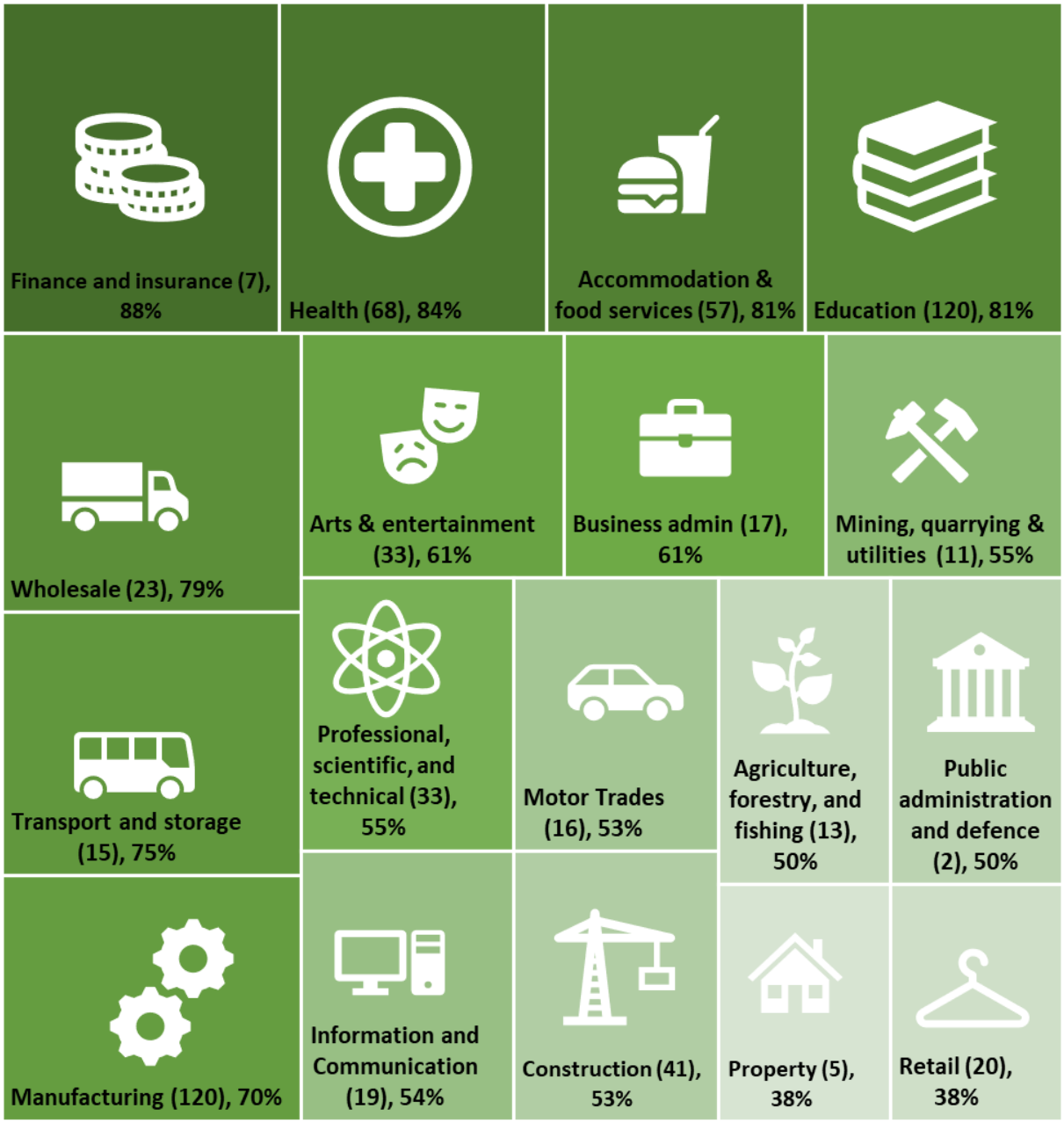
- *Finance and insurance* is a high skills sector with a higher proportion of higher skilled occupational groups (88 per cent of businesses reported vacancies)
- *Health*, and *Education* sectors with a "twin peak" distribution of occupational groups and skills needs[7] (84 per cent reported vacancies)
- *Accommodation and food services* and *Wholesale* are low skills sectors with a higher proportion of lower skilled occupation groups and a high degree of seasonality and variable hours contracts (81 per cent reported vacancies)

<u>Low vacancy rates</u>

- *Construction* (53 per cent of businesses reported vacancies), *Property* (38 per cent), and *Retail* (38 per cent) are low skills sectors without the equivalent seasonality observed in the high vacancy/low skills sectors

[7] See, for example, "Health: Sector Skills Assessment", Skills for Work, November 2012.

Figure 2.3: Proportion of businesses by sector who have had vacancies in the last 12 months[8]

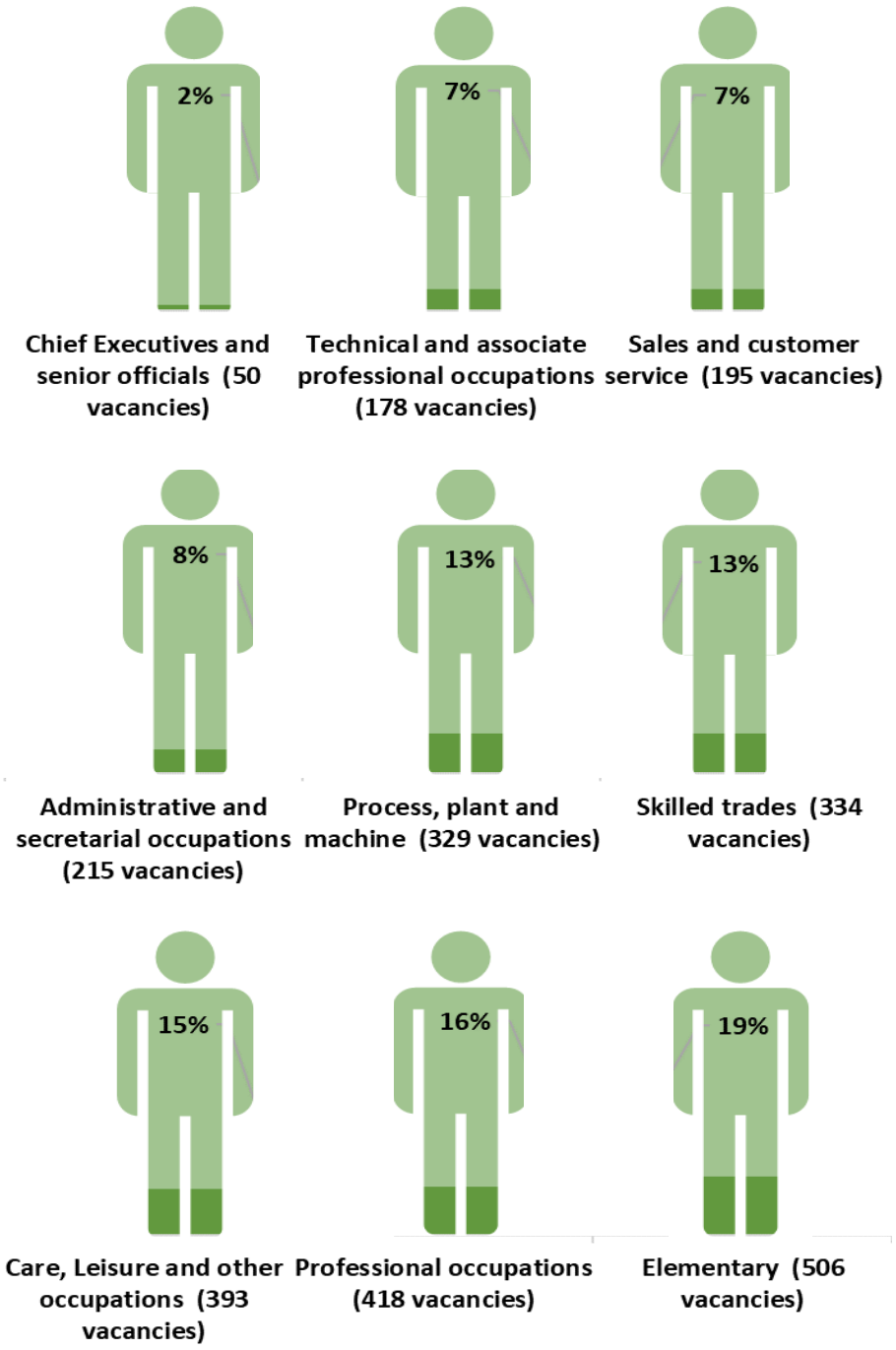


Base: All businesses

[8] In the tree maps in this report, the size of each box is proportionate to the per centages displayed for each data category

Of the 2,604 vacancies reported across the survey sample, 646 (25%) fall into the three highest skill occupational groups, while 1,030 (39%) fall into the three lowest skill occupational groups (Figure 2.4).

Figure 2.4: Vacancies in the last 12 months broken down by occupation category

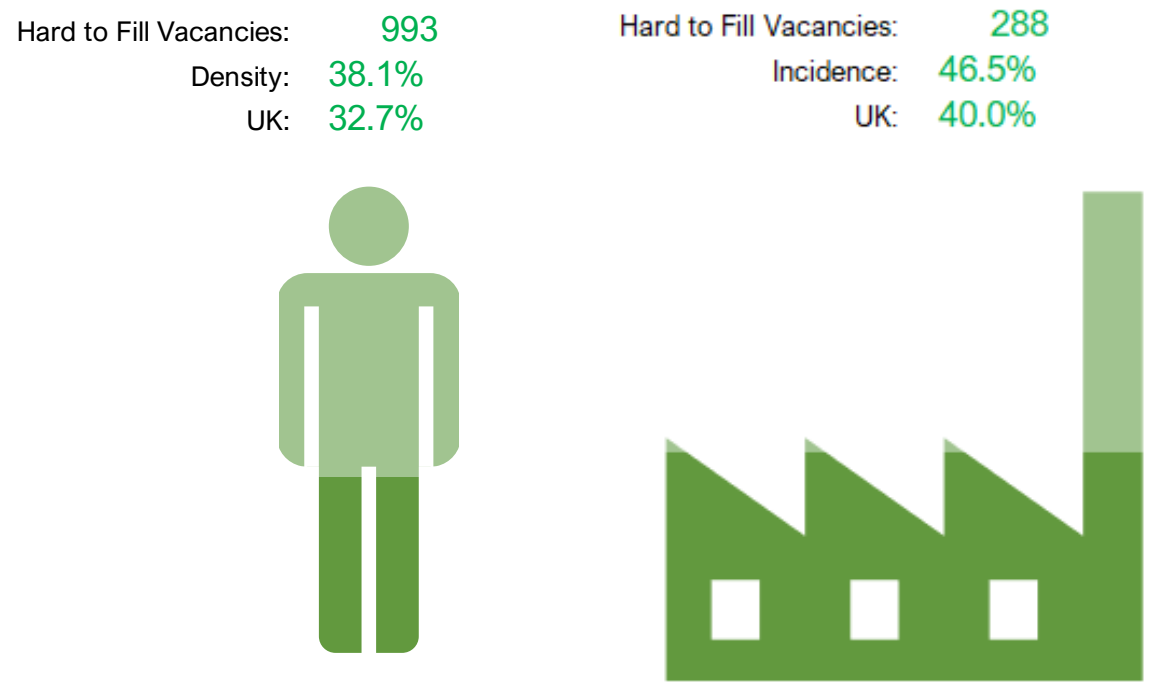


Base: All businesses

2.2 Hard to Fill vacancies (HTFV)

Where the survey asked employers about the experience that they have had in recruiting, we are able to calculate the number of vacancies that are reported as being hard to fill (Figure 2.5). Consistent with the finding that there is a relatively high rate of churn in the labour market in Gloucestershire – and that high rate of churn affects some high skill sectors – it is unsurprising that HTF vacancies are higher in terms of both the incidence and density than the latest reported UK average.

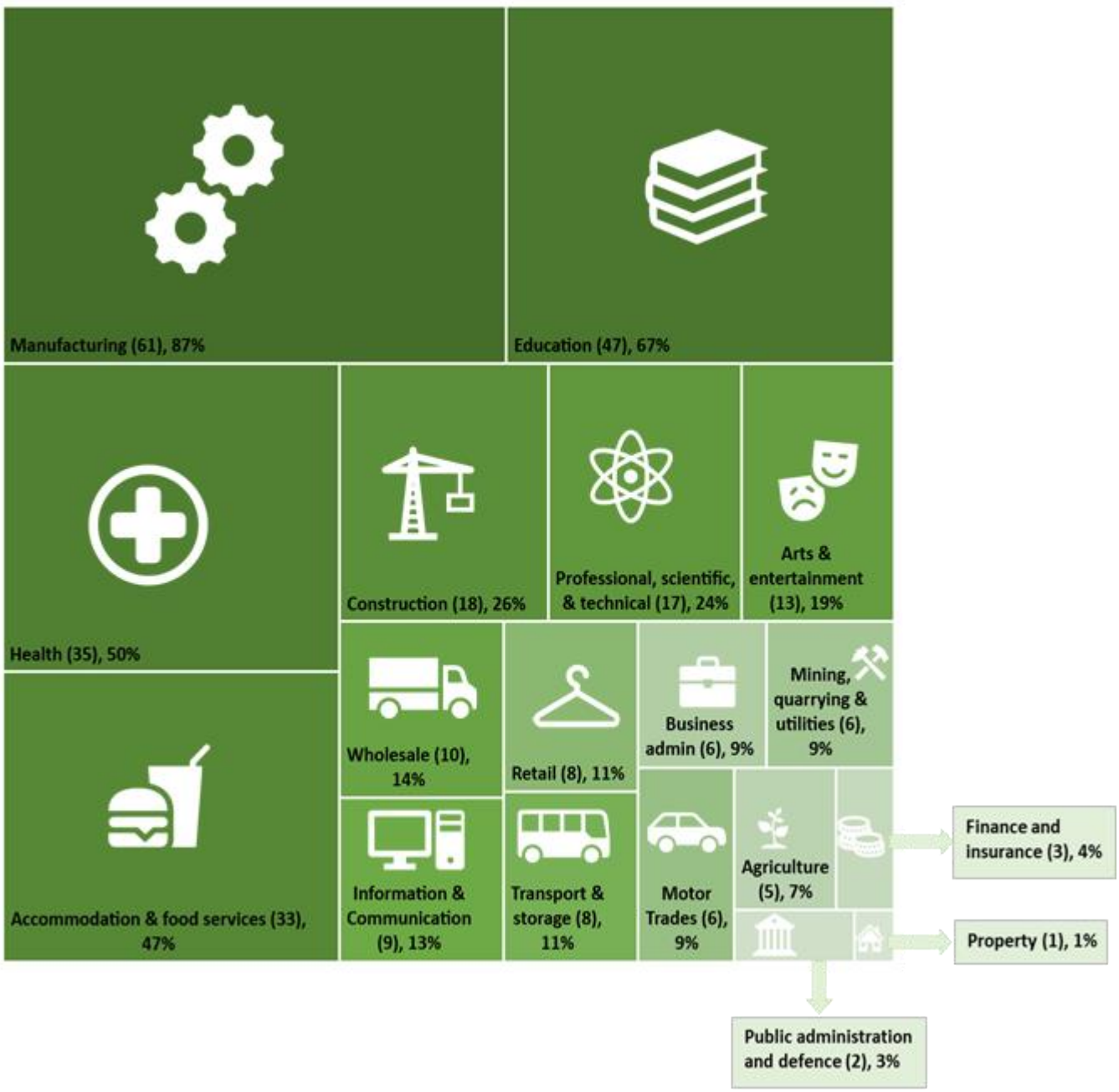
Figure 2.5: HTF vacancies in the last 12 months (incidence and density)[9]



Looking at HTF vacancy rates by sector (Figure 2.6) it is noteworthy that higher rates of HTF vacancies span all sectors by level of skill; for example, Public administration and defence and Professional, scientific, and technical services are high skills sectors; Health, and Manufacturing are medium skills sectors; Accommodation and food services is a low skill sector but also has higher than average HTF vacancy rates. The lack of a direct correlation between sector skills levels and HTF vacancies leads us to conclude that there is no one explanation for vacancies being hard to fill across Gloucestershire, and, very specifically, we cannot conclude that skills shortages are the sole driver of businesses struggling to fill empty positions.

