

FURTHER EDUCATION WORKFORCE DATA FOR ENGLAND

Analysis of the 2018-2019 Staff Individualised Record (SIR) data

FRONTIER ECONOMICS – MARCH 2020



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EXECUTIVE SUMMARY

This report presents the findings from an analysis of workforce data from the Staff Individualised Record (SIR) dataset for Further Education (FE) providers in England in 2018-19. In the main body of the report, we present our analysis of the characteristics of the FE workforce in detail; this section summarises the findings of that analysis.

This report is intended to be descriptive only – describing the raw data received from FE providers – and as such does not aim to draw detailed conclusions about the implications of the data received.

We have seen the quantity and quality of the SIR dataset improve over time. This year's dataset (SIR 27) includes 91,800 individual contract records from 186 providers,¹ in comparison to the 90,792 submitted by 193 providers in response to SIR 26.

Earlier years have fewer records as the data covered colleges only,² whereas since SIR 24 the dataset has included a range of provider types. Figures relating to trends over time therefore need to be interpreted in this context.

Providers (Section 2)

- **Numbers over time.** The number of FE providers submitting responses to the SIR dataset has increased from 122 in SIR 21 (2012-13 data) to 186 in SIR 27.³ The total number of records received has increased from 90,792 in SIR 26 to 91,800 in SIR 27.
- **Types.** We classify FE providers as one of four types: colleges, independents, local authorities, and other.
- **Prevalence of college providers.** College providers make up over half of the provider sample (110 of 186), and the 93 General Further Education Colleges (GFECs) that submitted data constitute over half of all GFECs (168) in England.⁴ Independent providers and local authority providers make up most of the rest of the provider sample (with 27 and 40 providers respectively).
- **Staff headcount.** We use the SIR, combined with the ESFA funding

¹ This is the number of contracts and providers after data cleaning has been undertaken on the original dataset. See the annex for more details.

² Prior to SIR 24, National Specialist Colleges were included in the SIR dataset, which we now classify in the provider type 'Other', despite being colleges, due to the unique offering that NSCs provide. See the main body of this report for further detail.

³ We report the number of providers in the SIR 27 dataset after data cleaning has taken place. Unless otherwise specified, all figures quoted in this report are calculated after data cleaning. Also note that SIR 21 only included college providers.

⁴ <https://www.aoc.co.uk/about-colleges/research-and-stats/key-further-education-statistics>

allocations, to estimate the total headcount of staff at each provider type. We estimate that there are around 159,000 staff at colleges, 26,000 at independent providers, 15,500 at local authority providers, and 16,000 at other providers. This implies an estimated total of around 216,500 staff in the FE sector.⁵

FE workforce (Section 3)

- **Occupation.** Considering staff at all providers, 41% are teaching staff, 16% are learner-facing technical staff (e.g. learning support staff), and 14% are admin staff, the three largest occupations. The same three occupations were the largest in SIR 26.
- **Apprentices.** The total number of apprentices recorded in SIR 27 is higher than that recorded in SIR 26, largely due to an increase in the number of administration apprentices.
- **Zero hours contracts.** The proportion of zero hours contracts remained similar to that in SIR 26, about 4.4% in SIR 27 compared to 4.2% in SIR 26. However, because the SIR 27 dataset contained more records in total, the number of zero hours contracts reported increased from 3,501 in SIR 26 to 3,824 in SIR 27. Zero hours contracts only began being recorded in SIR 24, when they made up 3.2% of the dataset.
- **Casual staff.** Local authority providers have substantially more contracts recorded as being 'casual': 43.1% of all contracts, compared to 8.7% at college providers.
- **In-year employment change.** Most occupations have seen small changes in employment during 2018/19 (i.e. between the beginning and end of the period that SIR 27 covers, the 2018/19 academic year). The biggest changes were in apprentices (+20.8%), 'caring' support staff (+6.6%), and assessors (+4.5%). The number of teaching staff contracts increased by 2.3%.
- **Part-time work.** As in SIR 26, local authorities employ significantly more part-time workers than other provider types – 72% of local authority staff work part-time, compared to 46% at colleges, 43% at other providers, and 20% at independent providers.
- **Gender balance.** Men remain heavily over-represented amongst trades support staff roles. Women remain over-represented amongst admin staff and caring support staff.
- **Age.** Staff at local authorities are older than those at other provider types – as in SIR 26, the median age at local authorities is 52,

⁵ We are aware that we may not be able to capture all (particularly small) providers as part of this estimate. We also note the challenges presented by combining information from different data sources. Finally, this year's numbers have been estimated using a different methodology (due to data availability) and as such are not directly comparable to last year's numbers.

compared to 47 across all provider types.

- **Ethnicity.** As in previous years, the vast majority of staff identify as white British, at all provider types.
- **Annual pay – provider types.** Staff at college providers have a higher median pay than those at independents or local authorities.
- **Annual pay – change over time.** Median pay across all staff and providers has increased in nominal terms from £26,500 in SIR 21 to £28,600 in SIR 27.
- **Annual pay – provider type and occupation.** The college pay premium can be observed across a number of occupations, most starkly for senior managers, for whom median annual pay is £58,000 at colleges, compared to £56,700 across all provider types and £40,000 at independent providers.
- **Annual pay – regional change over time.** Since SIR 21, the South has seen the largest increase (10.1%) in median pay (across all occupations), while Greater London has seen median pay rise by just 2.4% over the same period.
- **Gender pay gap.** The gender pay gap across all staff and providers is 10.1%, up from 9.3% in SIR 26. As this is an aggregate gap, it does not take into account the jobs and qualifications of individual members of staff. For example, the SIR 23 report in 2014-15 found that most of the difference in pay between genders – particularly for teaching staff – was related to differences in job roles held by men and women.
- **Retention.** The majority of permanent staff have been at their job for 5 years or less. This pattern holds if we look at distribution of years worked within each ethnicity or gender.

Teaching staff (Section 4)

- **Subject taught.** The three largest subject areas taught across the FE sector are: Health, Public Services and Care; Arts, Media and Publishing; and Preparation for Life and Work.
- **Annual pay – provider types.** Median pay for teaching staff is higher in colleges (£32,500) than in independent providers (£26,000) or local authorities (£27,900).
- **Annual pay – change over time.** Median teacher pay across all providers has declined slightly from £32,500 in SIR 21 to £32,300 in SIR 27. For colleges, the story is similar, though the decline in median pay is smaller.
- **Annual pay – variation by region.** Median teacher pay is higher in Greater London (£34,900) than in the North (£32,000), Midlands and East (£33,000), and the South (£31,800). Since SIR 21, median teacher pay has risen in Greater London, the Midlands & East and

the South, but fallen in the North.

- **Gender pay gap.** The gender pay gap is 4.2% for teaching staff, up from 2.5% in SIR 26. As mentioned above, previous analysis in SIR 23 suggests that this gap may be driven to a significant extent by the different subjects taught by men and women.
- **Continuing professional development (CPD).** The median number of hours recorded as being spent on CPD was 30 in SIR 27, similar to previous years. The mean number of CPD hours in SIR 27 was 38.
- **Qualifications.** As in SIR 26, the most common subject-specific qualification is Level 6 (Bachelor's Degree or equivalent), and the most common general teaching qualification is Level 7 (PGCE or equivalent). More vocational subjects such as 'Engineering and Manufacturing Technologies' and 'Retail and Commercial Enterprise' have a larger proportion of staff with Level 4 and 5 qualifications, compared to subjects such as Humanities and English.

Changes in typical college characteristics since SIR 22 (Section 5)⁶

- **Number of providers.** The number of colleges submitting data has increased over time – 84 in SIR 22 and 110 in SIR 27. In 2013/14 (the teaching year corresponding to SIR 22), there were 341 colleges, while in 2018/19 there were 252 colleges.⁷ The number of records submitted by colleges has increased from 60,900 to 82,366.
- **Number of employees.** All college types have increased in size over time. For example, in SIR 22 GFECs had a median headcount of 578; in SIR 27, this was 660.
- **Subjects offered.** Looking across seven subject areas consistent between SIR 22 and SIR 27, six out of seven have seen an increase in the proportion of providers submitting at least one contract in that area since SIR 22. For example, whereas 73.8% of providers submitting data in SIR 22 had at least one contract with the subject specified as ICT, in SIR 27 this was 83.2%.
- **Occupation.** Teaching staff now make up 40% of the records submitted by college providers, compared to 51% in SIR 22. This drop is partly mirrored by an increase in the proportion of learner-

⁶ In calculating results for each of SIR 22 and SIR 27, we do not restrict our dataset to those providers present in the data in both SIR 22 and SIR 27, due to the loss of sample size that would result and the fact that we are aiming to provide the fullest possible picture of college characteristics in each year.

⁷ The number of colleges is as of the end of the respective teaching years. The SIR 22 report provides details on calculating the number of colleges in 2013/14. The number of colleges in 2018/19 was calculated using the *Key Facts* leaflet and information on college mergers from the Association of Colleges. The *Key Facts* leaflet can be found at <https://www.aoc.co.uk/about-colleges/research-and-stats/key-further-education-statistics>. Information on college mergers can be found at <https://www.aoc.co.uk/about-colleges/college-mergers>.

facing technical staff between SIR 22 and SIR 27.

- **Demographics.** The demographics of the FE college workforce have not changed substantially since SIR 22. The workforce remains predominantly female (61%) and white British (85%). While the median age has only increased from 46 to 47, the proportion of the workforce that are aged 60 and over has increased from 10% in SIR 22 to 14% in SIR 27.
- **Part-time work.** The proportion of staff working part-time has declined from 48% in SIR 22 to 46% in SIR 27. This decline is concentrated amongst male staff.
- **Annual pay – change over time.** Median annual pay has increased by 2.8% since SIR 22, from £26,500 to £28,600. For teaching staff, median annual pay has fallen slightly, from £32,500 to £32,400.
- **Gender pay gap.** The gender pay gap has increased for colleges since SIR 22, from 7.3% to 10.2%. Median pay for male staff increased by 10.4%, while for female staff median pay increased by 6.9%.

1. INTRODUCTION

This report presents the findings from an analysis of workforce data from the Staff Individualised Record (SIR) dataset for Further Education (FE) providers in England in 2018-19 (SIR 27). The SIR has been collected from colleges in the FE sector since 1993, and from all types of provider since 2015. This is the latest publication in the series of annual SIR reports on the English FE workforce, and the seventh to be produced by the Education and Training Foundation (ETF). This will be the last report produced by ETF, as the responsibility for FE workforce data transfers to the Education and Skills Funding Agency (ESFA) from April 2020.

The data analysed in this report covers a wide range of information on staff in a range of different FE providers, including age, gender, ethnicity, sexual orientation, occupation, and annual pay. For teaching staff, the data specifies subject taught and qualifications. Provider details – for example, name, location, and type (sixth form, general FE, national specialist college etc.) – are also included in the SIR dataset.

This report summarises the SIR data. As in previous years, separate sections of this report look in detail at (a) the workforce as a whole, and (b) the teaching workforce. Following last year's report which took a more detailed look at how the typical characteristics of FE colleges have changed since SIR 21, this report will look at changes in the characteristics of FE colleges since SIR 22.⁸

This report is structured as follows:

- Section 2 describes the different FE provider types that submitted data in response to SIR 27.
- Section 3 contains our analysis of the characteristics of the FE workforce in England in 2018-19. We also look at how the workforce has changed over time.
- Section 4 looks specifically at the characteristics of teaching staff and how these characteristics have changed over time, including an analysis of the different subjects taught and the distribution of qualifications held by teachers.
- Section 5 looks specifically at college providers and the ways in which the typical characteristics of colleges have changed over time.
- The annex describes the data processing and edits we have made to the original SIR 27 dataset in order to remove errors and inconsistencies, and prepare the dataset for analysis.

⁸ We focus on college providers because SIR 22 only contained colleges.

2. PROFILE OF FE PROVIDERS

In this section, we provide an overview of the providers that responded to the SIR 27 data collection exercise.

As Figure 1 below shows, General Further Education Colleges (GFECs) are by far the most common provider type in the SIR 27 dataset. GFECs represent 50% of all providers in the sample, and 85% of all college providers.

As in SIR 26 and SIR 25, we continue to categorise local authorities separately due to the large number of such providers. Although the number of independent providers in the sample has decreased by eight from SIR 26, there is still a large number of them; we continue to classify these providers in a 'high-level' category of their own.

Figure 1. Number of providers by provider type

Provider type	High-level provider type	Number of providers
General Further Education College	College	93
Local Authority training provider	Local Authority	40
Independent training provider	Independent	27
Agriculture and Horticulture College	College	6
Sixth Form College	College	6
Specialist Designated College	College	4
National Specialist College	Other	4
Third sector / charity training provider	Other	3
Adult (19+) education provider	Other	2
Art, Design and Performing Arts College	College	1
Total		186

Source: Frontier Economics analysis of SIR 27 data

The total number of providers responding to the SIR data collection exercise has increased significantly since SIR 21 in 2012-13, when 122 providers submitted data (though SIR 21 only covered college providers). This year's provider total of 186 is lower than the 193 and 198 providers in SIR 26 and SIR 25 respectively, but still higher than the 173 providers which submitted data in SIR 24.

Figure 2 below shows the total number of records submitted by each provider type. Despite the decrease in the number of providers from SIR 26, the number of records has actually increased slightly, from 90,792 submitted in SIR 26 to 91,800 in SIR 27.

