



Skills demand in the Cambridge area

Attracting and retaining skills

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EUROPE

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Preface

Cambridge Ahead and the Cambridgeshire and Peterborough Combined Authority have asked RAND Europe to conduct a study examining the evidence on skills shortages in the regional labour pool. The objective of this study is to inform the discussion on the skills that require development to meet the needs of the present and future labour market in Cambridge and its surrounding areas.

This report presents evidence based on data from the Employer Skills 2015 survey carried out by the UK Commission for Employment and Skills. Research findings will be used to inform policymaking at the local and national level.

Executive summary

The Greater Cambridge Greater Peterborough (GCGP) region is a highly prosperous area, with prodigious job growth. Assessing and understanding the skills demand of the present and future local labour market is therefore of great importance to inform policy discussions about skills development at the local level.

This report, commissioned by Cambridge Ahead and the Cambridgeshire and Peterborough Combined Authority, uses the Employer Skills 2015 survey carried out by the UK Commission for Employment and Skills to assess the skills demand from the perspective of businesses. Analyses are conducted for four industry sectors that were considered particularly relevant for the local labour market in the region, namely *Life Sciences*, *Information and Communications*, *Health and Social Work* and *Construction*.

The analyses are guided by four high-level research questions examining: (1) the level of skills demand; (2) the main causes for difficulties in meeting the skills demand; (3) what employers are doing to meet the skills demand; and (4) the impact of unmet skills demand/skills gaps on employers. Whenever feasible, analyses are focused on comparing situations between sectors, occupations and areas in the GCGP region, and comparing the local labour market situation with the rest of England.

Our analyses indicate that:

- Overall, employers in the GCGP region report having a similar share of vacancies and hard-to-fill vacancies as in the rest of England. However, the Life Sciences and the Information and Communications sectors, two of the priority sectors for the regional economy, experience a higher rate of vacancies and skills shortages than in other parts of England. Out of all regions the GCGP ranks among the top 18% of all LEPs and Cambridge ranks in the top 11% of all LEAs with the highest proportion of employers with available vacancies in the Life Science sector. In addition, Peterborough ranks in the top third of all LEAs reporting the highest proportion of employers with available vacancies in the Information and Communications sector. Given the importance of these sectors for the regional economy, it is essential to address the skills demand challenges to ensure further growth in these sectors.
- Skills shortages are reported at both ends of the skills continuum – high-level and low-level skills. First, the share of available vacancies and hard-to-fill vacancies for professionals in the Cambridge region is much higher than in the rest of England. Since further demand is projected in professional and knowledge-intensive roles, an adequate supply of highly qualified workers is crucial for local business growth. Second, compared with other parts of England, employers in the Cambridge region report a higher unmet demand for low-level-skills occupations. Overall, Cambridgeshire ranks in the top 7% of all LEAs reporting the highest proportion of

establishments with hard-to-fill vacancies for elementary staff¹. It is important to ensure a sufficient supply of local workers with the skills required by local businesses.

- Finally, the skills gaps and hard-to-fill vacancies have greater impact on employers in the GCGP region than in the rest of England, in particular in the Life Sciences and Construction sectors. The main cause for difficulties in meeting the skills demand locally is the low number of applicants with the required skills. A potential solution is to provide more opportunities to upskill the local workforce, especially given that employers in the Cambridge area currently do not engage in the provision of training to the same extent as businesses in the rest of England.

¹ Elementary staff covers occupations that involve mostly routine tasks usually involving use of simple hand held tools and in some cases physical effort. Most do not require formal educational qualifications.

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1. Introduction

1.1. Study background

The Cambridge area is characterised by a large and diverse economy, ranging from highly prosperous knowledge-intensive industries with prodigious job growth to areas with a high concentration of low- and medium-skilled labour-intensive jobs in the agriculture and food-processing sectors. In 2016-17 the companies in the knowledge-intensive sectors² constituted 19.2% of all companies in the area twenty-miles radius from the centre of Cambridge; however, they provided employment to 26.7% of workers. Taking a broader perspective, with 40% of jobs in the Greater Cambridge Greater Peterborough (GCGP) region being in high-skilled roles and 21% in middle-skilled roles, the overall skills levels of GCGP is a strength.³

However, there are large differences between particular local areas within the region (Brown 2016; GCGP 2012). For instance, Cambridgeshire has a much higher proportion of people employed in high-skilled occupations than Peterborough and Great Britain on average. Overall, 52% of all employed people in Cambridgeshire have managerial, professional and technical occupations, compared with 38% in Peterborough LA and 46% in Great Britain. On the other hand, medium and low-skilled occupations are more prevalent in Peterborough: 43% of employees in Peterborough, 29% in Cambridgeshire and 34% in Great Britain hold such occupations.

The occupational differences to some extent reflect the qualification levels of the local working-age populations. Overall, 44% of the local population in Cambridgeshire has National Vocational Qualification (NVQ) level 4 or above, compared with just 27% in Peterborough and 38% in Great

² According to Centre for Business Research 2018 data the following four sectors constitute the knowledge-intensive sectors: (1) Information Technology and Telecoms, (2) Life science and healthcare, (3) High-tech manufacturing, (4) Knowledge-intensive services. Source: Centre for Business Research, Cambridge, May 2018, Table 2 Employment & turnover by broad sectors 2010-17. As of 7 June 2018: <http://www.cambridgeahead.co.uk/camclustermap/researchers/>

³ High-skilled roles defined by Standard Occupational Classification (SOC) 2010 major groups 1–3: (a) managers, directors and senior officials, (b) professional occupations, and (c) associate professional and technical. Low- and medium-skilled roles defined by SOC 2010 major groups 6–7: (a) caring, leisure and other service occupations, (b) sales and customer service occupations); and SOC 2010 major groups 8–9: (a) process plant and machine operatives, (b) elementary occupations. Data for October 2016 to September 2017 (ONS n.d.b).

Britain.⁴ The occupational differences are also reflected in earnings, with full-time workers in Cambridgeshire taking home gross weekly pay of £579.3 compared with £552.3 in Peterborough.⁵

In addition, there are also local differences in the labour market participation, with 81% of the local population in Cambridgeshire being economically active (including 79% in employment) compared with 78% of the local population in Peterborough (including 74% in employment).⁶ On the other hand, jobs density, defined as the jobs per resident aged 16 to 64, is higher in Peterborough, at 1.02, compared with 0.90 in Cambridgeshire and 0.84 in Great Britain overall.⁷ Understanding the composition of skills supply and demand at the local level is therefore essential to implement mechanisms to alleviate potential labour market imbalances.

The GCGP Enterprise Partnership has identified a number of priority areas and industries to further drive growth in the local economy and the local labour market. These areas, such as life sciences, research, technology (ICT and telecommunication), bio-medical, clean-tech and advanced manufacturing, have particular skills requirements (Brown 2016; GCGP 2012; GCGP homepage n.d.). The new Area Skills Strategy Proposal prepared by the Cambridgeshire and Peterborough Combined Authority sets out a framework for a skills strategy to further align skills supply and demand, identifying challenges and opportunities that local businesses face. The economic success of the Cambridge area is illustrated by the number of businesses locating in the region and creating high-skilled jobs which attract high-skilled professionals to the local labour market (GCGP 2012).

In addition, the sectoral approach in government strategy will create additional opportunities for business growth and employment, and demand for specific skills in sectors identified as high-priority areas, such as the life sciences, construction, automotive and creative industries sectors.⁸

Since further job growth is projected in professional and knowledge-intensive roles, one of the challenges of the local labour market is to maintain the supply of highly qualified workers to further contribute to innovation and economic growth. For instance, a study assessing the demand for skills in the UK science economy projects an increasing demand (replacement and new demand) from science industries over the next ten years for individuals at the varying skills levels (SIP 2016a; SIP 2016b).

Since the Life Sciences sector seems to be of particular importance for the Cambridge area in terms of its size and contribution to the local economy, it is important to examine how the supply of skills required for this sector meets the demands of local businesses. However, growth in highly skilled sectors also stimulates job creation in medium- and low-skilled occupations. These jobs are typically filled by people living locally; therefore, it is important to ensure that the local educational offer meets the skills demands of the current and future workforce. Identifying skills gaps and their concentration across particular sectors of the economy/skills levels is essential for policymakers to support businesses, for example by

⁴ Working-age population defined as those aged 16 to 64. Data for January 2016 to December 2016 (ONS n.d.b).

⁵ Data for 2017 (ONS n.d.b).

⁶ Data for October 2016 to September 2017 (ONS n.d.b).

⁷ Data for 2016. The density figures represent the ratio of total jobs to population aged 16–64. Total jobs include employees, self-employed, government-supported trainees and HM Forces (ONS n.d.b).

⁸ Department for Business, Energy and Industrial Strategy (2017).

planning education provision to ensure that employers gain access to the workforce with the required skills. From the current and future workforce perspective, knowing which skills are in demand can help individuals make informed decisions about their education choices to achieve success in their professional careers. This, in turn, can facilitate further economic growth at a regional level.

However, the skills supply and demand also depend on a number of factors external to businesses, e.g. the political and socio-economic situation in the UK. For instance, the UK's decision to leave the EU will inevitably bring consequences for the national and local economy and businesses. Among others, these include that the post-Brexit trade arrangements with the EU will potentially make it more difficult for UK businesses to sell services to EU countries, e.g. due to making exporting more complex or because of currency fluctuations. As a result, there could be a decrease in the demand for UK services and thus smaller opportunities for business growth.⁹

Accessing skills could also be a concern, in particular for some sectors of the economy that currently rely on migrant workers. Locally, around a third of current economically active Cambridge residents were born outside of the UK, including around 15% who were born in other EU member states. Many of these migrants are highly skilled and work in well-paid jobs. On average, 55% of EU migrants in Cambridge have a university degree, compared with just 43% of the UK-born population.¹⁰ Although migrant workers represent only 1.27% of the economically active population in the GCGP region, they are contributing disproportionately to some high-skilled occupations (e.g. computer programmers, scientific researchers, education professionals) and low-skilled occupations (e.g. warehouse operatives, agricultural and manufacturing workers, and hospitality and catering staff).¹¹ With Britain's vote to leave the EU, EU migrants residing in the UK face uncertainty about their future due to worries about their immigration status, opportunities to advance professional careers, the decrease in the value of the British pound and thus also the relative value of salaries, and the rise in public hostility towards migrants in general. Businesses are also affected by changes in migration patterns and trends, and face uncertainty. Brexit will affect, among other things, activity related to staff recruitment, retention of existing employees and employees' long-term plans. There are some tentative signs that the UK is already attracting and retaining fewer EU nationals.¹² This is because the supply of EU migrants to the UK is decreasing and, at the same time, those EU migrants who are already in the UK are changing their plans regarding their stay, and considering moving to other EU countries and elsewhere. This is particularly relevant for places such as Cambridge, with a relatively large population of EU migrants and high-tech industries relying on a high-skilled and specialised workforce. In addition, recruiting and retaining non-EU migrant staff is also becoming increasingly difficult. One of the main objectives of the UK's migration policy is to bring down the number of third-country migrants entering the country by limiting the potential legal routes to enter

⁹ Ries et al. (2017).