[9] The number of HTVF has been calculated by the number of vacancies consistent with the approach used by ESS.

Figure 2.6: Incidence of Hard to Fill vacancies by sector



Base: All businesses reporting vacancies

Whilst the data isn't directly comparable due to different sector groupings, the table below provides an indication of how these results measure up against businesses across the UK. Below are comparisons with the 13 sectors used by ESS.

Table 2.3: HTFV by sector

Sector (ESS 2017)	Sector (Survey)	Proportion of Hard to Fill Vacancies (ESS) 2017	Proportion of Hard to Fill Vacancies (Survey)
Primary Sector & Utilities	Mining, quarrying & utilities	45%	22%
Manufacturing	Manufacturing	38%	41%
Construction	Construction	49%	26%
Wholesale & Retail	Wholesale Retail	26%	23% 29%
Hotels & restaurants	Accommodation & food services	33%	42%
Transport & Storage	Transport & Storage	44%	20%
Information & Communications	Information & Communication	39%	37%
Financial Services	Finance and insurance	20%	33%
Business Services	Business admin	30%	16%
Public admin.	Public Administration and Defence	25%	68%
Education	Education	28%	30%
Health & social work	Health	40%	57%
Arts & Other Services	Arts, Entertainment and Recreation	37%	16%

The density of HTF vacancies can also be mapped against occupational groups (Table 2.4), allowing us to determine at what levels businesses are struggling to fill positions. The highest density of HTF vacancies falls in one of the top three skills occupational groups – Professional occupations – and yet the other two high skill occupational groups – technical and associate Professional occupations and Chief executive and senior officials – have lower than survey average HTF vacancy densities. Again, we cannot conclude that there is a systematic correlation between HTF vacancies and level of skills by occupational group.

Table 2.4: HTFV by Occupation Category

Job Type	Per cent	ESS 2017
Professional occupations	57%	39%
Skilled trades	38%	29%
Care, leisure and other occupations	37%	37%
Elementary	34%	46%
Survey Average	34%	n/a
Process, plant and machine	19%	19%
Technical and associate Professional occupations	15%	44%
Sales and customer service	10%	37%
Administrative and secretarial occupations	7%	24%
Chief Executives and senior officials	2%	9%

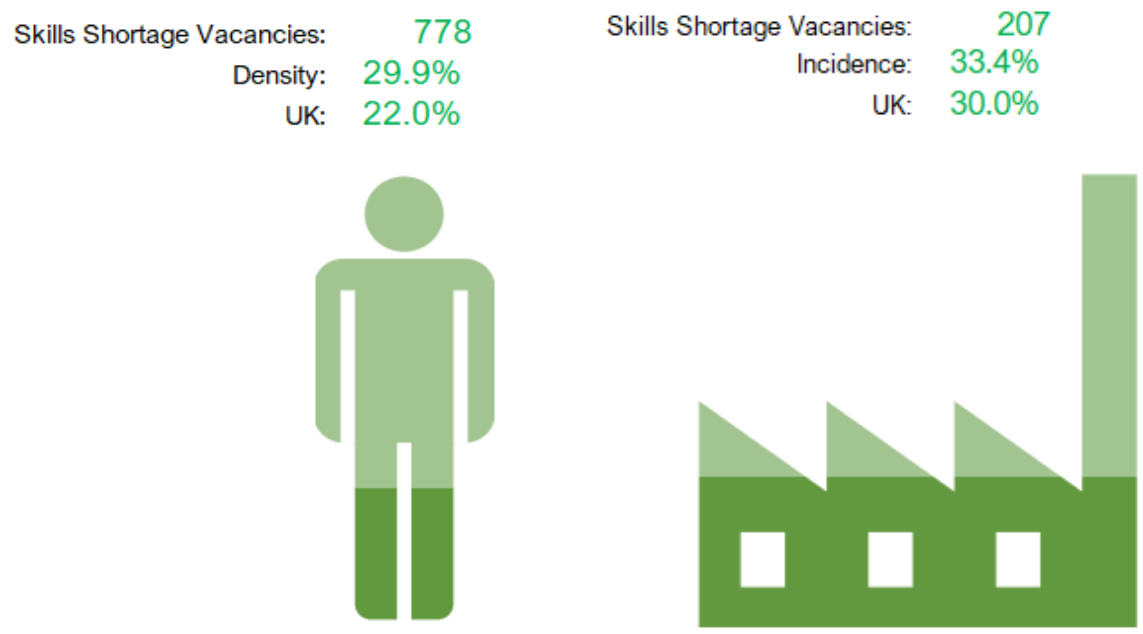
Base: All businesses reporting vacancies

In order to explore the relationship between skills and vacancies, we turn next to looking explicitly at vacancies that have been reported as hard to fill because of skills shortages.

2.3 Skills Shortage Vacancies (SSV)

As we have established in Figure 2.5, given that overall less than 50 per cent of businesses reported their vacancies as being HTF, where vacancies have arisen in Gloucestershire the labour market has largely have been able to meet the needs of employers: 61.9 per cent of all vacancies were filled without difficulty, albeit at a slightly lower rate than the national average (67.3 per cent). Where HTF vacancies exist, the survey asked employers to report why they had difficulty filling these positions. Where employers report that the positions were hard to fill because of a lack of skills, qualifications, or experience among applicants, these can be classified as SSV. In 2017, the ESS found that 67 per cent of all HTF vacancies across the UK are SSV; in Gloucestershire, we found that 778, (78.3 per cent) of the 993 HTF vacancies can be classified as SSV. The density and incidence of SSV are shown in Figure 2.7.

Figure 2.7: Skills Shortage Vacancies in the last 12 months (incidence and density)



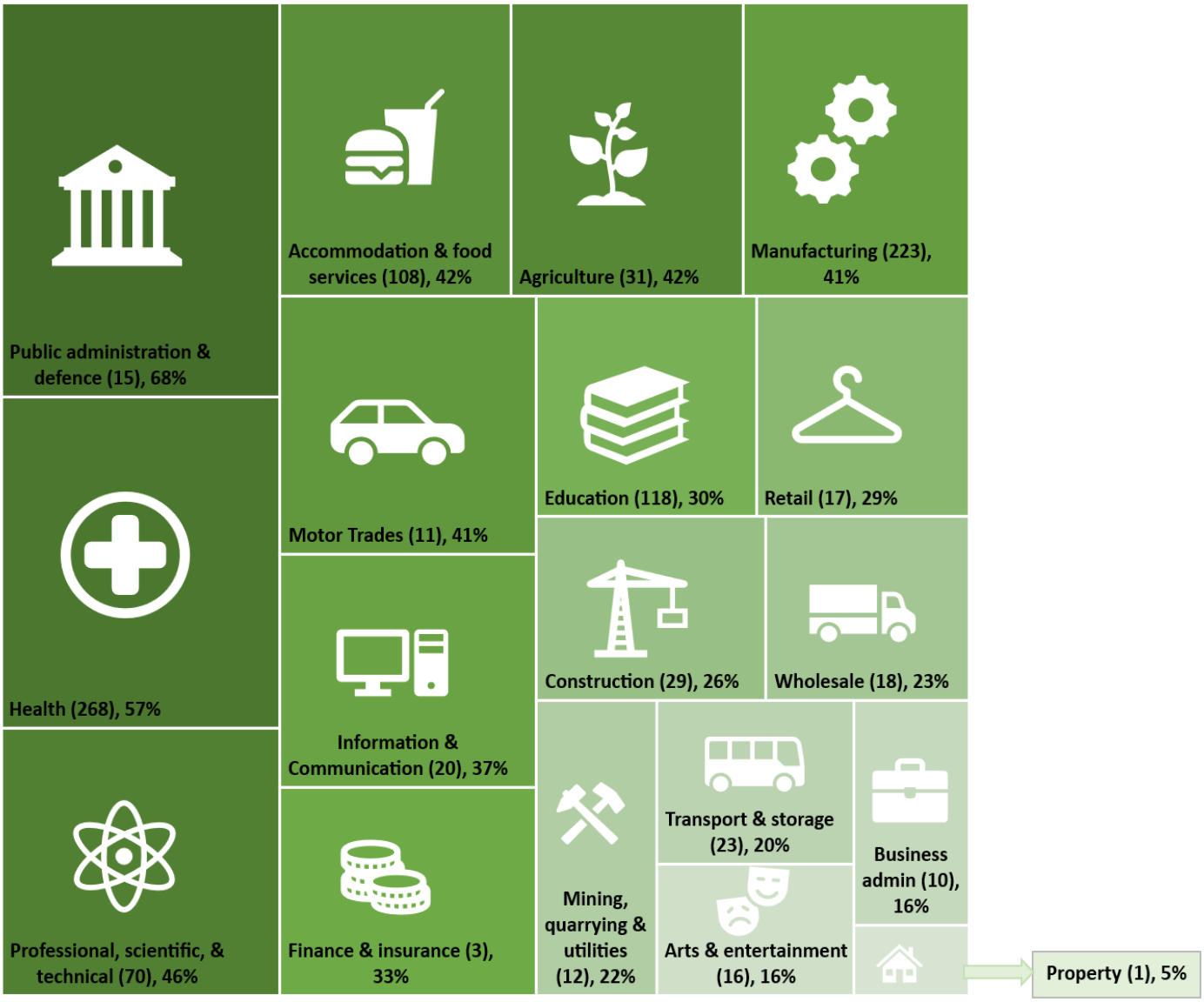
Base: All businesses

Clearly, more employers are reporting more positions in Gloucestershire as being hard to fill because of skills shortages than for the UK as a whole.

Looking at the SSV rates by vacancies for Gloucestershire LEP area in both 2015 and 2017, this figure has increased from 20.9 per cent to 25 per cent during this period. Gloucestershire now has the 14th highest SSV rate out of 39 English LEP areas surveyed (previously 29th). The LEP with the highest SSV rates is Swindon and Wiltshire with 43 per cent and the lowest is Leeds City Region with 14 per cent.

The density of SSV by sector is shown in Figure 2.8, and it allows us to reference against the skills by sector rankings shown in Table 2.2. It is immediately apparent that there is still no direct correlation between SSV and high skills sectors; while two of them (Public administration and defence and Professional, scientific, and technical) are experiencing some of the highest rates of SSV, the same is also true of sectors such as Accommodation and food services and Agriculture. The pattern of SSV across sectors is very different to that found in the national ESS 2017, where the sectors that had the highest SSV are Construction, Transport and Manufacturing, and those with the lowest SSV rates are Financial services, Public Administration and Retail.

Figure 2.8: Proportion of vacancies per sector reported as Skills Shortage Vacancies (density)



Base: All businesses reporting vacancies

We found that the highest rates of SSV in Gloucestershire are affecting Skilled trades (26 per cent), Professional occupations (17 per cent), and Caring, leisure and other occupations (17 per cent). The first two of those groups are also the groups with the highest rates of SSV nationally, with Caring, leisure and other occupations ranked fifth. However, the second highest group experiencing SSV nationally was reported in the ESS 2017 as Process, plant, and machine operatives, whereas that particular occupational group only ranks 8th out of the nine groups in the Gloucestershire survey. That particular pocket of skills shortages does not appear to be a feature of the Gloucestershire labour market.

2.4 Business impact of Hard to Fill vacancies

One of the direct consequences of HTF vacancies and skills shortages is that they have impacts upon businesses who are experiencing them (Table 2.5).

Table 2.5: Thinking now about all occupations in which you have Hard to Fill vacancies, are Hard to Fill vacancies causing this establishment to… (multiple response allowed)

	Number	Per cent	ESS 2017	Diff
Increase workload for other staff	230	80%	85%	-5
Experience increased operating costs	63	22%	43%	-21
Have difficulties meeting customer services objectives	58	20%	48%	-28
Have difficulties meeting quality standards	57	20%	34%	-14
Lose business or orders to competitors	51	18%	43%	-25
Outsource work	46	16%	31%	-14
Delay developing new products or services	44	15%	40%	-25
Have difficulties introducing new working practices	32	11%	35%	-24
Withdraw from offering certain products or services altogether	20	7%	25%	-17
Have difficulties introducing technological change	17	6%	23%	-17

Base: All businesses reporting HTFV

National figures from ESS 2017 indicate that 85 per cent of firms UK-wide experienced increased workloads for other staff, slightly higher than that reported across the Gloucestershire sample. Obviously, the impact of higher workloads also then has a potential impact upon the ability to retain staff and thus a potentially circular effect upon labour market churn; we will return to retention difficulties below.

However, it is noteworthy that other business impacts are of HTV vacancies and SSV are not being felt so keenly in Gloucestershire as elsewhere. While the rank order of impacts is broadly comparable, the other business impacts are only being felt by about half as many businesses in the Gloucestershire sample compared to the national rates. Thus, while the proportion of business feeling *any* impacts of HTV vacancies in Gloucestershire (94 per cent) is identical to the national rate reported in ESS 2015 (94 per cent), the intensity of those impacts is lower in Gloucestershire (i.e. number of impacts felt by any one business).

2.5 Recruitment

Almost all (596/620) of the businesses reporting vacancies have recruited in the last twelve months. These businesses were asked their reasons for recruiting (Table 2.6) and the results provide further evidence of the sources of labour market churn; 70 per cent of businesses recruiting (415/596) reported that one of the drivers for doing so was staff turnover. Extending the base to the survey sample, this implies that labour market churn due to staff turnover affects about 46 per cent of the businesses across the Gloucestershire economy.

