Attracting and retaining teachers in Cambridgeshire

Working conditions and teacher flows from a School Workforce Census data perspective

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Executive Summary

The numbers of school-aged children in Cambridgeshire are projected to increase over the next ten years. This means that ensuring a sufficient teacher supply in the Local Authority (LA) is of great importance. To do so, measures to maintain the area as an attractive area to work in will be needed, especially to attract teachers for science, technology, engineering and mathematics (STEM)-related subjects given the growing demand for future STEM professionals.

This report uses the School Workforce (SWF) Census to explore *working conditions* (pay, type of contract and employment status) and *flows* (numbers of new entries and leavers) of teachers in Cambridgeshire as compared to elsewhere in the country between 2010 and 2015. The report uses data from secondary school teachers working in state-funded establishments.

With regard to *working conditions*, our findings indicate that compared to the national average, teachers in Cambridgeshire (1) are more likely to earn a salary within lower pay ranges, (2) are more likely to work part-time and (3) since 2010 have seen an increase in their chances to work under fixed-term or temporary contracts. These conditions may be making Cambridgeshire less attractive than other LAs for teachers to work in.

With regard to teacher *flows*, or replacement rates of teachers, our findings point to a larger gap between the proportions of new entries and the proportions of retirees in Cambridgeshire compared to the national level. The difference is even starker for teachers of STEM-related subjects. Overall, Cambridgeshire also experienced smaller proportions of entries and higher proportions of retirement than three other LAs which we examined in the analysis, namely, Hertfordshire, Oxfordshire and Inner London.

In sum, these analyses suggest that *teacher shortages are a real threat for Cambridgeshire*. Therefore, strategies to attract larger numbers of teachers to work in Cambridgeshire will be important and necessary to maintain a sufficient supply of teachers.

Past research identified that insufficient pay is a factor influencing teacher choices to leave the profession. Hence, looking into mechanisms to ensure better working conditions for teachers in the LA is a potential area for action. In this report, teacher *working conditions* and *flows* were explored in isolation from other factors which can make an LA attractive to work in. Therefore, as a first step, future research looking at for example housing prices and other costs of living in Cambridgeshire is needed to see how these conflate with this reports' findings concerning pay. Such research can then inform future policy efforts to make the area a more attractive LA in which to work.

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Abbreviations

DfE	Department for Education
LA	Local Authority
STEM	Science, Technology, Engineering and Mathematics
SWF Census	School Workforce Census

1. Introduction

The recruitment and retention of teachers is of concern both nationally and locally in Cambridgeshire, especially given the projected growth in the numbers of school-aged children in the next ten years.[1] Between 2013 and 2021 there is a projected 20% increase in the numbers of children aged between 5 and 10, and a 15% increase in the numbers of children aged 11 to 15.[2] The National Audit Office released a report in February 2016 on schools' need for new teachers. It identified indicators which suggest growing teacher shortages: the rates of vacancies and temporarily filled positions in state-funded schools doubled between 2011 and 2014 (from 0.5% to 1.2%); difficulties recruiting newly qualified teachers were reported in significant proportions by school leaders; more subjects are taught by teachers without relevant qualifications in their subject (for physics this rose from 21% to 28% between 2010 and 2014); and leaving rates for maths and science teachers are above average.[3] Parallel to these changes we have seen a growing demand to fill science, technology, engineering and mathematics (STEM)-related jobs,[4] meaning that equipping children with the right STEM skills to be successful participants of the future workforce is crucial.

Furthermore, working conditions can impact teachers' decisions to join and leave the profession. The 2015 'Why Teach?'[5] Survey asked 1,010 teachers across England about the factors which influence their choices to join or leave the teaching profession. When asked about the reasons for potentially leaving the profession, nearly half (43%) of the respondents stated that being 'insufficiently paid' would be an influential factor. Among the factors affecting their choice of work location, 60% of the respondents said that the 'quality of life in the local area', for example living costs, was an important consideration.

To respond to these changing demographic and recruitment trends, and emerging job skills' requirements, it will be vital to secure a sufficient supply of qualified teachers in Cambridgeshire and to take measures to ensure that the Local Authority (LA) remains as an attractive location for teachers to work. Informed by these projections and past research, this report explores the current status with respect to working conditions and flows of teachers in the Cambridgeshire area and how they compare to the national situation. This report aims to provide information to help gauge the extent to which teacher shortages are present in Cambridgeshire and how the challenges may compare to the national landscape.

[1] Office for National Statistics (2015).

[2] Manley (2016).

[3] National Audit Office (2016).

[4] UK Commission for Employment and Skills (2013).

[5] LKMco (2015).

Cambridge Ahead asked RAND Europe to undertake this project as a first step to increase the evidence base to inform future research endeavours and policy efforts to address this issue in the area.

This report presents key findings stemming from analyses of the School Workforce (SWF) Census data. After exploring other data sources, the SWF Census was identified as the most complete source containing information regarding the working conditions and flows of teachers with sufficient respondents nationally, as well as in Cambridgeshire. The SWF Census provides data on teachers working in state-funded establishments in England. Our analyses focused on data from 2010 to 2015 and for secondary school teachers only.[6]

In Section 1, the working conditions of teachers in terms of their *pay*, *type of contract* and *employment status* are explored. Section 2 examines teacher flows in terms of the proportions of *leavers* and *new entries*. Furthermore, the analyses are also presented by subject taught and compare Cambridgeshire not only to national data but also to those of three other LAs: Hertfordshire, Oxfordshire and Inner London.

[6] Only data from 2010 to 2015 are analysed because earlier iterations of the SWF Census collected the data differently, posing possible comparability issues. See Department for Education (n.d.).

2. Method

This report presents analyses of the teacher working conditions and flows for the Cambridgeshire area using the SWF Census data. Basic descriptive statistics – primarily counts and cross-tabulations – were used to explore these aspects and are presented in the form of percentages.[7] Appendices A to G provide additional information, including more detailed data tables and figures that supplement the findings presented in the main body of the report. A variety of other databases were consulted and considered for this project. However, many were not publicly available or contained only partial or limited (i.e. few cases) information specific for Cambridgeshire that was relevant to the report's research aims. Appendix G provides details on the data sets that were considered for this project and the reasons why these were not used.

2.1. The SWF Census data

The SWF Census covers all publicly funded English schools and is statutorily collected on an annual basis in November. It was first collected in 2010 and contains information about individual teachers. These data are obtained from both LAs and schools using a Department for Education (DfE) extraction software. Which entity provides which information is agreed upon prior to initiating the collection. The collection process consists of five stages encompassing data extraction and validation by both the DfE and schools. After a first review by the DfE of the provided data, schools or LAs have the opportunity to make any edits and resubmit the data. Only after this reiterative process of quality assurance is the final data set released.[8] Non-response occurs when schools do not provide complete or approved information. Between 2010 and 2015, the proportion of schools failing to provide approved data fluctuated between 0.4% and 1.9% of the total population of schools in England. Hence, non-response rate is negligible and does not substantially affect the representativeness of the data to the true population (refer to Table 4, Appendix A for full figures).

Access to the SWF Census data was obtained through an application to the DfE requesting an extract of the Census. Appendix F lists the variables contained in this extract. Only non-disclosive or non-sensitive data items were requested to ensure the anonymity of the cases; for example, only merged pay range data were requested rather than discrete salaries. Furthermore, while these data are collected through a

[7] No statistical difference tests were conducted as part of the analysis due to the nature of the data. Since these are census data, any observed differences represent a true difference in the population rather than between samples. It is of course up to the reader to judge and determine if the observed differences are meaningful. In this report, we provide our interpretation of these data as guidance.

[8] For the technical specifications for each census year, see UK Government (2016).

systematised procedure from schools, there are only a few mandatory fields schools are required to provide. The minimum data set for matching purposes consists of: Teacher number, Family name, Given names, Date of birth, NI number.[9] Therefore, while Census data, some cases had missing LA name, Pay range, Subject taught or Leaver type information.

This report covers data from 2010 to 2015, and while data are collected from primary and secondary schools, this report uses data pertaining only to teachers working in state-funded secondary schools since information about subjects taught was only available for teachers teaching at this level of education. Furthermore, for the analysis only cases which had information on 'LA name' were included because a main purpose of the analyses was to compare Cambridgeshire to national averages. For each census year the data of approximately 2,000 secondary school teachers in Cambridgeshire were analysed, and of approximately 3,300 state-funded secondary schools nationally (in 2015 specifically, this amounted to 3,268 state-funded secondary schools). Please note that not all cases contained information about subject taught – e.g. in 2015, four out of the 33 secondary schools in Cambridgeshire did not return curriculum data. For the exact numbers of teachers that were included in the analysis please refer to Appendix A.

Furthermore, the analyses compare Cambridgeshire not only to national data but also to those of three other LAs:

- *Hertfordshire*, because it is a neighbouring LA in the east of England;
- *Oxfordshire*, because it is a comparable LA in terms of its 'university' status and comparable living costs[10]; and
- *Inner London*, because London is an attractive city in which to work[11] and therefore a potential competitor for Cambridgeshire in attracting new teachers.

Cambridgeshire is compared to these other three LAs in all analysis sections (3.1 and 3.2.) and sub-sections except 3.1.3 since no meaningful comparisons were distinguished in terms of the part-time and full-time employment status of teachers.

[9] Department for Education (2016).

[10] The Guardian (2015).

[11] Impact Teachers (2016).

3. Findings

3.1. Working conditions

This section begins by exploring the working conditions of teachers by looking at variations in terms of *pay*. In the analysis comparisons are made across different dimensions:

- Cambridgeshire averages are compared to national averages
- Comparisons are made across census years, and
- Comparisons are made by subjects taught.

Furthermore, when relevant, information about how Cambridgeshire compares to the three other LAs (Hertfordshire, Oxfordshire and Inner London) is presented in text (with detailed data presented in Appendix D).

In addition to examining differences between Cambridgeshire and the national landscape in terms of teacher *pay*, the working conditions of teachers are also analysed by looking at *type of contract* (i.e. permanent, fixed term or temporary) and *employment status* (i.e. part-/full-time employment). Variations across years are also noted.