¹⁰ From 2011 Census; see ONS (n.d.a).

¹¹ East of England Local Government Association (n.d.).

¹² CIPD (2017).

the UK. As a consequence, it is increasingly difficult for employers to provide a business case justifying recruiting staff from abroad.¹³

Against this background, Cambridge Ahead and the Cambridgeshire and Peterborough Combined Authority have commissioned this research to examine the skills demand from the business perspective in the GCGP region.

1.2. Study aims, objectives and research questions

This report aims to provide information to help gauge the extent of the (unmet) skills demand in Cambridge and the surrounding areas and examine how the challenges might compare to the national landscape. Cambridge Ahead asked RAND Europe to undertake these analyses as a first step to increase the evidence base on the skills required to meet the needs of the present and future local labour market, and to inform future research endeavours and policy discussions about the skills development at the local level.

The study analyses are guided by the following four research questions:

1. What is **the level** of the skills demand in the GCGP region?
2. What are **the main causes** for difficulties in meeting the skills demand in the Cambridge area?
3. **What are employers doing** to meet the skills demand?
4. What is **the impact** of unmet skills demand/skills gaps on employers in the Cambridge area?

Whenever feasible, our analyses were focused on comparing and contrasting skills demand across sectors and occupation/skills level and by areas in the region, and comparing it to the situation in the rest of England.

1.3. Methodologies and data used

Our analytical approach focused on assessing skills demand from the perspective of businesses. At the planning stage of this study, the research team considered several research approaches to data collection and analysis. When mapping potential available sources of statistical data we found that the UK Commission for Employment and Skills' (UKCES) Employer Skills Survey and Employer Perspective Survey provided the most comprehensive information about skills demand from the employers' perspective. However, upon examining the number of available observations for the Cambridge area in both surveys, it became clear that the Employer Perspective Survey would not allow detailed analyses to be conducted due to the small number of observations for Cambridge and the surrounding areas. For this reason, the analysis focuses solely on the UKCES Employer Skills Survey data. Table B.1 in Annex B provides detailed information on the number of observations in the survey across sectors and geographical locations. Based on the number of observations, we conducted analysis for the following regional levels:

¹³ GOV.UK Immigration and borders (homepage). N.d. As of 6 June 2018: <https://www.gov.uk/government/policies/immigration-and-borders>

- Local Enterprise Partnership (LEP): Greater Cambridge Greater Peterborough Enterprise Partnership
- Local Education Authority (LEA): Cambridgeshire and Peterborough.

The UKCES Employer Skills Survey provides the perspective of local businesses, painting a picture of the skills challenges faced by employers across the UK. As such, the data can contribute to an understanding of current and prospective employers' plans in relation to skills needs, the skills challenges that employers face both within their existing workforces and in terms of bringing in new skilled labour, the levels and nature of training investment, recruitment of young people and education leavers and the relationship between skills challenges, training activity, business strategy and investment (Winterbotham et al. 2016). Overall response rate for the survey was 42%, achieved due to several strategies to maximise coverage (Winterbotham et al. 2016).¹⁴ The UKCES Employer Skills Survey is conducted at the establishment level, rather than at the enterprise level,¹⁵ and provides insights on the experiences of employers in the UK with at least two staff members, including both employees and working proprietors. Sole traders and establishments with just one employee and no working proprietors are excluded from this survey. The data cover all sectors of the economy, encompassing commercial, public and charitable organisations (Vivian et al. 2016).

Access to the survey data was obtained through the UK Data Archive. At the time of conducting this study, the 2015 data were the latest available; therefore, our analyses are based on the 2015 data wave. Our analysis included descriptive statistics and cross-tabulations, supported by findings from other relevant research studies. Whenever possible, we used definitions as applied in the UKCES Employer Skills Survey. This refers to types of vacancies, geographical areas and sectors of the economy. The definitions of the *Construction, Information and Communications* and *Health and Social Work* sectors are in line with the 15-sector classification (see Appendix). In addition, we constructed a *Life Sciences* sector for our analyses, as this was not defined in the data source. More detail about the definitions applied in the study, as related to the geographical areas, the 15-sector classification and the Life Sciences sector is provided in Annex A.

It should be noted that the UKCES Employer Skills Survey has some limitations. First of all, although we have used the latest available wave of the data, the data collected in 2015 may already seem somewhat dated. Several political and socio-economic developments have occurred and new pressures have emerged since the data were collected (e.g. the Brexit vote), potentially affecting employers' current perspectives on the skills demand. Nevertheless, due to the paucity of good regional data and the demise of UKCES since 2015, these data still provide the most comprehensive picture at the national and regional level of the skills challenges that businesses are facing.

¹⁴ The overall response rate of 42% was calculated as 'achieved interviews' as a proportion of all 'complete contacts'. Several strategies for maximising coverage were applied, in particular in some of the harder-to-reach sectors and regions that may run the risk of being underrepresented. See Winterbotham et al. (2016) for more detail.

¹⁵ An establishment also refers to a workplace, business, employer or site. It is defined as a single location of an organisation (Vivian et al. 2016).

The second limitation of the UKCES data relates to the small number of observations at the regional level. This meant that it was not always feasible to conduct analysis disaggregated by sector and/or to the LEA level. All analysis should be interpreted bearing these caveats in mind.

1.4. Structure of this report

Chapter 2 summarises research findings as related to each of the four research questions. Chapter 3 concludes on the main findings and provides suggestions for further research. Annex A presents definitions of terms used throughout this report. Annex B contains supplementary data.

2. Research findings

In this chapter we present findings related to each of the four research questions. Note that we present percentages of responses in the text and in graphs only when these are based on categories with more than ten observations. In other relevant instances, we report the exact numbers.

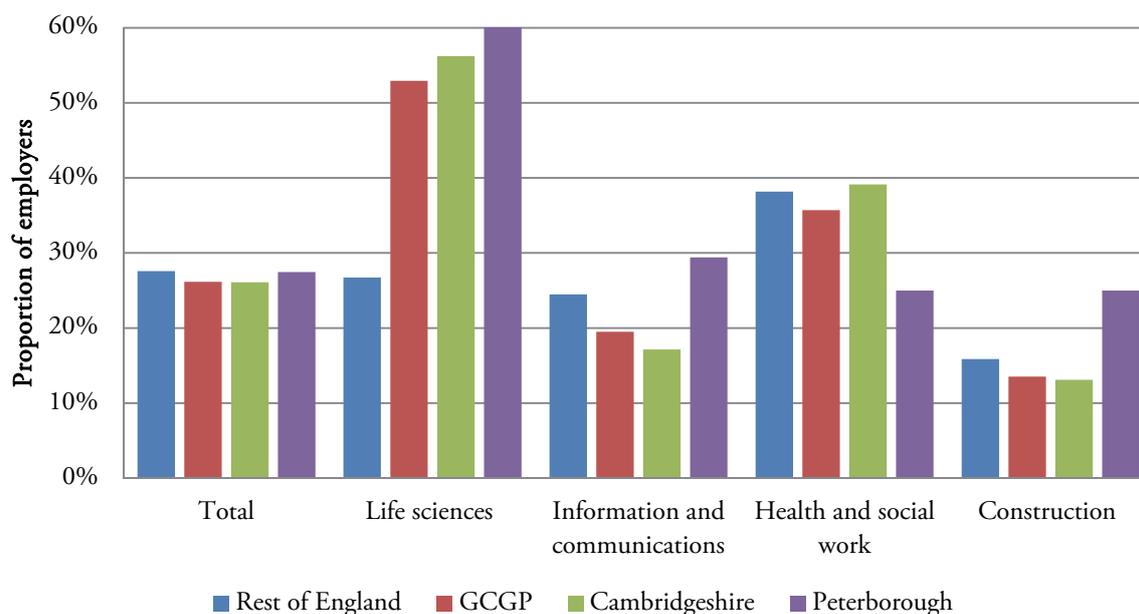
2.1. Skills demand

This section provides a detailed understanding of the level and nature of employer demand for the four different sectors in GCGP. Following a brief analysis of vacancies, this chapter focuses on hard-to-fill and skill-shortage vacancies.

Across the GCGP area, 563 employers reported a total of 2,153 available vacancies. More than one-quarter of the establishments in this region reported having at least one vacancy (26%), a similar proportion to the national average (28%). This average hides important variation across sectors: the proportion of employers who reported available vacancies ranged from 14% in Construction; 20% in Information and Communications; 36% in Health and Social Work; and 53% in Life Sciences (see Figure 1). The share of available vacancies in the Life Sciences sector in the GCGP area is much larger than in the rest of England (53% report vacancies, 26 percentage points higher in GCGP). Overall, out of the 39 LEPs across England, the Life Science sector in the GCGP region has the 7th highest proportion of employers with available vacancies, i.e. it ranks in the top 18% of all LEPs, and in Cambridgeshire, the Life Science sector has the 15th highest proportion of employers with available vacancies when compared to the remaining 134 LEAs across England for which data are available, i.e. it ranks in the top 11% of all LEAs. The skills demand in the Information and Communications and the Construction sectors is much higher in Peterborough (29% and 25% reported vacancies, respectively) than in Cambridgeshire (17% and 13%) and the rest of England (24% and 16%). In more detail, in the Information and Communications sector, Peterborough has the 49th highest proportion of employers with available vacancies out of the 150 LEAs for which data are available, i.e. it ranks in the top third of all LEAs. In the Construction sector, Peterborough has the 17th highest proportion of employers with available vacancies out of the 151 LEAs for which data is available, i.e. it ranks in the top 12% of all LEAs.

On the other hand, the skills demand in the Health and Social Work sector in Cambridgeshire (39%) is much higher than in Peterborough (25%) but nearly on a par with the situation in the rest of England (38%).

Figure 1 Establishments with available vacancies



Source: UKCES Employer Skills Survey.