Again, GFECs are by far the largest provider type category. Local authorities form the second-largest category. Independent providers collectively only submitted the fifth-largest number of records, despite being the third-largest type of provider in the data, suggesting that

independents may be smaller on average than other provider types.⁹

Figure 2. Number of records by provider type

Provider type	High-level provider type	Number of records
General Further Education College	College	76,455
Local Authority training provider	Local Authority	6,809
Agriculture and Horticulture College	College	3,689
Sixth Form College	College	1,479
Independent training provider	Independent	1,381
National Specialist College	Other	962
Specialist Designated College	College	578
Adult (19+) education provider	Other	169
Art, Design and Performing Arts College	College	165
Third sector / charity training provider	Other	113
Total		91,800

Source: Frontier Economics analysis of SIR 27 data

⁹ We cannot conclude from this that the average size of all independent providers is lower than other provider types, however, given that our analysis is based on a sample of providers.

College providers

There are 110 college providers in total in our sample, comprising:

- 93 General Further Education Colleges;¹⁰
- 6 Agriculture and Horticulture Colleges;
- 6 Sixth Form Colleges;
- 4 Specialist Designated Colleges; and
- 1 Art, Design and Performing Arts Colleges.

¹⁰ This is over half of all GFECs in England (<https://www.aoc.co.uk/about-colleges/research-and-stats/key-further-education-statistics>).

Figure 3 below shows the distribution of college providers in SIR 27, in terms of the number of records (i.e. contracts) submitted as part of SIR 27. The largest providers are GFECs, with a number of providers submitting over 1,000 records. At the other end, there are several providers with fewer than 300 records, including most of the Sixth Form Colleges (SFCs) and Specialist Designated Colleges (SDCs) in our sample.

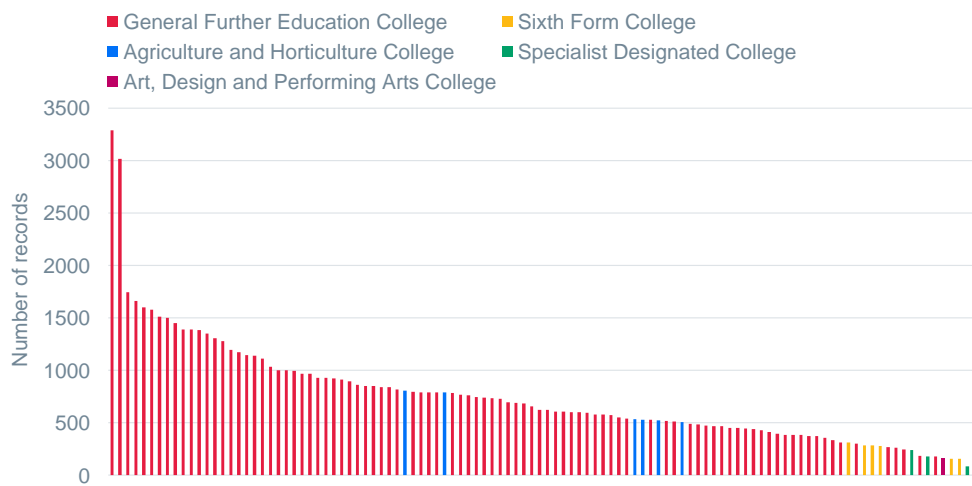
Our sample of colleges has decreased from SIR 26, when we received submissions from 118 college providers. However, the number of records has actually increased slightly from 82,028 in SIR 26 to 82,366 in SIR 27. This may reflect the latest waves of college mergers as part of the Area Reviews.¹¹ The number of Sixth Form Colleges in the sample has continued to fall, from 21 in SIR 21, to 10 in SIR 25, 7 in SIR 26, and 6 in SIR 27.

Using ESFA funding allocations combined with the SIR,¹² we estimate that there are around 159,000 individuals (headcount) working in FE colleges in England. Note that this figure is estimated for all colleges in England, of which we only have a sample in the SIR dataset.

¹¹ Information on college mergers by year can be found at <https://www.aoc.co.uk/about-colleges/college-mergers>

¹² We use ESFA funding allocations this year instead of college accounts data which was used for the SIR 26 report, as the college accounts data for 18/19 is not yet released at the time of writing. Some of the changes in headcount numbers may therefore be due to methodological differences. ESFA funding allocations data for 18/19 can be found at <https://www.gov.uk/government/publications/funding-allocations-to-training-providers-2018-to-2019>

Figure 3. College providers in SIR 27



Source: Frontier Economics analysis of SIR 27 data

Independent providers

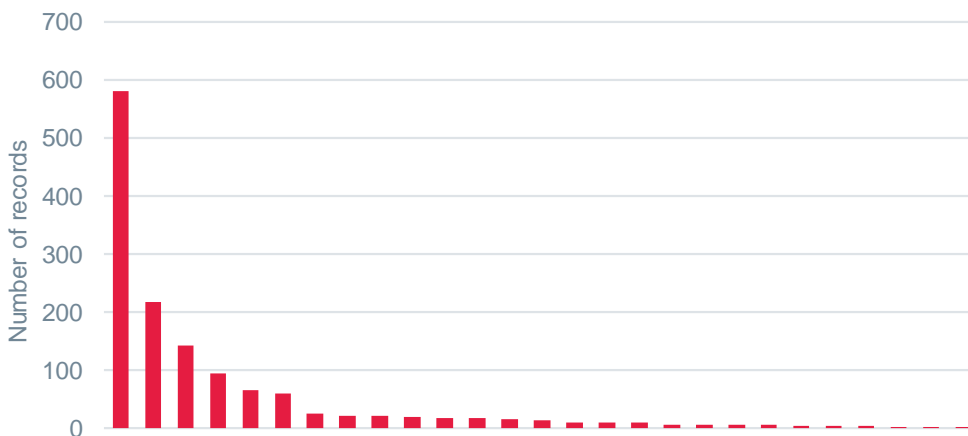
There are 27 independent providers in our sample, down from 35 in SIR 26. This year, workforce surveys were sent to independent providers on behalf of the DfE at the same time as the SIR collection, which may have affected the rate of returns to the SIR. Using ESFA funding allocations combined with the SIR, we estimate that there are around 26,000 individuals (headcount) working in independent FE providers in England. Note that this figure is estimated for all independent providers in England, of which we only have a sample in the SIR dataset.

Figure 4 below shows the distribution of these providers, in terms of the number of records submitted.

As in SIR 26 and SIR 25, there are a small number of providers with a relatively large number of records (the largest three providers make up over two-thirds of the records for independent providers), and a long tail of smaller providers making up the rest of the distribution.

Using ESFA funding allocations combined with the SIR,¹³ we estimate that there are around 26,000 individuals (headcount) working in independent FE providers in England. Note that this figure is estimated for all independent providers in England, of which we only have a sample in the SIR dataset.

Figure 4. Independent providers in SIR 27



Source: Frontier Economics analysis of SIR 27 data

¹³ ESFA funding allocations data for 18/19 can be found at <https://www.gov.uk/government/publications/funding-allocations-to-training-providers-2018-to-2019>

Local authority providers

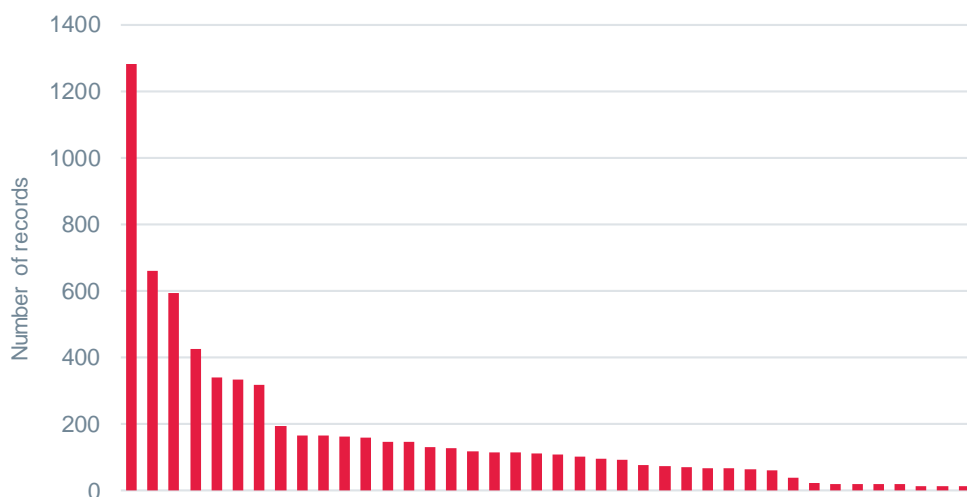
There are 40 local authority providers in our sample, a notable increase from the 25 local authority providers in SIR 26 and SIR 25. A data-sharing protocol designed to mostly replace a freedom of information request sent by the University and Colleges Union, was introduced to the SIR collection for local authorities this year which may have increased the return rate to the SIR. A similar approach for colleges was introduced for SIR 26. Using ESFA funding allocations combined with the SIR, we estimate that there are around 15,500 individuals (headcount) working in local authority FE providers in England. Note that this figure is estimated for all local authority providers in England, of which we only have a sample in the SIR dataset.

Figure 5 below shows the distribution of these providers, in terms of the number of records submitted.

As with independent providers, there are a small number of providers with a relatively large number of records (the largest six providers make up over half of the records for local authority providers), and a long tail of smaller providers making up the rest of the distribution.

Using ESFA funding allocations combined with the SIR,¹⁴ we estimate that there are around 15,500 individuals (headcount) working in local authority FE providers in England. Note that this figure is estimated for all local authority providers in England, of which we only have a sample in the SIR dataset.

Figure 5. Local authority providers in SIR 27



Source: Frontier Economics analysis of SIR 27 data

¹⁴ ESFA funding allocations data for 18/19 can be found at <https://www.gov.uk/government/publications/funding-allocations-to-training-providers-2018-to-2019>

Other providers

There are 9 'other' providers in our sample, fewer than the 15 in SIR 26 and SIR 25. 'Other' providers are all those not classified in the main categories of colleges, independents, and local authorities. This category includes the new National Colleges. Using ESFA funding allocations combined with the SIR, we estimate that there are around 16,000 individuals (headcount) working in other FE providers in England. Note that this figure is estimated for all providers in England that are not colleges, independent providers, or local authorities, of which we only have a sample in the SIR dataset.

Figure 6 below shows the distribution of these providers, in terms of the number of records submitted.

As with independent and local authority providers, a few large providers dominate the distribution, with the largest three providers making up over two-thirds of the records for other providers.

Using ESFA funding allocations combined with the SIR, we estimate that there are around 16,000 individuals (headcount) working in other FE providers in England.¹⁵ Note that this figure is estimated for all providers in England that are not colleges, independent providers, or local authorities, of which we only have a sample in the SIR dataset.

Figure 6. Other providers in SIR 27



Source: Frontier Economics analysis of SIR 27 data

¹⁵ ESFA funding allocations data for 18/19 can be found at <https://www.gov.uk/government/publications/funding-allocations-to-training-providers-2018-to-2019>

3. PROFILE OF THE FE WORKFORCE

In this section we provide an overview of the FE workforce in England based on the sample of providers responding to the 2018-19 Staff Individualised Record (SIR 27) data collection exercise. We describe the characteristics of the workforce, including occupation, staff turnover, gender, share of part-time/full-time workers, age, ethnicity, sexual orientation, disability status, annual pay, and retention. To mitigate the effects of changing sample composition over time, we have generally dropped Sixth Form Colleges when making comparisons across time, due to the consistent trend of decreasing Sixth Form Colleges in the sample over time despite the general increase in the number of providers in the sample.¹⁶

Occupation

The SIR 27 dataset included 87,359 records for occupations, with each record representing a single contract.¹⁷

Teaching staff remain the largest occupational group, representing 41% of contracts, similar to 42% as in SIR 26. Learner-facing technical staff (e.g. careers adviser, learning support staff) and admin staff (e.g. admissions officer, HR officer/assistant) are the next-largest occupational groups, comprising 16% and 14% of contracts respectively. As with teaching staff, these percentages are also similar to that in SIR 26 (16% and 15% respectively).

The occupation groups used in SIR 27 replicate those used in SIR 26 and SIR 25, and differ slightly to those used in previous years. For example, since SIR 25, the categories 'learner-facing technical staff' and 'non-teaching professional' have been used, and a few new job roles were added in SIR 24 (e.g. Business Development Manager). The new occupation groupings used since SIR 25 more closely resemble the reality of the types of staff that FE colleges employ, and also allow us to distinguish between learner-facing and non-learner-facing professional staff.

¹⁶ We have noted this trend earlier in the college providers section.

¹⁷ Despite receiving 91,800 records (after cleaning and removal of invalid records) in total in SIR 27, 4,441 (4.8%) records left the occupation category missing or stated that occupation was unknown, leaving 87,359 records specifying occupation. This is much lower than in SIR 26 and SIR 25, when approximately 18% of records left the occupation category missing or stated that occupation was unknown.