Table 2.6: Primary reasons for recruiting, by business size (multiple responses allowed)

	All N	All Per cent	Micro	SME	Large
Staff turnover	415	70%	62%	73%	88%
Business growth	278	47%	45%	47%	63%
Internal promotion	26	4%	1%	6%	25%
Additional / new skills required	63	11%	9%	11%	38%
Other	20	3%	2%	4%	

Base: All businesses reporting that they recruited in the last 12 months

However, the drivers for recruiting vary substantially by sector (Table 2.7). Some sectors – notably Accommodation and food services and Health – are being pushed into recruiting by high levels of staff turnover, whereas others – notably Property, Business administration, Finance and insurance, and Construction – locate the primary driver for recruitment as being business growth (although staff turnover remains an issue to varying degrees in all these sectors except Finance and insurance).

Table 2.7: Primary reasons for recruiting, by sector (multiple responses allowed)

	Staff turnover	Business growth	Internal promotion	Additional / new skills required	Other
Accommodation & food services	88%	40%	2%	9%	5%
Health	82%	22%	6%	15%	3%
Retail	79%	26%		5%	
Education	78%	37%	4%	4%	1%
Agriculture, forestry, and fishing	77%	38%			15%
Transport and storage	73%	53%			
Arts, entertainment, recreation, and other services	72%	45%		10%	3%
Motor Trades	69%	62%	8%	23%	
Wholesale	68%	59%	5%		5%
Professional, scientific, and technical	65%	55%	6%	19%	6%
Manufacturing	61%	59%	9%	13%	2%
Construction	58%	63%	3%	16%	5%
Information and Communication	53%	41%	6%	18%	6%
Property	50%	100%			

	Staff turnover	Business growth	Internal promotion	Additional / new skills required	Other
Public administration and defence	50%	50%			
Business administration and support services	47%	71%		24%	
Mining, quarrying & utilities	27%	73%		9%	9%
Finance and insurance	0%	50%		17%	33%

Base: All businesses reporting that they recruited in the last 12 months

Respondents were asked to identify what skills are lacking in applicants (Figure 2.9). Seventy-one per cent (146/206) of businesses cited specialist skills adapted to the role, broadly comparable to the 66 per cent reported in the 2017 ESS; however, other skills lacking in applicants were reported at about half the levels from the national survey. Thus, while the lack of specialist skills are and continue to be a problem for the Gloucestershire economy, it appears that other skills may be more readily prevalent than in the wider national economy.

Figure 2.9: Have you found any of the following skills difficult to obtain from applicants?

Base: All businesses reporting that they have experienced Skills Shortage Vacancies

The sectoral level breakdown of skills lacking in applicants is shown in Table 2.7, which calculates the skills identified as lacking in applicants for identified vacancies against the total number of hard to fill vacancies in each sector (first and second ranked displayed). Specialist skills or knowledge needed to perform the role dominate most sectors as the primary set of skills lacking in applicants, with the exception of Finance and insurance (soft skills) and, crucially, Information and communication (Advanced or specialist IT skills). While there may be a certain degree of overlap between the two response categories for this particular sector, it is indicative of the struggles that the sector has in general and in Gloucestershire in particular in filling job roles with suitably qualified applicants.

Table 2.8: Skills lacking among applicants, by sector (multiple responses allowed)

Sector	First	Second
Accommodation & food services	Specialist skills or knowledge needed to perform the role (17%)	Soft skills (11%)
Agriculture, forestry, and fishing	Specialist skills or knowledge needed to perform the role (13%)	
Arts, entertainment, recreation, and other services	Specialist skills or knowledge needed to perform the role (38%)	Other (31%)
Business administration and support services	Specialist skills or knowledge needed to perform the role (30%)	Advanced or specialist IT skills, Basic numerical skills and understanding, Soft skills, Writing instructions, guidelines, manuals or reports (all 20%)
Construction	Specialist skills or knowledge needed to perform the role (52%)	Knowledge of products and services offered by your organisation and organisations like yours (10%)
Education	Specialist skills or knowledge needed to perform the role (28%)	
Finance and insurance	Soft skills (67%)	Other (33%)
Information and Communication	Advanced or specialist IT skills (25%)	Specialist skills or knowledge needed to perform the role (15%)
Manufacturing	Specialist skills or knowledge needed to perform the role (18%)	
Mining, quarrying & utilities	Specialist skills or knowledge needed to perform the role (25%)	
Motor Trades	Specialist skills or knowledge needed to perform the role (36%)	Solving complex problems requiring a solution specific to the situation (27%)
Professional, scientific and technical	Specialist skills or knowledge needed to perform the role (14%)	
Property	Knowledge of products and services offered by your organisation and organisations like yours, soft skills, solving complex problems requiring a solution specific to the situation (all 100%)	

Sector	First	Second
Public administration and defence	Specialist skills or knowledge needed to perform the role (13%)	
Retail	Other (24%)	Specialist skills or knowledge needed to perform the role, Soft skills, Computer literacy / basic IT skills (12%)
Transport and storage	Specialist skills or knowledge needed to perform the role (17%)	Manual dexterity, solving complex problems requiring a solution specific to the situation (all 13%)
Wholesale	Specialist skills or knowledge needed to perform the role (28%)	Knowledge of products and services offered by your organisation and organisations like yours, Other (all 11%)

Table 2.9 shows that businesses are employing a range of strategies to try and overcome their recruitment difficulties and to attract a sufficient quantity of suitable applicants. Only 18 per cent of businesses (52/288) say that they are doing nothing, while using new recruitment methods and channels was identified by almost two in five employers in the sample as being one of their strategies implemented to overcome HTF vacancies. Almost 29 per cent of our sample (83/288) are examining training – either to new recruits, existing staff, or trainees – to overcome HTF vacancy generated skills shortages in recruitment. Obviously, the ability to extend training to overcome recruitment difficulties has implications for the supply, quality, and affordability of external training provision, and we will return to this later in the report.

Table 2.9: What have you done to overcome difficulties in recruitment?

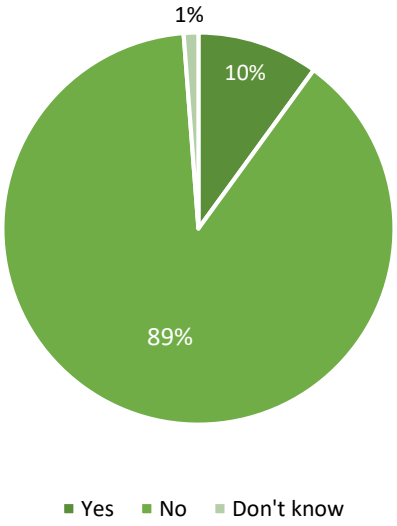
Recruitment strategy	Per cent
Using new recruitment methods or channels (112)	39%
Increasing advertising/recruitment spend (56)	19%
Nothing (52)	18%
Being prepared to offer training to less qualified recruits (49)	17%
Other (46)	16%
Offering flexible working patterns (24)	8%
Bringing in contractors to do the work, or contracting it out (24)	8%
Increasing the training given to your existing workforce (17)	6%
Increasing/ expanding trainee programmes (17)	6%
Increasing salaries (18)	6%
Redefining existing jobs (18)	6%
Recruiting workers who are non-UK nationals (14)	5%

Base: all businesses experiencing HTF vacancies

2.6 Retention

As suggested above, staff turnover accounts for a substantial amount of the drivers pushing companies to recruit. Ten per cent of businesses (Figure 2.10) reported that they had difficulties retaining staff (compared to the national incidence of approximately eight per cent reported in the 2015 ESS).[10] One of the areas that we examined is the patterns in difficulties experienced in staff retention across occupational groups.

Figure 2.10: Are there particular jobs in which you have difficulties retaining staff?



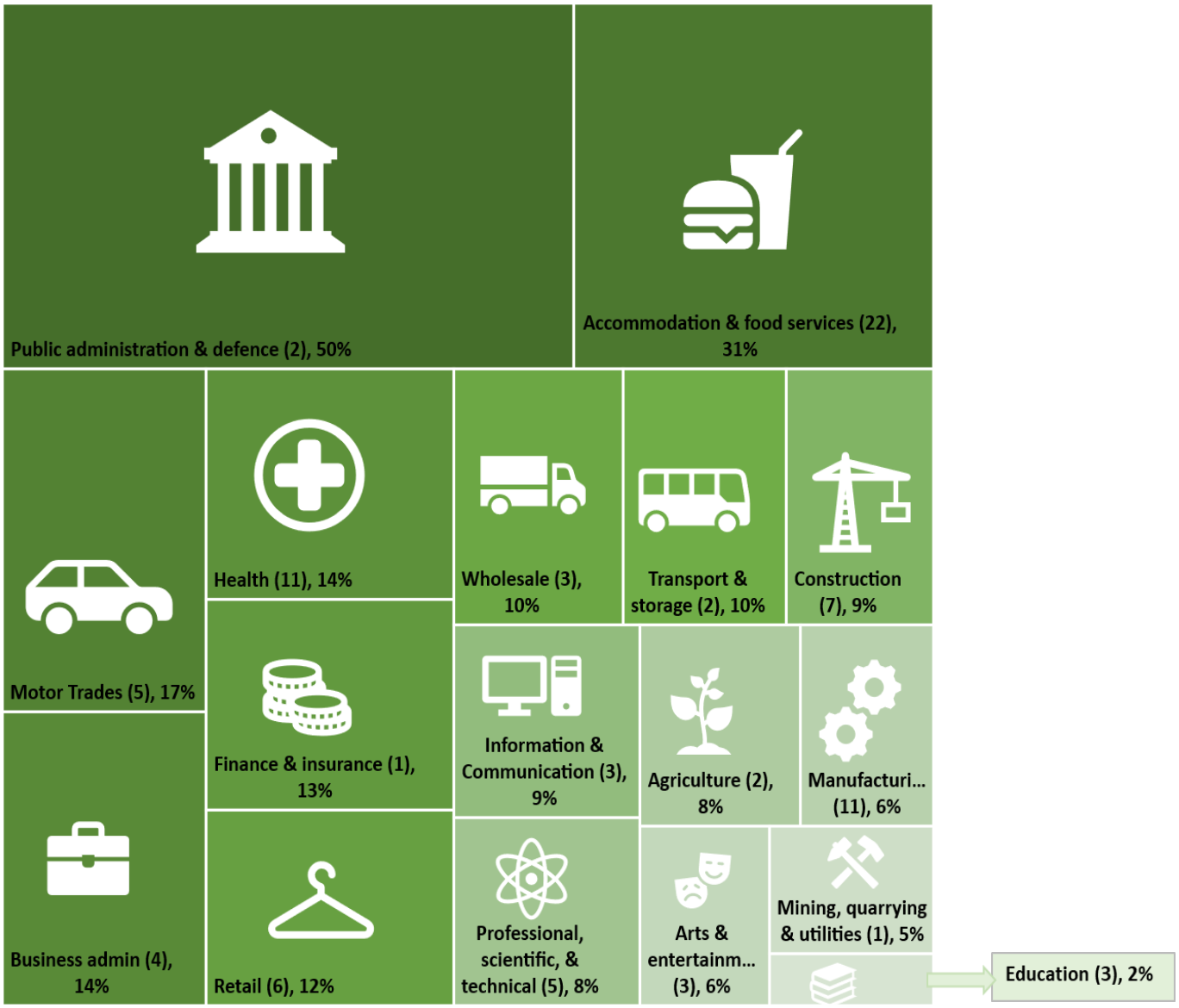
Base: All businesses

In Figure 2.11, we show the sectors in which specific occupation groups are seen as being particularly affected by staff retention difficulties, which is important as it points to pockets of difficulties within these sectors as opposed to broad based (cross-occupational) retention issues.[11] Not surprisingly (if we leave aside Public administration and defence which has a low response size for this question), we see specific occupation retention issues in Accommodation and food services, a sector characterised by high churn, variable hours contracts, and a relatively seasonal pattern of employment. This finding echoes the national data reported in the 2017 ESS.

[10] In this instance there is not currently comparable data available for the ESS 2017

[11] Thus, we expect to see higher retention issues by specific occupational groups in sectors that have multi-peak skills needs, such as the Health sector.

Figure 2.11: Are there particular jobs in which you have difficulties retaining staff? Broken down by sector



Base: All businesses

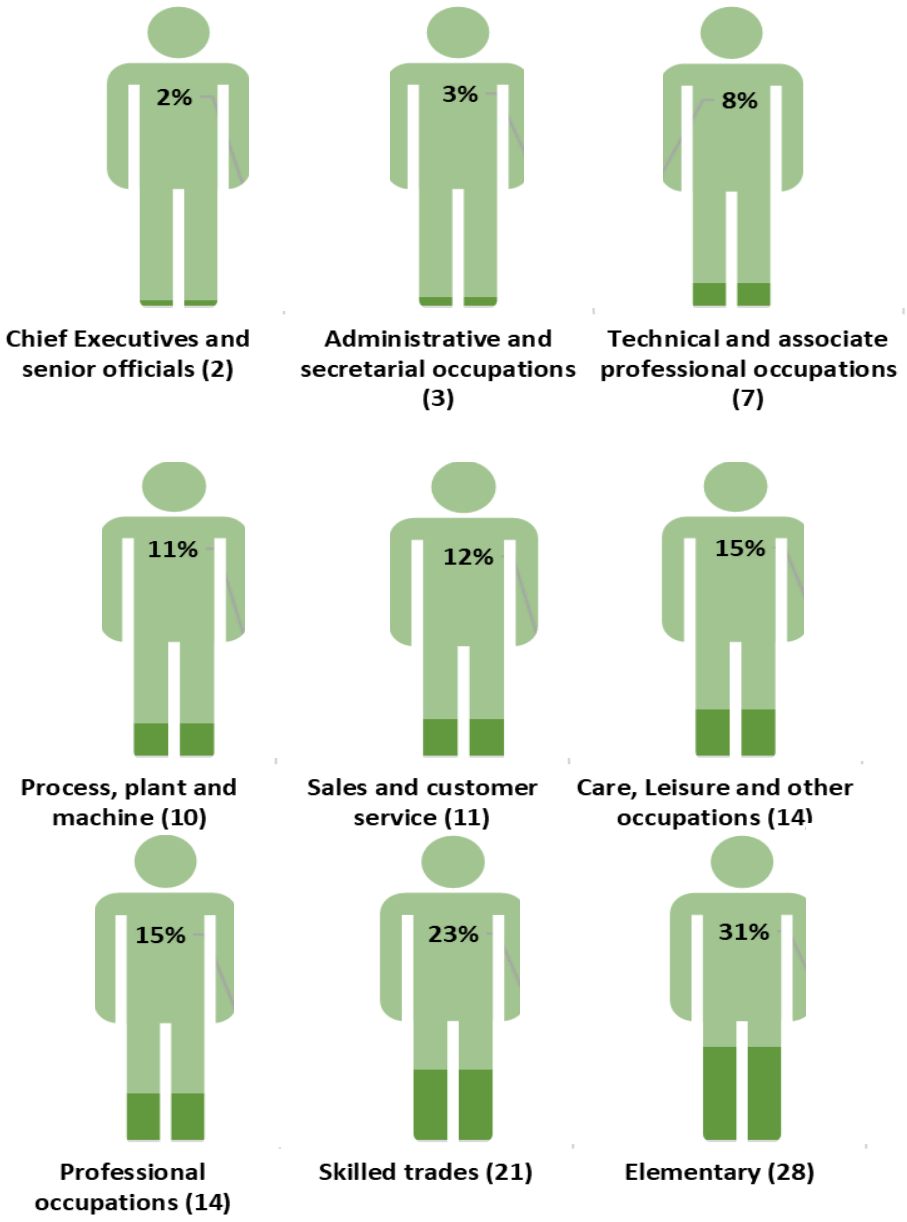
Once these same data are broken down by occupational group (Figure 2.12), an interesting – if not unexpected – pattern emerges. Turnover is highest among,