3.1.1. Working conditions: Teacher pay

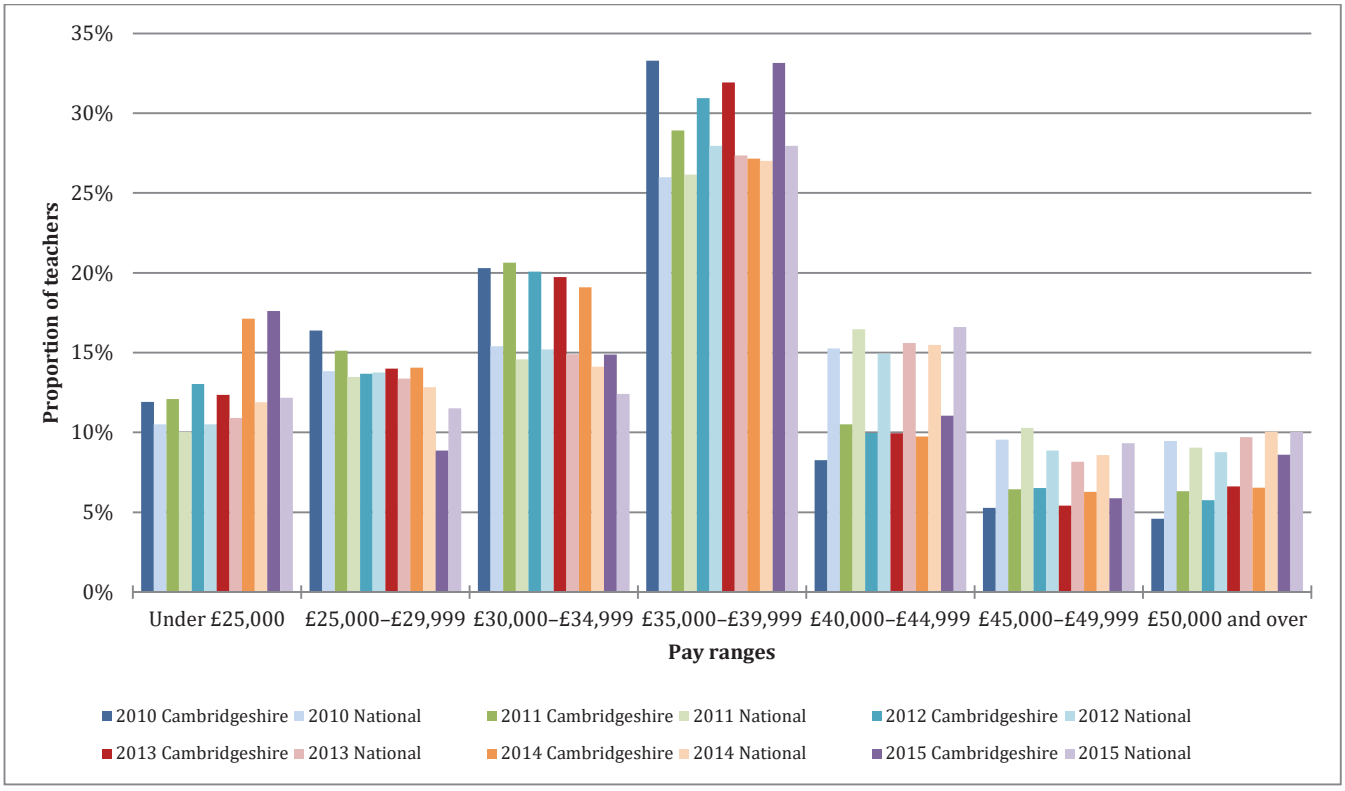
In this section, we present the profiles of teacher *pay* across the different census years for Cambridgeshire and nationally, first focusing on STEM teachers, and then examining the findings in other subjects as well for each census year.

STEM teachers' *pay*

Figure 1 shows the proportions of teachers of STEM-related subjects distributed across *pay ranges* for each census year. The figure clearly shows that higher proportions of Cambridgeshire STEM teachers earn a salary within lower pay ranges (i.e. under £25,000, £25,000–29,999, £30,000–£34,999) compared to the national average – and lower proportions of STEM teachers in Cambridgeshire earn salaries in the higher pay ranges (i.e. £40,000–44,999, £45,000–£49,000, more than £50,000) than the national average. Furthermore, this finding can be seen across all census years examined, and in fact, the gap between Cambridgeshire and the national level has broadened over time: in 2010, 12% of Cambridgeshire STEM teachers earned under £25,000 while at the national level this was 10%. In 2015, this proportion increased for Cambridgeshire by 5 percentage points to 18%, while the national average experienced a

smaller increase of 2 percentage points to 12%. Hence, in 2015, the proportion of STEM teachers who earned under £25,000 was 6% greater in Cambridgeshire than nationally, while this gap was only 2% in 2010.

Figure 1. *Pay ranges* of teachers of STEM subjects across census years



When interpreting these findings, factors which may explain the difference in *pay* between Cambridgeshire and the national averages need to be considered. Given the connection between earnings and years of experience – more years of experience tend to equate with higher earnings (refer to Appendix B, Figure 10) – this difference could be due to a larger proportion of less experienced STEM teachers working in Cambridgeshire. To assess this possible explanation, the distributions of teachers across years of experience for Cambridgeshire and nationally were explored. Table 1 portrays the different proportions of STEM teachers by *years in service* for each census year for Cambridgeshire compared to the national situation. No notable differences are observed between the Cambridgeshire and the national proportions. Furthermore, after carrying out a Spearman's correlation between *years in service* and *pay range* for both samples, near-identical correlations were obtained (Cambridgeshire rs=0.696, national rs=0.679; both significant at $p>0.01$). This shows that both groups are similar with respect to their distribution of teachers according to experience and to the relationship they display between years of experience and pay. Thus, the difference in *pay* between the two groups is likely not due to a greater proportion of less experienced teachers working in Cambridgeshire.

Table 1. Proportions of STEM teachers across length of service

Proportion of teachers (%) in Cambridgeshire (C) and at the National level (N)												
	Census Year											
	2010		2011		2012		2013		2014		2015	
Years in Service	C	N	C	N	C	N	C	N	C	N	C	N
0–4 years	1.8	2.8	5.9	7.0	11.7	12.1	17.2	16.7	21.1	20.0	22.7	20.1
5–9 years	27.5	27.7	28.7	26.6	25.8	25.4	25.2	24.7	25.4	24.4	21.6	24.4
10–14 years	21.7	23.0	20.7	22.4	20.2	21.7	18.9	21.0	18.1	20.5	21.7	21.2
15–19 years	14.2	13.8	13.2	13.8	13.8	13.4	13.0	13.0	12.3	12.9	12.2	13.4
20–29 years	14.9	15.3	14.8	15.1	13.9	14.6	13.7	14.0	12.9	13.5	13.8	13.8
30–39 years	14.8	13.0	40.8	12.0	12.1	10.6	10.1	9.2	8.7	7.8	7.1	6.6
40–49 years	4.9	4.4	3.2	3.1	2.4	2.1	1.8	1.4	1.6	0.9	0.7	0.6
50–59 years	0.1	0.1	-	0.1	-	0.0	-	0.0	-	0.0	-	0.0

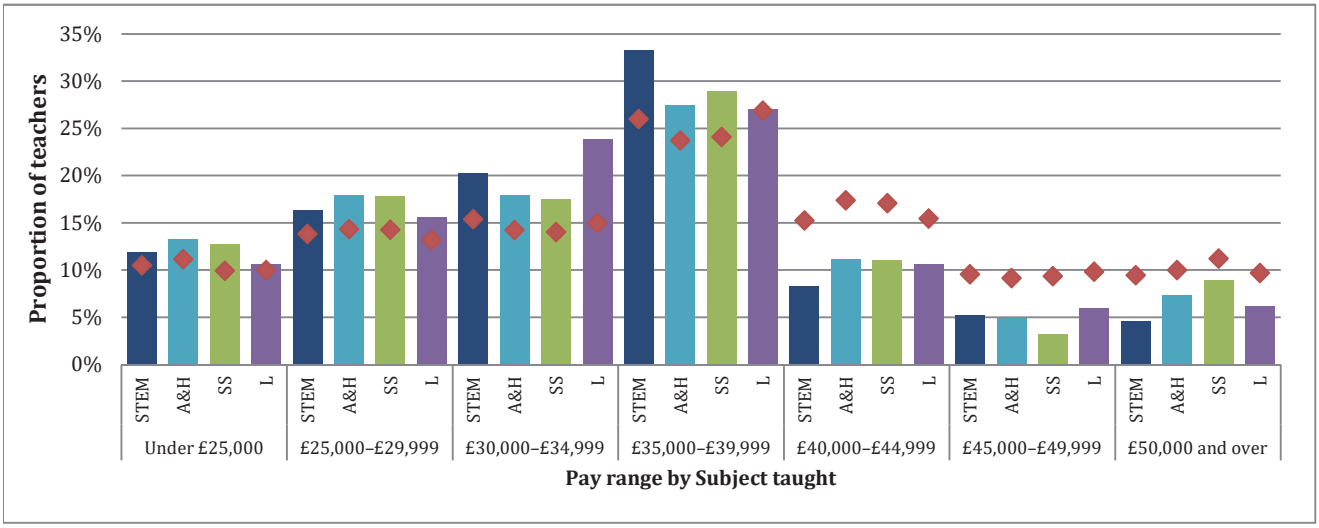
C – Cambridgeshire
N – National level

Teachers' pay in different subjects

The previous section focused solely on STEM teachers. In this section, the proportions of teachers of different subjects across *pay range* are explored to see whether the above findings are specific to STEM teachers. Proportions are also compared to the national level.

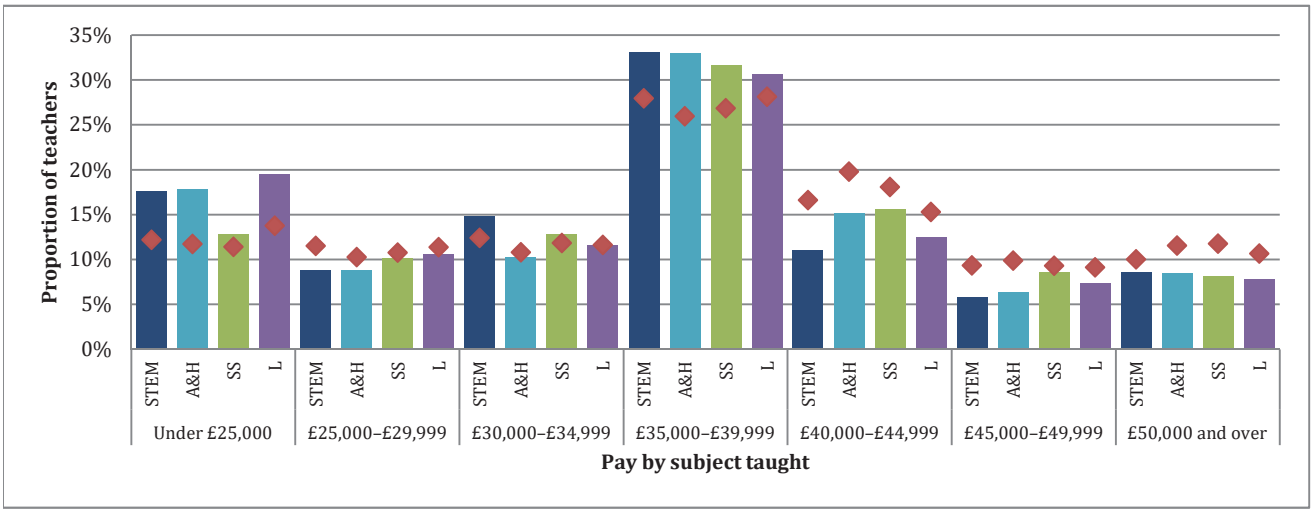
Figures 2 and 3 present teacher *pay* by *subject taught* for 2010 and 2015 (figures for 2011 to 2014 are presented in Appendix C). As was the case for STEM teachers, greater proportions of teachers of other subjects in Cambridgeshire earn salaries within lower pay ranges than nationally. In particular, the proportion of language teachers earning under £25,000 experienced a notable between 2010 and 2015 (from 10.6% to 19.5%). These increases are surprising given that inflation alone would lead one to expect to see a decrease in this proportion over time.