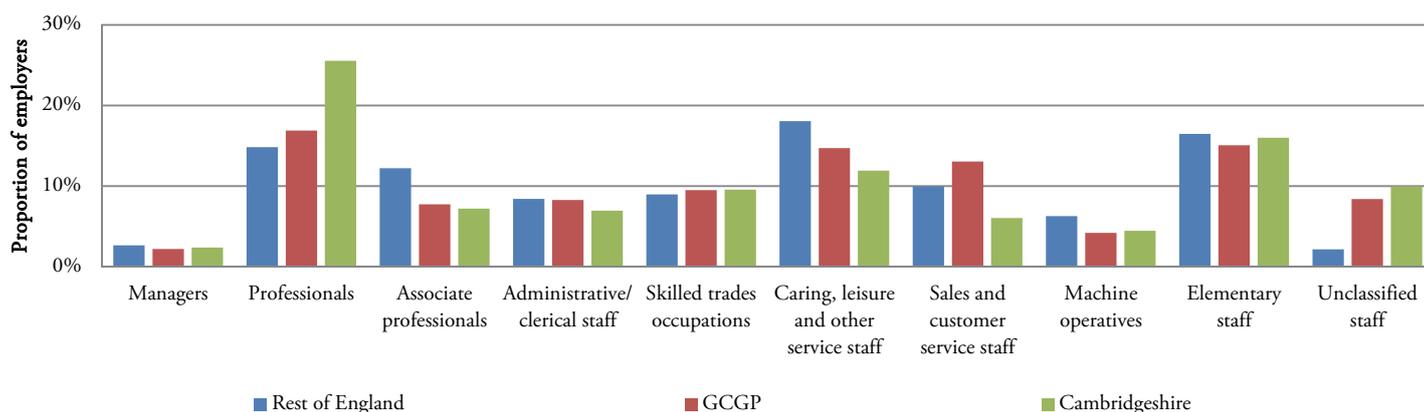
Even though the Life Sciences sector is smaller than other sectors in terms of the total number of available vacancies, GCGP has a larger proportion of the national vacancies (12%, or 59 out of 512) compared to vacancies in the Information and Communications sector (3%) and in the Construction sector (2%).

The survey also identified the occupational groups with high vacancy density¹⁶ (Figure 2). The occupations with the highest share of available vacancies in the GCGP area are professionals (17%) and elementary staff¹⁷ (15%). In addition, the share of available vacancies for professionals in Cambridgeshire, at 26%, is much higher than the average for the rest of England (15%). On the other hand, the proportion of available vacancies for caring, leisure and other service staff in Peterborough, at 26%, was much higher than in the rest of England (18%).

¹⁶ The number of vacancies as proportion of employment. Source: Vivian et al. (2016).

¹⁷ Elementary staff covers occupations that involve mostly routine tasks usually involving use of simple hand held tools and in some cases physical effort. Most do not require formal educational qualifications. This category includes for example, cleaners, security guards, labourers, kitchen/catering assistants, packers, goods handling, storage staff, shelf fillers, postal workers, messengers and couriers.

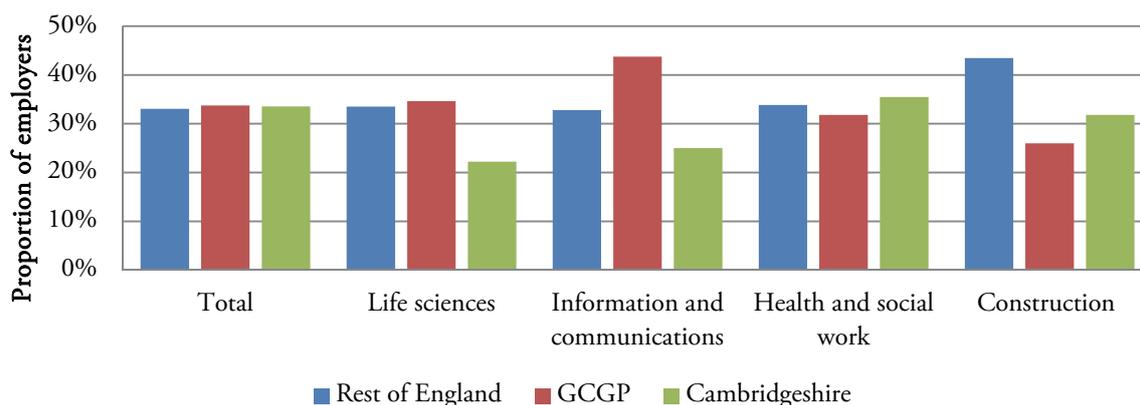
Figure 2 Vacancy density by occupation



Source: UKCES Employer Skills Survey.

The issue of hard-to-fill vacancies is not confined to one occupation or to the GCGP region. On average, the share of hard-to-fill vacancies in the local labour market is similar to the national average (34% and 33%, respectively) (see Figure 3). Looking at the situation across sectors in the GCGP area, the highest share of hard-to-fill vacancies was reported in the Information and Communications sector (44%), and this was just over 11 percentage points higher than in the rest of England. Overall, the Information and Communications sector in the GCGP area has the 14th highest proportion of employers reporting a hard-to-fill vacancy when compared to all other LEPs, i.e. it lies in the top 36% of all LEPs. On the other hand, the proportion of hard-to-fill vacancies in the Construction sector was much smaller in the GCGP region (26%) compared to the rest of England (43%).

Figure 3 Share of hard-to-fill vacancies



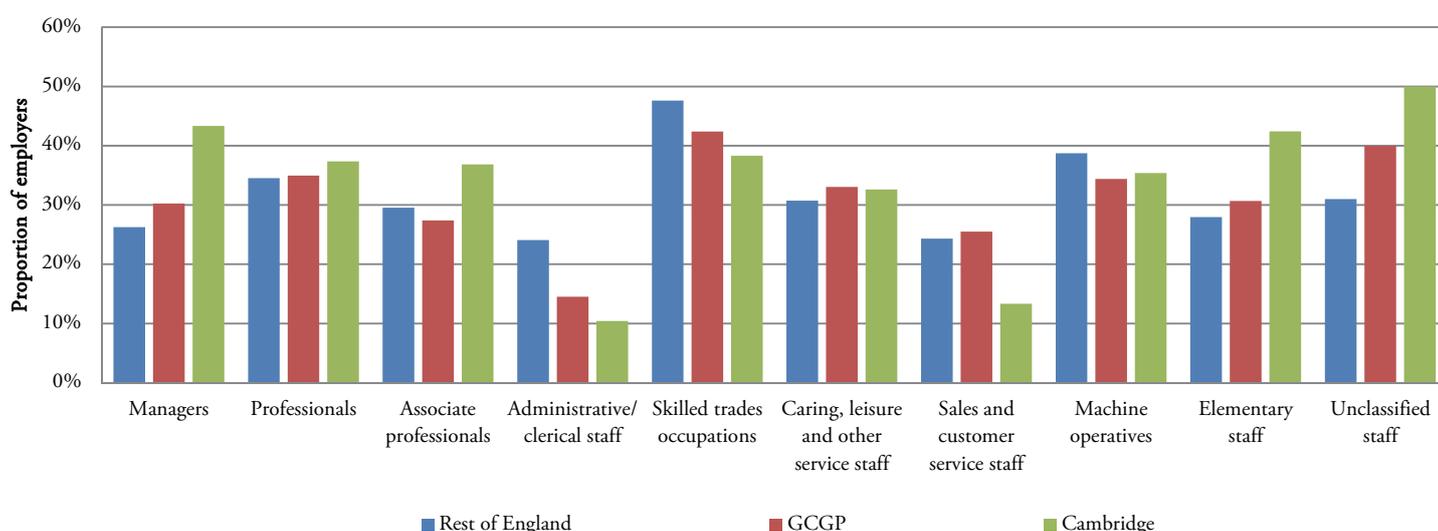
Source: UKCES Employer Skills Survey.

Analysing the occupational data (Figure 4), we note that there are skill shortages in both high- and low-skilled occupations, but the situation varies significantly by region. Across England, an important proportion of employers were struggling to fill positions for skilled trades occupations (47%), machine operatives (39%) and professionals (35%). In the GCGP area, the hard-to-fill vacancies were for: skilled

trades occupations (42%), unclassified staff (40%) and professionals (35%). Overall, vacancies for managers (43%), elementary (42%) and unclassified staff (50%) were more difficult to fill in the Cambridgeshire area than in the rest of England. In each of the Life Sciences, Information and Communication and Health and Social Work sectors, half of the hard-to-fill vacancies were jobs for professionals, including doctors, architects, accountants, nurses, social workers, professional engineers and IT workers. According to the data, the proportion of hard-to-fill vacancies for managers in Cambridgeshire is much higher than in the rest of England and in Peterborough. Overall, Cambridgeshire has the 45th highest proportion of establishments with managerial hard-to-fill vacancies out of the 152 LEAs for which data is available, i.e. it lies in the top 30% of all LEAs.

On the other hand, the share of hard-to-fill vacancies in administrative/clerical roles in Peterborough is much higher than in the rest of England and in Cambridgeshire. In terms of elementary staff and unclassified staff, the proportion of hard-to-fill vacancies in Cambridgeshire is much higher than in the rest of England. In more detail, Cambridgeshire has the 40th highest proportion of establishments with hard-to-fill vacancies for elementary staff out of the 152 LEAs for which data is available, i.e. it lies in the top 27% of all LEAs. In addition, Cambridgeshire has the 10th highest proportion of establishments with hard-to-fill vacancies for unclassified staff out of the 152 LEAs for which data is available, i.e. it lies in the top 7% of all LEAs.

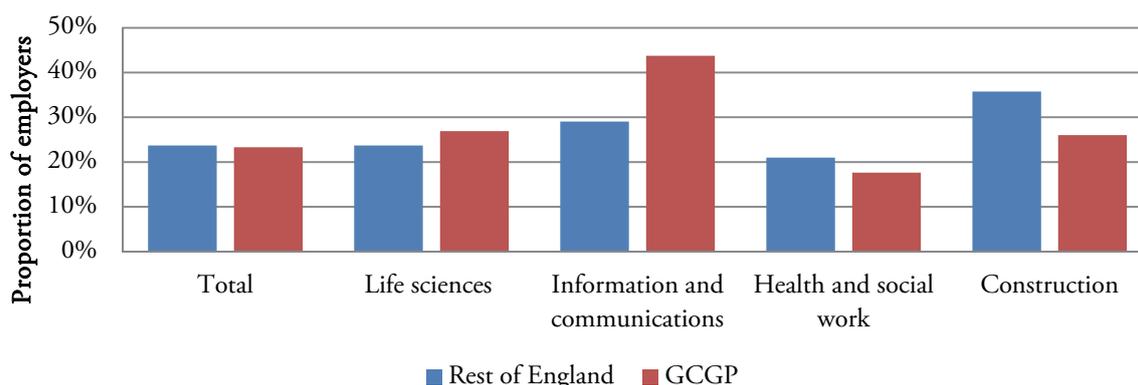
Figure 4 Share of hard-to-fill vacancies by occupation



Source: UKCES Employer Skills Survey.

Perhaps the most potent observation for the GCGP region is that across sectors there is a large variation in the share of vacancies that are difficult to fill due to the establishment not being able to find applicants with the appropriate skills, qualifications or experience (see Figure 5). Overall, the density of skill-shortage jobs in GCGP was higher than in the rest of England in the Information and Communications sector (44% vs. 29%, respectively) and in the Life Sciences sector (27% vs. 24%, respectively). The opposite was the case for the Health and Social Work sector (18% vs. 21%, respectively) and for the Construction sector (26% vs. 36%, respectively).