- Elementary workers (31 per cent, compared to 19 per cent in the 2015 ESS)
- Skilled trades (23 per cent, compared to 21 per cent in the 2015 ESS)

and lowest among,

- Chief executives and senior managers (2 per cent/ 2 per cent in the 2015 ESS)
- Administrative and secretarial occupations (3 per cent/ 4 per cent in the 2015 ESS)

Figure 2.12: Are there particular jobs in which you have difficulties retaining staff? Broken down by occupation

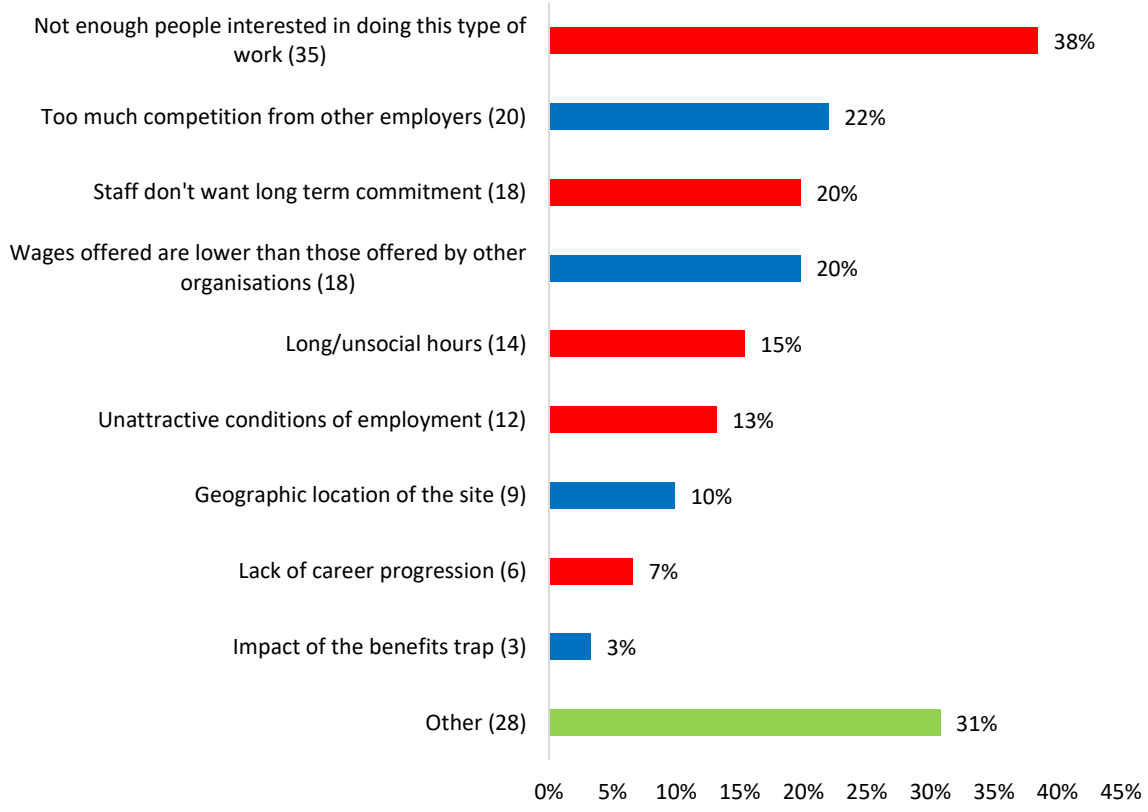


Base: Businesses that said they had difficulty retaining staff

Higher staff turnover appears to be experienced among Skilled trades, which corresponds with the high HTF vacancy rates reported for this group, suggesting that employers have a hard time replacing lost workers. The 2017 ESS survey found that, while retention difficulties among elementary workers is high, there are lower HTF vacancy rates for this group (22 per cent), meaning that employers do not struggle as much to fill these positions. However, we found that the HTF vacancy rate for this group (34 per cent) was higher than for the national sample; while still slightly below the average across all occupational groups (36 per cent), it does suggest that there may be more competition to hire elementary workers than in other parts of the UK[12]. Higher retention is apparent among those at the lower end of the HTF vacancy scale, suggesting an underlying stability among Chief executive and senior managers and Administrative and secretarial occupations.

Businesses identifying staff retention difficulties were asked to report why those difficulties exist (Figure 2.13 and Table 2.7), and the answers shed further light on the dynamics of labour market churn in Gloucestershire. Factors highlighted in blue in Figure 2.13 may be described as labour market factors that are reflective of the labour market situation in Gloucestershire, whereas those in red are occupation or job specific factors that are likely to be relatively invariant across local or regional labour markets.

Figure 2.13: Which of the following are the main reasons why it is difficult to retain staff? (multiple response allowed)



Base: All businesses reporting difficulties retaining staff

[12] Which may in turn be reflective of a smaller pool or fewer workers willing or keen to obtain elementary occupational positions.

Table 2.10: Which of the following are the main reasons why it is difficult to retain staff? By sector

Sector	First	Second
Accommodation & food services	Staff don't want long term commitment (50%)	Other (36%)
Agriculture, forestry, and fishing	Long/unsocial hours, Other (50%)	
Arts, entertainment, recreation, and other services	Wages offered are lower than those offered by other organisations, Other (67%)	Unattractive conditions of employment, Lack of career progression, Staff don't want long term commitment, (33%)
Business administration and support services	Other (75%)	Staff don't want long term commitment, too much competition from other employers, wages offered are lower than those offered by other organisations (25%)
Construction	Not enough people interested in doing this type of work (43%)	Staff don't want long term commitment, Too much competition from other employers, Unattractive conditions of employment (29%)
Education	Other (67%)	Not enough people interested in doing this type of work, Unattractive conditions of employment, Long/unsocial hours, ages offered are lower than those offered by other organisations (all 33%)
Finance and insurance	Other (100%)	
Health	Not enough people interested in doing this type of work (55%)	Long/unsocial hours (45%)
Information and Communication	Other (67%)	Not enough people interested in doing this type of work (36%)
Manufacturing	Not enough people interested in doing this type of work (55%)	Other (27%)
Mining, quarrying & utilities	Not enough people interested in doing this type of work (100%)	

Sector	First	Second
Motor Trades	Not enough people interested in doing this type of work (60%)	Wages offered are lower than those offered by other organisations, too much competition from other employers (40%)
Professional, scientific, and technical	Not enough people interested in doing this type of work, wages offered are lower than those offered by other organisations (40%)	Geographic location of the site, Unattractive conditions of employment (20%)
Public administration and defence	Wages offered are lower than those offered by other organisations, other (50%)	
Retail	Not enough people interested in doing this type of work (83%)	Staff don't want long term commitment, Unattractive conditions of employment (33%)
Transport and storage	Too much competition from other employers, Unattractive conditions of employment (50%)	
Wholesale	Staff don't want long term commitment, too much competition from other employers, wages offered are lower than those offered by other organisations, other (all 33%)	

While the rates reported in the Gloucestershire survey are lower than in the ESS, the rank order is relatively similar with the exception of,

- Staff don't want a long-term commitment (rank order 3rd in Gloucestershire, 6th in ESS)
- Lack of career progression (rank order 8th in Gloucestershire, 5th in ESS)

This suggests that the local labour market in Gloucestershire is more likely to draw from a pool of casual labour (including students) than others, be more susceptible to seasonal effects, but yet more likely to offer long-term career progression. In the next section, we will turn to the internal skills challenge.

3 The Skills Challenge

Skills shortages are an important part of the labour market landscape but are not limited to vacancies and recruitment. The second pillar of understanding skills gaps in the workforce is to map pockets of skills shortages in the existing workforce. In this section, we look at the challenges to the existing workforce, and explore areas (sectors and occupational groups) in which employers in the Gloucestershire region feel that their workforce needs to upskill.

3.1 Internal skills challenges

Employers were asked to identify which, if any, occupational groups are affected by the need to acquire new skills or knowledge. Overall, 7.9 per cent of the businesses in the sample identified a skills gap, compared to 4.4 per cent reported in the 2017 ESS. This places Gloucestershire in the higher skills gap group of LEPs (Hertfordshire led the group at 10.9 per cent).[13]

In Table 3.1 we show the density of the need for skills acquisition among the existing workforce, broken down by occupational group. The top three occupational groups in which skills gaps are emerging are Care, leisure and other occupations, Professional occupations, and Skilled trades; as we identified in section 2.3 of this report, these are precisely the same top three occupational groups in terms of Skills Shortage Vacancies.

Table 3.1: Which staff from occupational categories are affected by the need to acquire new skills or knowledge? (Density)

	Elementary	Process, plant & machine	Sales & customer service	Care, leisure & other occupations	Skilled trades	Administrative & secretarial occupations	Technical & associate professional occupations	Professional occupations	Chief Executives & senior officials
All	22%	3%	21%	71%	33%	23%	25%	31%	18%
Micro	12%	20%	33%	64%	32%	31%	35%	47%	21%
SME	24%	3%	20%	71%	30%	24%	30%	52%	18%
Large	25%	0%	12%	78%	48%	16%	16%	16%	11%
ESS 2017 total	6%	4%	7%	4%	8%	6%	4%	8%	43%
ESS 2017 Gloucestershire	5%	5%	5%	4%	9%	10%	3%	10%	45%

Base: All businesses

[13] We note a slight difference in question wording between the 2018 Gloucestershire survey and the ESS 2017; ESS 2017 asked employers which existing staff have skills deficiencies, whereas Gloucestershire 2018 asked employers which employees are affected by the need to acquire new skills.

The distribution of internal skills gaps by sector (Table 3.2) shows that the top five sectors affected by the need to acquire new skills in Gloucestershire are,

1. Education (ranked 2nd in 2017 ESS)
2. Public administration and defence (ranked 1st in 2017 ESS)
3. Business administration and support services (ranked 6th in 2017 ESS)
4. Health (ranked 3rd in 2017 ESS)
5. Manufacturing (ranked 10th in 2017 ESS).

Table 3.2: Which staff are affected by the need to acquire new skills or knowledge? (All occupational groups, by sector)[14]

Sector	Number	Per cent	ESS 2017 Rank	Survey Rank
Education	2296	67%	2	1
Public administration and defence	267	50%	1	2
Business administration and support services	106	33%	6	3
Health	1038	25%	3	4
Manufacturing	1232	25%	10	5
Professional, scientific, and technical	315	24%		
Arts, entertainment, recreation, and other services	131	24%	8	7
Information and Communication	73	20%	5	8
Property	21	19%		
Construction	207	18%	12	10
Retail	80	18%		11
Finance and insurance	17	16%		12
Wholesale	59	14%	7	13
Mining, quarrying & utilities	60	12%		14
Accommodation & food services	106	12%	13	15
Agriculture, forestry, and fishing	29	10%		
Transport and storage	53	6%	9	17

Base: All businesses

Clearly, the need to acquire skills for the existing workforce in the Public administration and defence, the Business administration and support, the Education – and to a lesser extent Health - sectors broadly matches the national landscape. However, we note that the internal skills needs identified in the manufacturing sector are particular to the local economy of Gloucestershire.

[14] Please note that Sectors without a ranking score do not directly align with ESS sectors used.

The occupational groups most likely to be affected by the need to acquire these new skills are shown for the top five sectors in Table 3.3.

Table 3.3: Top three occupational groups needing to acquire new skills for the top five sectors identifying skills gaps

Sector	Occupation category
Education	Care, leisure and other occupations
	Professional occupations
	Administrative and secretarial occupations
Public administration and defence	Care, leisure and other occupations
	Professional occupations
	Administrative and secretarial occupations
Business administration and support services	Administrative and secretarial occupations
	Skilled trades
	Process, plant and machine
Health	Care, leisure and other occupations
	Professional occupations
	Elementary
Manufacturing	Process, plant and machine
	Skilled trades
	Technical and associate professional occupations

There is some diversity across these sectors, which has implications for skills and training provision. In the public and service sectors, there are clear needs in:

- Care, leisure and other occupations,
- Professional occupations
- Administrative and secretarial skills,

In the (non-public dominated) service sector of Business administration and support services, the occupational groups with high skills gaps are:

- Skilled trades
- Process, plant, and machinery operatives.

Similarly, the Manufacturing sector has identified skills gaps that dominate in:

- Process, plant, and machinery
- Skilled trades
- Technical and associate Professional occupations.

We note that the skills gaps in these latter two sectors align very closely with the aspirations for increasing skills training and provision through work-based learning and Apprenticeships, a subject to which we will return below.

Businesses were able to identify a number of factors that may lead to skills gaps in their existing workforce (Table 3.4).[15] New technologies, products and services, and technologies and equipment are all cited by Gloucestershire employers as contributing to the emergence of internal skills gaps in the same rank order as in the 2017 ESS; however, the primary reason, cited by 57 per cent of the sample with internal skills gaps, is a new legislative or regulatory requirement. Obviously, this is a factor external to the Gloucestershire region, but it provides evidence of the impact of such requirements upon businesses.

Table 3.4: Are the main reasons due to any of the following?

	All	(Micro)	(SME)	(Large)	ESS 2017
New legislative or regulatory requirement	**57%**	46%	59%	67%	38%
Recent introduction of new technologies	**37%**	34%	28%	50%	38%
Recent development of new products/services	**27%**	29%	19%	33%	35%
Business growth	**26%**	23%	22%	33%	N/A
Recent introduction of new working practices	**16%**	17%	14%	17%	35%
(Other)	**15%**	13%	16%	17%	1%
Succession replacement/aging workforce	**13%**	9%	13%	17%	N/A
Increased competitive pressure	**12%**	11%	9%	17%	24%

Base: All businesses reporting that they have internal skills gaps

In Table 3.5 we report the specific skills that Gloucestershire employers report needing to improve in their existing workforce. Fully 71 per cent of those reporting skills gaps identify specialist skills or knowledge as being the area that needs improving in their existing staff, which is the same rank order (1st) as the 2017 ESS, although with a slightly higher incidence (65 per cent in the 2017 ESS[16]).