Figure 2. Teacher *pay* by *subject taught* in 2010



STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages; O = Other; ◆ = National level

Figure 3. Teacher *pay* by *subject taught* in 2015



STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages; O = Other; ◆ = National level

Comparing teacher *pay* to three other LAs

Looking at how Cambridgeshire compares to the three other LAs on these aspects, we can see that higher proportions of teachers, regardless of subject taught, tend to earn salaries within lower pay ranges in Cambridgeshire compared to Hertfordshire, Oxfordshire and Inner London.[12] Complete data on these comparisons are included in Appendix D1. Furthermore, this observation holds true across census years. It is noteworthy that in the case of Hertfordshire, the proportions of teachers earning under £25,000 across different subjects remained stable between 2010 and 2015. In fact, a slight decrease is observed in the proportions of teachers of STEM (11.6% in 2010, 11.0% in 2015), Arts and Humanities (13.5% in 2010, 13.0% in 2015) and Social Science (10.7% in 2010, 10.4% in 2015) earning under £25,000

[12] Given the weighted London salaries due to higher living costs, we would expect to observe lower proportions of teachers earning under £25,000. Therefore, the £25,000–£29,999 and £30,000–£34,999 pay ranges should be examined. We see a decrease in the proportion of teachers earning in the £25,000–£29,999 pay range between 2010 and 2015, while we see an increase in the £30,000–£34,999 pay range in this time span.

between 2010 and 2015 in this LA. In contrast, as for Cambridgeshire, an increase of STEM teachers earning within the lowest pay range is observed between these census years in Oxfordshire (11.5% in 2010; 14.6% in 2015) and Inner London (2.7% in 2010; 6.2% in 2015), though their proportions remain below those observed for Cambridgeshire (11.9% in 2010, 17.6% in 2015).

Looking at the other end of the *pay range* scale, a similar picture emerges. When compared to the other three LAs, we see lower proportions of teachers, on average across all subjects taught in 2015, who earn over £50,000 in Cambridgeshire (STEM=8.6%; Arts and Humanities 8.5%; Social Sciences= 8.2%; Languages=7.9%) than in Hertfordshire (STEM=9.2%; Arts and Humanities=10.5%; Social Sciences=12.3%; Languages=8.5%), Oxfordshire (STEM=7.0%; Arts and Humanities=8.6%; Social Sciences=9.3%; Languages=9.6%) and Inner London (STEM=24.8%; Arts and Humanities=29.4%; Social Sciences=27.9%; Languages=27.3%).

3.1.2. Working conditions: Contract type

The type of contract agreement an individual holds is related to varying levels of job security. Depending on the type of contract a teacher may have, staying in the teaching profession will be more or less appealing.[13] The SWF Census data provide information on contract type, and distinguish between:

- Permanent contract – an indefinite work agreement.
- Fixed-term contract – one that terminates on a specified date or on the occurrence of an event which is certain to occur on a particular date.
- Temporary contract – normally used when no end date is known; its termination is dependent on an event such as return from sick leave or maternity leave, or completion of a job.[14]

When looking at the proportions of teachers with these different *types of contract* at the national level compared to Cambridgeshire, no notable differences are observed. Table 2 shows that the vast majority of teachers hold *permanent contracts* (above 90%) both nationally and in Cambridgeshire.

Table 2. Proportions of teachers by *type of contract* across census years

Year	Type of contract	National (%)	Cambridgeshire (%)
2010	Fixed Term	3.9	2.7
	Permanent	92.7	95.8
	Temporary	3	1.5
2011	Fixed Term	4.1	3.7
	Permanent	92.8	93.9
	Temporary	2.8	2.4
2012	Fixed Term	4.6	4.1
	Permanent	92.2	92.8
	Temporary	2.9	3
2013	Fixed Term	4.8	3.9

[13] Wilkin (2013).

[14] National Union of Teachers (2005).

Year	Type of contract	National (%)	Cambridgeshire (%)
2014	Permanent	91.8	93.4
	Temporary	2.8	2.3
	Fixed Term	5.1	4
2015	Permanent	91.2	93.2
	Temporary	2.9	2.5
	Fixed term	5.2	4
	Permanent	91.2	92.3
	Temporary	2.9	2.9

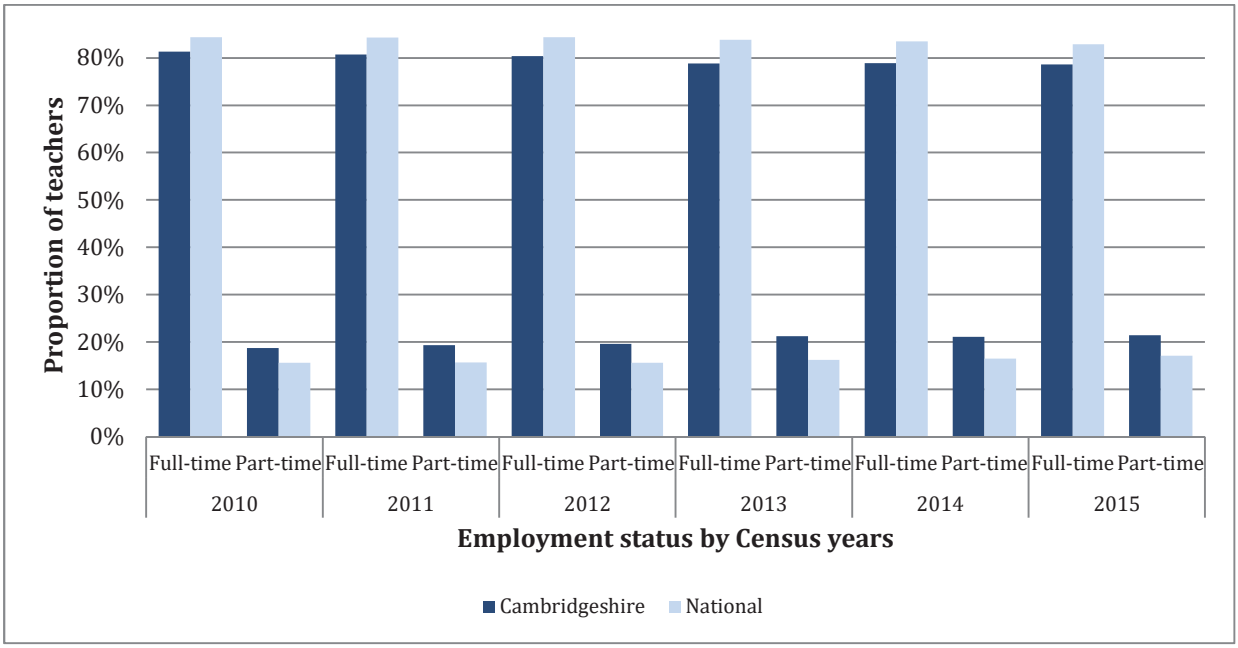
In 2010, there was a higher proportion of teachers holding *permanent contracts* in Cambridgeshire compared to the national level. However, between 2010 and 2015 this apparent advantage compared to the national average disappeared as there was a decrease in this proportion from 96% to 92%, while nationally this proportion remained more stable between 93% and 91% every year. Furthermore, across the years, there has been an increase in the proportion of teachers holding a *fixed-term contract* both nationally and in Cambridgeshire. At a national level, the proportion of teachers working under a *fixed-term contract* went from 3.9% to 5.2%, while in Cambridgeshire this increased from 2.7% to 4%. In terms of the proportion of teachers working under a *temporary contract* this stayed roughly the same across the years at the national level, while fluctuations were seen in Cambridgeshire. However, in 2015 the same proportion of teachers (2.9%) held *temporary contracts* in Cambridgeshire and at the national level.

In Appendix D2 the distributions of teachers by *type of contract* are presented for the other three LAs we examined for this report. Focusing on *permanent contracts,* Hertfordshire experienced no change in this percentage between 2010 and 2015 (it remained at 90.5%). For Oxfordshire this percentage also remained stable at 92%, while Inner London experienced a decrease from 92.5% to 90.4%. Two observations are worth noting: 1) in 2015 the proportions of *permanent contracts* have converged towards the national average in all LAs, and 2) while Inner London also experienced a decrease in this proportion between 2010 and 2015 and actually lies under the national level, this decrease was steepest for Cambridgeshire.

3.1.3. Working conditions: Employment status (part-time or full-time)

Figure 4 shows that between 2010 and 2015 there was an increase in the number of teachers working *part-time* both in Cambridgeshire and at a national level. Still, the proportion of part-time teachers in Cambridgeshire remained above the national average across the years. In 2015, 21.4% of Cambridgeshire teachers worked *part-time*, compared to 17.1% nationally.

Figure 4. Teacher *employment status*



The higher proportion of *part-time* teachers in Cambridgeshire compared to the national level could explain the findings in sub-section 3.1.1 showing higher proportions of teachers earning salaries within lower pay ranges in Cambridgeshire. To examine the plausibility of this explanation, the proportions of Cambridgeshire *full-time* teachers earning under £25,000 were compared to the national level. Figure 11 in Appendix B2 presents the distribution of *full-time* teachers across the different *pay ranges*. The findings show that again, higher proportions of *full-time* teachers in Cambridgeshire earn salaries under £25,000 compared to the national average. This therefore suggests that the observed tendency of Cambridgeshire teachers to earn salaries within lower pay ranges is not due to having higher proportions of *part-time* teachers.

3.1.4. Working conditions: Key messages

After exploring the working conditions of teachers in Cambridgeshire and how these compare to the conditions of teachers across the country, the analyses show that in terms of *pay*, teachers in Cambridgeshire, including STEM teachers, tend to earn salaries within lower pay ranges than teachers in other parts of the country. Therefore, in terms of *pay*, Cambridgeshire is likely a less attractive LA for teachers. Furthermore, there is no sign of improvement: in fact, the trend since 2010 shows an increase in the proportions of teachers earning below £25,000 and this increase is more prevalent in Cambridgeshire than in the other LAs examined.

With regard to *type of contract*, there was a steeper decrease in the proportion of *permanent contracts* in Cambridgeshire than in other LAs or at the national level. Finally, Cambridgeshire experienced an increase in its proportion of *part-time* employment between 2010 and 2015.

When considering the findings related to *pay*, *type of contract* and *employment status* of teachers, we can conclude that generally the conditions for Cambridgeshire teachers tend to be less attractive than for teachers in other parts of the country. Increasingly lower pay and reduced job security (as reflected in

more *part-time*[15] contracts and as noted reduction in *permanent contracts*) are issues that need to be carefully overseen in coming years.

3.2. Teacher flows

In this section the proportions of teachers leaving and entering the teaching profession are presented for each census year. By counter-posing these proportions an estimate can be made of the replacement rates of teachers each year. This analysis is useful to inform setting future targets on the number of new teachers which may be needed in Cambridgeshire to avoid teacher shortages.

3.2.1. Leaver flows

This sub-section begins by looking at the proportions of teachers who left their teaching posts between 2010 and 2014.[16] In the data set, teacher leavers are classified as: *retired*, *deceased*[17] or *wastage*. *Wastage* refers to 'full-time teachers leaving but not moving to a full-time post in another maintained school'.[18] Therefore, these teachers could be moving either to part-time jobs within the education sector, going on maternity/paternity leave or leaving the sector altogether. It is worth noting that from the available data it is impossible to distinguish those teachers who after leaving their post due to *wastage* at some point return to teaching. For this reason, the analyses below primarily focus on teachers who leave due to retirement although findings pertaining *wastage* are also presented.