Figure 7. Staff breakdown by occupational group

Occupation	Number of records	% of total
Admin staff	12,231	14%
Apprentice	1,094	1%
Assessor	3,303	4%
Learner-facing technical staff	13,995	16%
Middle manager	4,634	5%
Non-teaching professional	1,541	2%
Senior manager	1,637	2%
Support staff - caring	1,435	2%
Support staff - other	6,091	7%
Support staff - technical	4,638	5%
Support staff - trades	947	1%
Teaching staff	35,813	41%
Total	87,359	100%

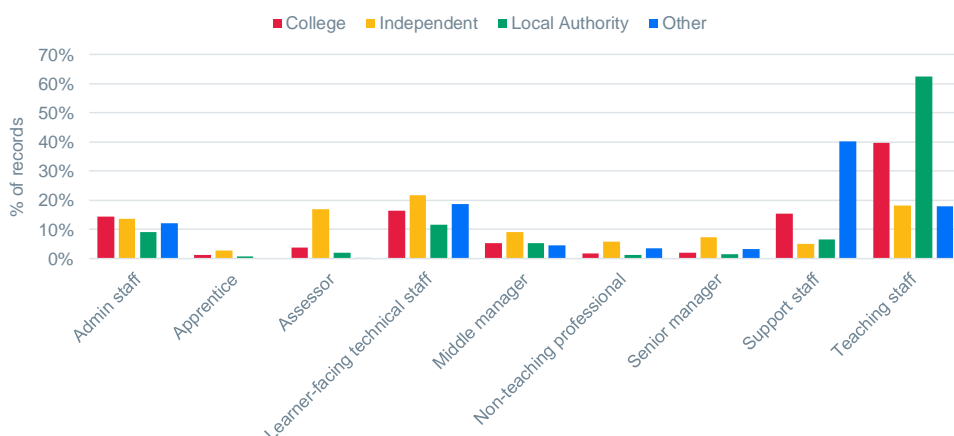
Source: Frontier Economics analysis of SIR 27 data

Note: records are not reported on an FTE basis – each record simply represents one contract in the SIR 27 data, not necessarily one full-time equivalent worker.

Figure 8 shows how the staff breakdown by occupational group differs across FE provider types.

As in SIR 26, ‘other’ providers and independent providers in SIR 27 have significantly lower proportions of teaching staff than colleges and local authority providers (18% at other providers and independents, compared to 40% and 62% at colleges and local authorities). Other providers make up this shortfall with a higher proportion of support staff, while independent providers have a higher share of their workforce classified as assessors. Both other providers and independents also have a higher percentage of learner-facing technical staff compared to colleges and local authorities.

Figure 8. Staff breakdown by occupation and provider type



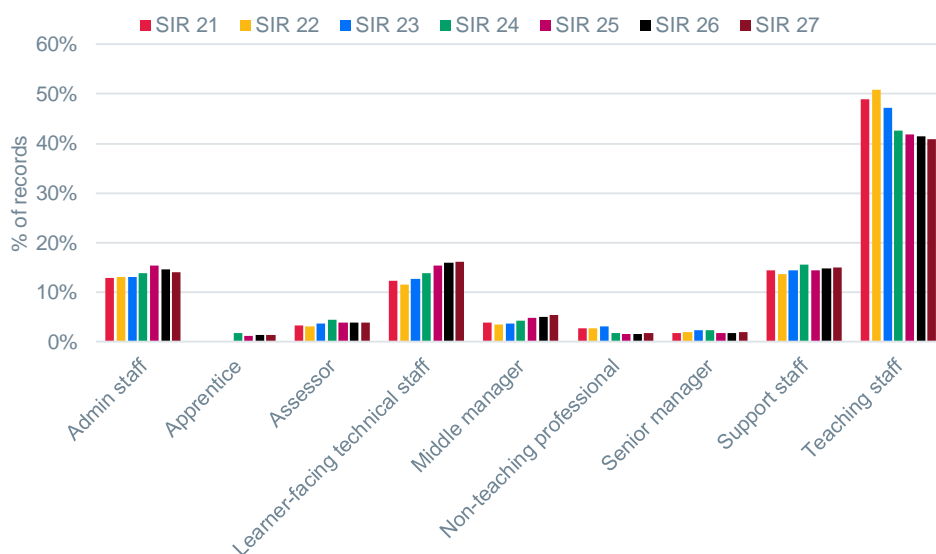
Source: Frontier Economics analysis of SIR 27 data

Figure 9 below shows the distribution of occupations (across all provider types) over time.

Overall, the occupational distribution has not changed very much since SIR 21.¹⁸ The most significant trends that have occurred are the fairly consistent decline in the proportion of teaching staff (from 49% in SIR 21 to just over 41% in SIR 27), as well as the increase in the proportion of learner-facing technical staff (from 12% in SIR 21 to 16% in SIR 27).

However, it is important to note that the sample of providers has changed significantly since SIR 21, namely to include non-college providers, making comparisons over the entire period more difficult.

Figure 9. Staff breakdown by occupation, change over time



Source: Frontier Economics analysis of SIR 21-27 data

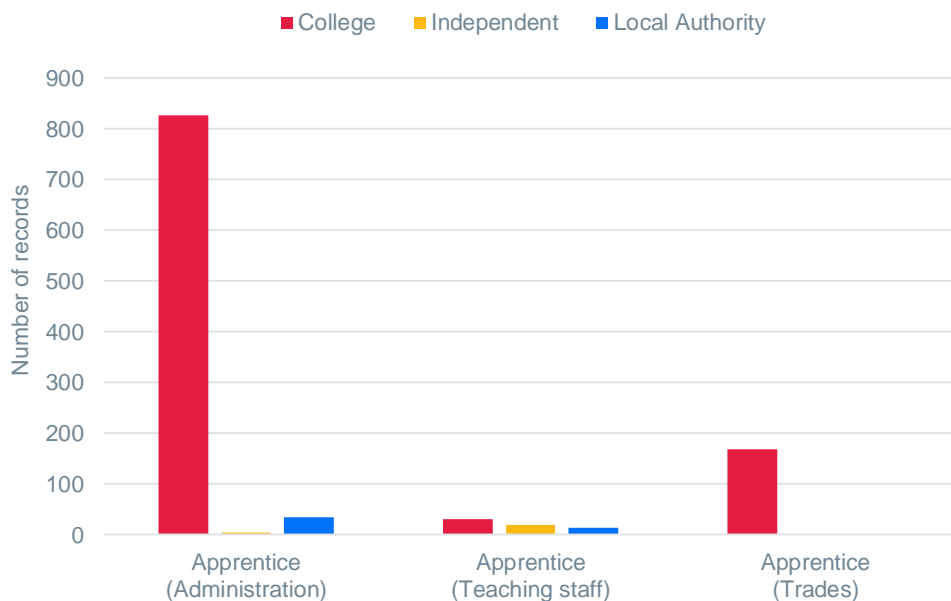
Figure 10 below provides a breakdown of the apprentice occupational category, showing the number of different types of apprentices at different provider types. Apprentices are categorised into those working in (a) administration, (b) teaching, or (c) trades.

As in SIR 26, the vast majority of apprentices in SIR 27 are in college providers. Across all provider types, 79% of apprentices are working in administration, 15% in trades, and 6% in teaching. The proportion of apprentices working in administration has increased from 75% in SIR 26, while the proportion working in trades has dropped from 19%.

The number of records submitted by non-college providers is very small, making any comparisons across provider types difficult. For example, there were no records for trades apprentices from either local authority providers or 'other' providers.

¹⁸ The distribution and trends remain similar even if we consider only college providers.

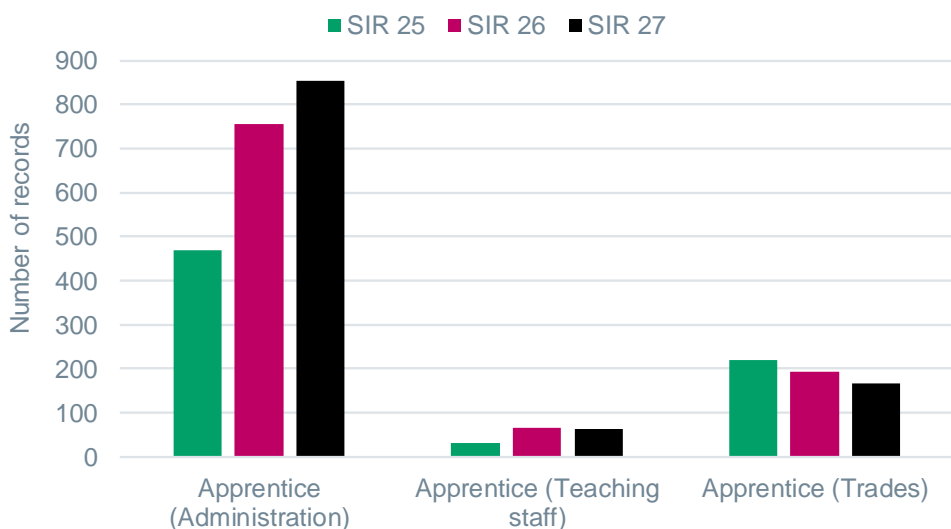
Figure 10. Types of apprentice by provider type



Source: Frontier Economics analysis of SIR 27 data

Figure 11 below shows the change in apprentice numbers between SIR 25 and SIR 27. Since SIR 25, the number of records for administration apprentices has increased, while the number of records for trades apprentices have decreased. The number of records for teaching apprentices increased from SIR 25 to SIR 26, but stayed about the same in SIR 27.

Figure 11. Types of apprentice, change over time



Source: Frontier Economics analysis of SIR 25-27 data

Terms of employment

Figure 12 below shows the distribution of employment types in the sample. Approximately three-quarters of staff are on permanent contracts. Casual, fixed term, and zero hours contracts are the other key categories.

Since SIR 25, the proportion of permanent staff has decreased, while the proportion of casual staff has increased. The proportion of permanent staff fell from 78.0% in SIR 25, to 75.7% in SIR 26, and to 74.6% in SIR 27. In contrast, the proportion of casual staff has increased from 7.4% in SIR 25, to 9.9% in SIR 26, and to 11.1% in SIR 27. The proportions of zero hour contracts and fixed term staff have been fairly consistent. Zero hour contracts were 5.2% of records in SIR 25, 4.5% in SIR 26, and 4.4% in SIR 27. Fixed term contracts were 9.1% of records in SIR 25, 9.5% of records in SIR 26, and 9.1% in SIR 27.

Figure 12. Number of records by employment type

Terms of employment	Number of records	% of total
Casual staff	9,769	11.1%
Employed through an agency	146	0.2%
Fixed term staff	8,024	9.1%
Permanent staff	65,473	74.6%
Self-employed	158	0.2%
Voluntary staff	331	0.4%
Zero hours contract	3,824	4.4%
Total	87,725	100%

Source: Frontier Economics analysis of SIR 27 data

Note: records are not reported on an FTE basis – each record simply represents one contract in the SIR 27 data, not necessarily one full-time equivalent worker. In SIR 21-23 data was submitted directly by agencies in response to the SIR data collection exercise. In SIR 24-27, however, this data has not been available; records of staff classified as 'Employed through an agency' have been submitted by FE providers themselves, meaning a large drop in the number of staff classified as 'Employed through an agency'.

Figure 13 shows how the distribution of employment type varies across provider types. Independent providers have over 95% permanent staff, compared to less than 50% at local authorities. The use of zero hours contracts shows the opposite pattern – 10% of contracts at local authority providers are on zero hours; at independent providers this is just 0.4%.

Independent providers seem to have reversed the decrease in the proportion of permanent staff and the increase in the proportion of casual staff.¹⁹ In SIR 25, independent providers had 91.4% on permanent contracts, which decreased to 80.2% in SIR 26, but increased to 96.6% in SIR 27. For casual staff, this proportion was 0.7%

¹⁹ These changes could be due to year-on-year changes in the sample (i.e. changes in the sample composition) rather than changes in the distribution of employment types across the entire population of independent providers.

in SIR 25, increased to 6.1% in SIR 26, and decreased to 0.7% in SIR 27. However, given the relatively small numbers of returns from independent providers, particularly in SIR 27, this may simply be a feature of the sample.

Figure 13. Percentage of records by employment type and provider type

Terms of employment	% of all records			
	College	Independent	Local Authority	Other
Casual staff	8.7%	0.7%	43.1%	9.4%
Employed through an agency	0.2%	0.0%	0.1%	0.0%
Fixed term staff	9.6%	1.7%	4.4%	11.8%
Permanent staff	77.0%	96.6%	41.1%	77.0%
Self-employed	0.2%	0.7%	0.0%	1.8%
Voluntary staff	0.3%	0.0%	1.3%	0.0%
Zero hours contract	4.0%	0.4%	10.0%	0.0%

Source: Frontier Economics analysis of SIR 27 data

Turnover and in-year employment change

In this section, we look at two measures of changes in employment:

- 1) **Turnover rate.** The number of contracts ending within 2018-19 as a proportion of all contracts at the beginning of the year.
- 2) **In-year employment change.** The change in the total number of contracts between the beginning and end of 2018-19, as a proportion of all contracts at the beginning of the year. This is the same measure as has been reported in previous versions of this report, but we have renamed the variable to “in-year” employment change to clarify that this measure **does not** look at the change from one year to the next, but rather the change in employment between the beginning and end of a single year (in the case of this report, the 2018-19 academic year).