[15] Here we report gaps as the incidence, taking the base as the number of establishments who have identified skills gaps. The method of calculation varies slightly from that reported in the 2017 ESS, and so we do not compare per centages but use rank order as the metric for comparison.

[16] We note that the higher incidence may be an artefact of the question, as the 2017 ESS constrained respondents to two choices, whereas it was an unconstrained multiple response option in the 2018 Gloucestershire survey.

Table 3.5: Which, if any, of the following skills do you feel needs improving?

	Number	Per cent	(Micro)	(SME)	(Large)	ESS 2017
Specialist skills or knowledge needed to perform the role	315	71%	56%	72%	83%	47%
Adapting to new equipment or materials	107	26%	20%	24%	33%	43%
Knowledge of products and services offered by your organisation and organisations like yours	101	25%	20%	21%	33%	48%
Advanced or specialist IT skills (such as networking, programming/ coding)	52	18%	13%	9%	33%	30%
Leadership and management	94	18%	14%	24%	17%	N/A
Computer literacy / basic IT and digital skills	81	17%	19%	16%	17%	31%
Manual dexterity-for example, to mend, repair, assemble, construct or adjust things	39	16%	7%	9%	33%	13%
Soft skills e.g. basic communication skills, team working or time management	66	15%	15%	13%	17%	N/A
Knowledge of how your organisation works	37	11%	7%	8%	17%	30 %
Solving complex problems requiring a solution specific to the situation	37	8%	8%	8%		38%
More complex numerical or statistical skills and understanding	20	8%	5%	4%	17%	19%
Reading and understanding instructions, guidelines, manuals or reports	34	7%	6%	8%		26%
Basic numerical skills and understanding	32	7%	7%	7%		15%
Writing instructions, guidelines, manuals or reports	29	6%	6%	7%		22%
Communicating in a foreign language	9	2%	1%	3%		12%

Base: All businesses reporting that they have internal skills gaps

Table 3.6 reports the top three skills gaps by sector, and there are some clear variations that emerge. While specialist skills or knowledge needed to perform the role dominate in the survey sample as a whole, there are a few sectors where they are not the most in demand,

- Business administration and support services (3rd)
- Finance and insurance (2nd)
- Property (not in the top three)
- Retail (3rd)

Table 3.6: Top three skills gaps by sector

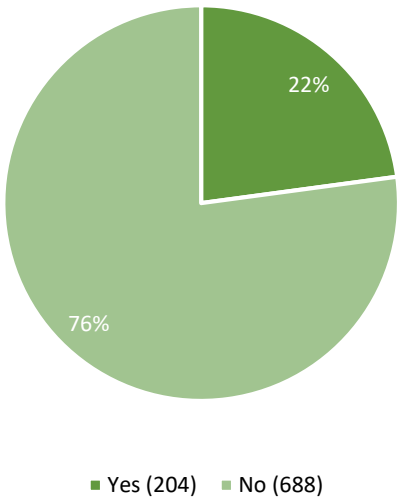
Sector	Advanced or specialist IT skills	Adapting to new equipment or materials	Basic IT and digital skills	Computer literacy	Knowledge of products and services	Leadership and management	Manual dexterity-	More complex numerical or statistical skills	Reading and understanding instructions, reports etc	Soft skills	Solving complex problems	Specialist skills or knowledge
Accommodation & food services		3			2	3				3		1
Agriculture		3	2	2								1
Arts & entertainment	3			3		2						1
Business admin	1			2								3
Construction	3				2							1
Education				3		2						1
Finance & insurance	3				1							2
Health					2					3		1
Information & communication	3	2										1
Manufacturing		2			3							1
Mining, quarrying & utilities		3			2							1
Motor trades		3		3	3						2	1
Professional, scientific & technical	2	3		3	3					3		1
Property						2			3	1	3	2
Public administration & defence	2							3				1
Retail				1	2							3
Transport & storage		3		3	2		3					1
Wholesale		3			2							1

The frequency count of first, second, and third mentions of skills shows that knowledge of products and services offered and computer literacy are the second and third most lacking skills within the existing workforce; crucially, the former is sector-specific, and, along with the dominance of the lack of specialist skills, show that training provision for workforce upskilling will need to be sector targeted. The latter, computer literacy, demonstrates the needs for generalist skills training across the workforce.

3.2 STEM

In the 2018 Gloucestershire survey, employers were specifically asked about their Science, Technology, Engineering or Maths (STEM) needs as part of the mapping of internal skills gaps. Almost one in four (22 per cent) of all respondents in the sample report that they have specific skills needs in the area (Figure 3.1).

Figure 3.1: Does your business have any particular skills needs in the area of STEM (Science, Technology, Engineering or Maths)?



Base: All businesses

Those STEM needs are correlated with the size of businesses (Table 3.7), with three quarters (75 per cent) of large businesses having particular STEM skills needs, compared to only one fifth (20 per cent) of micro businesses.

Table 3.7: Does your business have any particular skills needs in the area of STEM (Science, Technology, Engineering or Maths)?

	Micro	SME	Large
Yes	20%	24%	75%
No	78%	74%	25%

Base: All businesses

Particular needs for STEM skills vary quite widely by sector (Table 3.8). Nine sectors show above sample average needs in STEM, the highest being ICT (61 per cent of all businesses) and Manufacturing (45 per cent of all businesses); conversely, specific STEM needs are not widely felt in the Health (4 per cent) and Accommodation and food services (6 per cent) sectors

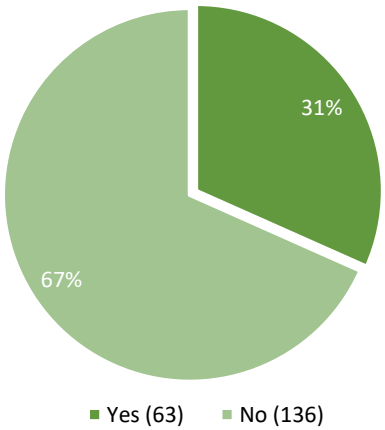
Table 3.8: STEM needs by sector

Row Labels	Yes	Total	Per cent
Information and Communication	20	33	61%
Manufacturing	77	170	45%
Professional, scientific, and technical	20	59	34%
Property	3	9	33%
Public administration and defence	1	3	33%
Wholesale	9	27	33%
Finance and insurance	2	7	29%
Construction	20	74	27%
Transport and storage	5	19	26%
Survey average	*204*	*909*	*22%*
Mining, quarrying & utilities	3	17	18%
Business administration and support services	4	26	15%
Retail	7	49	14%
Agriculture, forestry, and fishing	3	24	13%
Arts, entertainment, recreation, and other services	5	48	10%
Motor Trades	3	29	10%
Education	13	147	9%
Accommodation & food services	4	68	6%
Health	3	73	4%

Base: all businesses

Of the 204 businesses identifying particular needs in the area of STEM, 63 (31 per cent) stated that they are having difficulty meeting those needs (Figure 3.2).

Figure 3.2: Are you having difficulties meeting these skills needs?



Base: All businesses

We cross-tabulated the incidence of particular skills needs in the area of STEM by HTV vacancies (Table 3.9), and the results reveal that businesses with particular needs in the area of STEM are more likely to have HTF vacancies (58 per cent) than businesses who have no particular STEM needs (46 per cent). We found that these results are statistically significant at the .05 level[17], meaning that there is a correlation between STEM needs and the prevalence of HTF vacancies. Unsurprisingly, it is particularly acute in the Information and communication sector, where fully 41 per cent of all the companies with vacancies are finding them hard to fill and also have particular STEM needs.

Table 3.9: STEM needs cross-tabulated by Hard to fill vacancies

Hard to fill vacancies?					
STEM needs	No		Yes		Total
No	249	54%	208	46%	457
Yes	53	42%	74	58%	127
Total	302	52%	282	48%	584

Base: all businesses with vacancies

National research has shown that STEM skills shortages are particularly prevalent in certain occupation groups (e.g. Professional occupations) and can create pockets of HTF vacancies; for example, the 2015 ESS found that 43 per cent of vacancies for Professional occupations in so-called SRET sectors (Science, Research, Engineering, and Technology).

In table 3.10, we compare the rank order of the sectors which are experiencing problems meeting STEM needs against the rank order of sectors by the prevalence of the highest skilled occupational groups (data presented in Table 2.2).

Table 3.10: Rank order of difficulty meeting STEM needs against rank order of proportion of staff in higher occupational sectors.

Row Labels	Rank of difficulty in meeting STEM needs	Rank of staff in highest occupational groups
Information and Communication	1	1
Public administration and defence		2
Professional, scientific, and technical	2	3
Business administration and support services	3	4
Finance and insurance		5
Property		6
Construction	7	7
Motor Trades		8
Manufacturing	8	9
Mining, quarrying & utilities	10	10
Education	4	11

[17] Using a chi-square test

Row Labels	Rank of difficulty in meeting STEM needs	Rank of staff in highest occupational groups
Agriculture, forestry, and fishing	5	12
Health		13
Wholesale	13	14
Transport and storage	12	15
Retail	9	16
Arts, entertainment, recreation, and other services	6	17
Accommodation & food services	11	18

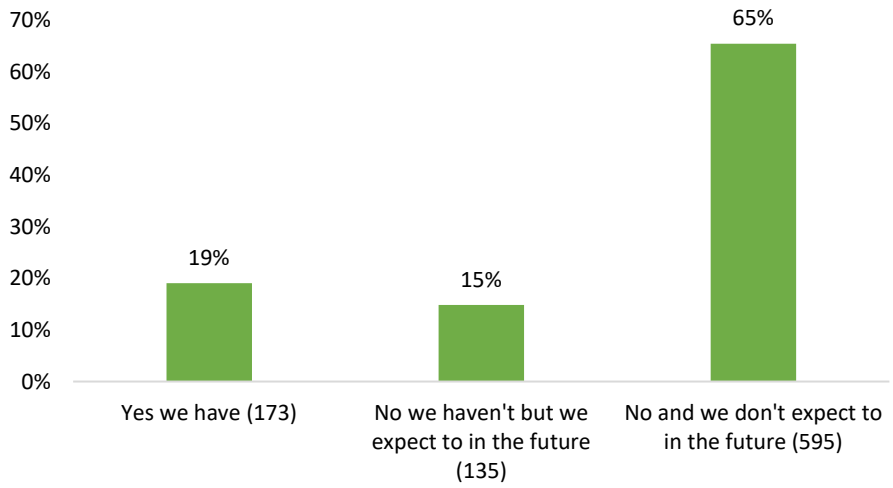
Base: all businesses having difficulty meeting STEM needs

These data show a very strong correlation between difficulties meeting STEM needs and the ranking of sectors in terms of the proportion of their staff in higher level occupation groups. These findings echo those of the national ESS 2013, which concluded that there is not so much a systemic shortage of STEM skills across the breadth of the economy as pockets of shortages in key sectors and among specific occupational groups.

3.3 Skills impact of Brexit

Finally, in terms of mapping current skills challenges in the Gloucestershire labour market and economy, businesses were asked if they are experiencing, or expect to experience any skills impact from the (June 2016) decision to leave the European Union. Nineteen per cent (173/909) say that they have already experienced impacts, with a further 15 per cent (135/909) reporting that they expect to feel skills impacts from Brexit. However, the majority of businesses in the survey (65 per cent, 595/909) report that they do not expect to see Brexit impacts (Figure 3.4).

Figure 3.4: Have you noticed, or do you expect any impact on your business from the UK's decision to leave the EU?



Base: All businesses

We did not find much variation in this pattern by business size, but there is considerable variation by sector (Table 3.11). If we examine the sectors that fall above the survey average in terms of expected Brexit impacts, we note that,

- *Wholesale*, *Agriculture*, and *Accommodation and food services* are high churn, high seasonality and low skills sectors with a high demand for elementary occupational group workers;
- *Retail* and *Property* are sectors that do **not** have a high demand for sector specific specialist skills
- *Manufacturing* is an export driven sector with high levels of hard to fill and SSV.

Table 3.11: Brexit impacts, by sector

Sector	No Brexit impacts
Wholesale	39%
Agriculture, forestry, and fishing	40%
Retail	50%
Manufacturing	50%
Property	55%
Accommodation & food services	57%
Mining, quarrying & utilities	59%
Survey average	*65%*
Public administration and defence	67%
Motor Trades	69%
Business administration and support services	70%
Professional, scientific, and technical	71%
Construction	72%
Arts, entertainment, recreation, and other services	73%
Information and Communication	73%
Transport and storage	74%
Health	78%
Finance and insurance	86%
Education	87%

Base: all businesses

To look at this in more detail, companies were asked to report the per centage of their workforce that are non-UK nationals and what proportion of their workforce are non-UK nationals and from the EU. The data are displayed in Table 3.12, ranked by the sectors with the highest non-UK and EU proportions of their workforces.

Table 3.12: Proportion of staff from Non-UK and EU countries, by sector

Sector	Non-UK	EU
Mining, quarrying & utilities	19%	15%
Agriculture, forestry, and fishing	13%	13%
Accommodation & food services	16%	11%
Property	10%	10%
Health	15%	8%
Transport and storage	11%	8%
Manufacturing	9%	7%
Motor Trades	8%	6%
Professional, scientific, and technical	8%	4%
Public administration and defence	17%	4%
Wholesale	6%	4%
Construction	5%	3%
Education	5%	3%
Arts, entertainment, recreation, and other services	5%	3%
Retail	4%	2%
Business administration and support services	4%	2%
Information and Communication	8%	1%
Finance and insurance	0%	0%

Base: All businesses

The data reflects a correspondence between the experience or anticipation of Brexit impacts and the proportion of the workforce employed who are from EU countries. It is noteworthy that this is an effect specifically addressing EU workers, not non-UK nationals; for example, the per centage of non-UK workers employed in the Public administration and defence (17 per cent) and Information and communication (8 per cent) is quite high, but the low numbers of those non-UK workers from the EU (4 per cent and 1 per cent respectively) correlates with the experience or expectations of low Brexit impacts.

4 Training and Apprenticeships

How are employers responding to skills shortages and skills gaps? In this section, we explore the use of training and apprenticeships as mechanisms for addressing skills challenges. Research has shown that training is the most common mechanism that employers use to tackle skills gaps among their workforce, a finding that is echoed by the responses to this survey reported in Section 2 of this report.

4.1 Training demand and delivery

Over two-thirds of employers in the Gloucestershire sample (625/909) say that they have an annual appraisal process that considers the workforce development of their staff. Sixty-seven per cent (611/909) of businesses in the sample have funded or arranged training for their existing staff in the last twelve months, which compares with the 66 per cent reported in the 2017 ESS. Training is more prevalent by business size (Table 4.1).