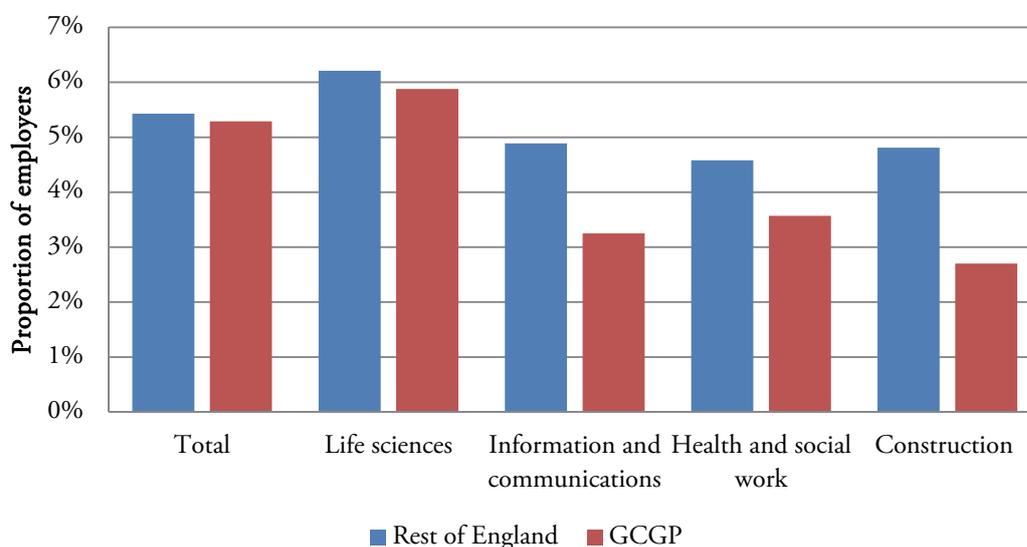
Figure 5 Share of skill-shortage jobs



Source: UKCES Employer Skills Survey.

The impact of hard-to-fill vacancies is aggravated when staff retention is a challenge. Therefore, it is important to examine skill shortages in relation to the retention of existing staff (see Figure 6). Overall, the share of employers in the GCGP region who report staff retention difficulties is lower than for the rest of England. It is however noteworthy that a slightly larger share of employers in Peterborough report staff retention difficulties in the Information and Communications sector compared to the rest of England (5.6% vs. 4.9%).

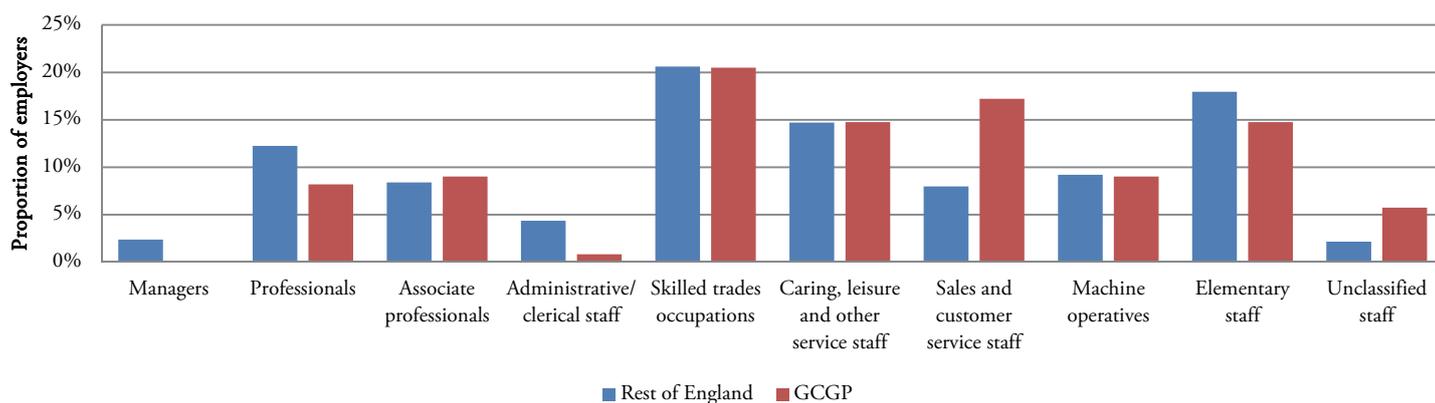
Figure 6 Share of employers with staff retention difficulties



Source: UKCES Employer Skills Survey.

Skilled trades (20%) and sales and customer service staff jobs (17%) were the occupations most often reported by employers experiencing retention difficulties in GCGP (see Figure 7). In contrast, very few employers reported retention difficulties among administrative/clerical staff (1%) and there were no employers with retention difficulties among managers. Compared with the rest of England, the reported difficulty in retaining sales and customer staff was larger in the GCGP region (8% vs. 17%). Similarly, the difficulty in retaining unclassified staff was higher in the GCGP region (6% vs. 2%).

Figure 7 Occupations with the highest retention difficulties



Source: UKCES Employer Skills Survey.

Note: If bar is missing, the share is 0%.

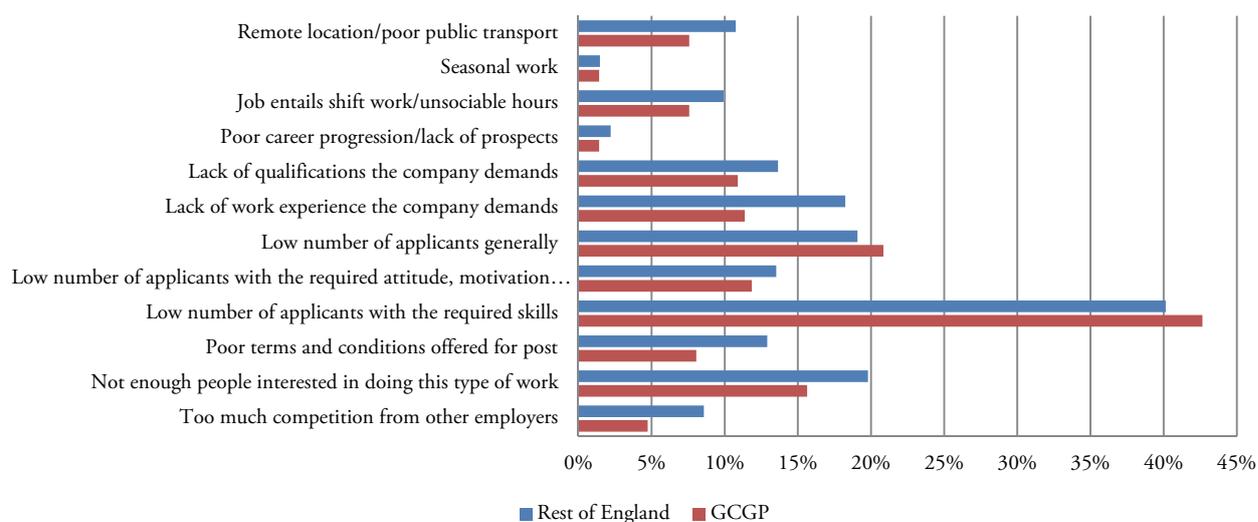
The Employer Skills Survey 2015 provides evidence of strong labour market activity in the Life Sciences sector in GCGP. According to the survey there are signs of increasing challenges for establishments in recruiting individuals in the skilled trades occupations, unclassified staff jobs and professionals. There are signs of increasing recruitment challenges related to skill shortages in the Information and Communications and the Life Sciences sectors in GCGP. However, compared to the rest of England, the share of establishments reporting difficulties in retaining staff in is lower in GCGP.

2.2. The main causes for difficulties in meeting the skills demand in the Cambridge area

Having considered the nature of skills demand, this section explores the specific reasons for difficulties in hiring or retaining staff, and the skills employers found were lacking.

Employers report a number of factors that lead to difficulties in filling open vacancies (see Figure 8). By far the most reported cause, both nationally and in the GCGP area, is a low number of applicants with the required skills (40% and 43%, respectively), followed by a low number of applicants generally (19% and 21%, respectively). Other reasons, such as a low interest in doing the type of work, are reported by about one-fifth of employers nationally (20%), though this factor, like all the other reported factors, seems to be more important from the national than the local labour market perspective (16% in the GCGP area).

Figure 8 Reasons reported by employers for difficulties in filling an open vacancy

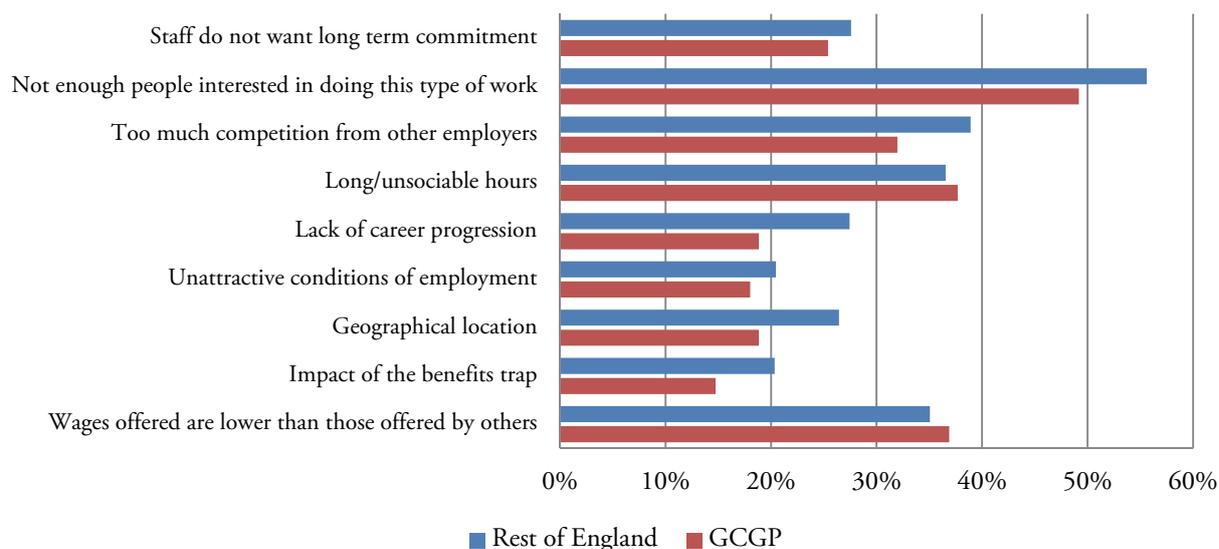


Source: UKCES Employer Skills Survey.

The top reason for difficulties in filling vacancies in the Information and Communications, Life Sciences and Construction sectors in the GCGP area is the low number of applicants with the required skills, which was listed as a reason in 91%, 80% and 29% of cases, respectively. Low numbers of applicants in general was also often cited in these sectors (18%, 20% and 19%, respectively). In the Information and Communications sector, nearly one in ten employers reported lack of work experience of applicants (9%) as a reason. Lack of experience and low interest in doing the type of work were also often reported as causes in the Construction sector (29%). These analyses should be approached with caution given the low number of observations.