Figure 5 shows that the main reason for Cambridgeshire teachers to leave their teaching posts was *wastage*. Both at the national level and in Cambridgeshire approximately 70% of teachers who left their teaching post left for this reason. Furthermore, approximately 30% of teachers leaving their teaching post *retired* each year. Figure 5 also shows that the proportion of teachers retiring gradually increased each year (from 20% to 30%). Although the differences between Cambridgeshire and England in the proportion of teachers who leave because of retirement was stable between 2010 and 2013, a higher proportion of teachers left the profession due to *retirement* in Cambridgeshire (31%) than at the national level (25%). The recent increase in the proportions of retirees in the past five years is in line with projections that show an ageing teaching workforce.[19] It is interesting to observe that this is a particularly pressing and probably enduring issue for Cambridgeshire since in coming years it is likely that retirees' figures will continue to increase.

[15] While *part-time* employment is related to lower earnings, it is necessary to note that *part-time* employment does not necessarily mean a negative working condition since this type of employment status can be advantageous for striking a right family-life/work-life balance.

[16] At the time of requesting the data, the SWF Census data set could only be made available containing information for these years. Data on leaver types for 2015 were not yet available.

[17] Deceased percentages are not presented in this report since these values were negligible each year.

[18] Smithers and Robinson (2004).

[19] Flynn (2014).

Figure 5. Teacher leavers by *leaver type* across years

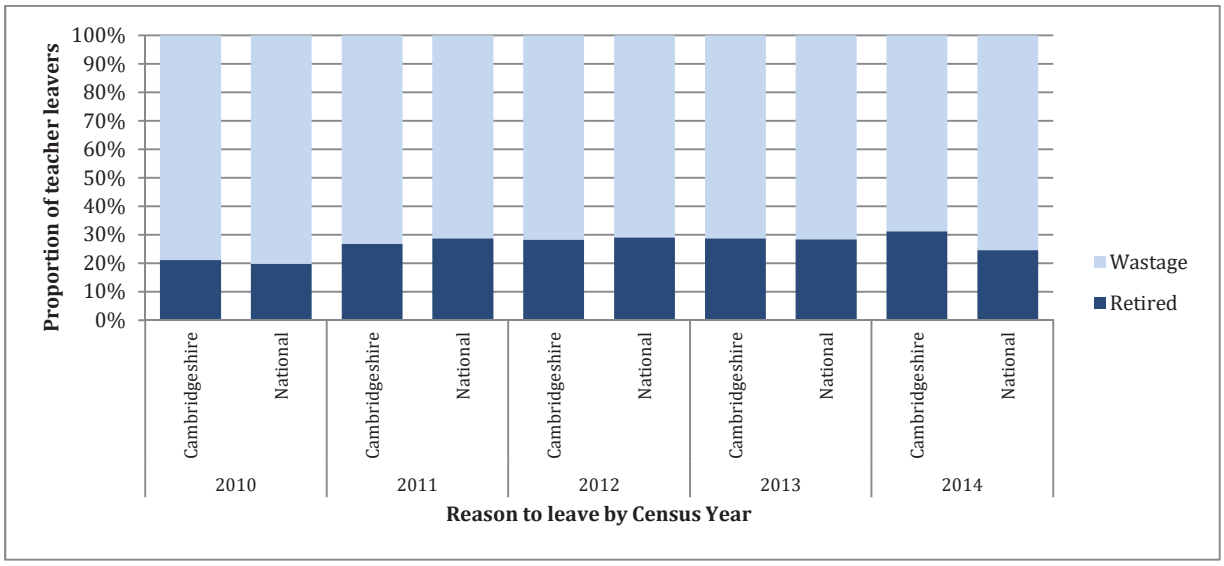
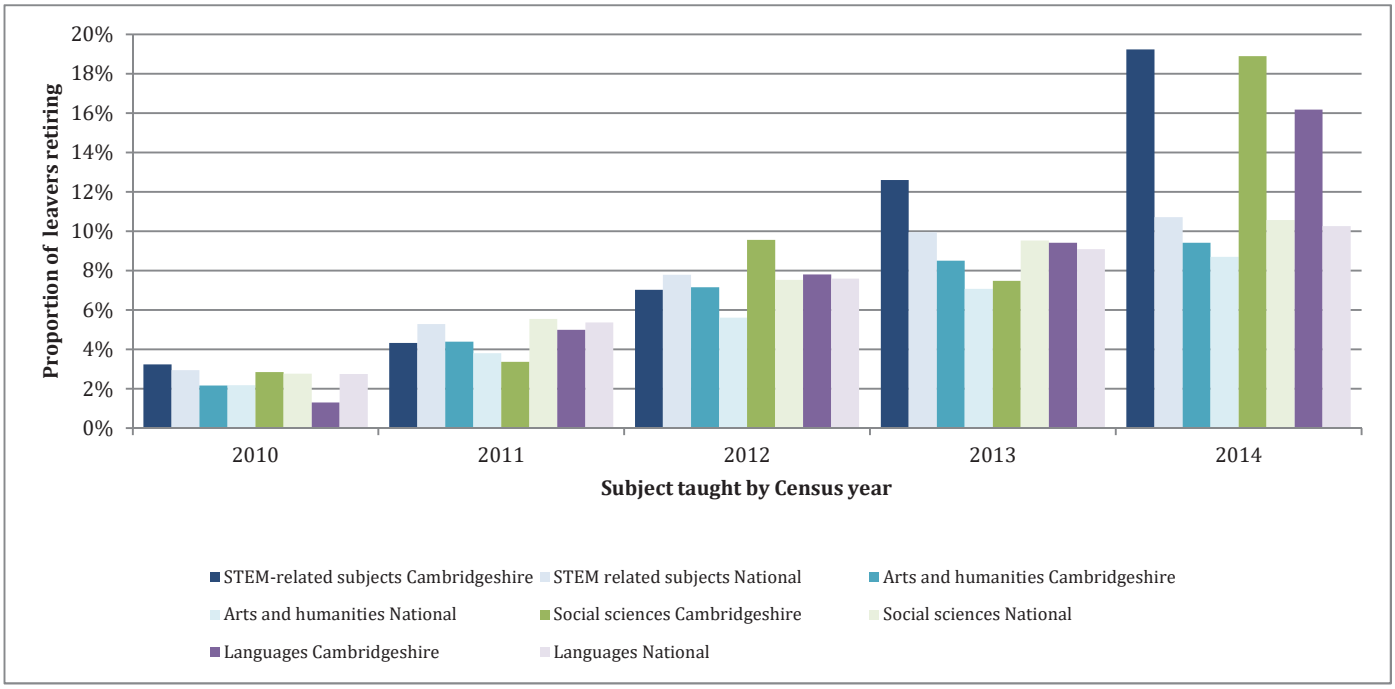


Figure 6 focuses on the proportions of teachers leaving due to retirement by subject taught. Apart from observing a gradual increase in retiree proportions each year both for Cambridgeshire and the national level, we can also see that in 2014 Cambridgeshire experienced notably higher proportions of teachers leaving the profession due to retirement than the national average. In Cambridgeshire the proportions of STEM (19.2%), social science (18.8%) and language (16.2%) teachers leaving due to retirement were nearly double those observed at the national levels (10.7% STEM, 10.5% social science and 10.2% languages).

Figure 6. Proportion of teachers leaving due to *retirement* each year by subject taught



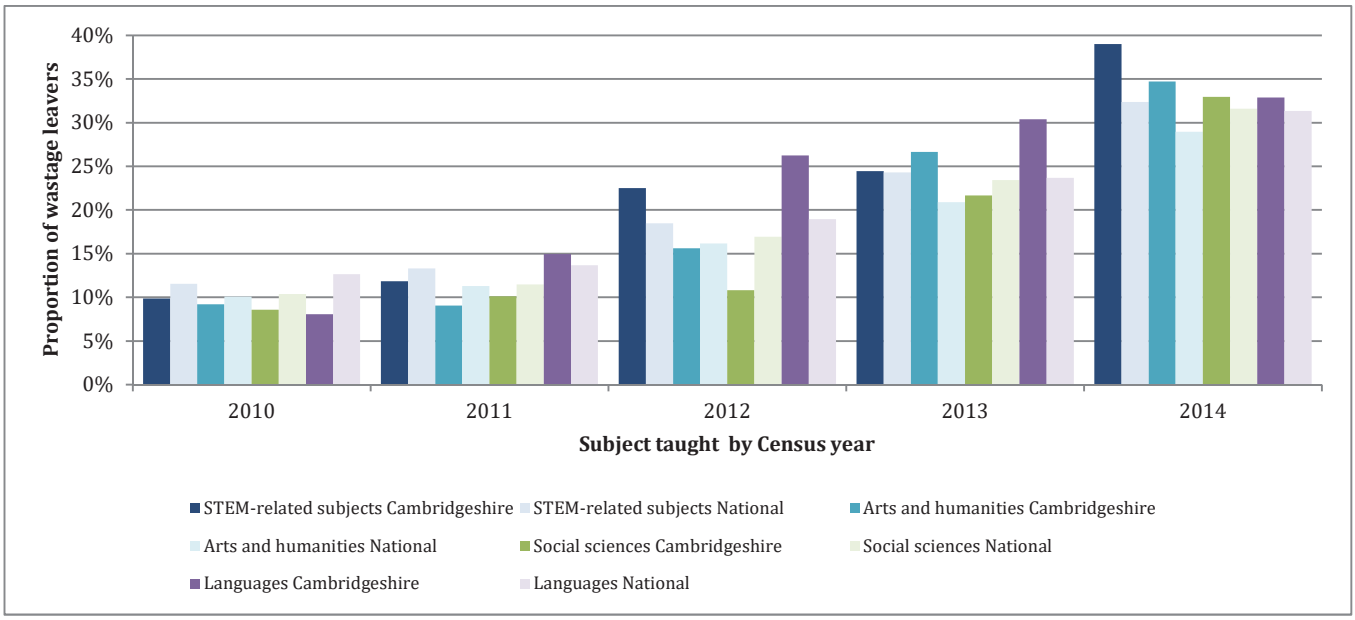
When looking at differences by subject, we see that in 2013 and 2014 STEM subjects suffered the largest proportions of teachers leaving due to retirement both in Cambridgeshire and at the national level.

Nevertheless, in both years, the proportion was largest in Cambridgeshire. In absolute numbers, this means that 139 STEM teachers retired in Cambridgeshire in 2014.

In terms of teachers leaving due to *wastage*, Figure 7 shows the proportions by subject taught for 2010 to 2014. In this case increases in *wastage* proportions are also observed across the years both in Cambridgeshire and nationally. While in 2010 and 2012 the *wastage* proportions were similar in Cambridgeshire and nationally, notable differences emerge from 2012. For example, focusing on STEM teachers, we can see that since 2012 there have been higher proportions of leavers due to *wastage* in Cambridgeshire than nationally. The highest difference is in 2014 when 39% of Cambridgeshire STEM teachers left due to *wastage*, while this was 32% for the national average.

As noted above, teachers leaving due to *wastage* may be leaving to part-time posts, going on maternity/paternity leave or leaving the teaching profession altogether. Future research should focus on trying to better understand these movements. It would be interesting to know whether each year increasingly more *wastage* teachers in Cambridgeshire moved to part-time jobs, left the profession altogether or went on maternity/paternity leave than at the national level. Greater clarity on this matter will help inform and establish necessary policies to make Cambridgeshire attractive for teachers to work in.