Table 4.1: At least one of your staff undergone training in the last 12 months, by size

	Micro	SME	Large
Yes	54%	80%	88%
No	46%	20%	13%
Don't know	1%	2%	

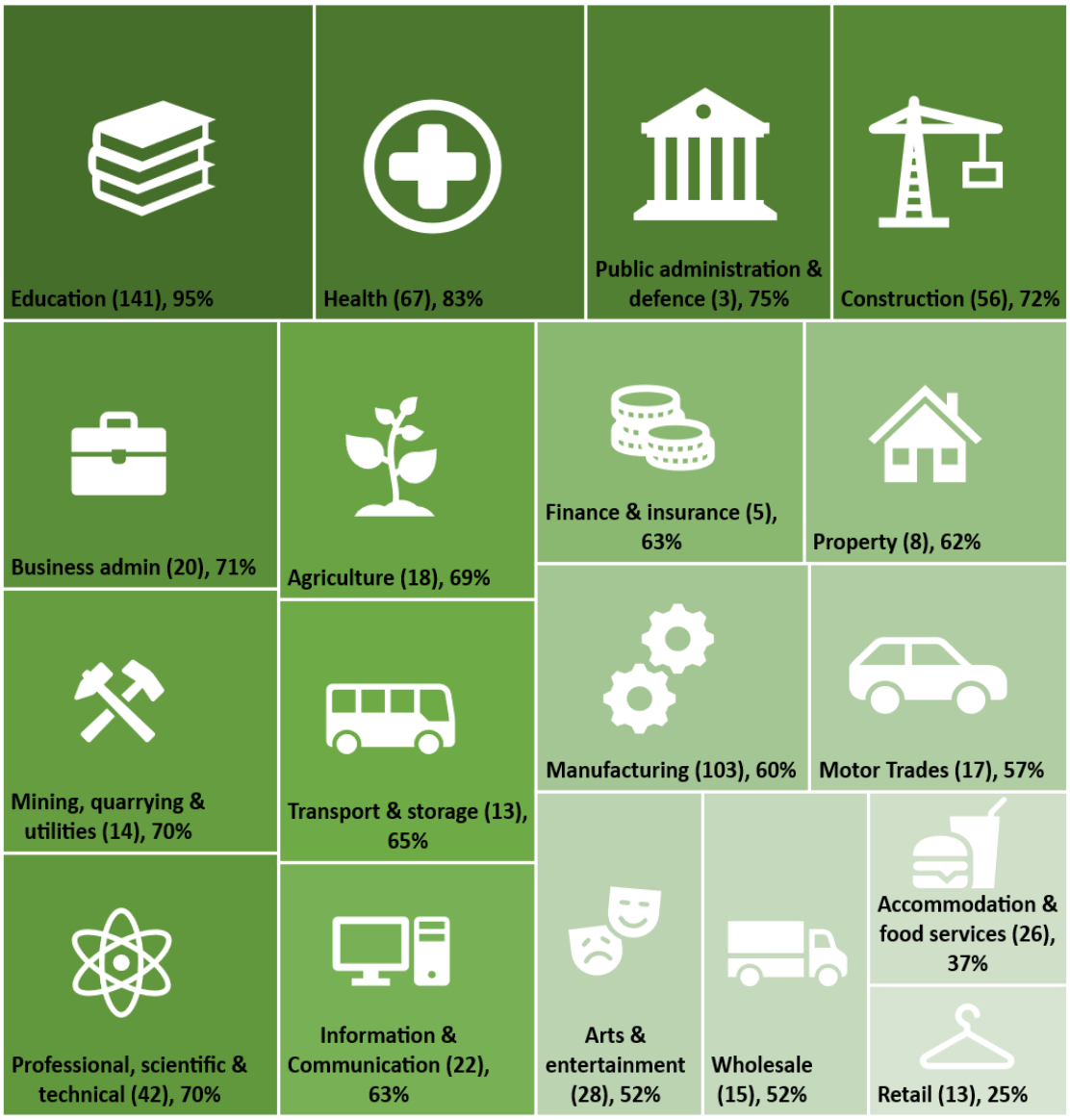
Base: All businesses

The take up of training is variable by sector (Figure 4.1), with higher than average training rates in:

- Education
- Health
- Public administration and defence
- Construction
- Business administration
- Agriculture

Although there is not a perfect correspondence, we do note that some of these sectors (notably Health, Public administration and defence, and Agriculture) are also sectors that are experiencing high SSV.

Figure 4.1: At least one of your staff undergone training in the last 12 months, by sector



Base: All businesses

The most prevalent type of training provided through employers is job specific training (Table 4.2), followed by Health and safety and induction training. While the rate of job specific training is comparable to the 2017 ESS, the data suggest that employers in Gloucestershire are less likely to provide training in management, new technologies, or supervision, than elsewhere. These results are placed into greater relief by benchmarking against other surveys that Wavehill have conducted in other Local Enterprise Partnerships/Unitary Authorities, which suggest that the lower rates of training provision in new technologies and management and supervision may be more unique to Gloucestershire than shared with other areas.

Table 4.2: Types of training benchmarking[18]

	Gloucestershire	2017 ESS	Liverpool	Devon	WoE
Job Specific	85%	84%	89%	91%	81%
Health and Safety/First Aid	70%	74%	77%	79%	62%
Basic induction training	51%	65%	64%	63%	53%
Training in a new technology	28%	48%	40%	44%	45%
Advanced induction training	21%	36%	25%	22%	14%
Management	28%	35%	34%	38%	27%
Supervisory	16%	-	28%	37%	19%

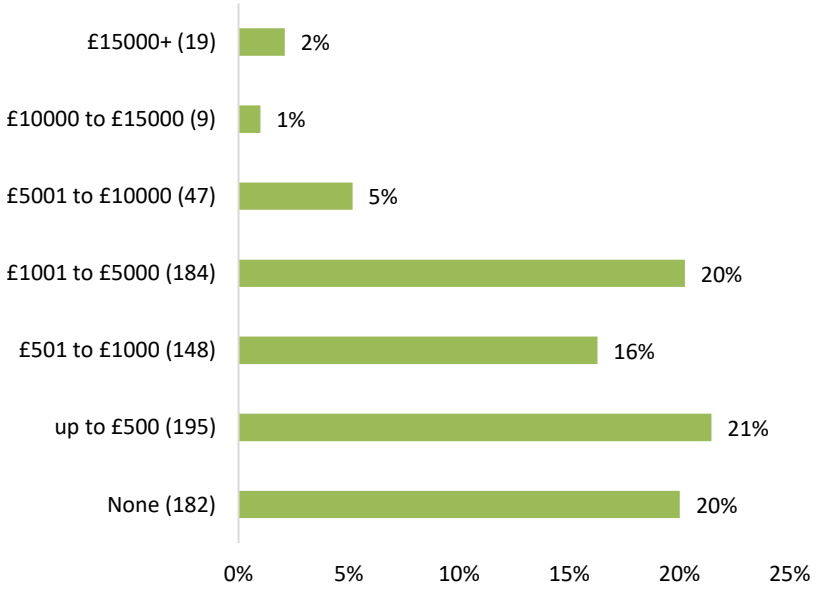
Base: Businesses reporting a member of staff had undergone training in the last year

These figures may be referenced against the findings in Sections 2 and 3 of this report, in which it was reported that managerial skills are among those where respondents see the fewest challenges and gaps.

4.2 Training budgets and programmes

Eighty per cent of the businesses in the sample report having a training budget to support workforce development (Figure 4.2). Collectively, the businesses in the sample spend up to £2.24 million on training per year; scaling up to the Gloucestershire economy, we estimate that Gloucestershire employers spend up to £73 million per year on staff training.

Figure 4.2: Which of the following reflects your total allocated annual training budget for this site?

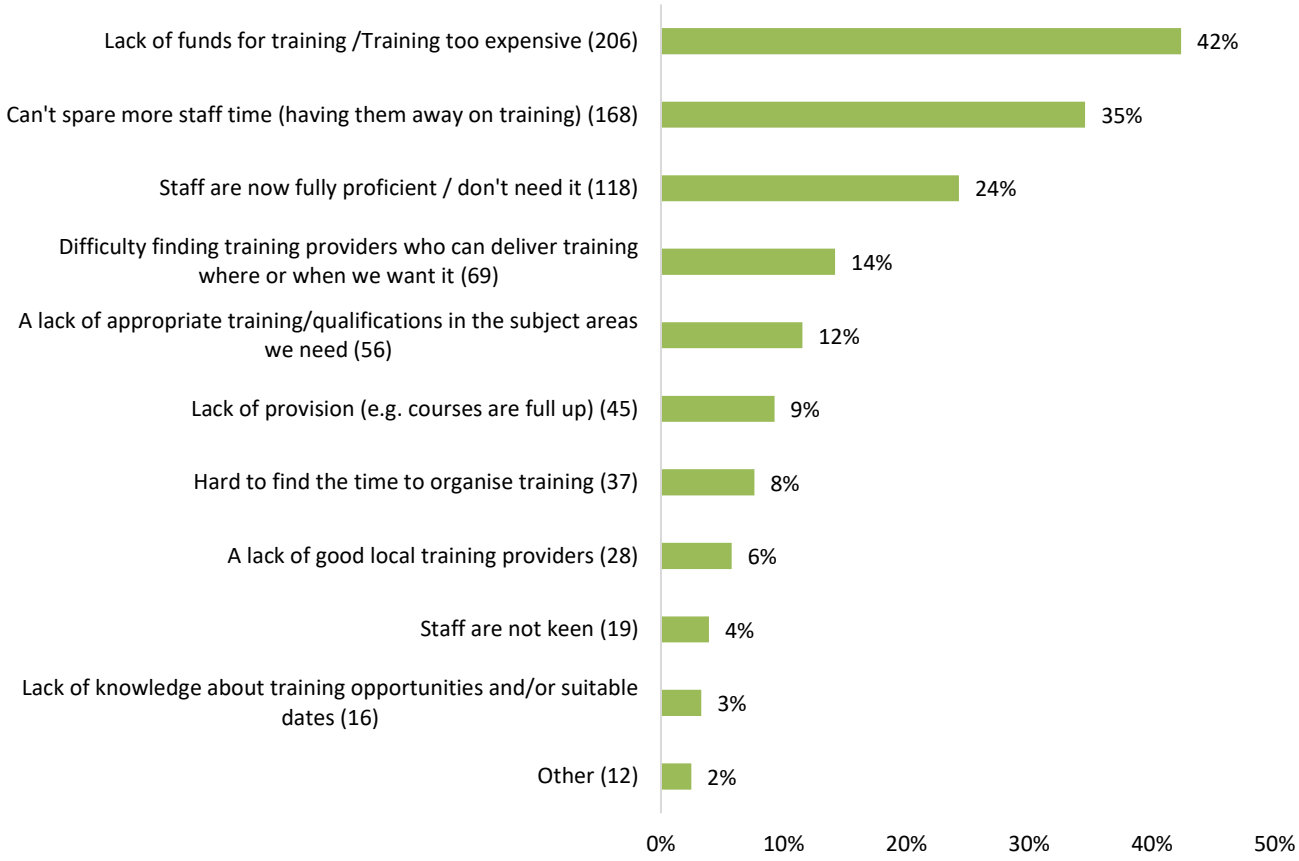


Base: All businesses

[18] 'Supervisory' has been removed as a type of training in ESS 2017.

More than half the sample (491/909, 54 per cent) identify at least one barrier to providing training to current staff. The pattern of those barriers is reflected in Figure 4.3. Forty-two per cent say that funding is a major barrier to training provision for their existing workforce. This figure is lower than the 51 per cent figure reported in the 2017 ESS[19], although different question wording makes direct comparison unreliable.. Outside of funding, supply side barriers to training are cited by approximately a quarter of those who have identified barriers, and resource and motivation barriers by over half of them. We note that supply side factors are only cited by four per cent of the sample of the 2017 ESS, again with the caveat that the sampling methodology and question wording are different, suggesting that there may be more concern about the extent and appropriateness of training provision in Gloucestershire.

Figure 4.3: What barriers, if any, have prevented your business providing training to current staff?



Base: Those who identified barriers to providing training (486)

[19] In the Gloucestershire survey, the question of barriers was asked of all businesses, whereas the question in the 2017 ESS was only asked of those who said that they would like to provide more training than they currently do (2017 ESS figures have been recalculated against the base to provide standardisation across the two). We note that this would tend to underinflate the Gloucestershire numbers compared to the 2017 ESS.

4.3 Training suppliers used by businesses

Table 4.3 shows that external training provision in Gloucestershire has been mainly centred around the offer from independent training providers, with 68 per cent of the sample who have accessed external training using an independent training provider. The take up of training provision from Further Education and Higher Education providers appears to be much more dependent on business size, with FE colleges being used by large businesses (57 per cent) and SME (24 per cent) much more than micros (13 per cent); the gap is greater still for Higher Education institutions. The figures for FE and HE training provision are reflective of the 2017 ESS, which found that 15 per cent of fees spent on training go to FE and HE providers; we estimate that approximately 23 per cent of the £73 million spent on training in Gloucestershire goes to FE or HE provision, or approximately £16.8 million.

It is important to recognise that the survey did not ask where those FE and HE providers are located, and large businesses may potentially be accessing HE training provision from institutions based outside the LEP area.

Table 4.3: In the last 12 months, have your staff been on training provided by any of the following?