Figure 14. Turnover and in-year employment change, by occupation

Occupation	Turnover	In-year employment change
Admin staff	15%	0.7%
Apprentice	33%	20.8%
Assessor	16%	4.5%
Learner-facing technical staff	13%	4.4%
Middle manager	12%	-3.1%
Non-teaching professional	11%	-0.3%
Senior manager	14%	-2.7%
Support staff - caring	13%	6.6%
Support staff - other	16%	2.6%
Support staff - technical	14%	-0.3%
Support staff - trades	10%	-2.4%
Teaching staff	12%	2.3%

Source: Frontier Economics analysis of SIR 27 data

Most occupations' turnover rates are similar to those observed in SIR 26. The key differences are:

- Those working as apprentices had a turnover rate of 39%; this has now fallen to 33%
- Those working as 'caring' support staff had a turnover rate of 20% in SIR 26; this has now fallen to 13%.

Most occupations saw negligible changes in employment during SIR 27, but there are still significant differences in some categories. Apprentices and 'caring' support staff – categories which saw a lower turnover in SIR 27 – experienced an increase in the in-year employment change by about 12 percentage points and 4 percentage points respectively.

Assessors and 'other' support staff also saw an increase in the in-year employment change by about 3 percentage points each. Notably, 'other' support staff went from a slightly negative in-year employment change in SIR 26 (-0.5%) to a positive one (2.6%) in SIR 27.

Figure 15 below shows that there is significant variation in employment changes in different occupations across provider types. For example, local authorities and independents saw a 17% and 20% increase in assessors respectively, but colleges and 'other' providers saw only small or negligible increases in assessors.

Some provider-combination categories in this disaggregated analysis may depend only on a small sample size, which explains why we observe some particularly high turnover or in-year employment changes. These small sample sizes also mean that Figure 15 should be interpreted with caution when trying to make any inferences about the state of the sector as a whole.

Figure 15. Turnover and in-year employment change, by occupation and provider type

Occupation	College		Independent		Local Authority		Other	
	Turnover	Change	Turnover	Change	Turnover	Change	Turnover	Change
Admin staff	16%	0%	24%	-1%	4%	9%	12%	9%
Apprentice	34%	21%	18%	24%	18%	15%	n/a	n/a
Assessor	16%	3%	14%	20%	4%	17%	0%	0%
Learner-facing technical staff	13%	4%	30%	-2%	2%	16%	13%	2%
Middle manager	13%	-4%	17%	21%	3%	6%	7%	-2%
Non-teaching professional	11%	0%	27%	-20%	3%	4%	12%	-9%
Senior manager	16%	-3%	10%	-9%	5%	5%	3%	3%
Support staff - caring	14%	5%	n/a	n/a	1%	3%	11%	17%
Support staff - other	16%	2%	67%	0%	2%	20%	18%	4%
Support staff - technical	15%	-1%	23%	6%	2%	5%	4%	4%
Support staff - trades	11%	-3%	n/a	n/a	0%	0%	2%	2%
Teaching staff	13%	1%	21%	6%	5%	9%	4%	5%

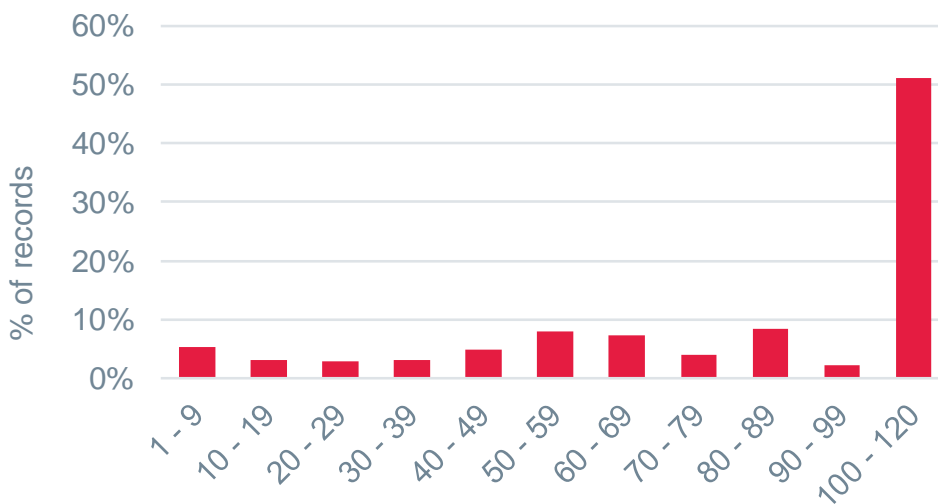
Source: Frontier Economics analysis of SIR 27 data

Part-time work

Figure 16 below shows the distribution of fraction of full-time worked across all providers in SIR 27. Note that this measures the number of hours **actually worked**, as opposed to the number of **contracted hours**.²⁰

Looking across all provider types, 47% of staff work part-time (we define part-time as working less than 90% of the full-time hours for the job role in question). As shown in Figure 16, this 47% of staff working part-time are spread across a range of the distribution, from those working just 1-9% of full-time to those working 80-89% of full-time.

Figure 16. Shares of staff by fraction of full-time and provider type



Source: Frontier Economics analysis of SIR 27 data

Figure 17 below shows the distribution of fraction of full-time worked across each provider type.

The proportion working part-time varies across provider types: from relatively low at independent providers (20%), higher at other providers (43%) and colleges (46%), up to much higher at local authorities (72%).

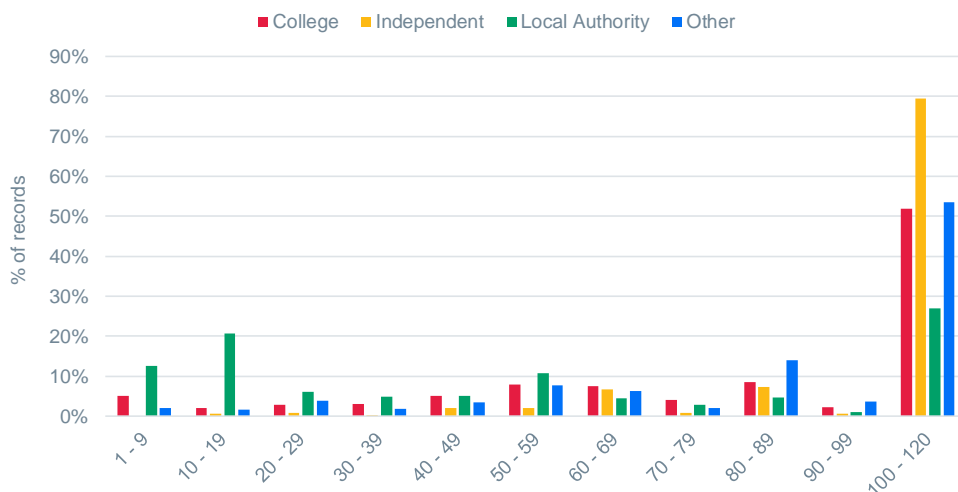
About 34% of staff at local authority providers work less than 20% of full time, which is more than the 27% of staff at local authority providers who work 100-120% of full-time.

In contrast, we observe a majority of workers in the 100-120% of full-time category, for the remaining provider types. The upper limit of 120% captures the fact that staff may sometimes work slightly more than their full-time hours, but in practice a very small proportion of staff work over 100% full-time.²¹

²⁰ This means that, for example, those on zero hours contracts can have a positive value for hours worked.

²¹ Over 97% of staff in the 100-120% full-time category are simply working 100% full-time (across all provider types).

Figure 17. Shares of staff by fraction of full-time and provider type



Source: Frontier Economics analysis of SIR 27 data

The distribution of fraction of full-time worked has mostly not changed significantly over time when looking across all provider types.

One notable difference is that in SIR 26, nearly 30% of local authority staff worked less than 10% of full time, but this has dropped significantly to 13% in SIR 27. Much of this change appears to have gone into the increase in local authority staff working 10 to 20% of full time, from nearly 10% in SIR 26 to about 21% in SIR 27.

Another key difference is that the proportion of staff at independent providers working full-time has increased from 65% to 80%.

Gender

This section looks at two metrics of gender balance in the FE workforce:

- 1) Gender balance by occupation – for all provider types, and for each provider type separately.
- 2) Gender balance over time for those in more senior positions (i.e. middle and senior managers)
- 3) The proportion of men and women working part-time in each provider type.²²

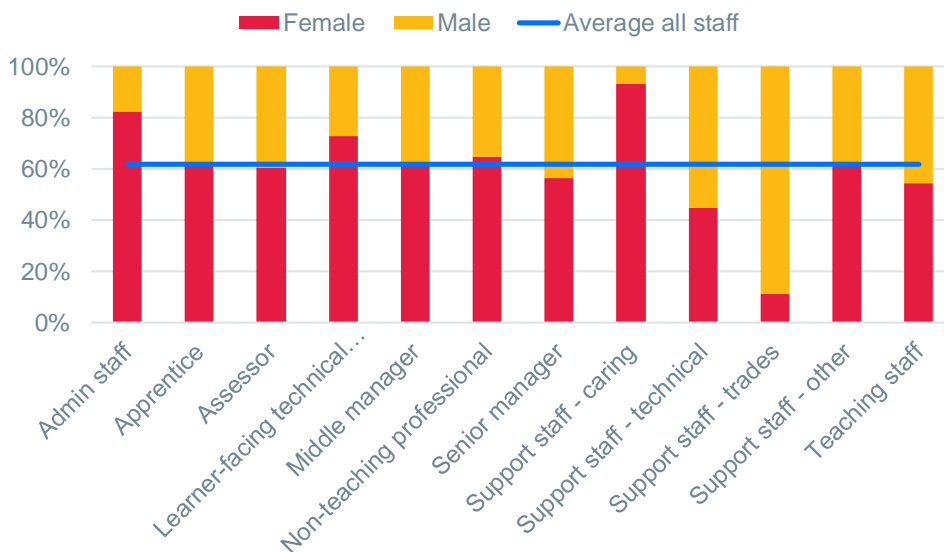
Gender balance – all providers

Figure 18 below shows the gender balance by occupation, across all provider types. The flat blue line indicates the proportion of female staff across all occupations – 62% of the FE workforce is female.

Certain roles show over-representation of men compared to the average – in particular, technical support staff (e.g. finance officer) and trades support staff (e.g. electrician). Teaching staff and senior managers also include a slightly higher proportion of men than average.

The proportion of women in each occupation has not changed substantially since SIR 26.

Figure 18. Gender balance by occupation



Source: Frontier Economics analysis of SIR 27 data

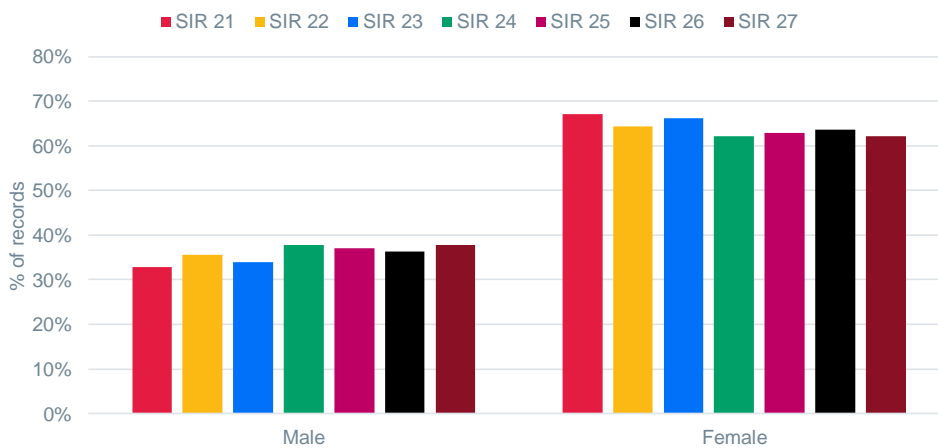
²² Full-time is defined as working 90% or more of the full-time hours for the job role in question.

Gender balance over time – in middle and senior managers

We also consider the gender balance of those in more senior positions (i.e. middle and senior managers).

Overall, the FE sector has seen a slight increase in the proportion of females over time, from 60% in SIR 21 to 62% in SIR 27. However, when considering middle managers, the proportion of females has decreased over time, from 67% in SIR 21 to 62% in SIR 27 in line with the general share of women in the FE workforce. Figure 19 below shows the gender balance in middle managers over time.

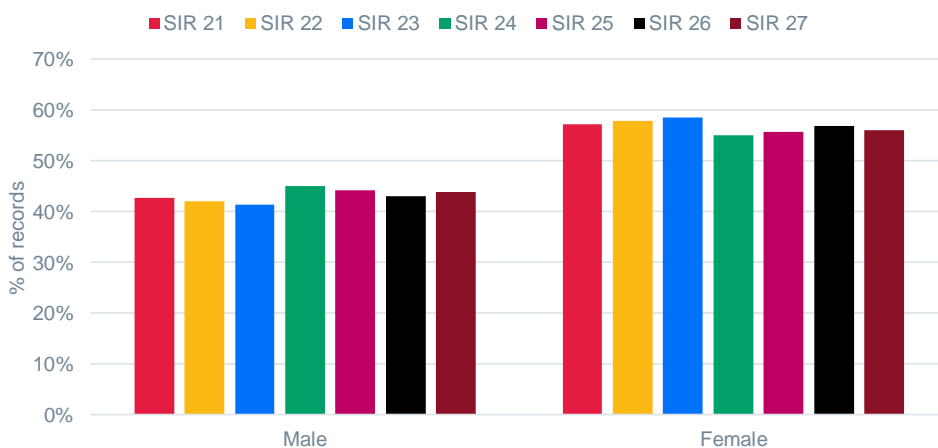
Figure 19. Gender balance in middle managers, change over time



Source: Frontier Economics analysis of SIR 27 data

Figure 20 below shows the gender balance over time for senior managers. Unlike middle managers, the gender balance for senior managers has seen some fluctuations over time, but has not changed much on the whole. The proportion of senior managers who are female was 57% in SIR 21, and 56% in SIR 27.