Figure 7. Proportions of teachers leaving due to *wastage*



When comparing Cambridgeshire to other LAs in terms of *retiree* and *wastage* leavers proportions, Cambridgeshire also stands out by having the highest percentages of leavers retiring. In 2014 for example, in Hertfordshire 10.6% of STEM teachers leaving their posts retired; in Oxfordshire this was 10.5% and in Inner London 13.6%. In each case, these proportions remain below the 19% that was observed for Cambridgeshire in 2014 (for full figures refer to Appendix D4).

3.2.2. Entry flows

In the following the proportions of teachers holding a teaching post for the first time in each census year are examined. Figure 8 shows that between 2010 and 2015 the proportion of incoming teachers increased

each year both in Cambridgeshire and at a national level. However, the proportion of incoming teachers in Cambridgeshire remained below the national average.

Figure 8. Teachers with *first employment in teaching*

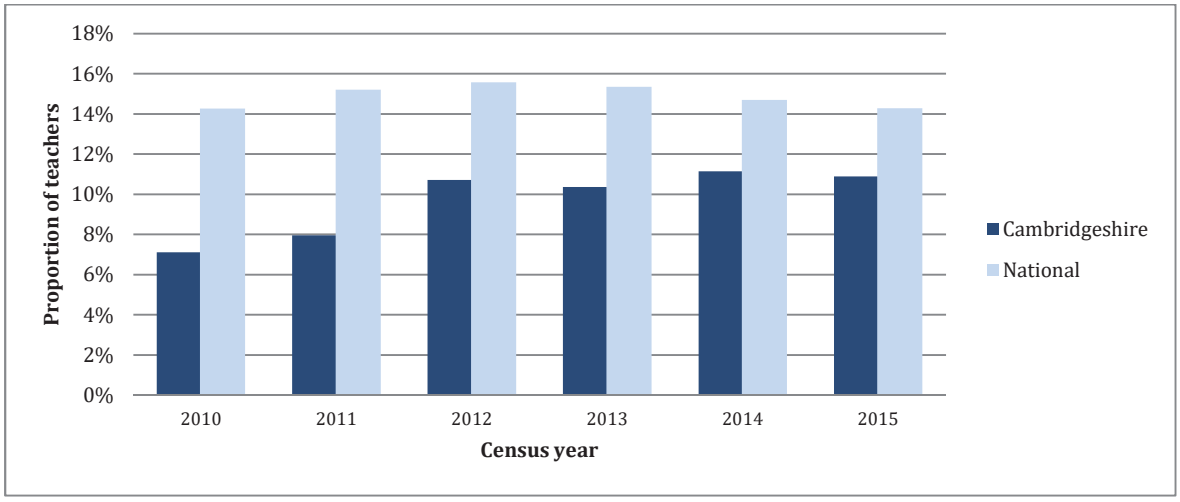
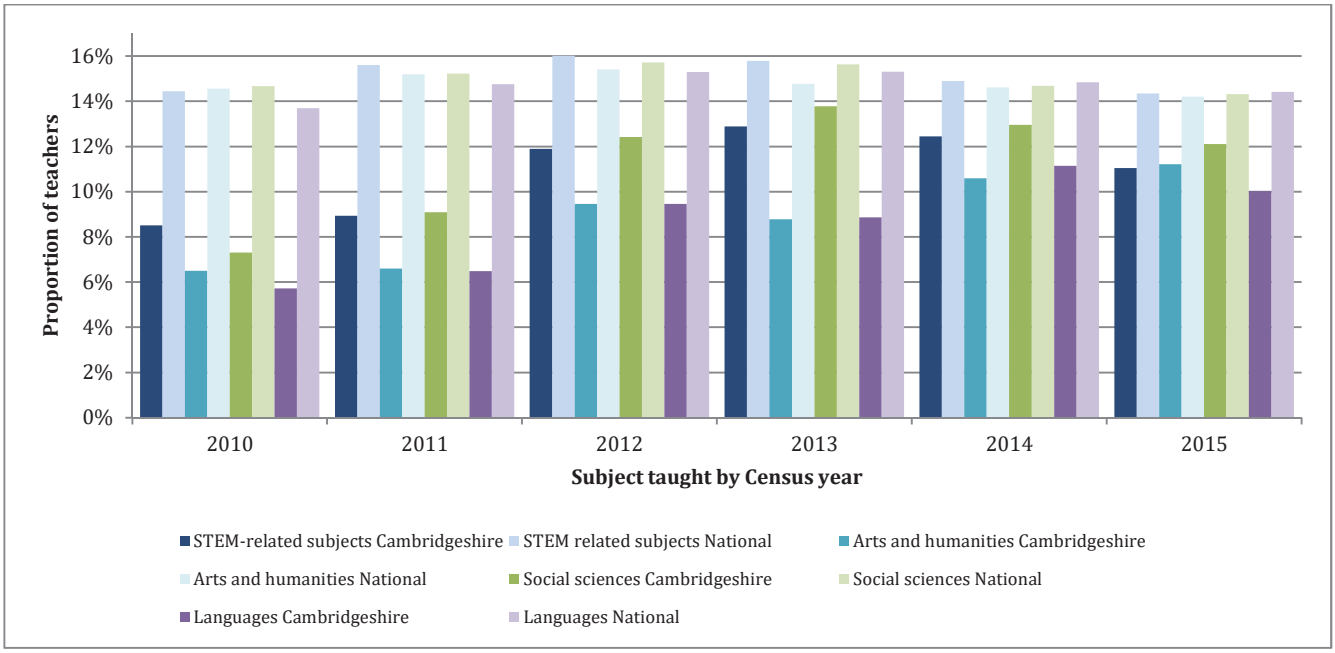


Figure 9 presents the proportions of new teacher entries by subject taught. Regardless of subject taught, between 2010 and 2015 there were lower proportions of new entries in Cambridgeshire than there were at the national level.

Focusing on STEM teachers in Cambridgeshire, while there was a slight increase in the proportion of new entries between 2010 and 2013 (from 9% to 13%), a slight decrease took place between 2013 and 2015. In 2014, 12% of STEM teachers in Cambridgeshire joined the teaching workforce for the first time, while in 2015 only 11% of new entrants went into teaching STEM-related subjects.

Figure 9. Teachers with *first employment in teaching* by *subject taught*



Comparing Cambridgeshire to the other LAs, we see that Cambridgeshire is the LA with the lowest proportion of STEM new entries in 2015: in Hertfordshire there were 15.6% STEM new entries, in

Oxfordshire 12% and in Inner London 17.3%. In fact, Inner London is the LA experiencing the highest proportions of new entries, above national levels.

3.2.3. Comparing leaver and entry flows

Comparing leaver (as measured by retirements) and entry flows from Figures 6 and 9 shows that at a national level, the entry of new teachers seems to be taking place at necessary levels to cover those leaving due to retirement. Similarly, looking at the three other LAs, the proportions of new entries across subjects taught were higher than the proportions of retirees in each census year (see Tables 17, 18 and 19 in Appendix D4). However, this is not the case in Cambridgeshire. While nationally in 2014 there were roughly 11% of teachers retiring and 15% of incoming teachers, in Cambridgeshire these figures amounted to roughly 19% of teachers retiring against 12% of new entries. Specifically, with respect to the replacement rates of STEM teachers in Cambridgeshire, this translates to 139 STEM teachers retiring in 2014 compared to 81 STEM new teachers entering the profession.

It is important to bear in mind that this estimated replacement rate is conservative since it does not take into account teachers leaving their posts due to *wastage* (some *wastage* teachers may be leaving the teaching profession altogether).[20] Therefore, replacement rates even for the national level may be lower than those which are needed to maintain a sufficient supply of teachers.

These findings suggest that the risk of experiencing teacher shortages in coming years in Cambridgeshire will likely be *higher* than in other parts of the country unless greater numbers of incoming teachers are attracted to the LA. The findings show that there is an ageing workforce in Cambridgeshire (higher proportions of retirements), even more so than in other parts of the country. The replacement of teachers of STEM-related subjects should be of particular concern for policymakers since higher proportions of teachers in this subject area are retiring in Cambridgeshire.

[20] However, it is also true that new entries' proportions may be different, since in this case only teachers holding a teaching post for the first time are considered. This analysis does not take into account teachers who came to Cambridgeshire from another LA. An analysis in this regard was attempted. However, there were very few cases holding this type of information (high amount of cases with these data missing). While this is a data limitation, it may also suggest that in fact the movement of teachers across LAs is not large.

4. Conclusions and recommendations

This report used the SWF Census data to examine how the teacher *working conditions* and *flows* in Cambridgeshire compared to those elsewhere in England. The findings suggest that teachers in Cambridgeshire tend to earn salaries within lower pay ranges than teachers in other parts of the country. Similarly, in the six years examined for this report, we see indications of possible decreases in job security in Cambridgeshire as there have been increases in *fixed-term* and *temporary* contracts and decreases in secure *permanent* jobs. These changes likely make Cambridgeshire a less attractive LA in which to work. In terms of teacher *flows*, the situation is also worrying: The data show lower proportions of new entries into the profession than retirements in Cambridgeshire. This is especially the case for teachers of STEM-related subjects. Therefore, these data suggest that teacher shortages are a real threat for Cambridgeshire. Strategies to attract larger numbers of teachers to work in Cambridgeshire will be important and necessary to maintain a sufficient supply of teachers.

As mentioned in the previous section, in 2014 there were 139 STEM teachers retiring in Cambridgeshire compared to 81 new STEM teacher entries. We are unable to specify or recommend future targets for absolute teacher replacement numbers due to 1) data limitations which hinder our ability to quantify *wastage* teachers leaving the profession altogether or teachers moving to Cambridgeshire from other LAs, and 2) because retirement percentages continuously change. However, while keeping these caveats in mind, the findings suggest that it is possible that around 140 new STEM teacher entries would have been needed to fully replace the number of STEM teachers retiring in Cambridgeshire in 2014. It can be expected that similar (and likely higher) numbers of new entries (or entries from other LAs) will be needed in future years to, at a minimum level, replenish new vacancies after teachers retire. This report explored these teacher working condition factors in isolation from other aspects which also make an area attractive to work in, such as living costs. Therefore, as a first step, future research should explore how these aspects of working conditions (e.g. low pay) are related to other aspects related to the quality of life of the local area (e.g. housing costs).

In terms of future action, the findings pertaining to teacher flows strongly suggest that unless more new teachers are attracted and retained, a shortage of qualified teachers is imminent in Cambridgeshire – if it is not already happening. Therefore, collecting data pertaining to Cambridgeshire teachers specifically regarding their work satisfaction and reasons to join and leave the profession will contribute to our understanding of the identified leaver and entry flows. The 'Why Teach?' survey identified that insufficient pay is a factor influencing teacher choices to leave the profession. It would be interesting to see if this is also the case for teachers in Cambridgeshire.