	Micro	SME	Large
Independent training providers	78%	86%	86%
Further Education Colleges	13%	24%	57%
Universities and Higher Education	8%	7%	57%
None of the above	15%	8%	14%

Base: Businesses reporting a member of staff had undergone training in the last year

4.4 Apprenticeships and Placements

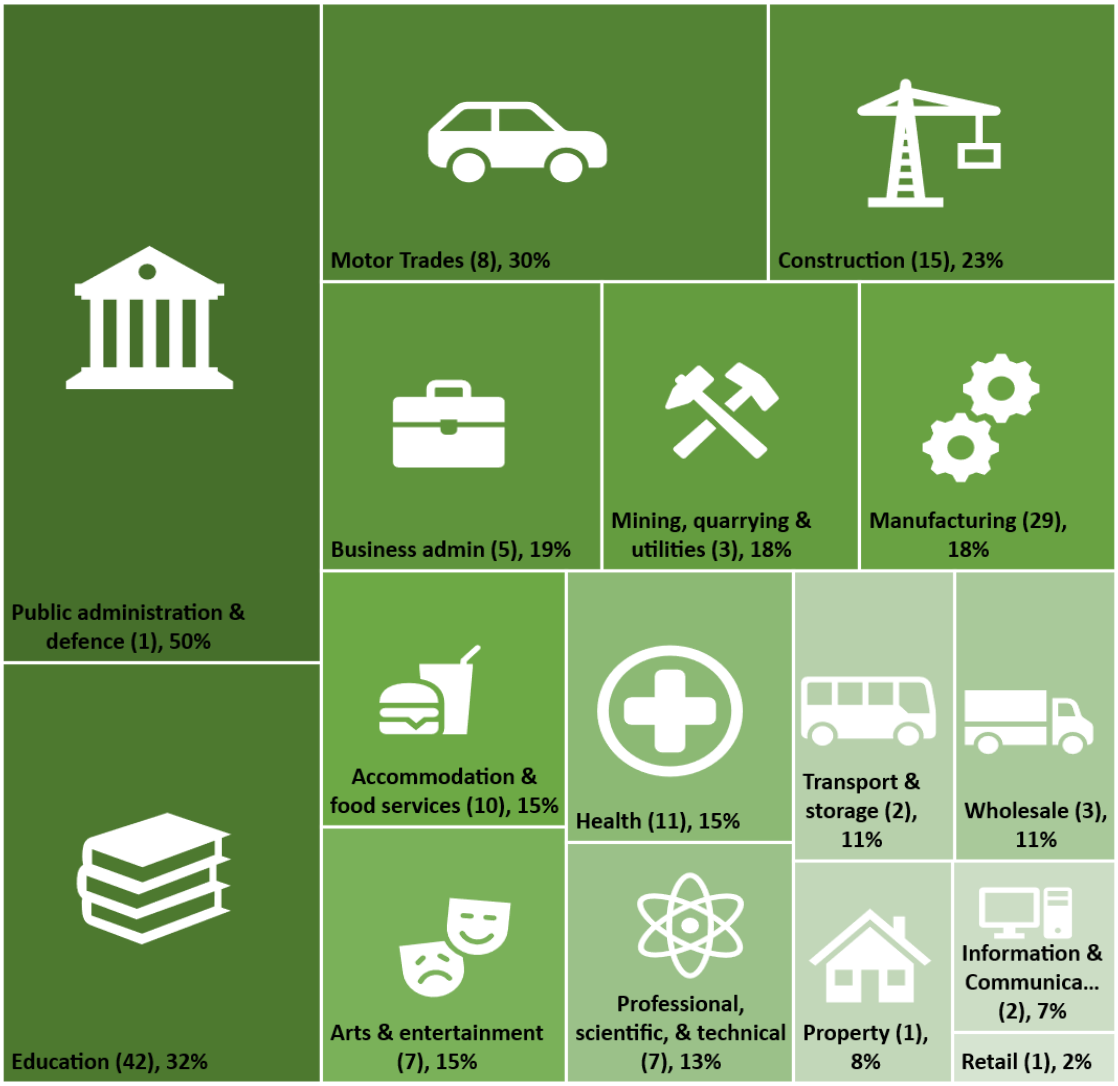
A key element of the current landscape for training provision is Apprenticeships. Since the introduction of the Apprenticeship levy in April 2017, businesses have been incentivised to adopt both internal skills provision (upskilling) and acquisition of skills externally through the labour market (recruitment) via the platform of Apprenticeships.

National data has suggested that employers remain somewhat unclear about the transition to the levy-paying Apprenticeship framework, and the Gloucestershire survey confirms this.

- A narrow majority (54 per cent, 489/875) report that they are aware of the Apprenticeship levy
- Only 19 per cent of those aware of the levy are also aware that employers pay ten per cent of the cost of training Apprenticeships
- Five per cent of the sample (41/875) report paying into the levy (i.e. having a wage bill over £3 million).
- Sixty-three per cent of those paying into the levy (26/41) say that they intend to use those funds

The survey shows that 17 per cent of employers report using Apprenticeships (147/846), and the sectoral distribution is shown in Figure 4.4. We note that the high report of Apprenticeship take-up rates in the Education and Public administration and defence sectors mirrors national aspirations for those sectors, yet the lower-than-sample average for the Health sector (15 per cent) indicates that there is progress to be made there in the Gloucestershire area if national projections are to be reflected in local economic trends.

Figure 4.4: Do you currently employ any apprentices? Broken down by sector



Base: All businesses

Businesses who report using Apprenticeships as part of their training provision were asked to give an estimate of the number of Apprentices that they currently employ at the different levels (NVQ2 to NVQ7), and these data are shown in Table 4.4.

Table 4.4: Number of businesses employing Apprentices at different levels

Number of Apprenticeships	Intermediate (Level 2)	Advanced (Level 3)	Higher / Degree (Levels 4 to 7)
1	45	40	3
2-4	40	42	6
5-9	5	5	1
10+	7	2	0
Total number of businesses	97	89	10

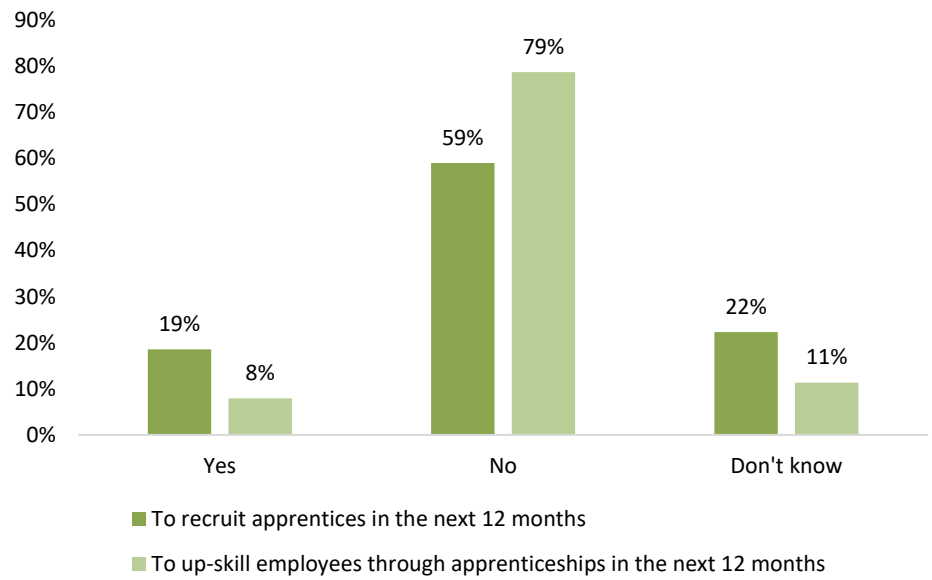
Base: all businesses employing Apprenticeships

We estimate that there are up to 369 Apprentices employed across the businesses in the Gloucestershire survey, including:

- 270 at NVQ level 2
- 89 at NVQ level 3
- 10 at NVQ levels 4 to 7

All businesses in the sample were asked about their plans for the future regarding Apprenticeships (Figure 4.5). Twenty-eight per cent of businesses said that they plan to use Apprenticeships over the coming year (200/706), while a sizeable proportion are unsure whether they will recruit Apprenticeships (22 per cent) or upskill their existing workforce through them (11 per cent). Of the 169 businesses who say they are planning to recruit, 76 of them (43 per cent) do not currently use Apprenticeships in their workforce training and development; of the 72 businesses who report that they intend to upskill existing workers through Apprenticeships, 42 of them (58 per cent) do not currently use Apprenticeships. Together, these businesses represent about 13 per cent of the overall survey sample, suggesting that there is potential for an expansion of Apprenticeship provision across the Gloucestershire region.

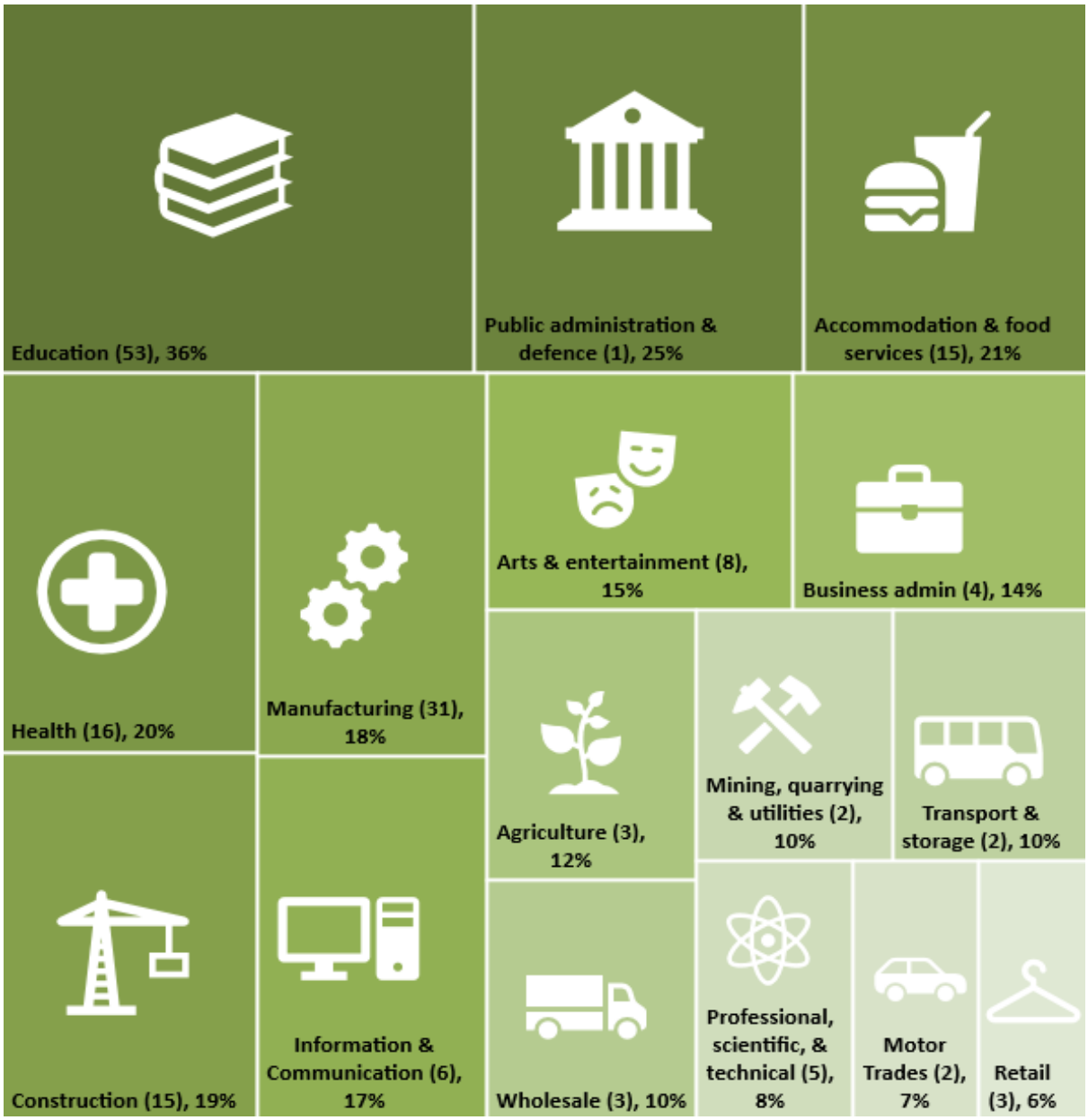
Figure 4.5: Apprentices, levy and future plans – Do you plan to…?



Base: All businesses

The sectors represented by these plans to recruit are displayed in Figure 4.6. While caution should be exercised due to low frequency counts, it is notable that the aspiration to take on Apprenticeships seems to broadly correlate with the sectors that are experiencing the highest skills challenges, as analysed in Sections 2 and 3 of this report. These results suggest that employers may be turning to Apprenticeships as an organisational pathway to overcoming skills gaps and shortages which exist in the local labour market.

Figure 4.6: Do you plan to recruit apprentices in the next 12 months? Broken down by sector



Base: All businesses

For businesses reporting that they plan to recruit Apprentices over the coming year, they were asked which (if any) age groups that they are likely to recruit (Table 4.5). While the predominant target group are 19-24-year olds, we note that almost two in three potential recruiters say that they will recruit older workers in the 25 years and over age group (63 per cent).

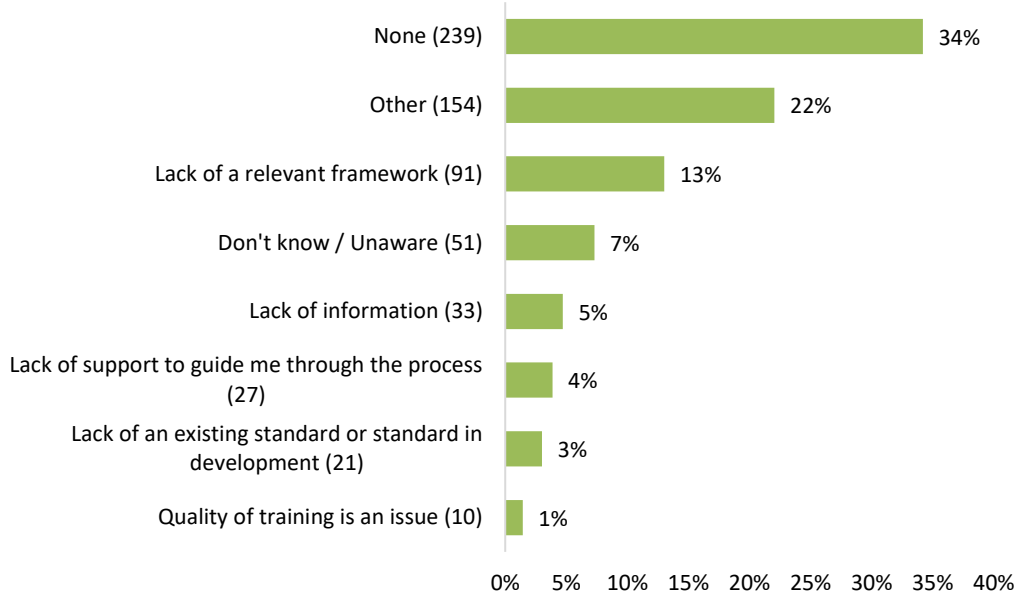
Table 4.5: Target groups for Apprenticeship recruitment

	Number of businesses	Per centage of those planning to recruit Apprentices
16 to 18	116	69%
19 to 24	144	85%
25+	107	63%

Base: businesses planning to recruit Apprentices in the next year (169)

Finally, businesses who do not currently employ apprentices were asked to identify barriers that they perceive to employing Apprentices (Figure 4.7). The largest single response group (34 per cent) report that they do not perceive any barriers to doing so, again suggesting that the Apprenticeship market is expanding among employers and that some of the negative perceptions surrounding Apprenticeships that have been reported nationally in the last few years are beginning to dissipate, at least in the Gloucestershire labour market area.

Figure 4.7: What are the barriers to employing apprentices?



Base: All businesses reporting that they do not currently employ apprentices

4.5 Placements

Participants in the survey were also asked if they have offered placements in the last 12 months, and almost a quarter of respondents (24 per cent, 216/891) said that they have. Those that have not offered any form of placements were asked if they are interested in doing so, and 221 out of the 675 not offering placements (33 per cent) report that they are interested in doing so. Again, this points to the potential for the expansion of work-based placements across Gloucestershire and represents an additional route to upskilling the workforce across the region and equipping workforce entrants with the skills to succeed in the local labour market.