Figure 20. Gender balance in senior managers, change over time



Source: Frontier Economics analysis of SIR 27 data

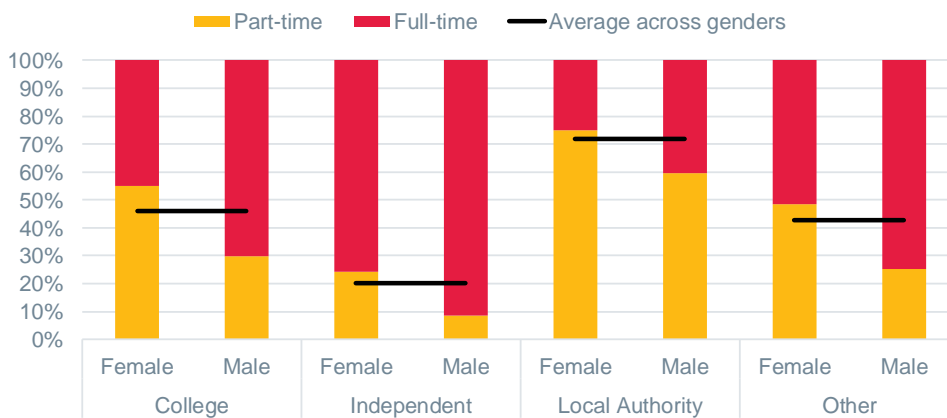
Proportion working part-time – male and female

Another important facet of gender comparisons is the proportion of men and women working full-time or part-time. Figure 21 below represents this for the FE workforce in SIR 27, for each provider type.

For all provider types, the proportion of women working part-time is higher than for men. This difference is most noticeable in colleges, where 55% of women work part-time compared to 30% of men.

The key difference from SIR 26 is that there has been a decrease in the proportion of staff working part-time at independent providers, which we noted earlier (in Figure 17). Figure 21 shows us that this change has happened across both genders. The proportion of women working part-time at independent providers has decreased from 40% to 24%, while the proportion of men doing so has decreased from 23% to 9%.

Figure 21. Proportion of men and women working part-time, by provider type



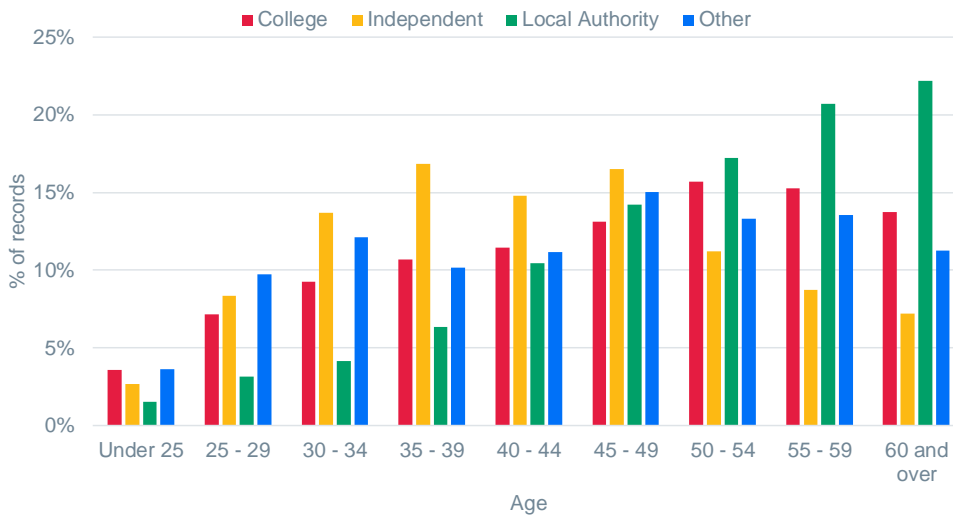
Source: Frontier Economics analysis of SIR 27 data

Note: part-time is defined as working less than 90% of the full-time hours specified for the job in question. Averages across providers are calculated looking only at those records which specified the gender of the individual, and therefore differ slightly to the figures reported above for the percentage of part-time at each provider type.

Age

Figure 22 shows the age distribution of FE staff across provider types. Local authority provider staff are notably older than those of other provider types. Just 15% of staff at local authority providers are 39 or younger (compared to 30% across all providers), and 43% of staff are 55 or over (compared to 29% across all providers). In contrast, staff at independent providers are relatively younger. 42% of staff at independent providers are 39 or younger, and 16% are 55 or over.

Figure 22. Age distribution by provider type



Source: Frontier Economics analysis of SIR 27 data

These differences in age distribution are summarised in Figure 23 below, which shows the mean and median age of staff at each provider type. Local authorities have a mean age of 51 compared to 46 across all providers, while independent providers have the youngest staff with a mean of 43. The median ages tell a similar story.

Figure 23. Average age by provider type

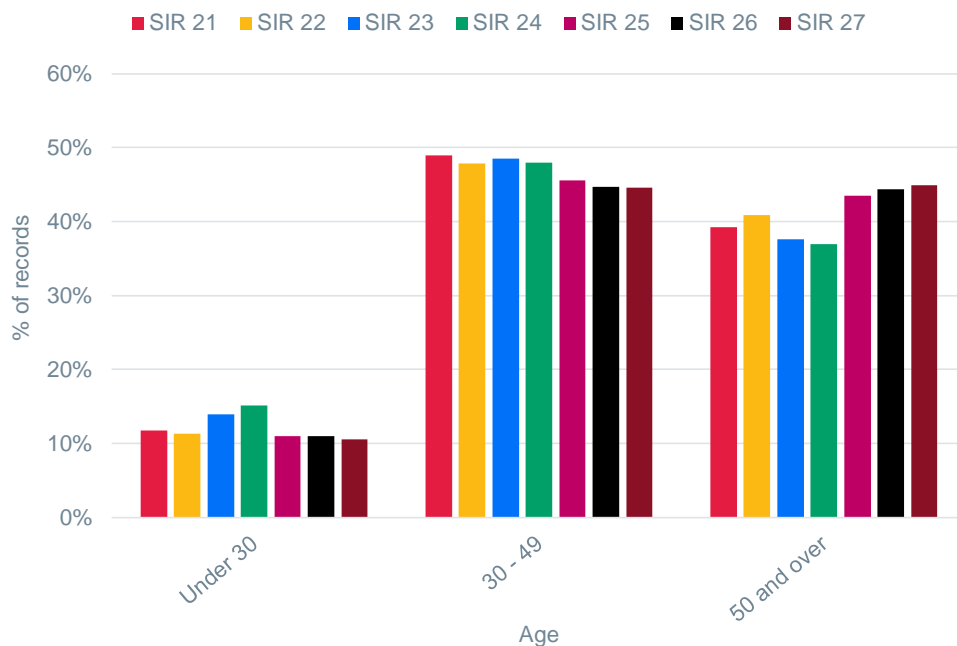
Provider type	Mean age	Median age	Mode age band
All providers	46	47	50 - 54
Colleges	46	47	50 - 54
Independent	43	42	35 - 39
Local authority	51	52	60 and over
Other	45	45	45 - 49

Source: Frontier Economics analysis of SIR 27 data

Figure 24 below shows how the age distribution of the FE workforce has changed over time (for simplicity, we have grouped together different age bands). Since SIR 21, and particularly since SIR 24, the proportion of staff under 49 has fallen while the proportion of those who are 50 and over has risen. This trend has continued in SIR 27.²³

²³ This pattern remains the same when we look solely at college providers. The increase in the proportion of the workforce that is 50 and over is therefore not due to the introduction of non-college providers such as local authorities in SIR 24.

Figure 24. Age distribution, change over time



Source: Frontier Economics analysis of SIR 21-27 data

Figure 25 below shows that these changes in the age distribution have had relatively small impacts on the average age of the FE workforce over time. Mean and median age have both increased by 2 years since SIR 24, but the age band within which the highest proportion of workers fall has remained 50-54 since SIR 21.

Figure 25. Average age, change over time

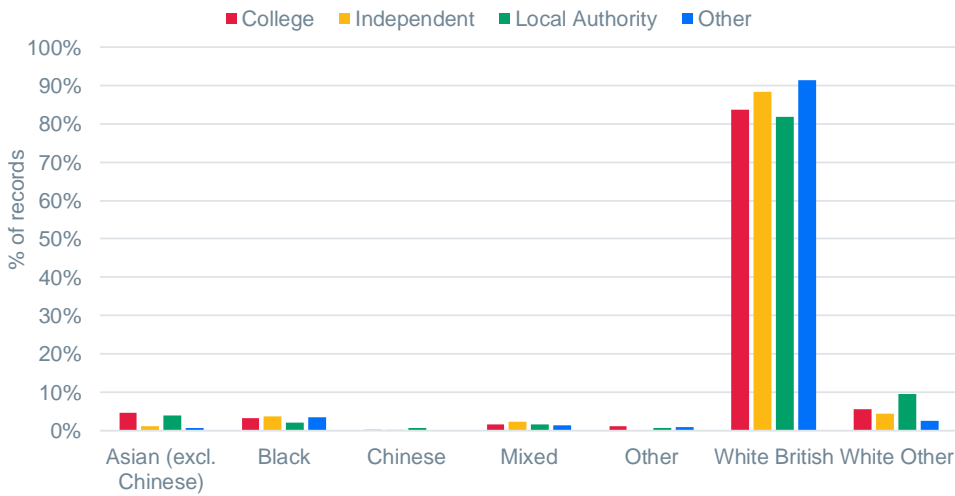
Year	Mean age	Median age	Mode age band
SIR 21	45	46	50 – 54
SIR 22	45	46	50 – 54
SIR 23	44	45	50 – 54
SIR 24	44	45	50 – 54
SIR 25	46	47	50 – 54
SIR 26	46	47	50 – 54
SIR 27	46	47	50 – 54

Source: Frontier Economics analysis of SIR 21-27 data

Ethnicity

As in SIR 26, the FE workforce is 80-90% white British across all provider types, as shown in Figure 26. “White Other”, “Asian (excl. Chinese)”, and “Black” are the next largest categories.

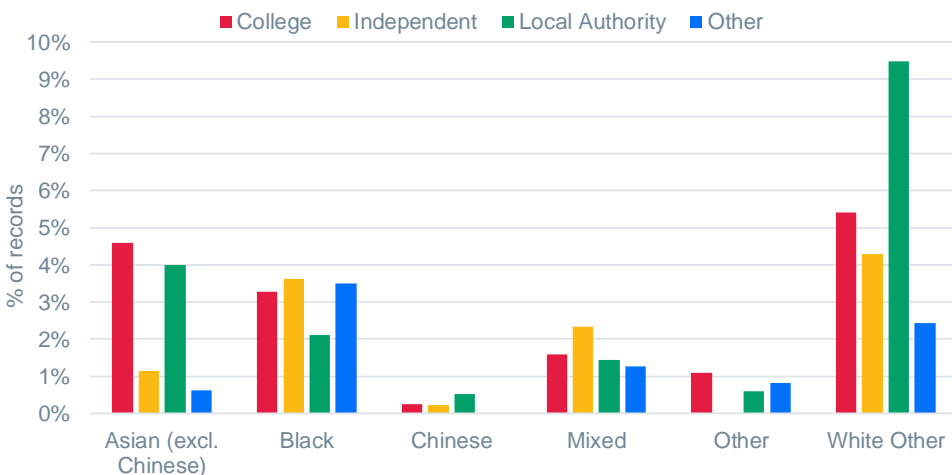
Figure 26. Ethnicity of staff by provider type



Source: Frontier Economics analysis of SIR 27 data

Figure 27 looks further into the ethnicity split in the FE workforce by excluding white British staff. This shows that – of the relatively small number of non-white British staff – “White Other” is the largest ethnicity in colleges, local authorities, and independent providers. ‘Other’ providers, in contrast, have “Black” as their second-largest ethnicities after white British.

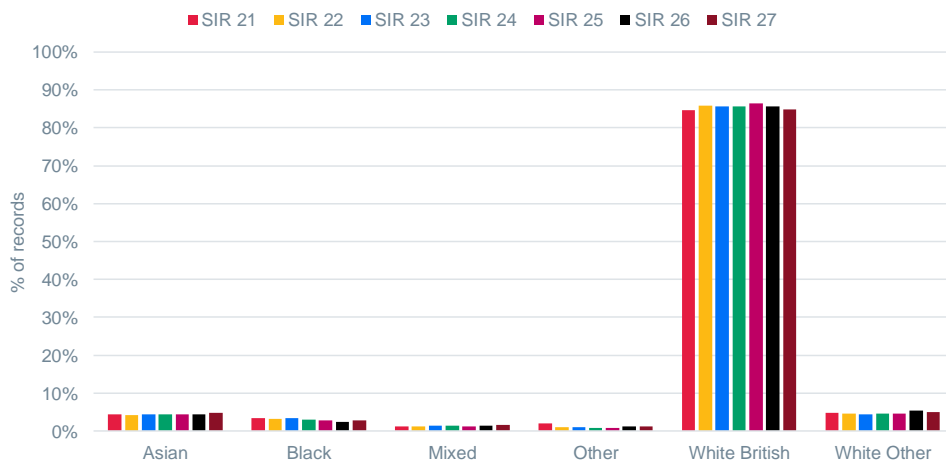
Figure 27. Ethnicity of staff by provider type, excl. white British



Source: Frontier Economics analysis of SIR 27 data

The ethnicity distribution of the FE workforce has not changed substantially over time, as shown in Figure 28. The proportion of white British staff has remained around 85-86% throughout SIR 21 to SIR 27.