The main reasons employers reported having difficulties retaining staff are shown in Figure 9. The three main drivers related to retention difficulties in the GCGP region are: low numbers of people interested in doing the type of work (49%); lower wages being offered relative to other organisations (37%); and long/unsociable hours (38%). Proportions tend to be generally similar to the rest of England, though it is noteworthy that geographical location and lack of career progression were identified by larger proportions of employers in the rest of England compared to the GCGP area.

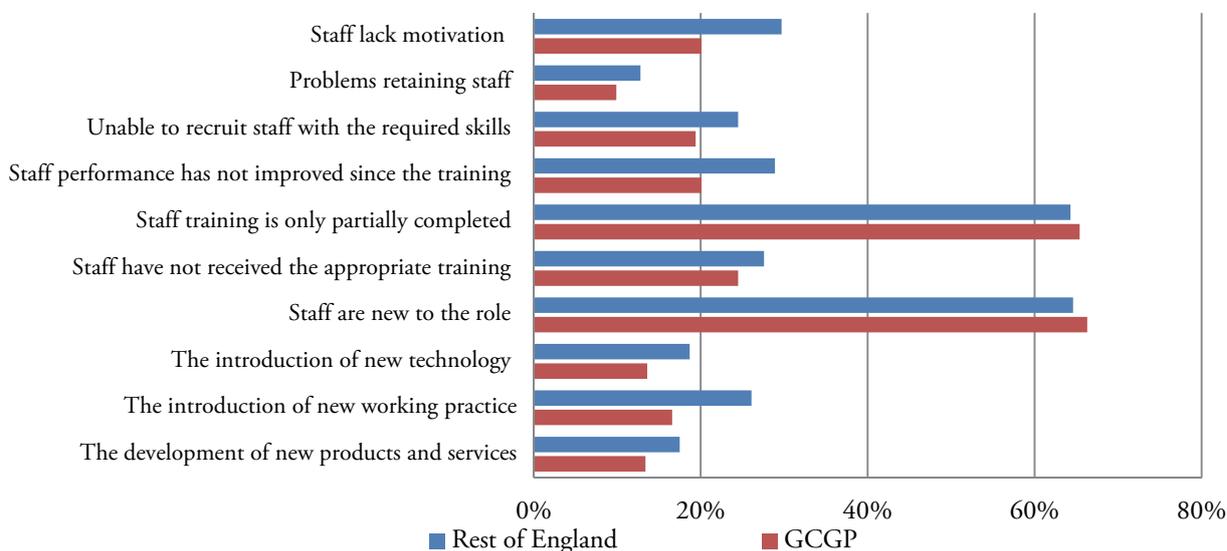
Figure 9 Reasons employers report for staff retention difficulties



Source: UKCES Employer Skills Survey.

The two most common reasons for lack of full proficiency at the workplace, as identified by employers, were partially completed training (65% in GCGP and 64% nationally) and being new to the role (66% in GCGP and 65% nationally) (see Figure 10).

Figure 10 Reasons for lack of full proficiency in the workplace



Source: UKCES Employer Skills Survey.

Over half of employers in the GCGP area stated that due to lack of proficiency they had to increase the workload for other staff, while around 40% stated that they had started to change working practices.

On the other hand, there were also some employers who reported that their staff were overqualified for their positions. The underutilisation of skills in the region was most reported in the Life Sciences and Health and Social Work sectors. The share of overqualified staff in the Life Sciences and Health and

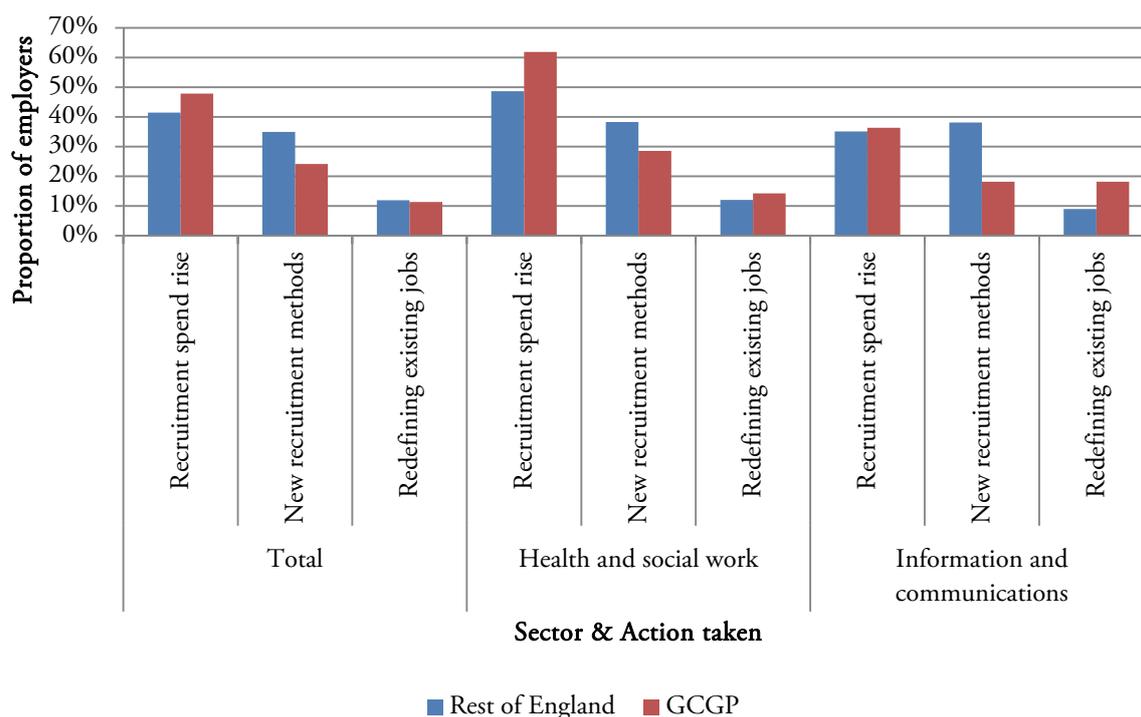
Social Work sectors was slightly higher in the GCGP area (3% and 5%, respectively) than the rest of England (2% and 3%, respectively).

The reported reasons for hard-to-fill vacancies in the GCGP area were numerous, with many employers reporting a low number of applicants with the required skills as a top reason. This was particularly prominent for the Life Sciences sector. Retention difficulties in the survey were also attributed to job market issues, particularly not enough people being interested in the type of work. Over half of the employers reported that skills gaps were deemed to be caused by employees being new to the role, while a similar proportion cited employees' training being incomplete. The proportions in the GCGP area were similar to the rest of the country.

2.3. Actions to meet the skills demand

This section summarises findings on the actions that employers undertake to meet the skills demand. Overall, there are several actions that employers report taking. The top-three actions reported by employers are: recruitment spend rise, new recruitment methods and redefining existing jobs (see Figure 11). In the Health and Social Work sector in the GCGP area, 62% of employers report having increased their spending on recruitment. This is much higher than in the rest of England, where just under half of employers (49%) report doing the same. It is also higher than in the Information and Communications sector in GCGP, where just over a third of employers (36%) report doing the same to overcome the problem of hard-to-fill vacancies. Findings are not shown for the Life Sciences and Construction sectors due to a small number of observations at the GCGP level ($n < 10$), as shown in Table B.2 in Annex B. However, two of five employers in the Life Sciences sector in GCGP reported an increase in recruitment spending; with increase in salaries, expansion of trainee programmes, new recruitment methods and the recruitment of non-UK nationals being reported by one of the five. In the Construction sector in GCGP, expansion of trainee programmes and new recruitment methods were reportedly undertaken by two of the seven employers.

Figure 11 Actions taken by employers to overcome the problem of hard-to-fill vacancies by sector

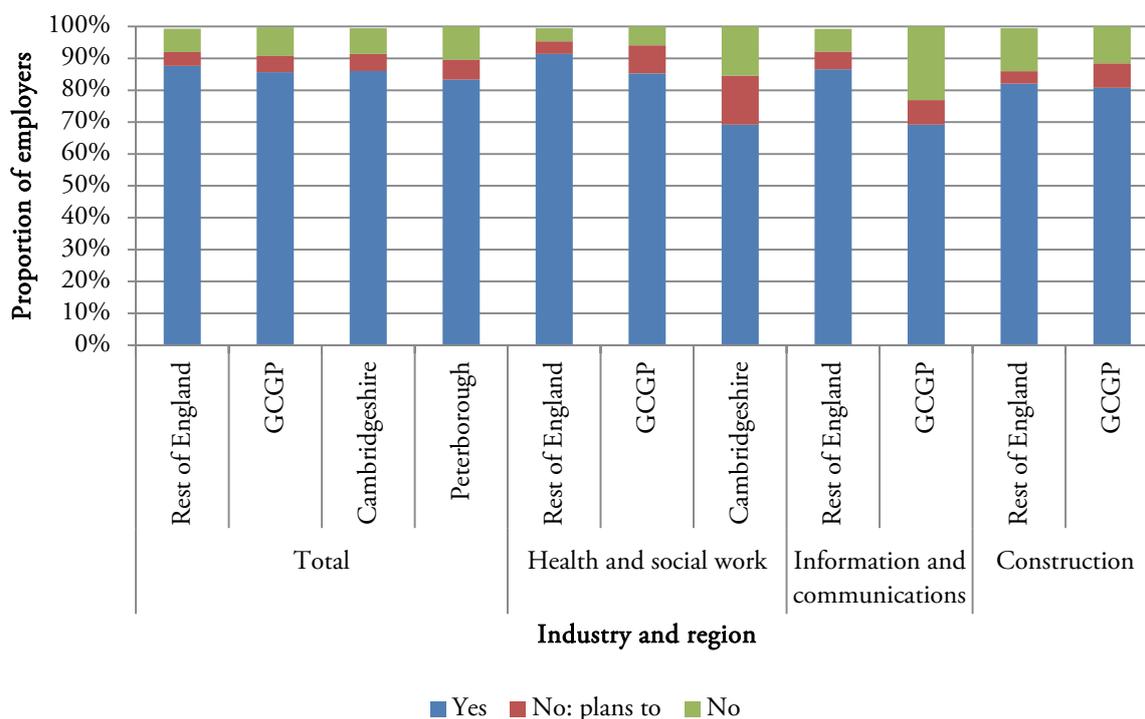


Source: UKCES Employer Skills Survey.

Note: Top-three actions taken by establishments are shown.

Both locally and nationally, the vast majority of employers report having plans in place to improve the skills of their staff with skills gaps, as highlighted in Figure 12. In the Life Sciences sector, all the employers surveyed in GCGP (and in the Cambridgeshire and Peterborough regions more specifically) reported having taken action to improve the skills of underskilled employees. The proportions were generally similar between GCGP and the rest of England, though in the Health and Social Work and Information and Communications sectors slightly smaller proportions of employers in GCGP (85% and 69%, respectively) and Cambridgeshire (69% and 67%, respectively) report taking action compared to their counterparts in the rest of England (91% and 87%, respectively). However, it is worth noting that comparisons should be interpreted with caution due to small sample sizes in certain sectors and in certain regions, as shown in Table B.3 in Annex B. Only industries and regions with more than ten observations were included in Figure 12.