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Appendices

Appendix A – Counts of teachers

Table 3. Counts of teachers by *Local Authority* across *census years*

	Census Year						
Local Authority	2010	2011	2012	2013	2014	2015	Total
Cambridgeshire	1,885	1,987	2,026	1,862	1,922	1,781	11,463
Oxfordshire	2,250	2,174	2,233	2,241	2,249	2,030	13,177
Hertfordshire	5,176	5,425	5,332	5,346	5,466	5,451	32,196
Inner London	7,401	8,276	8,762	8,636	9,118	9,293	51,486
National total	***158,898***	***169,620***	***175,679***	***176,941***	***177,133***	***173,637***	***1,031,908***

Table 4. Number and proportion of schools not returning complete census data

Census Year	Number of schools that did not submit approved or authorised data	Proportion (%) of total number of publicly funded schools
2010	110	NA
2011	406	1.9
2012	179	0.7
2013	192	0.9
2014	93	0.4
2015	150	0.7

Table 5. Counts of teachers in Cambridgeshire by subject taught

Census Year	Case type	Subject taught	Frequency	Per cent (%)	Valid Per cent (%)	Cumulative Per cent (%)
2010	Valid	STEM-related subjects	740	39.3	40.4	40.4
		Arts and humanities	369	19.6	20.2	60.6
		Social sciences	315	16.7	17.2	77.8
		Languages	385	20.4	21	98.8
		Other	22	1.2	1.2	100
		Total	1831	97.1	100	
	Missing	System	54	2.9		
	Total		1885	100		
2011	Valid	STEM-related subjects	761	38.3	40.2	40.2
		Arts and humanities	409	20.6	21.6	61.8
		Social sciences	297	14.9	15.7	77.5
		Languages	401	20.2	21.2	98.7
		Other	25	1.3	1.3	100
		Total	1893	95.3	100	
	Missing	System	94	4.7		
	Total		1987	100		
2012	Valid	STEM-related subjects	782	38.6	40.4	40.4
		Arts and humanities	391	19.3	20.2	60.6
		Social sciences	314	15.5	16.2	76.8
		Languages	423	20.9	21.8	98.6
		Other	27	1.3	1.4	100
		Total	1937	95.6	100	
	Missing	System	89	4.4		
	Total		2026	100		
2013	Valid	STEM-related subjects	667	35.8	40	40
		Arts and humanities	353	19	21.2	61.2
		Social sciences	254	13.6	15.2	76.4
		Languages	372	20	22.3	98.7
		Other	21	1.1	1.3	100
		Total	1667	89.5	100	
	Missing	System	195	10.5		
	Total		1862	100		

Census Year	Case type	Subject taught	Frequency	Per cent (%)	Valid Per cent (%)	Cumulative Per cent (%)
2014	Valid	STEM-related subjects	723	37.6	41.9	41.9
		Arts and humanities	340	17.7	19.7	61.6
		Social sciences	270	14	15.6	77.2
		Languages	377	19.6	21.8	99.1
		Other	16	0.8	0.9	100
		Total	1726	89.8	100	
	Missing	System	196	10.2		
	Total		1922	100		
2015	Valid	STEM-related subjects	733	41.2	42.9	42.9
		Arts and humanities	330	18.5	19.3	62.2
		Social sciences	256	14.4	15	77.2
		Languages	369	20.7	21.6	98.8
		Other	20	1.1	1.2	100
		Total	1,708	95.9	100	
	Missing	System	73	4.1		
	Total		1,781	100		

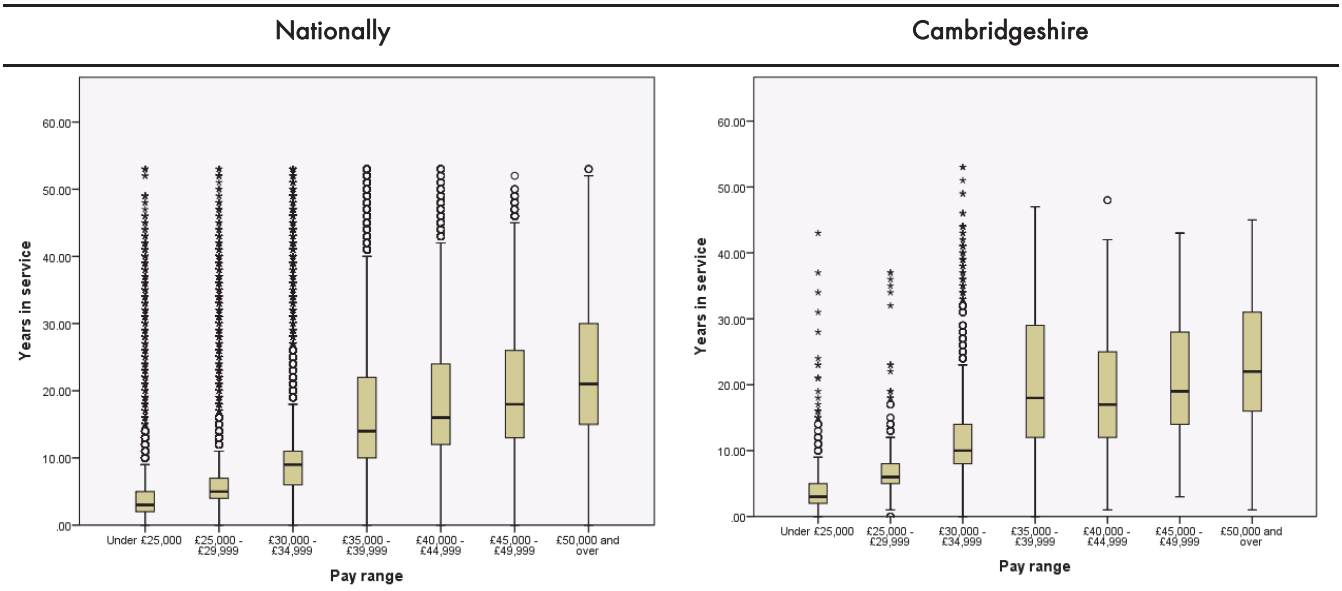
Table 6. Counts of *retirees* in Cambridgeshire by *subject taught* across census years

	Count of retirees by census year				
Subject taught	2010	2011	2012	2013	2014
STEM	24	33	55	84	139
Arts and humanities	8	18	28	30	32
Social science	9	10	30	19	51
Languages	5	20	33	35	61

Appendix B – Distributions across pay ranges

Appendix B1 – Teacher distribution across *pay ranges* according to *length of service*

Figure 10. Teacher distributions across *pay ranges* by *years in service*



These are distributions of teachers across all census years.

The above box plots show that wages increase with length of service for both England as a whole and Cambridgeshire. Spearman's correlations between pay and years in service show that there is a statistically significant positive relationship between teacher earnings and their length of service in England and Cambridgeshire (Cambridgeshire rs=0.696, national rs=0.679; both significant at p>0.01). The strength of this correlation is almost identical in both cases.

Table 7. Distribution of teachers across grouped *length of service*

		National				Cambridgeshire			
		Frequency	Per cent	Valid Per cent	Cumulative Per cent	Frequency	Per cent	Valid Per cent	Cumulative Per cent
Valid	0–4 years	128,540	12.5	12.8	12.8	1,418	12.4	12.6	12.6
	5–9 years	257,020	24.9	25.6	38.4	2,965	25.9	26.4	39
	10–14 years	219,430	21.3	21.9	60.3	2,278	19.9	20.3	59.2
	15–19 years	136,206	13.2	13.6	73.9	1,531	13.4	13.6	72.9
	20–29 years	140,476	13.6	14	87.9	1,537	13.4	13.7	86.5
	30–39 years	100,566	9.7	10	97.9	1,267	11.1	11.3	97.8
	40–49 years	20,616	2	2.1	100	244	2.1	2.2	100
	50–59 years	373	0	0	100	3	0	0	100
	Total	1,003,227	97.2	100		11,243	98.1	100	
System Missing		28,681	2.8			220	1.9		
Total		*1,031,908*	*100*			*11,463*	*100*		

Distributions shown are for all census years combined.

Cambridgeshire has similar proportions of teachers across the different groups of length of service as does the national distribution.

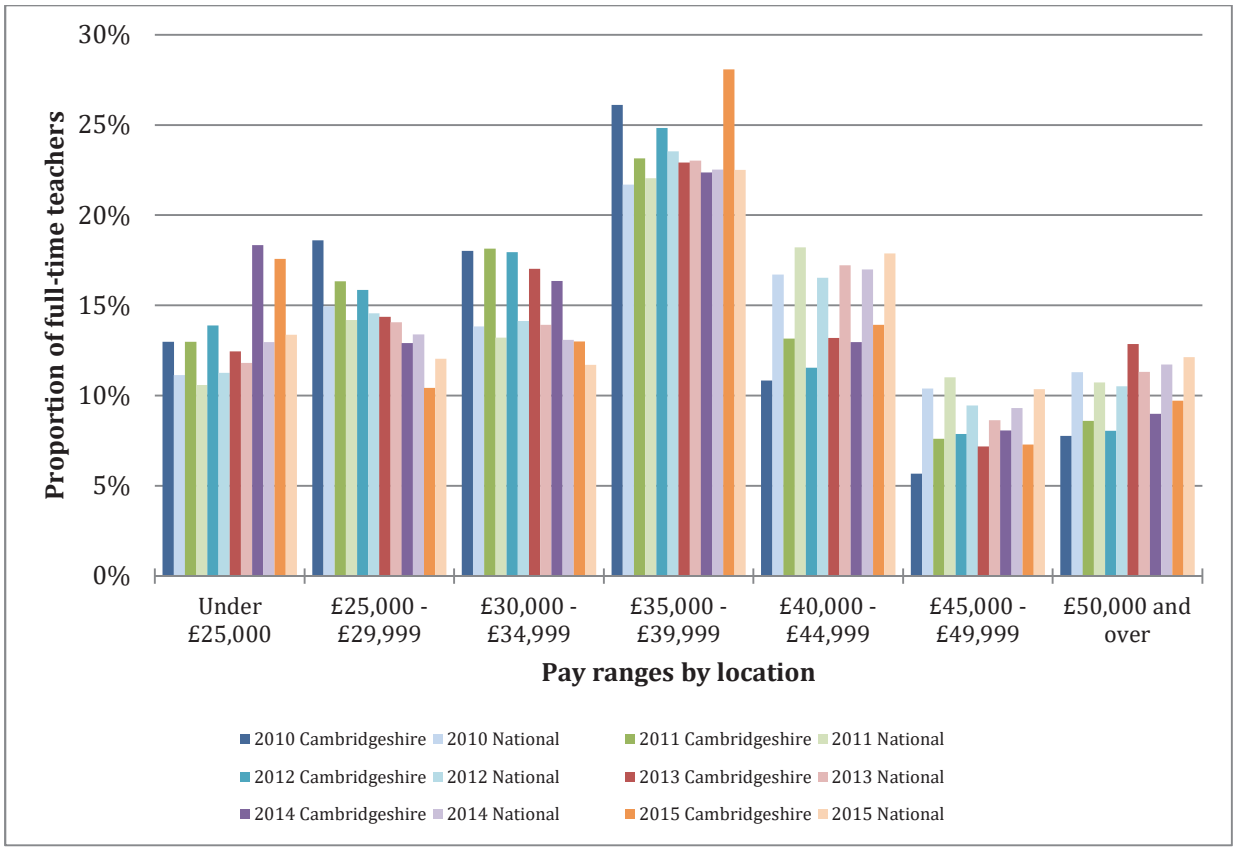
Table 8. Mean and median *pay range*

	Cambridgeshire	National
Median pay range	£35,000–£39,999 (4)	£35,000–£39,999 (4)
Mean	3.9207	3.6056

Where: 1= Under £25,000; 2=£25,000–£29,999; 3=£30,000–£34,999; 4=£35,000–£39,999; 5=£40,000–£44,999; 6=£45,000–£49,999; 7=£50,000 and over.