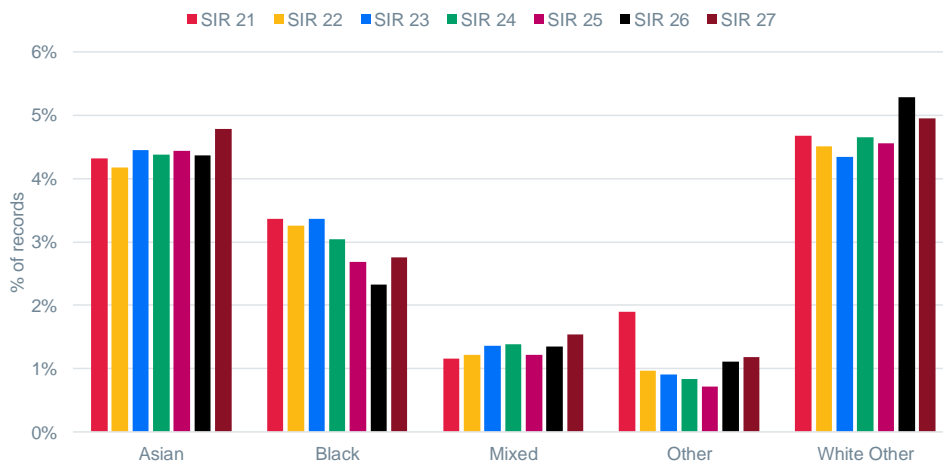
Figure 28. Ethnicity of staff, change over time



Source: Frontier Economics analysis of SIR 21-27 data

Figure 29 shows the changes in the ethnicity distributions over time, excluding white British staff. The patterns are a bit mixed, but overall we see slight decreases in the “Black” and “Other” ethnicities, with corresponding increases in the remaining ethnicities.

Figure 29. Ethnicity of staff, change over time, excl. white British



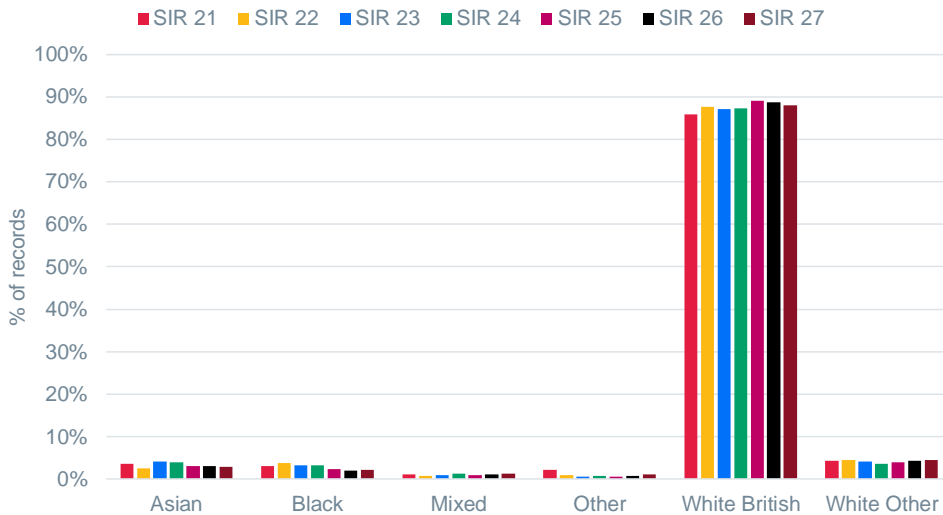
Source: Frontier Economics analysis of SIR 21-27 data

We also consider changes in the ethnicity distribution for those in more senior positions (i.e. middle managers and senior managers). Figure 30 and Figure 31 show the changes in ethnicity distribution of middle managers over time, including and excluding white British respectively.²⁴

Figure 30 shows that there is a slight increase in the proportion of white British middle managers over time, from 86% in SIR 21 to 88% in SIR 27.

²⁴ For the ethnicity distribution comparisons over time, we have aggregated “Asian (excl. Chinese)” and “Chinese” ethnicities together to facilitate comparisons with earlier iterations of the SIR which did not consider these two groups separately.

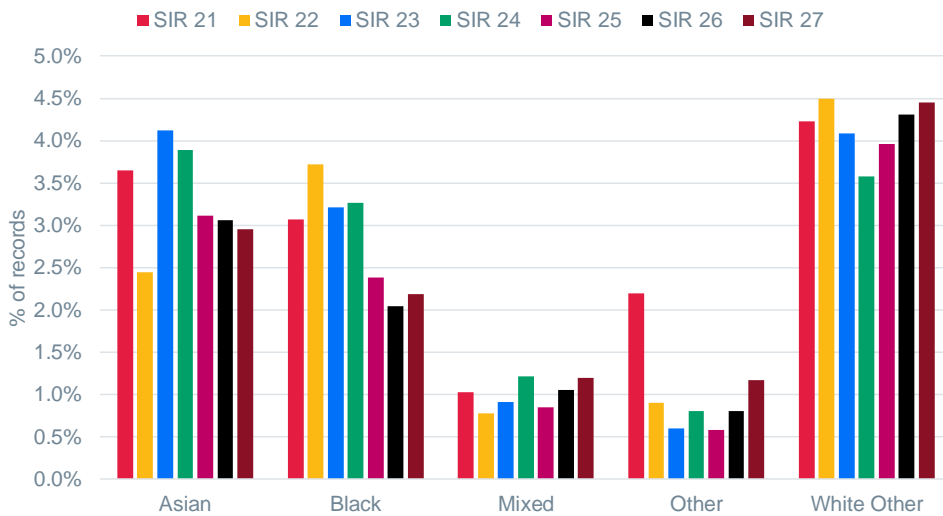
Figure 30. Ethnicity of middle managers, change over time



Source: Frontier Economics analysis of SIR 21-27 data

From Figure 31, we observe the same decrease in “Black” and “Other” ethnicities as before (when we considered all staff categories), though we also see a decrease in the “Asian” ethnicity as well.

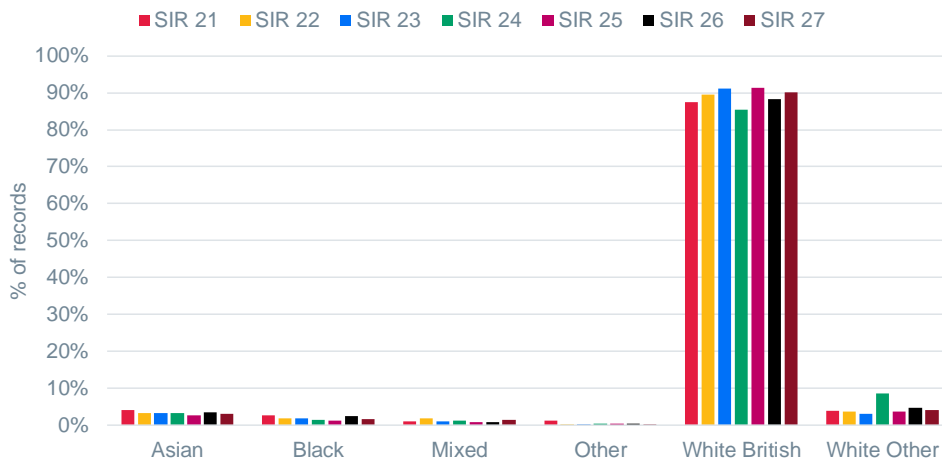
Figure 31. Ethnicity of middle managers, change over time, excl. white British



Source: Frontier Economics analysis of SIR 21-27 data

As for senior managers, the trends are similar to that of middle managers. Figure 32 and Figure 33 show the changes in ethnicity distribution of senior managers over time, including and excluding white British respectively.

Figure 32. Ethnicity of senior managers, change over time

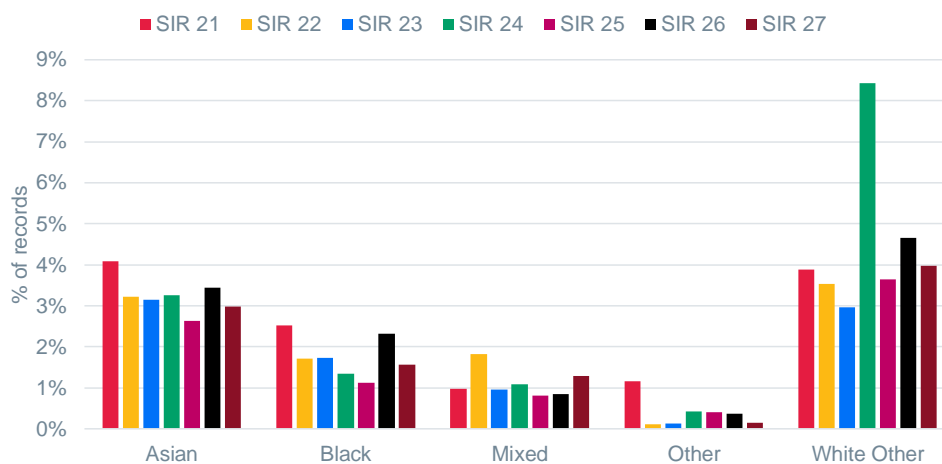


Source: Frontier Economics analysis of SIR 21-27 data

As with middle managers, we observe from Figure 32 that the overall proportion of white British senior managers has increased slightly from 87% in SIR 21 to 90% in SIR 27.

When excluding white British, we observe from Figure 33 that there is a decreasing proportion of senior managers who are in the “Asian”, “Black” and “Other” category, similar to what we observed in middle managers.

Figure 33. Ethnicity of senior managers, change over time, excl. white British



Source: Frontier Economics analysis of SIR 21-27 data

Sexual orientation

Figure 34 shows the sexual orientation of the FE workforce by provider type.

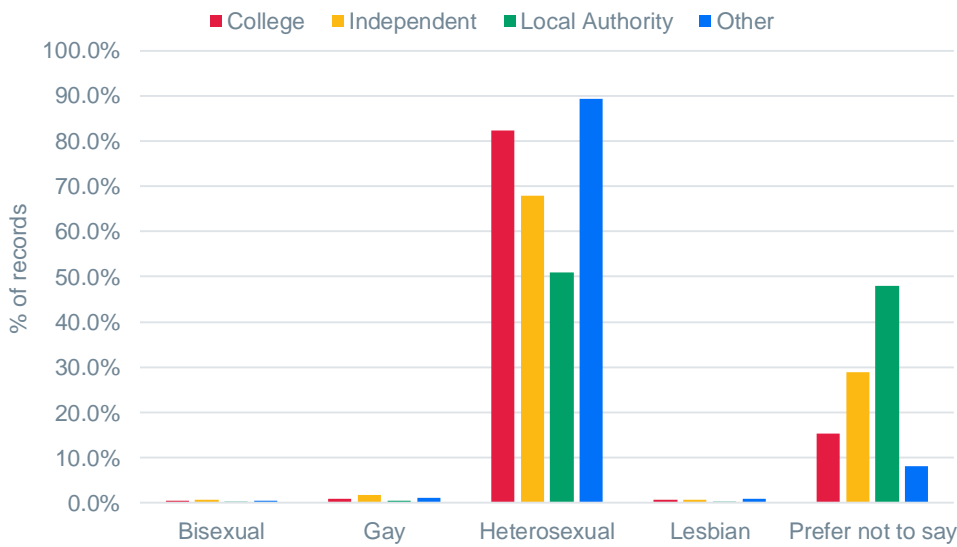
The proportion of the FE workforce identifying as bisexual, gay or lesbian is similar across provider types – between 0% and 2% – but the proportion identifying as heterosexual varies in direct (negative) correlation with the proportion responding “Prefer not to say”.

Across all provider types, 81% of the workforce self-report as heterosexual, and 17% state that they prefer not to answer the question.

The number of responses has increased this year, from 33,353 records in SIR 26 to 40,594 records in SIR 27.

The proportion of respondents answering “Prefer not to say” has decreased slightly from 19% in SIR 26 to 17% in SIR 27.