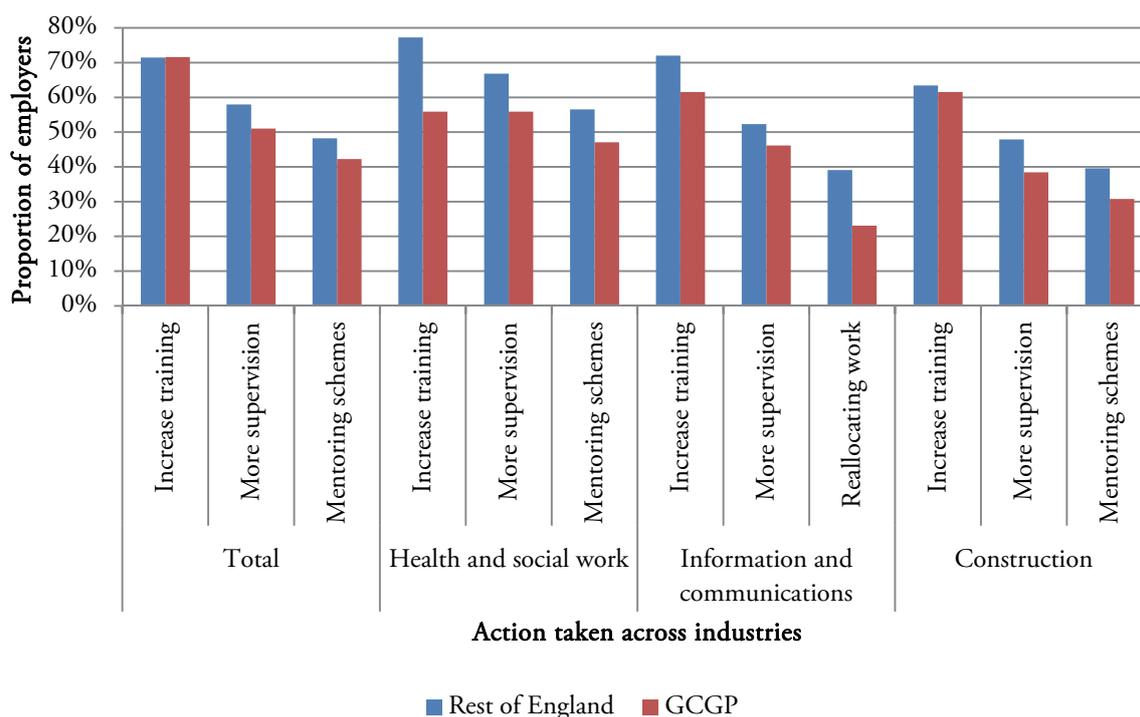
Figure 12 Proportion of employers who report taking action to improve the skills of their staff with skills gaps



Source: UKCES Employer Skills Survey.

Figure 13 demonstrates the top actions being undertaken by employers in GCGP to overcome a lack of proficiency among staff, comparing it to the rest of England. The top-two reported actions are increasing training and offering more supervision. Overall, across all sectors, these actions are taken by a greater proportion of employers in the rest of England than in the GCGP area. For example, in total 58% and 48% of employers across the rest of England provide more supervision and mentoring schemes, respectively, compared to 51% and 42%, respectively, in GCGP. The findings are not shown for the Life Sciences sector due to a low number of observations at the GCGP level ($n < 10$), as shown in Table B.3 in Annex B. However, all of the five employers reported increasing training, and three out of the five reported providing more supervision.

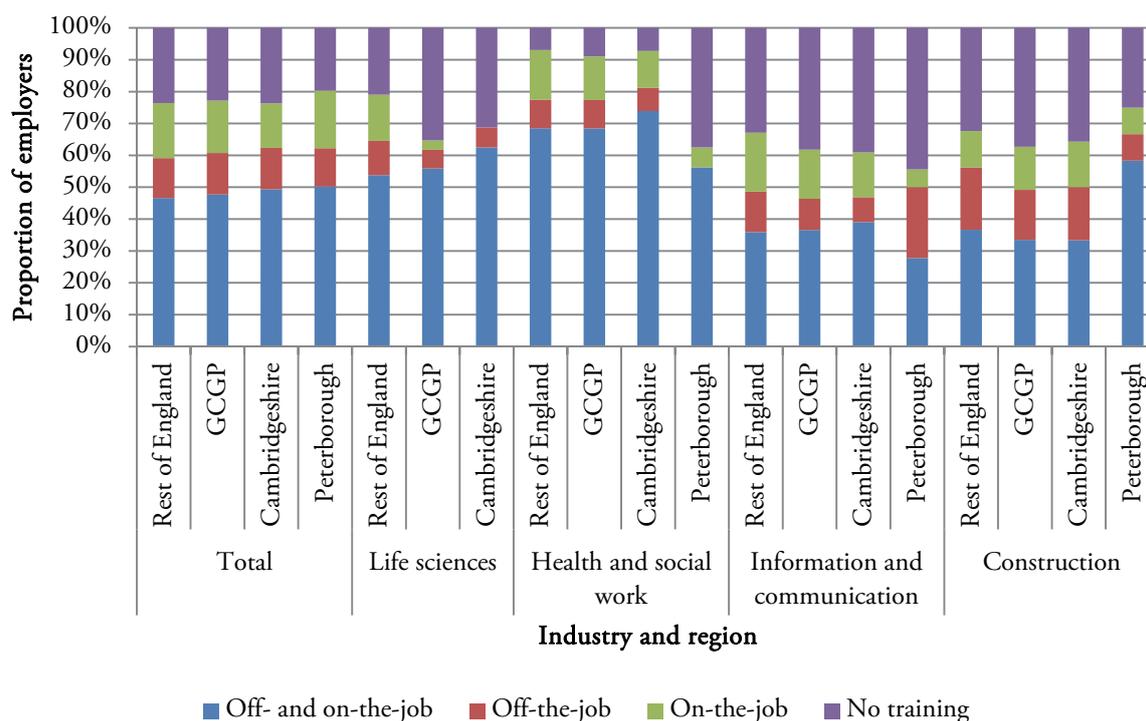
Figure 13 Action reported to overcome lack of proficiency among staff, by sector



Note: Top-three actions reported by GCGP employers are shown.

The most frequently reported action taken across all sectors at all geographical levels is increasing training activity for employees. It is therefore important to better understand how training is utilised. Training can be offered both off- and on-the-job, on-the-job only, off-the-job only or not at all. Figure 14 shows the proportions of employers who report that they provide different types of training to their employees. Considerably larger proportions of employers in the Life Sciences sector in GCGP (35%) and Cambridgeshire (31%) provide no training at all when compared to the rest of England (21%). Employers in the Information and Communications and Construction sectors in GCGP and Cambridgeshire provide a similar amount of different types of training to that provided by establishments in the rest of England in these sectors. Overall, establishments in the Cambridgeshire area (49%) provide slightly more off- and on-the-job training than in the rest of England (47%). This analysis is based on considerably more data than the previous parts of this section, as highlighted in Table B.4 in Annex B. Findings for the Life Sciences sector in the Peterborough LEA were omitted due to small sample size (n<10).

Figure 14 Proportion of employers who report providing training of different types



Source: UKCES Employer Skills Survey.

Overall, a considerable proportion of local employers report taking action to overcome hard-to-fill vacancies and a lack of proficiency among staff across all four sectors of interest. However, there are mixed messages as to whether local employers could be doing more. Although lower proportions of employers in GCGP report taking action to overcome lack of proficiency among staff compared to the rest of England, a greater proportion of employers in Cambridgeshire report providing more comprehensive on- and off-the-job training than in the rest of England.

2.4. Impact of skills demand on employers

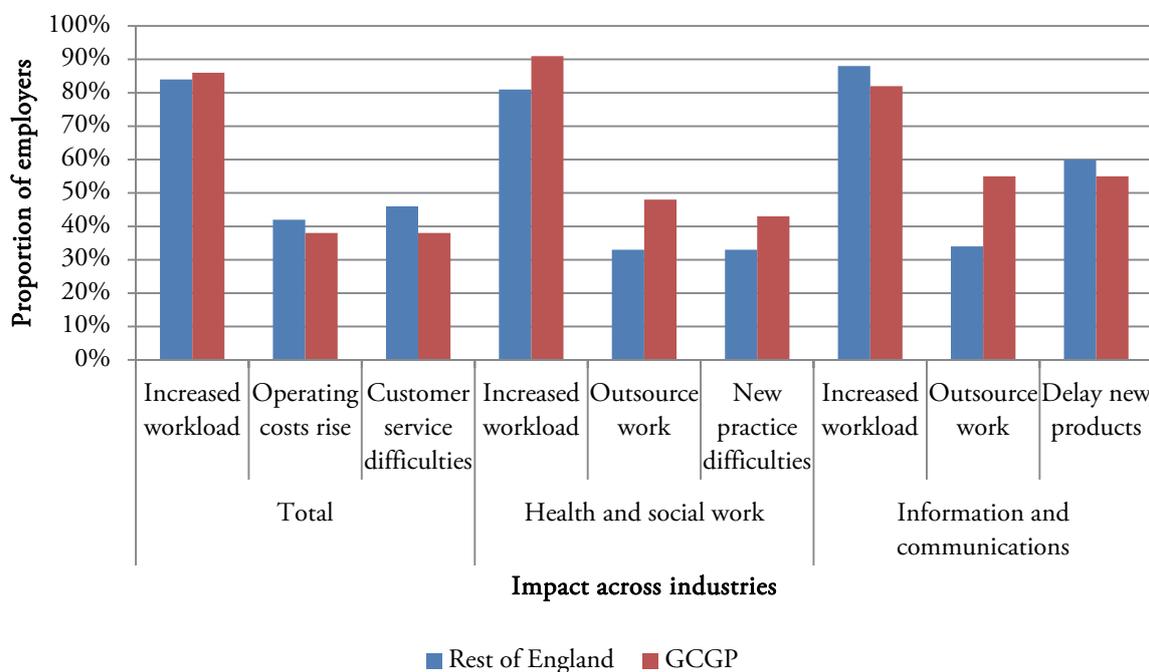
This section examines the impact of unmet skills demand/skills gaps on employers in the Cambridge area. First, we analyse the impact that hard-to-fill vacancies have on organisations locally, particularly in comparison to the rest of the country.

Figure 15 highlights the impacts of hard-to-fill vacancies most reported by employers in the different sectors across GCGP.¹⁸ In the Health and Social Work sector, based on the 21 employers with available data, 91% of employers with hard-to-fill vacancies stated that these resulted in increased workload for other staff, and just under half (48%) reported that hard-to-fill vacancies led them to outsource work. Nearly half (43%) find it difficult to introduce new working practices as a result of having hard-to-fill

¹⁸ The sample sizes for all sectors and regional levels are shown in Table B.6 in Annex B. The number of observations across all four sectors of interest is low and significant caution should be used when drawing regional conclusions at the GCGP level.

vacancies. It is noteworthy that each of these impacts is more frequently reported by employers in GCGP than in the rest of England.