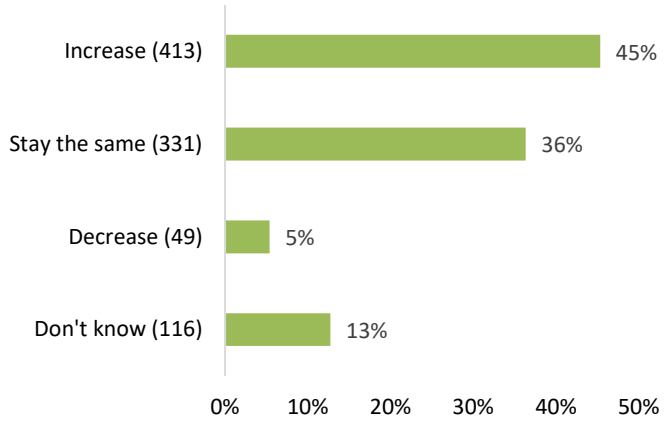
5 Turnover and R&D investment

As part of the mapping of the skills gaps, challenges, and potential across the Gloucestershire region, the survey asked businesses about their outlook for the immediate future (the next 12 months).

5.1 Turnover

The plurality of businesses responding to the question about their expectations for the immediate future (45 per cent) report that they expect their turnover to increase (Figure 5.1). Only a small number expect their turnover to decrease (five per cent, 49/909).

Figure 5.1: Turnover expectations for the next 12 months



Base: all businesses

There was little variation by business size in optimism (increased turnover), but there were some quite marked differences by sector (Table 5.1).

Table 5.1: Business optimism (increased turnover in the next 12 months), by sector

Sector	Increase	Stay the same	Decrease	Don't know
Business administration and support services	78%	19%	0%	4%
Wholesale	71%	29%	0%	0%
Mining, quarrying & utilities	61%	22%	6%	11%
Information and Communication	59%	18%	12%	12%
Finance and insurance	57%	29%	0%	14%
Manufacturing	56%	39%	3%	3%
Professional, scientific, and technical	53%	25%	3%	19%
Property	50%	25%	0%	25%
Accommodation & food services	48%	35%	3%	14%
Construction	47%	39%	1%	13%
Motor Trades	45%	45%	3%	7%

Sector	Increase	Stay the same	Decrease	Don't know
Survey sample	45%	36%	5%	13%
Arts, entertainment, recreation, and other services	43%	17%	9%	30%
Retail	43%	39%	4%	14%
Public administration and defence	33%	0%	33%	33%
Agriculture, forestry, and fishing	32%	56%	8%	4%
Transport and storage	32%	32%	11%	26%
Education	30%	48%	12%	10%
Health	24%	45%	4%	28%

Base: all businesses

We looked at the distribution of business optimism by primary markets (Table 5.2) and found that there is an almost perfect correlation between primary market and expectations for turnover increase in the coming 12 months. Businesses with primarily local markets have expectations for turnover increase (35 per cent, 145/412)) that are half those of businesses with primarily global markets (70 per cent, 64/92). These findings point to the importance of market expansion as the platform for businesses increasing their turnover and income.

Table 5.2: Business optimism (increased turnover in the next 12 months), by primary market[20]

Row Labels	Gloucestershire	South West	England	UK	EU	Globally	Total
Decrease	8%	3%	5%	4%	0%	1%	5%
Increase	35%	53%	43%	54%	67%	70%	45%
Stay the same	44%	33%	43%	30%	28%	18%	36%

Base: all businesses

Further evidence for the growth impact of expanded markets was provided when businesses were asked about the reasons for their turnover increase expectations (Table 5.3).

Table 5.3: Reasons for expecting a turnover increase (multiple response)

	Number of businesses	Per cent
Growth in existing markets	283	69%
New market	151	37%
Increased performance	144	35%
New product	95	23%
New technology	45	11%
New process	39	9%
Other	39	9%

Base: all businesses expecting a turnover increase

Growth in markets or new markets account for over half (54 per cent, 434/796) of the responses generated by this question, clear evidence that businesses link turnover to markets and market access.

[20] Excludes those responding 'Don't Know'

5.2 Research and development

In the survey sample, 197 businesses (22 per cent) responded that they invest in research and development. Of those businesses, the plurality (44 per cent, 87/197) spend between three-quarters and the whole of their R&D budget in Gloucestershire; 24 businesses (12 per cent) report that they do not spend any of their R&D investment in the Gloucestershire area (Table 5.4).

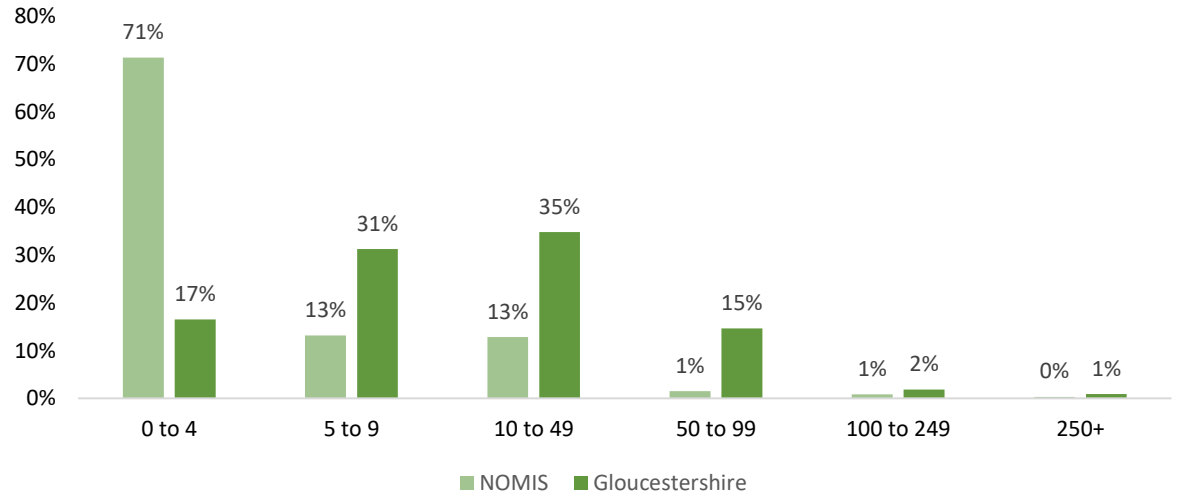
Table 5.4: Approximately percentage of your R&D investment is spent in the Gloucestershire area?

Per centage of R&D investment spent in the Gloucestershire area	Number of businesses	Per cent
0	24	12%
1 to 25	26	13%
26 to 50	10	5%
51 to 75	8	4%
76 to 100	87	44%

Annexe A: Firmographics

This annexe provides data for the survey sample, benchmarked against Gloucestershire business counts (derived from the IDBR and accessed through Nomis) and other recent surveys undertaken by Wavehill.

Figure A.1: Detailed size profile, survey data vs Gloucestershire Business Counts



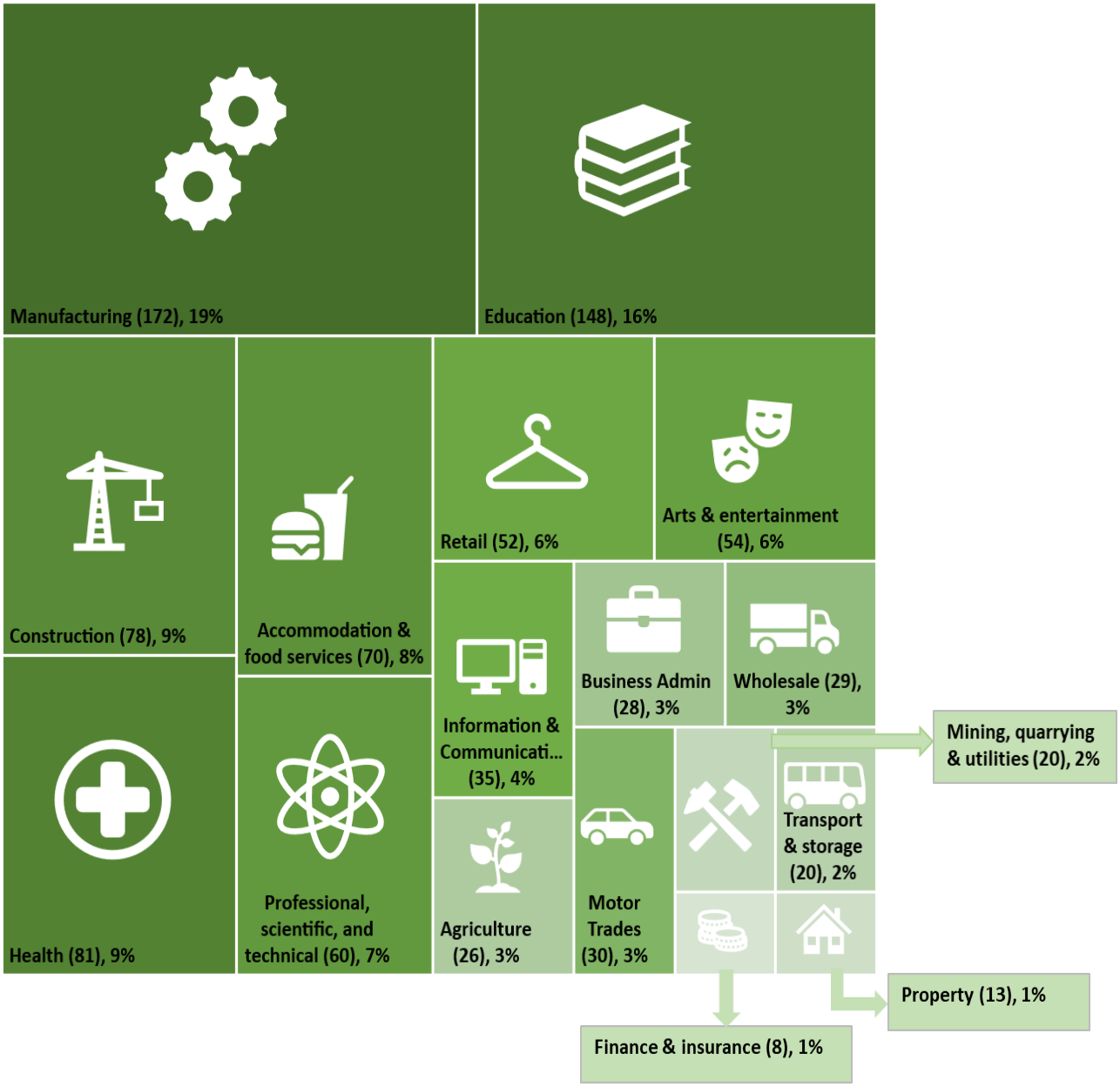
Source: IDBR(accessed through Nomis)/Wavehill. All figures are rounded.

Table A1: Size profile benchmarks

Number of employees (local unit)						
Survey	**2 - 4**	**5 - 9**	**10 - 49**	**50 – 99**	**100 - 249**	**250+**
Gloucestershire Countywide Business Survey (2017)	15%	31%	47%	3%	2%	1%
Newport Business Skills Survey (2017)	42%	18%	30%	5%	2%	3%
Liverpool City Region Combined Authority Skills Survey (2017)	18%	26%	44%	7%	3%	2%
Devon Workforce Skills Survey (2017)	77%	13%	9%	1%	0%	0%
West of England Employer Skills Survey (2016)	42%	26%	26%	3%	2%	1%
Devon Workforce Skills Survey (2016)	77%	12%	9%	1%	0%	0%

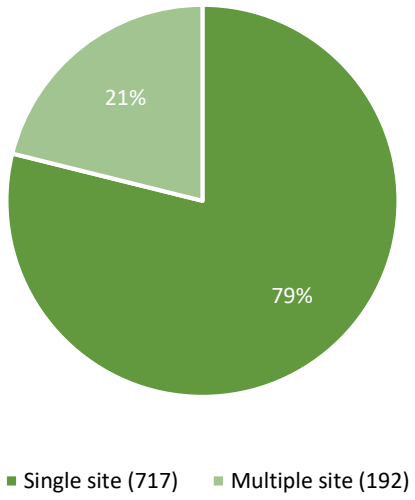
Source: Wavehill

Figure A.2: Business sector



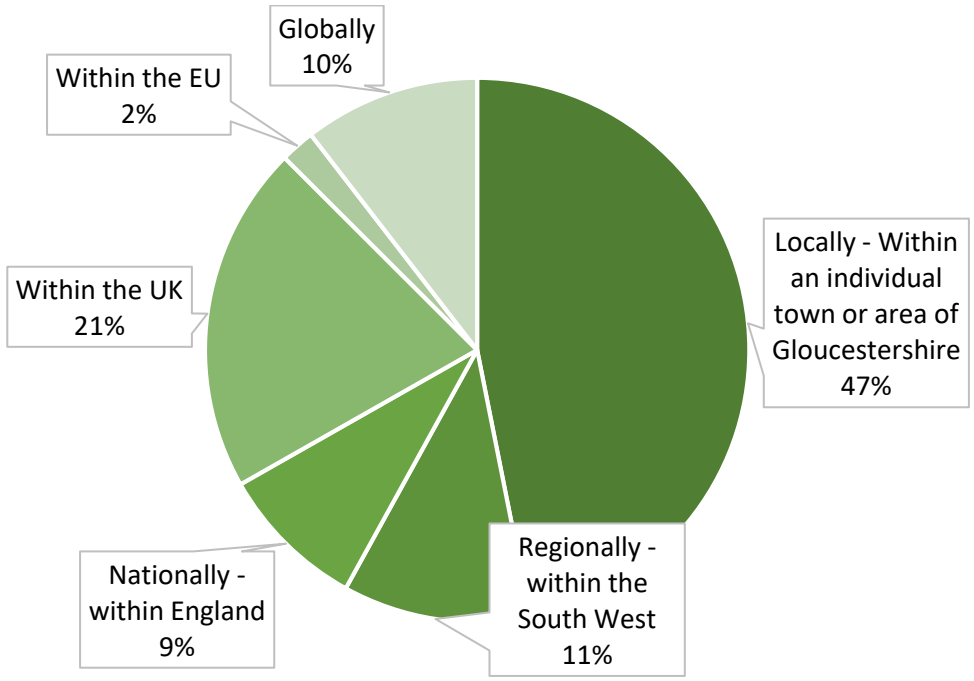
Base: All businesses

Figure A.3: Single versus multi-site businesses



Base: All businesses

Figure A.4: Business primary markets



Base: All businesses

Table A2: Business primary markets benchmarks

Survey	Locally	Regionally	Nationally	UK	Internationally
Gloucestershire Countywide Business Survey (2017)	47%	11%	9%	21%	13%
Newport Business Skills Survey (2017)	54%	11%	4%	16%	2%
Liverpool City Region Combined Authority Skills Survey (2017)	65%	24%	4%	6%	1%
Devon Workforce Skills Survey (2017)	66%	13%	6%	6%	9%
West of England Employer Skills Survey (2016)	35%	20%	14%	20%	12%

Source: Wavehill

wavehill

social and economic research