Figure 34. Sexual orientation of staff by provider type



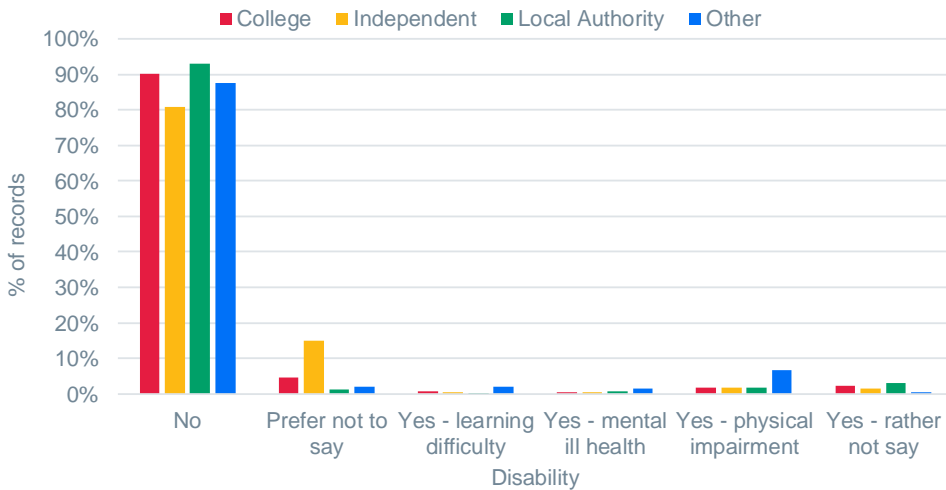
Source: Frontier Economics analysis of SIR 27 data

Disability

Figure 35 shows the disability status of the FE workforce. As in SIR 26, the vast majority of staff at each provider type do not have a disability.

Independent providers have seen a decrease in the proportion of respondents answering “Prefer not to say”, from 22% in SIR 26 to 15% in SIR 27.²⁵ Correspondingly, independent providers have seen the proportion of respondents answering “No disability” increase from 73% to 81%.

Figure 35. Disability status of staff by provider type



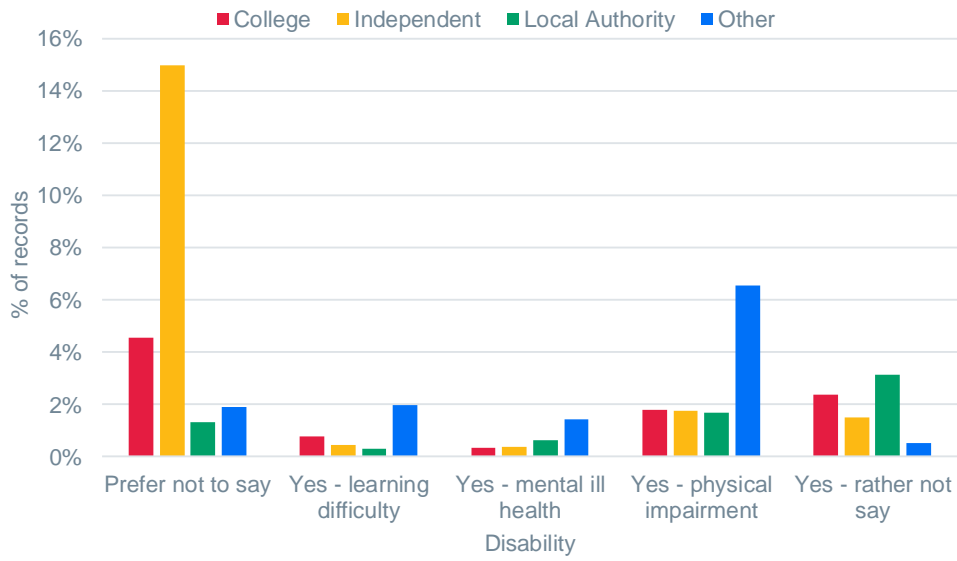
Source: Frontier Economics analysis of SIR 27 data

We look further into the disability status of FE staff by looking only at responses other than “No disability”.

Of those respondents that specify their condition, physical impairment is the largest category of disability across all provider types.

²⁵ However, only 6% of respondents from independent providers in SIR 25 answered “Prefer not to say”. This fluctuation suggests that this particular result could be driven by changes in sample composition rather than a shift in the entire population of staff from independent providers, and exemplifies why careful interpretation of the results is required.

Figure 36. Disability status of staff by provider type, excl. "No disability" responses



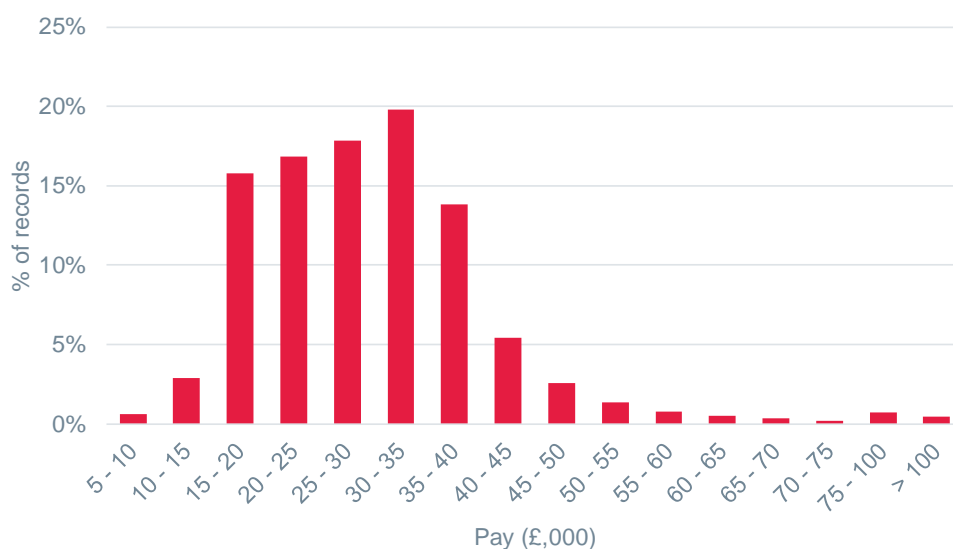
Source: Frontier Economics analysis of SIR 27 data

Annual pay

Figure 37 below shows the distribution of annual pay for staff in FE colleges. For comparability purposes, this analysis has been limited to full-time staff, and those who were in their job for the whole of the 2018-19 academic year.

As a result of these restrictions, the sample sizes in various pay bands for non-college providers are very low; we therefore restrict Figure 37 to college providers only.²⁶

Figure 37. Annual gross pay distribution, FE colleges



Source: Frontier Economics analysis of SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

The college pay distribution is similar to that in SIR 26. It is clustered in the range £15,000 - £40,000, with a relatively even spread across this range. 84% of staff were in this pay range. A further 4% were paid below £15,000 and 12% had annual pay above £40,000.

As shown in Figure 38 below, mean pay across all provider types was £30,100 and median pay was £28,700. This compares to mean pay of £38,200 and median pay of £30,700 across all full-time workers in England in 2019.²⁷

In SIR 27, 'other' providers had both the highest mean and median pay of all provider types. (In contrast, in SIR 26, 'other' providers had the highest mean pay but not the highest median pay.) This may reflect year-on-year variations in the sample, as there were only a handful of 'other' providers with annual pay information.

College providers paid the second-highest, whether we consider median or mean pay. In SIR 26, college providers had the highest median pay

²⁶ The distribution remains very similar if we include the other provider types.

²⁷ Data from the Annual Survey of Hours and Earnings (ASHE), available at <https://www.nomisweb.co.uk/>.

but the second highest mean pay.²⁸

Figure 38. Average pay by provider type

Provider type	Mean pay	Median pay
All providers	£30,100	£28,700
College	£30,100	£28,900
Independent	£29,100	£25,000
Local authority	£28,500	£27,900
Other	£32,000	£31,500

Source: Frontier Economics analysis of SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

The distribution of annual pay has increased slightly over time, as reflected by the small changes in mean and median pay shown in Figure 39.²⁹ This also includes a slight increase in both mean and median pay between SIR 26 and SIR 27.³⁰

Figure 39. Average pay, change over time

Year	Mean pay	Median pay
SIR 21	£27,500	£26,500
SIR 22	£27,100	£26,500
SIR 23	£28,700	£27,500
SIR 24	£28,600	£27,000
SIR 25	£29,600	£28,200
SIR 26	£29,500	£28,200
SIR 27	£30,000	£28,600

Source: Frontier Economics analysis of SIR 21-27 data

Figure 40 below breaks down differences in pay across providers by illustrating the median annual pay by provider type for different occupations. To reduce the impact of low sample sizes, we restrict our analysis to those provider-occupation combinations with at least 10 observations. We exclude 'other' providers entirely due to the aforementioned issue of having annual pay information from only a handful of providers.

The college pay premium is most stark for senior managers, for whom median annual pay is £58,000 at colleges, compared to £56,700 across

²⁸ The result that 'other' providers had the highest mean pay in SIR 26 was driven by one provider with a small number of highly paid staff. In SIR 27, there was no single provider driving the result of 'other' providers having the highest pay. However, this result likely reflects a small sample issue as not all of the 'other' providers sampled – already a low number to begin with – had annual pay information.

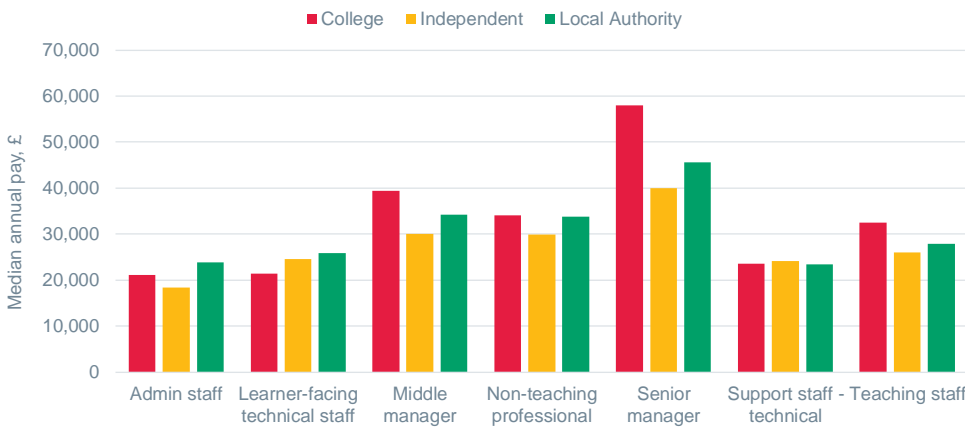
²⁹ The discrepancy between Figure 38 and Figure 39 is because Figure 39 does not include sixth form colleges, as per our explanation at the start of this section. When including sixth form colleges, the median and mean pay for earlier years increase, and there only appears to be a slight increase in pay over time.

³⁰ This does not account for price inflation, i.e. we are looking at nominal pay rather than real pay.

all provider types and £40,000 at independent providers.

Teaching staff and middle managers also earn higher median pay at colleges than non-college providers.

Figure 40. Median annual pay by provider type and occupation

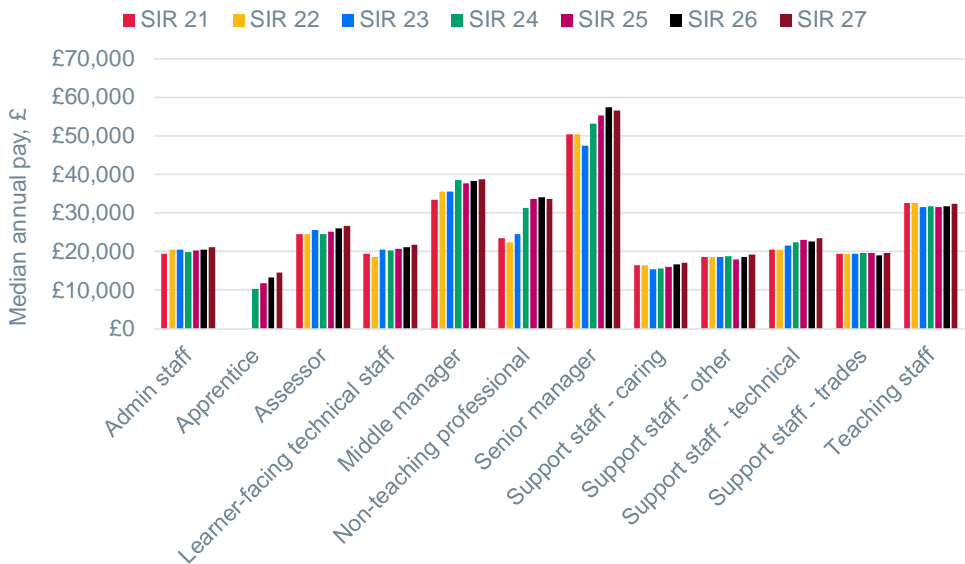


Source: Frontier Economics analysis of SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

Figure 41 shows how median annual pay for each occupation has changed over time. Most occupations experienced a slight increase in median annual pay between SIR 26 and SIR 27, of about 1-4%. Apprentices experienced the highest increase in median annual pay (of about 11%), as in SIR 26. Senior managers and non-teaching professionals, however, saw their median annual pay decrease slightly, by about 1%.