Figure 15 Impact of hard-to-fill vacancies by sector



Source: UKCES Employer Skills Survey.

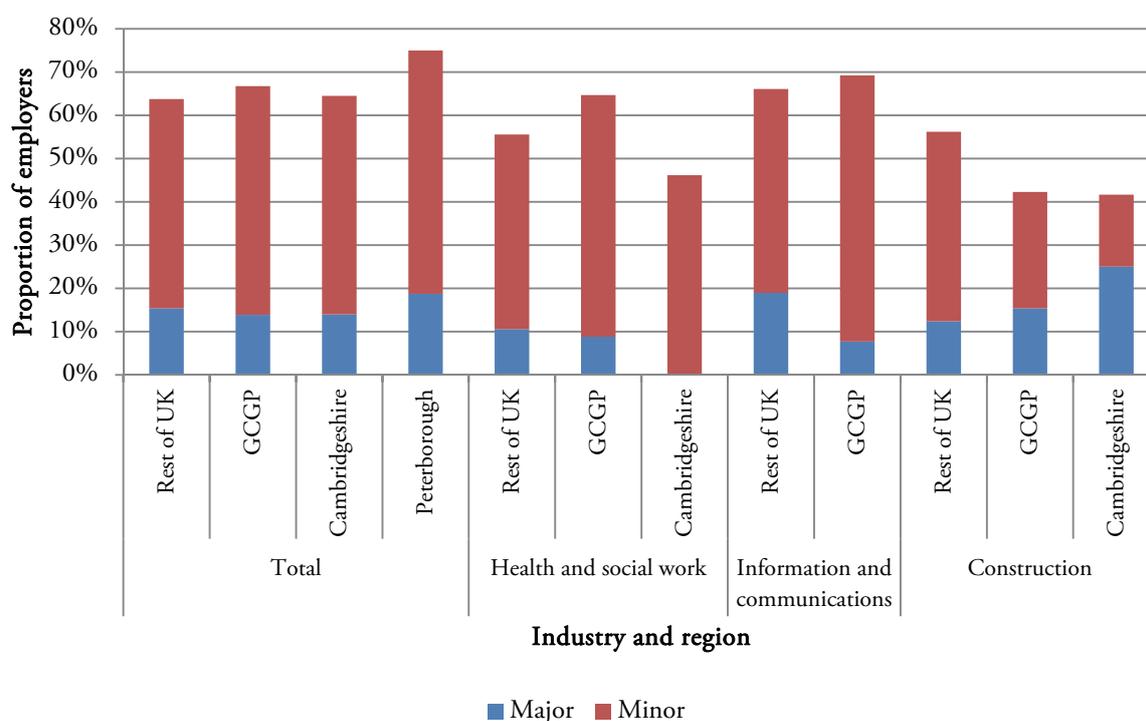
The three greatest impacts of hard-to-fill vacancies on the Information and Communications sector are also illustrated in Figure 15, based on data from 11 employers in GCGP. As in the Health and Social Work sector, increased workload (82%) and outsourcing of work (55%) are the two most frequently reported impacts. However, in this sector, the third-most-reported impact of hard-to-fill vacancies is delays in developing new products or services, reported by 55% of employers. In this sector, considerably more employers in GCGP are reporting having to outsource work due to hard-to-fill vacancies when compared to the national average (34%).

The Life Sciences and Construction sectors were not included in Figure 15 due to low sample size (n<10). In the Construction sector within GCGP, increased workload is reported as being an issue by all seven employers with available data. Five of the employers in this sector also report that hard-to-fill vacancies are leading to difficulties in meeting customer service objectives, which was not identified as a key impact in either the Health and Social Work or the Information and Communications sector. Delays in the development of new products and services, loss of business or orders to competitors, difficulty introducing new working practices and the outsourcing of work were also reported by four employers across GCGP.

In the Life Sciences sector in the GCGP area, all five employers with hard-to-fill vacancies declared that other staff's workload increased as a result. The next-biggest reported impact was delays in the development of new products and services, with four out of five employers stating this as an issue. Finally, rising operating costs and loss of business were also reported by three employers as an impact of hard-to-fill vacancies.

Vacancies can be hard to fill for numerous reasons. The existence of skills gaps in the labour pool is a crucial factor, and may suggest a mismatch with the training and education provided at the national and local level. For this reason, it is important to understand whether skills gaps impact the performance of establishments at the regional level and, if so, what these impacts are.

Figure 16 Proportion of employers who report that skills gaps have major/minor impact on business performance



Source: UKCES Employer Skills Survey.

Employers reporting skills gaps were asked whether and to what extent these impacted on their performance (Figure 16). Overall, the reported impact of skills gaps at the local and regional level is similar to that in the rest of England; however, there are differences in particular sectors.¹⁹

In Cambridgeshire none of the employers in the Health and Social Work sector reported being majorly impacted by skills shortages and only 9% did so in GCGP. Seventy per cent of the employers in the Information and Communications sector in GCGP report being impacted by skills gaps, and this is in line with the rest of England (66%), suggesting skills gaps may not be an issue unique to the area. Only 42% of employers in the Construction sector in GCGP and Cambridgeshire report impacts, but in Cambridgeshire over half (60%) of these reported that the impact was major – considerably more than in the rest of the England, where only 27% of those reporting an impact stated it was major. In the Life

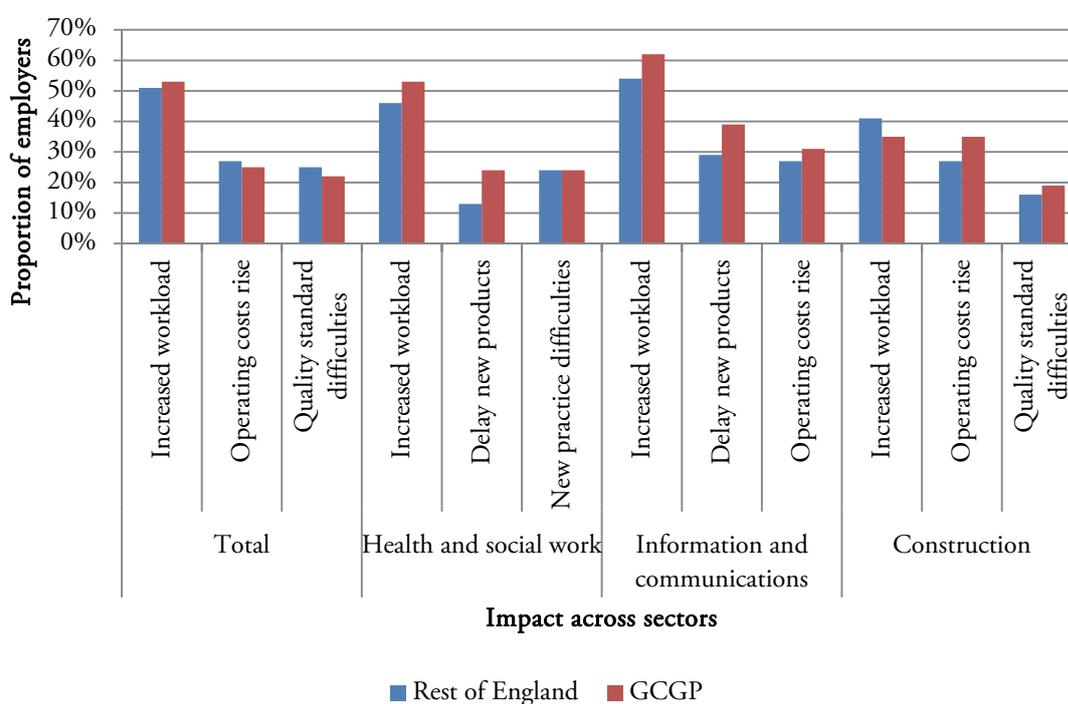
¹⁹ Significant caution needs to be used when drawing conclusions from the data as only a very small number of observations exist at the GCGP, Peterborough and Cambridgeshire level, as highlighted in Table B.7 in Annex B. Any sectors and regions with fewer than ten observations were omitted from Figure 16.

Sciences sector four of the five employers in GCGP reported being impacted by skills gaps, as did all three in Cambridgeshire.

It is clear from the data that skills gaps are perceived by employers as having an impact on the performance of their businesses in GCGP and the Cambridgeshire region, with the issue appearing to be particularly localised in the Life Sciences sector. However, it is important to determine exactly what impact this issue is having. Figure 17 provides some insights by highlighting the proportions of employers who report various impacts of the skills gap.²⁰

As was the case with respect to the impact of hard-to-fill vacancies, increased workload was reported most frequently. Across the GCGP region, increased workload is reported more frequently as an impact by local employers across all analysed sectors (apart from Construction) than by employers in the rest of England. Other types of impacts, such as delay in new products, rising operating costs and quality standard difficulties also tend to be more frequently reported by local employers than by employers nationally. It is important to note, however, that many organisations reported impacts of skills gaps that were not listed in the survey. Overall in GCGP, 44% of employers from the Health and Social Work sector, 31% from the Information and Communications sector, 58% from the Construction sector and one out of the five employers from the Life Sciences sector said they were impacted by skills gaps in ways not covered in the survey.

Figure 17 Impact of skills gaps by sector



Source: UKCES Employer Skills Survey.

²⁰ Again, caution needs to be used when drawing conclusions from the data due to the very small number of observations at the GCGP level, as highlighted in Table B.3 in Annex B. Due to the small numbers, observations for the Life Sciences sector and Cambridgeshire LEA were not included in Figure 17.

3. Conclusions and recommendations

This report uses the Employer Skills 2015 survey carried out by the UK Commission for Employment and Skills to examine skills demand from the perspective of businesses across four industry sectors that are considered to be particularly relevant for the local economy and the local labour market. When feasible, comparative analyses were conducted to compare situations between sectors, occupations and areas in the region, and to compare the local labour market situation with the situation in the rest of England. Detailed analyses were not always possible because of the small number of observations for particular sectors and/or areas. In addition, although the 2015 data are the latest available, the changing political and socio-economic context (e.g. Brexit and its impact on the economy and supply of skills) should be taken into consideration when interpreting the survey results.

Overall, the findings suggest that local employers report having a similar share of vacancies and hard-to-fill vacancies as other businesses in the rest of England. However, there are differences in skills demand across sectors. For instance, the Life Sciences sector in the Cambridgeshire region experiences a much higher rate of vacancies than in other parts of England. Out of all regions the GCGP ranks among the top 18% of all LEPs and Cambridge ranks in the top 11% of all LEAs with the highest proportion of employers with available vacancies in the Life Science sector. Similarly, the Information and Communications sector is also experiencing skills shortages, expressed as a higher proportion of hard-to-fill vacancies compared with the rest of England. For instance, Peterborough ranks in the top third of all LEAs reporting the highest proportion of employers with available vacancies in the Information and Communications sector. Since regional strategies (Cambridgeshire and Peterborough Combined Authority 2018) have previously identified these sectors as the priority areas for the regional economy, it is essential to address these skills demand challenges. This is because any further growth in these sectors would depend on the sufficient supply of workers with the required level of skills.