Appendix B2 – Distribution of *full-time* teachers across pay ranges

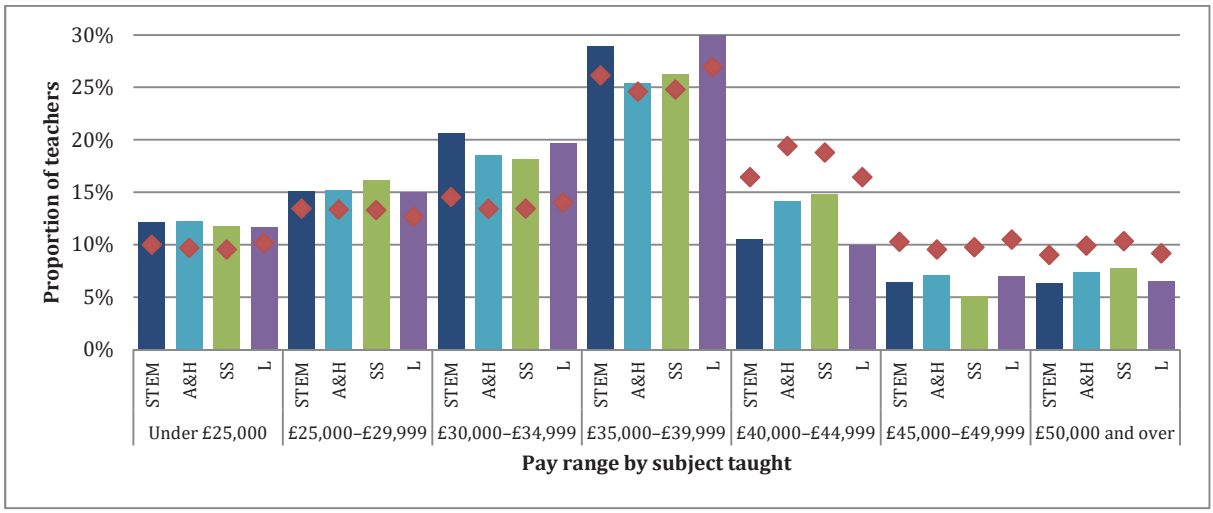
Figure 11. Proportions of *full-time* teachers across pay ranges *for all subjects*



This graph shows a near-identical distribution of teachers across pay ranges to the one observed for the distribution of pay of STEM teachers.

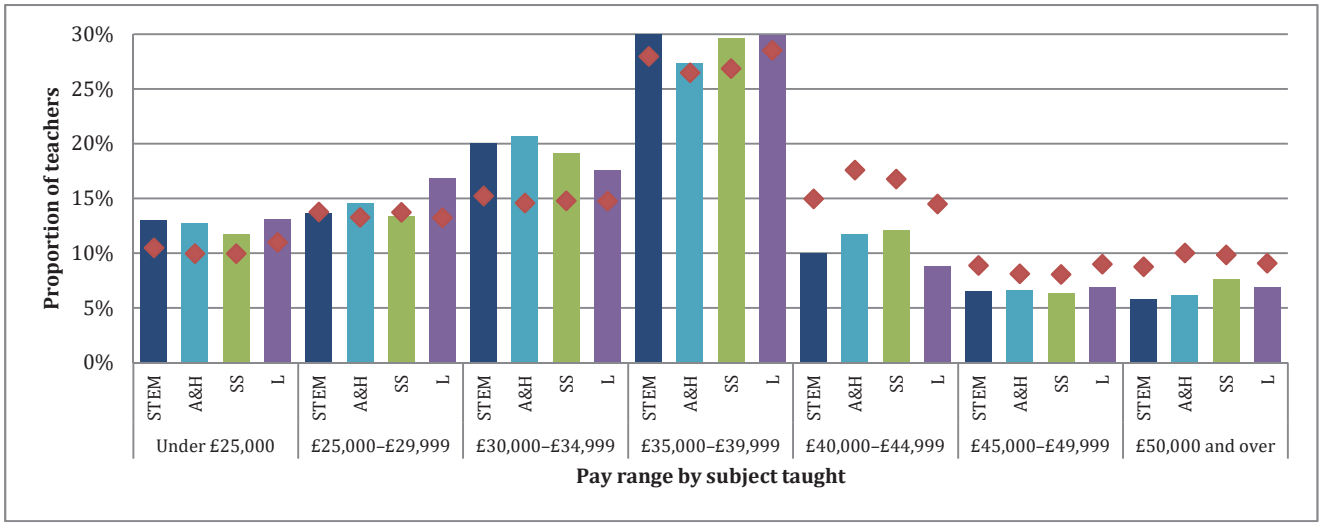
Appendix C – Teacher pay by subject taught

Figure 12. Teacher *pay* by *subject taught* in 2011



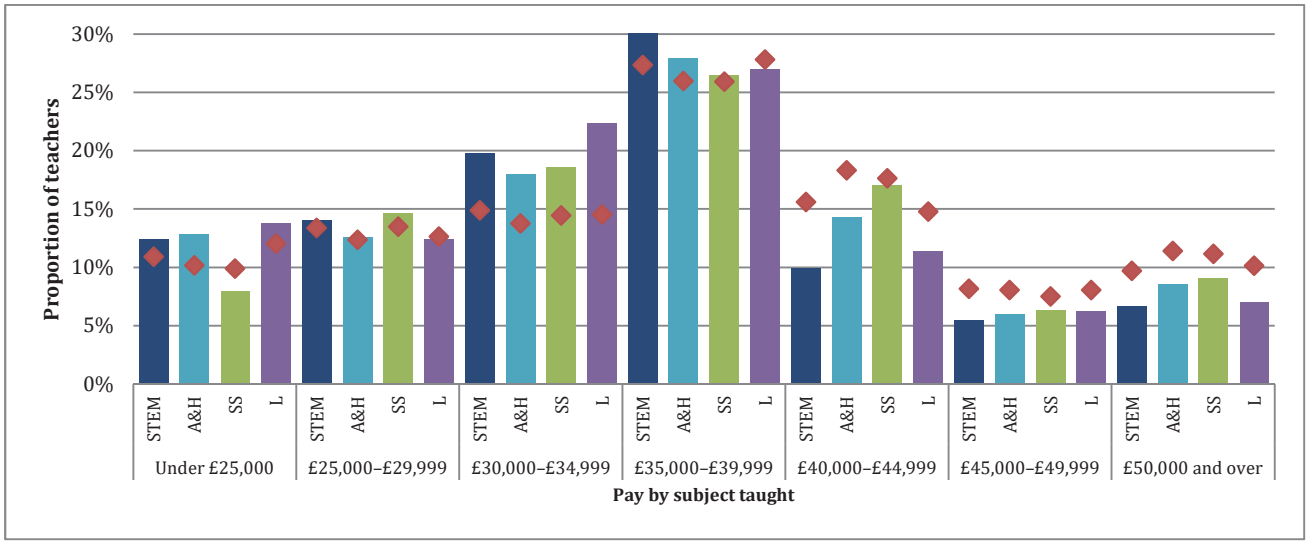
STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages; O = Other; ◆ = National level

Figure 13. Teacher *pay* by *subject taught* in 2012



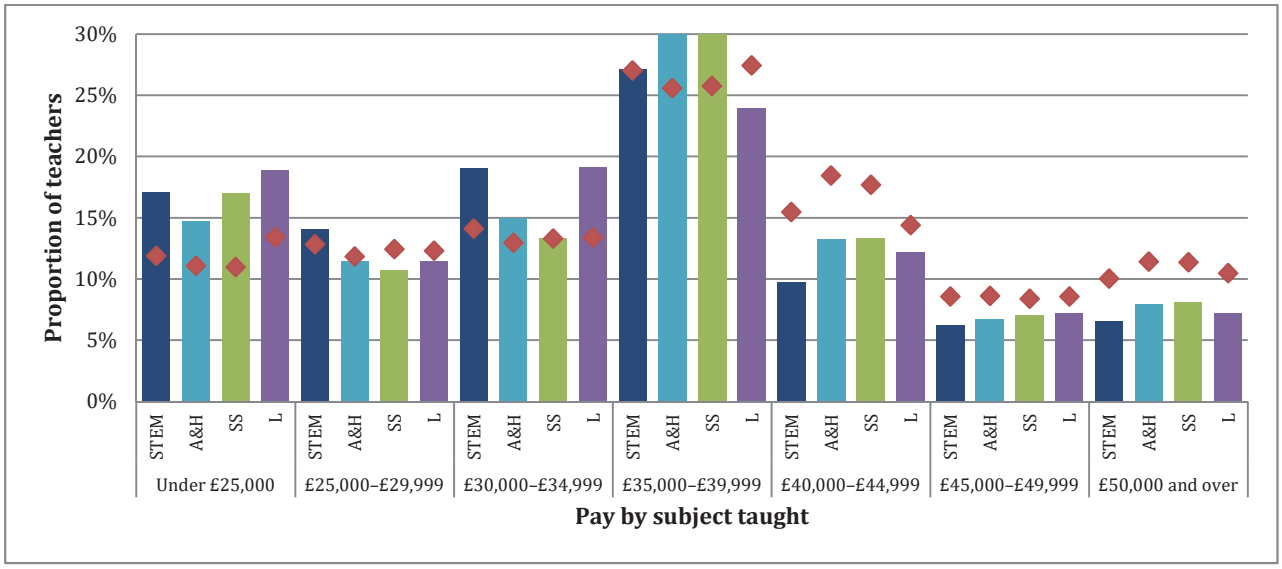
STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages; O = Other; ◆ = National level

Figure 14. Teacher *pay* by *subject taught* in 2013



STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages; O = Other; ◆ = National level

Figure 15. Teacher *pay* by *subject taught* in 2014



STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages; O = Other; ◆ = National level

Appendix D – Data on the other three LAs

Appendix D1 – *Pay* by *subject taught*

Table 9. *Pay* by *subject taught* in Hertfordshire

	STEM-related subjects (%)		Arts and humanities (%)		Social sciences (%)		Languages (%)	
Pay range	2010	2015	2010	2015	2010	2015	2010	2015
Under £25,000	11.6	11.0	13.5	13.0	10.7	10.4	11.0	11.2
£25,000–£29,999	11.5	12.5	11.4	11.8	13.0	11.5	10.1	13.9
£30,000–£34,999	15.5	12.5	15.3	11.3	12.2	12.0	14.7	13.1
£35,000–£39,999	26.2	29.3	24.7	24.8	23.3	28.0	30.0	28.6
£40,000–£44,999	16.2	15.5	16.9	16.9	16.5	14.5	16.2	13.9
£45,000–£49,999	11.0	10.0	10.4	11.9	12.2	11.3	9.7	10.8
£50,000 and over	8.1	9.2	7.8	10.5	12.2	12.3	8.4	8.5