The skills shortages locally are focused at opposite ends of the skills continuum – high-level skills and low-level skills. The share of available vacancies and the hard-to-fill vacancies for professionals in Cambridgeshire is much higher than the average for the rest of England. As further job growth is projected in professional and knowledge-intensive roles, it is essential to address this challenge to maintain the supply of highly qualified workers. In addition, the demand for low-level skills is also greater in the Cambridgeshire region than nationally. For instance, the share of hard-to-fill vacancies for elementary staff and administrative/clerical roles, and the share of skill-shortage vacancies in caring, leisure and other services are much higher in the regional labour pool than in the rest of England. Overall, Cambridgeshire ranks in the top 7% of all LEAs reporting the highest proportion of establishments with hard-to-fill

vacancies for elementary staff. Since these jobs are typically filled by people living locally, it is important to ensure that there is an adequate supply of local low- and medium-skilled workers matching the demands of local businesses.

Finally, the findings show that skills gaps and hard-to-fill vacancies have greater impact on employers in the Cambridge region than on businesses in the rest of England, in particular for employers in the Life Sciences and Construction sectors. The analyses also suggest that the main cause of difficulties in meeting the skills demand locally is the low number of applicants with the required skills. On the other hand, it seems that local employers do not engage in the provision of training to the same extent as businesses in the rest of England. A way forward for local education/skills providers and employers to meet the demand for skills locally could be to provide more training to skill-up local workforce as required for local jobs.

This report has highlighted some of the core issues, but in order to gain a better understanding of the specific issues related to skills demand in the local labour market, further research is needed. For instance, a broader range of local businesses could be consulted to capture a wider range of experiences from across sectors. Such a consultation could potentially utilise a survey approach, building on questions from the UKCES Employer Skills Survey. The comparability of data-gathering tools would, in turn, allow some further comparative analysis to explore which issues are specific to the local labour market situation and, as such, could be addressed at the local level.

In addition, more detailed analysis focused on specific sectors of the economy could be conducted. For instance, additional insights might be gathered from sources such as the NHS workforce census (e.g. on vacancy gaps in the Health and Social Work sector), Science Industry Partnership (SIP) data on vacancies and salary levels in the science sector, and Higher Education Statistics Agency (HESA) data on demand and supply of academic jobs.

Furthermore, it would also be relevant to examine how the new sectoral approach in government strategy (Prime Minister's Office 2018), which seeks to provide additional opportunities for business growth and employment, could potentially affect demand for certain skills through additional funding or extra work visas. Finally, it would be interesting to investigate how the devolution deal (Ministry of Housing, Communities & Local Government 2017), by providing more flexibility to policymakers, could potentially mobilise local-level skills initiatives and additional funding to deal with the skills demand.

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Annex A. Definitions used in this report

Geographical definitions:

UK: includes England, Scotland, Wales and Northern Ireland.

Greater Cambridge Greater Peterborough: represents the Greater Cambridge Greater Peterborough LEP.

Rest of England: represents all other English regions excluding Greater Cambridge Greater Peterborough.

Cambridgeshire: represents Cambridgeshire LEA.

Peterborough: represents Peterborough LEA.

Sectoral definition:

The Life Sciences industries are equivalent to the Science Industries definition applied in the Science Industry Partnership's (SIP) 2016 report *The Demand for Skills in the UK Science Economy*. As such, the Life Sciences industries include pharmaceutical, medical technology and medical biotechnology, and industrial science industries covering chemicals (including paints), polymers, industrial biotechnology and downstream petroleum (excluding wholesale and retail).

The Life Sciences industries are defined by the following Standard Industrial Classification (SIC) codes:

Chemicals:

20.11 Manufacture of industrial gases

20.12 Manufacture of dyes and pigments

20.13 Manufacture of other inorganic basic chemicals

20.14 Manufacture of other organic basic chemicals

20.15 Manufacture of fertilisers and nitrogen compounds

20.16 Manufacture of plastics in primary forms

20.17 Manufacture of synthetic rubber in primary forms

20.20 Manufacture of pesticides and other agrochemical products

20.30 Manufacture of paints, varnishes and similar coatings, printing ink and mastics

20.41 Manufacture of soap and detergents, cleaning and polishing preparations

20.42 Manufacture of perfumes and toilet preparations

20.51 Manufacture of explosives

20.52 Manufacture of glues

20.53 Manufacture of essential oils

RAND Europe

- 20.59 Manufacture of other chemical products n.e.c.
- 20.60 Manufacture of man-made fibres
- 22.11 Manufacture of rubber tyres and tubes; retreading and rebuilding of rubber tyres
- 22.19 Manufacture of other rubber products
- 22.21 Manufacture of plastic plates, sheets, tubes and profiles
- 22.22 Manufacture of plastic packing goods
- 22.23 Manufacture of builders' ware of plastic
- 22.29 Manufacture of other plastic products
- 19.10 Manufacture of coke oven products
- 19.20 Manufacture of refined petroleum products pharmaceuticals:
- 21.10 Manufacture of basic pharmaceutical products
- 21.20 Manufacture of pharmaceutical preparations medical technologies
- 26.60 Manufacture of irradiation, electro-medical and electrotherapeutic equipment
- 32.50 Manufacture of medical and dental instruments and supplies
- 72.11 Research and experimental development in biotechnology
- 72.19 Other research and experimental development in natural sciences and engineering

UKCES Employer Skills Survey 15-sector classification

The 15-sector classification comprises the following sectors:

1. Agriculture, hunting, forestry and fishing
2. Mining and quarrying
3. Manufacturing
4. Electricity, gas and water supply
5. Construction
6. Wholesale and retail trade
7. Hotels and restaurants
8. Transport and storage
9. Information and communications
10. Financial services
11. Real estate, renting and business activities
12. Public administration and defence; compulsory social security
13. Education
14. Health and social work
15. Community, social and personal service activities

Table 1 Types of vacancies

Vacancy density	The number of vacancies as a proportion of all employment.
Hard-to-fill vacancies	Vacancies which are proving difficult to fill, as defined by the establishment (from the question: 'Are any of these vacancies proving hard to fill?').
Skill-shortage vacancies	Vacancies which are proving difficult to fill due to the establishment not being able to find applicants with the appropriate skills, qualifications or experience.
Skills gaps	A 'skills gap' exists where an employee is deemed by their employer to be not fully proficient, i.e. not able to do their job to the required level.

Source: Vivian et al. (2016).

Annex B. Annex : Supplementary Data

Table B.1 Sample size for different geographical levels and sectors

Variable	Area (Value Code)	Life Sciences	Health and Social Work	Information and Communications	Construction	Total number of observations	Total number of observations – for all sectors
REGION	East of England	91 (9.22%)	623 (8.68%)	262 (3.65%)	664 (9.25%)	987	7,179
	Rest of England	620 (4%)	3,479 (5.12%)	6,340 (9.23%)	5,670 (8.34%)	15,489	67,950
Local Authority (LA)	Cambridge (57)	3 (1.37%)	15 (6.85%)	14 (6.39%)	8 (3.65%)	40	219
	East Cambridgeshire (114)	1 (0.74%)	10 (7.35%)	10 (7.35%)	18 (13.24%)	39	136
	Fenland (138)	3 (2.44%)	10 (8.13%)	4 (3.25%)	12 (9.76%)	29	123
	Huntingdonshire (177)	3 (1.34%)	21 (9.38%)	16 (7.14%)	15 (6.70%)	55	224
	South Cambridgeshire (307)	6 (2.32%)	13 (5.02%)	20 (7.72%)	31 (11.97%)	70	259
Local Education Authority (LEA)	Cambridgeshire (115)	16 (1.66%)	69 (7.17%)	64 (6.65%)	84 (15.49%)	298	962
	Peterborough (116)	2 (0.86%)	16 (6.87%)	18 (7.73%)	12 (15.45%)	72	233
LEPL	Greater Cambridge Greater Peterborough (1)	34 (1.58%)	168 (7.80%)	123 (5.71%)	185 (8.59%)	510	2,153

Source: UKCES Employer Skills Survey.

Note: Share of total in brackets.

Table B.2 Sample size (n) for different geographical levels and sectors for action taken to overcome hard-to-fill vacancies

Region level	Sector				
	Life Sciences	Health and Social Work	Information and Communications	Construction	Total
Rest of England	69	1,029	333	459	7,646
GCGP LEP	5	21	11	7	211
Cambridgeshire LEA	2	11	3	4	94

Source: UKCES Employer Skills Survey.

Table B.3 Sample size (n) for different geographical levels and sectors for action taken to improve skills

Region level	Sector				
	Life Sciences	Health and Social Work	Information and Communications	Construction	Total
Rest of England	186	1,362	522	927	14,976
GCGP LEP	5	34	13	26	433
Cambridgeshire LEA	3	13	6	12	186
Peterborough LEA	1	2	3	2	48

Source: UKCES Employer Skills Survey.

Table B.4 Sample size (n) for different geographical levels and sectors for the provision of training

Region level	Sector				
	Life Sciences	Health and Social Work	Information and Communications	Construction	Total
Rest of England	677	6,795	3,618	6,149	72,976
GCGP LEP	34	168	123	185	2,153
Cambridgeshire LEA	16	69	64	84	962
Peterborough LEA	2	16	18	12	233

Source: UKCES Employer Skills Survey.

Table B.5 Sample size (n) for different geographical levels and sectors for prevalence of hard-to-fill jobs

Region level	Sector				
	Life Sciences	Health and Social Work	Information and Communications	Construction	Total
Rest of England	181	2,595	886	976	20,134
GCGP LEP	13	60	24	25	563
Cambridgeshire LEA	9	27	12	11	251

Source: UKCES Employer Skills Survey.

Table B.6 Sample size (n) for different geographical levels and sectors for the impact of hard-to-fill jobs

Region level	Sector				
	Life Sciences	Health and Social Work	Information and Communications	Construction	Overall
Rest of England	69	1,029	333	459	7,646
GCGP LEP	5	21	11	7	211
Cambridgeshire LEA	2	11	3	4	94

Source: UKCES Employer Skills Survey.

Table B.7 Sample size (n) for different geographical levels and sectors for the impact of skills gaps

Region level	Sector				
	Life Sciences	Health and Social Work	Information and Communications	Construction	Overall
Rest of England	186	1,362	522	927	14,976
GCGP LEP	5	34	13	26	433
Cambridgeshire LEA	3	13	6	12	186
Peterborough LEA	1	2	3	2	48

Source: UKCES Employer Skills Survey.