Table 10. *Pay* by *subject taught* in Oxfordshire

	STEM-related subjects (%)		Arts and humanities (%)		Social sciences (%)		Languages (%)	
Pay range	2010	2015	2010	2015	2010	2015	2010	2015
Under £25,000	11.5	14.6	12.4	14.3	12.7	13.0	10.3	15.1
£25,000–£29,999	15.7	14.0	14.9	10.9	17.0	8.7	11.0	10.1
£30,000–£34,999	15.7	11.7	12.4	8.6	14.7	13.6	16.6	11.5
£35,000–£39,999	25.0	31.1	23.5	29.4	21.6	29.9	32.2	28.9
£40,000–£44,999	15.6	12.6	19.9	18.2	15.8	18.6	13.3	15.3
£45,000–£49,999	8.3	9.0	9.3	9.9	8.9	7.0	8.4	9.4
£50,000 and over	8.1	7.0	7.6	8.6	9.3	9.3	8.4	9.6

Table 11. *Pay* by *subject taught* in Inner London

	STEM-related subjects (%)		Arts and humanities (%)		Social sciences (%)		Languages (%)	
Pay range	2010	2015	2010	2015	2010	2015	2010	2015
Under £25,000	2.7	6.2	2.8	5.4	2.9	6.2	2.9	5.6
£25,000–£29,999	17.1	14.4	17.9	14.9	16.6	11.7	15.3	15.0
£30,000–£34,999	11.1	14.5	10.9	12.4	12.0	16.8	11.3	16.1
£35,000–£39,999	11.8	10.3	12.0	9.4	13.1	10.0	11.6	9.3
£40,000–£44,999	14.1	12.3	13.4	12.4	12.5	11.8	12.9	10.9
£45,000–£49,999	17.5	17.5	16.3	16.0	15.8	15.7	17.8	15.8
£50,000 and over	25.7	24.8	26.7	29.4	26.9	27.9	28.2	27.3

Appendix D2 – *Type of contract*

Table 12. Proportions of teachers by *type of contract* in Hertfordshire

	Proportion (%) of teachers by type of contract		
Census year	Fixed term	Permanent	Temporary
2010	6.9	90.5	1.8
2011	7.1	90.4	2.0
2012	7.4	90.1	1.8
2013	6.1	90.8	1.6
2014	6.5	90.0	1.5
2015	5.9	90.5	2.1

Table 13. Proportions of teachers by *type of contract* in Oxfordshire

	Proportion (%) of teachers by type of contract		
Census year	Fixed term	Permanent	Temporary
2010	4.5	92.0	3.5
2011	2.8	93.8	3.4
2012	3.9	92.5	3.4
2013	3.7	93.3	3.0
2014	3.2	92.0	4.6
2015	3.3	92.1	4.4

Table 14. Proportions of teachers by *type of contract* in Inner London

	Proportion (%) of teachers by type of contract		
Census year	Fixed term	Permanent	Temporary
2010	4.1	92.5	2.3
2011	4.3	91.9	2.8
2012	4.8	91.4	2.8
2013	5.0	90.3	3.1
2014	4.9	90.2	3.2
2015	5.3	90.4	2.7

Appendix D3 – *Full-time* vs. *part-time* proportions

Table 15. Proportions of teachers working full-time and part-time by LA

	Proportions of teachers (%)					
	Hertfordshire		Oxfordshire		Inner London	
Census year	Full-time	Part-time	Full-time	Part-time	Full-time	Part-time
2010	80.7	19.3	79.3	20.7	90.1	9.9
2011	81.2	18.8	78.2	21.8	90.2	9.8
2012	80.8	19.2	78.0	22.0	90.2	9.8
2013	80.7	19.3	78.5	21.5	90.1	9.9
2014	80.3	19.7	77.2	22.8	90.4	9.6
2015	79.3	20.7	76.5	23.5	90.2	9.8

Appendix D4 – Teacher flows

Table 16. Proportions of teachers by leaver type and entries by subject taught in Hertfordshire

	Proportions of teachers (%)											
	Leaver type								Entries			
	Retired				Wastage				First teaching position			
Census year	STEM	A&H	SS	L	STEM	A&H	SS	L	STEM	A&H	SS	L
2010	2.4	2.0	2.2	1.9	11.7	11.3	12.7	12.4	16.8	21.0	19.0	18.1
2011	5.5	4.4	5.0	5.2	13.8	11.7	10.7	13.8	17.7	22.3	18.2	17.8
2012	8.7	3.2	7.8	8.3	19.8	14.8	15.2	21.6	18.8	22.4	19.1	20.0
2013	7.2	4.3	6.8	9.6	22.4	20.4	22.0	22.1	17.4	20.7	17.7	20.1
2014	10.6	5.4	10.0	9.6	26.2	29.1	29.2	22.5	16.4	19.3	16.8	18.1
2015	NA	NA	NA	NA	NA	NA	NA	NA	15.6	19.4	16.0	16.8

STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages

Table 17. Proportions of teachers by leaver type and entries by subject taught in Oxfordshire

	Proportions of teachers (%)											
	Leaver type								Entries			
	Retired				Wastage				First teaching position			
Census year	STEM	A&H	SS	L	STEM	A&H	SS	L	STEM	A&H	SS	L
2010	2.7	3.0	1.4	3.7	9.7	7.0	10.7	15.7	15.6	14.7	16.4	12.2
2011	4.0	3.5	4.5	3.5	14.9	9.9	22.2	12.0	15.4	13.9	13.4	12.5
2012	6.2	3.1	3.4	8.5	21.4	14.6	20.8	25.4	16.1	15.9	13.0	14.1
2013	10.3	3.5	6.2	3.8	28.7	24.2	26.1	20.0	14.5	14.8	11.6	12.2
2014	10.5	9.6	13.0	2.4	34.1	38.3	36.8	41.4	12.7	13.6	10.6	11.0
2015	NA	NA	NA	NA	NA	NA	NA	NA	11.6	12.0	10.1	8.2

STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages

Table 18. Proportions of teachers by leaver type and entries by subject taught in Inner London

	Proportions of teachers (%)											
	Leaver type								Entries			
	Retired				Wastage				First teaching position			
Census year	STEM	A&H	SS	L	STEM	A&H	SS	L	STEM	A&H	SS	L
2010	8.2	14.1	12.0	10.2	91.8	85.9	88.0	89.8	16.8	18.6	17.0	15.0
2011	15.6	10.8	16.7	16.2	84.4	89.2	83.3	83.8	17.7	17.8	17.4	16.4
2012	14.6	12.0	14.9	13.8	85.4	88.0	85.1	86.2	18.1	19.1	19.4	18.2
2013	15.5	11.5	9.2	12.3	84.5	88.5	90.8	87.7	19.0	19.4	19.5	18.3
2014	13.6	11.6	15.2	13.6	86.4	88.4	84.8	86.4	18.0	20.5	18.4	18.7
2015	NA	NA	NA	NA	NA	NA	NA	NA	17.3	18.1	19.1	17.2

STEM = STEM-related subjects; A&H = Arts and Humanities; SS = Social Sciences; L = Languages

Appendix E – Coding details

Grouped subject taught

STEM: Applied ICT; Applied Science; Biology / Botany / Zoology / Ecology; Chemistry; Combined/General Science – Biology; Combined/General Science – Chemistry; Combined/General Science – Physics; Computer Science; Construction and Built Environment / Building; Design and Technology; Design and Technology – Electronics; Design and Technology – Food Technology; Design and Technology – Graphics; Design and Technology – Industrial Studies; Design and Technology – Resistant Materials; Design and Technology – Systems and Control; Design and Technology – Textiles; Engineering; Environmental Science/Studies; Land and Environment / Agriculture; Manufacturing; Mathematics / Mathematical Development; Other Mathematical Subject; Other Physical Subject; Other Sciences; Other Technological Subject; Physics; Problem Solving Reasoning and Numeracy; Science; Statistics; Technical Drawing/Graphics.

Arts and Humanities: Applied Art and Design; Art and Design / Art; Classics; Communication Language and Literacy; Creative Development; Dance; Drama; History; Humanities; Music; Other Aesthetic / Practical Subject; Performing Arts; Philosophy; Religious Education.

Social Science: Applied Business Studies; Citizenship; Combined Arts / Humanities / Social Studies; Commercial and Business Studies/Education/Management; Craft Design and Technology; Communication Studies; Community Studies; Economics; European Studies; General Studies; Geography; Geology; Government and Politics; Health and Social Care; Information and Communication Technology; Law; Leisure Travel and Tourism; Media Studies; Other Business / Commercial Subject; Other Social Studies; Psychology; Retail Warehousing and Distribution; Social Studies/Science; Sociology.

Languages: Arabic; Bengali; Chinese; Cymraeg/Welsh (as First Language); Danish; Dutch; English; Finnish; French; Greek (Classical); Greek (Modern); Gujarati; Hebrew (Biblical); Hebrew (Modern); Hindi; Italian; Japanese; Latin; Modern Foreign Language; Other Humanities; Panjabi; Portuguese; Russian; Spanish; Swedish; Turkish; Urdu.

Other: Any new GCSE in a vocational subject; Accountancy; Careers Education; Child Development; Early Years Foundation Stage Profile (Total); Education; Hospitality and Catering; Life Skills; Not Applicable; Other; Other Language Subject; Other Vocational Subject; Personal Social and Emotional Development; Personal Social and Health Education (PSHE); Physical Education / Sports; Primary Curriculum; Special Educational Needs; Under-5 Activities.

Appendix F – Variables contained in SWF Census data extract

Data items requested from the SWF Census data:

1. Staff details

- Gender
- QT Status [Qualified Teacher Status]
- HLTA Status [Higher Level Teaching Assistant Status]
- QTS Route [Qualified Teacher Status Route]

2. Contract/Service agreement

- Contract/Service Agreement Type
- Start Date
- End Date
- Post
- Date of Arrival in School
- Pay Range
- Destination
- Origin
- Role Identifier

3. Curriculum

- Subject Code
- Hours
- NC Year Group

4. Teacher flows data

- Staff Matching Reference
- School Year
- Qualified Leaver Type

5. Teacher deployment and characteristics

- Census Year
- Contract Agreement Type
- LA_Name [Local Authority Name]
- LAestab [Local Authority establishment]
- School Phase
- Staff Matching Reference
- QTSRoute [Qualified Teacher Status Route]
- QTStatus [Qualified Teacher Status Status]

Appendix G – Potential data sources

Table 19. List of data sources considered for this project

Organisation	Data set name	Relevant constructs	Reason not used
NUT	Teachers and Workload survey	Reasons for leaving the profession Causes of workload Difficulties caused by workload	Data not publicly available
UCAS	UCAS Teacher Training (UTT) statistics	Number of applications received for teacher training programmes Number of individuals enrolled into teacher training programmes Information available per course, monthly and by year (available in website reports since 2012–2016)	Data publicly available only in pdf format
NFER	Teacher Voice Omnibus Survey	Teacher beliefs regarding the profession	Data not publicly available
COMRES & NASWUT	NASUWT Teachers' Satisfaction and Wellbeing in the Workplace (2013)	Levels of satisfaction with job Motivation Considerations to leave the profession Perceived competitiveness in the profession (compared to other professions, in terms of salary) Beliefs on career progression Stress and wellbeing at the workforce	Data publicly available only in pdf format Not possible to distinguish data for Cambridgeshire
LKMco – Pearson report	'Why Teach?'	Motivations to join the teaching profession Considerations to leave the profession	Made publicly available upon request, but sample size for east of England is too small. Not possible to distinguish data for Cambridgeshire teachers