Figure 41. Median annual pay by occupation, change over time



Source: Frontier Economics analysis of SIR 21-27 data

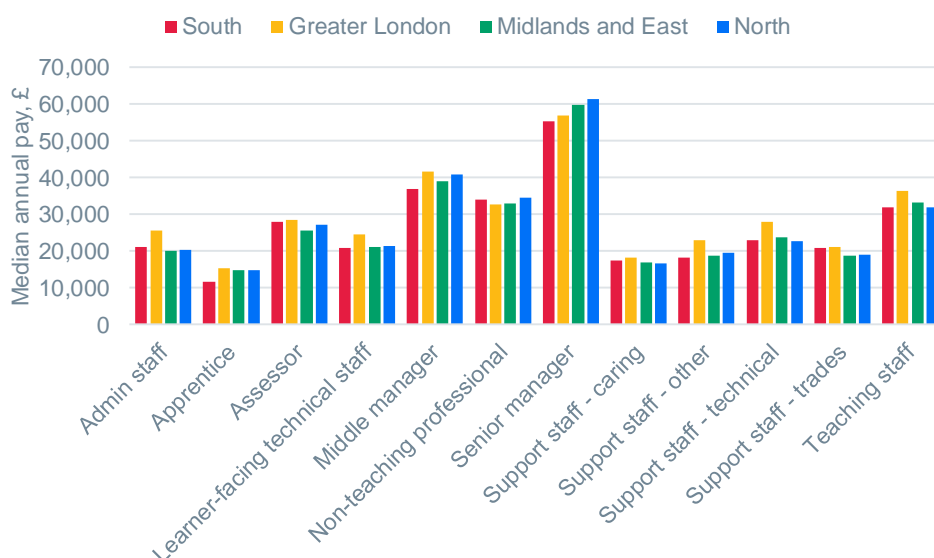
Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Figure 42 below also breaks down annual pay differences, this time across regions. We only include college providers for this analysis,

given the small sample sizes available for non-college provider types when looking at pay at a regional level.

As expected, Greater London pay is generally higher than in other regions, with the notable exception of Senior Managers. For example, teachers' median annual pay is £36,300 in London compared to £31,800 in the South, £33,100 in the Midlands and East, and £32,000 in the North.

Figure 42. Median annual pay by region and occupation (colleges only)



Source: Frontier Economics analysis of SIR 27 data

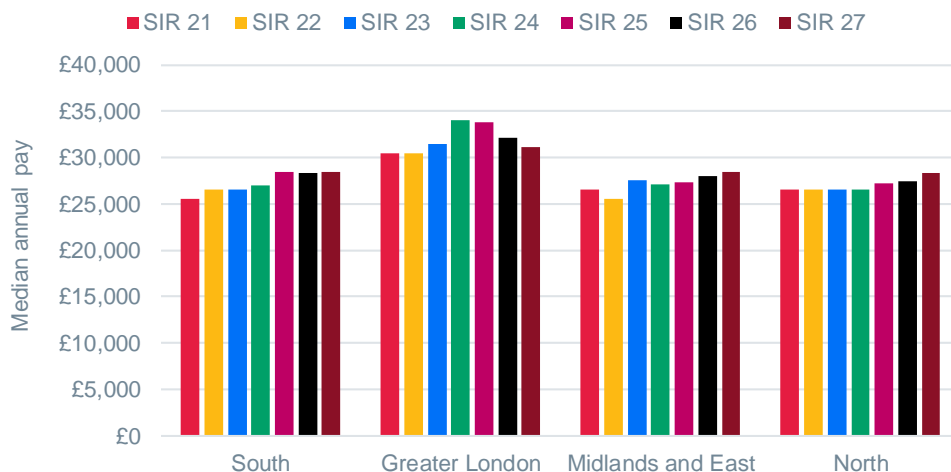
Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

Figure 43 below shows how regional pay discrepancies have changed over time, across all occupations. As above, we only include college providers for this analysis.

Figure 43 shows that the South has seen the largest increase (10.1%) in median pay since SIR 21. Although median pay remains highest in Greater London, the region saw a drop of 3.9% in median pay between SIR 26 and SIR 27, continuing the decline from SIR 25 to SIR 26.

This analysis does not account for inflation across the period from SIR 21 to SIR 27, which would reduce *real* (i.e. inflation-adjusted) pay increases.

Figure 43. Regional pay discrepancies, change over time (colleges only)



Source: Frontier Economics analysis of SIR 21-27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Below we look in detail at differences in median annual pay between genders.

Figure 44 shows that the gender pay gap is 10.1% across all provider types when looking at median pay (as above, this is only for full-time staff who were employed for the entire 2018-19 academic year), higher than 9.3% in SIR 26. Colleges – the overwhelming majority of the sample – have a 10.3% gender pay gap, an increase from 9.3% in SIR 26.

The gender pay gap for independent providers has also reversed from a negative pay gap in SIR 26 (i.e. female staff had higher median pay than male staff) to a positive pay gap in SIR 27.

In contrast, the gender pay gap is negative in local authorities and ‘other’ providers (i.e. median pay for female staff is higher than for male staff). Local authorities have had a negative gender pay gap since SIR 25, while the pay gap for ‘other’ providers has fluctuated from negative in SIR 25, to positive in SIR 26, and back to negative in SIR 27.

For ‘other’ providers, due to the fact that we are only looking at full-time staff and contracts that were in existence throughout the whole of the academic year (to ensure comparability), when we also split by gender the sample sizes on which we rely could become very small. Therefore, median pay figures and the gender pay gap for other providers is influenced heavily from year to year by the providers that submit data. This also applies to a smaller extent to the gender pay gap for independents and local authorities.

Figure 44. Gender pay gap by provider type

Provider type	Median pay - male staff	Median pay - female staff	Male-female % pay gap
All providers	£30,300	£27,300	10.1%
College	£30,400	£27,300	10.3%
Independent	£26,000	£25,000	3.8%
Local authority	£27,000	£27,900	-3.4%
Others	£30,900	£31,900	-3.3%

Source: Frontier Economics analysis of SIR 27 data

Figure 45 shows the changes in the gender pay gap over time. Due to the relatively low sample size and fluctuations for non-college providers which we noted earlier, we restrict comparison to college providers only. The gender pay gap has, on the whole, remained similar between SIR 21 and SIR 27, despite some yearly fluctuations.³¹

Figure 45. Gender pay gap by provider type, change over time (colleges only)

Year	Median pay - male staff	Median pay - female staff	Male-female % pay gap
SIR 21	£28,500	£25,500	10.5%
SIR 22	£27,500	£25,500	7.3%
SIR 23	£28,500	£26,500	7.0%
SIR 24	£29,400	£26,200	10.6%
SIR 25	£29,900	£27,000	9.9%
SIR 26	£29,600	£26,900	9.4%
SIR 27	£30,400	£27,300	10.2%

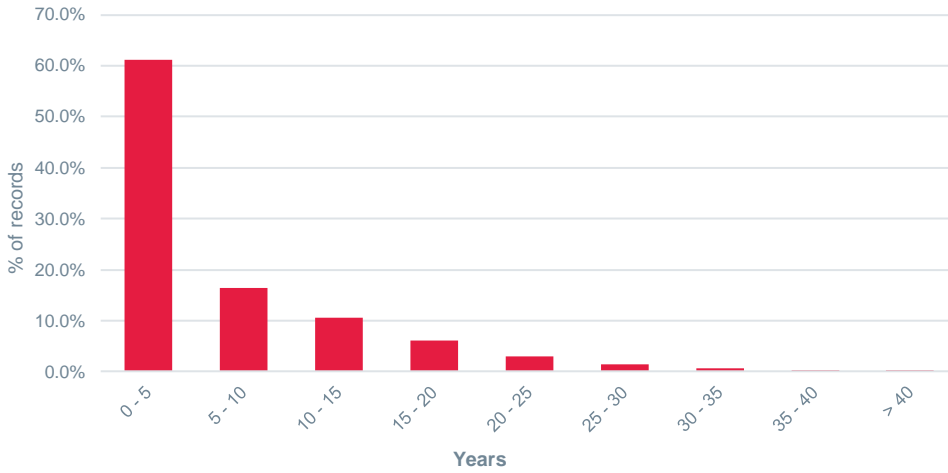
Source: Frontier Economics analysis of SIR 21-27 data

³¹ This result holds even when including all provider types.

Retention

In this section, we focus on permanent staff, for whom the concept of retention is most meaningful.³² Figure 46 below shows the overall retention pattern of permanent staff in SIR 27.

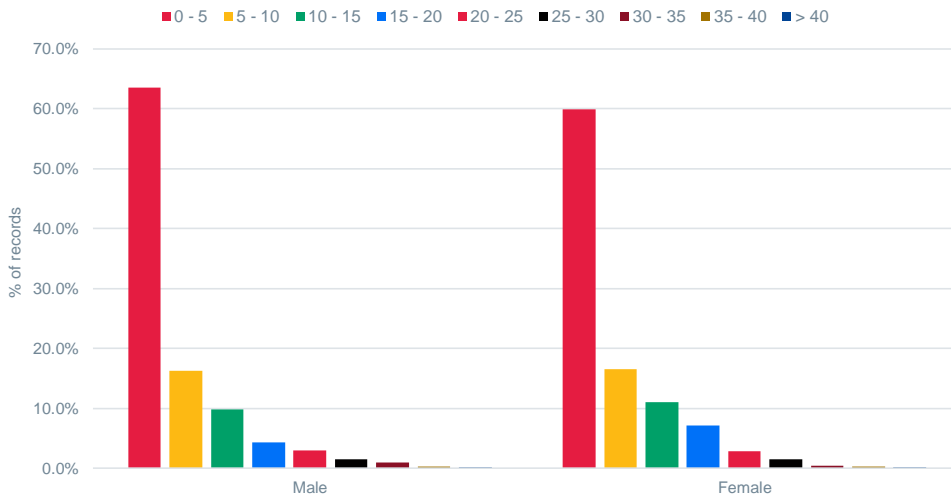
Figure 46. Retention pattern distribution



Source: Frontier Economics analysis of SIR 27 data

Figure 46 shows that the large majority of staff in the FE sector have only worked 0 to 5 years. This pattern does not change significantly when we consider the distribution of years worked within each gender (Figure 47), or within each ethnicity (Figure 48). We have omitted the distribution for the “Chinese” ethnicity in Figure 47 due to small samples.

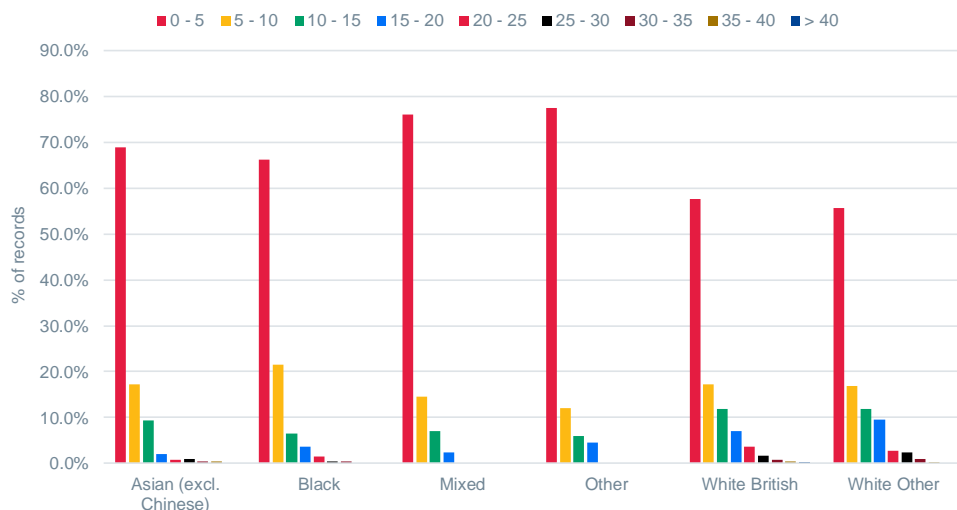
Figure 47. Retention pattern distribution, by gender



Source: Frontier Economics analysis of SIR 27 data

³² In contrast, the concept of retention is less meaningful for, say, a fixed-term worker, and for zero hour contracts, it's not necessarily clear what retention entails.

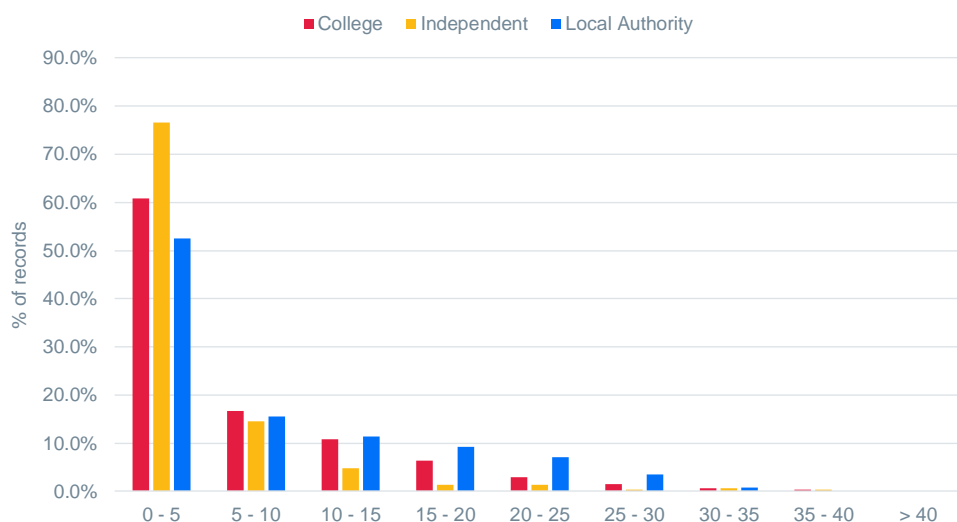
Figure 48. Retention pattern distribution, by ethnicity



Source: Frontier Economics analysis of SIR 27 data

Across provider types, we can see that colleges and local authorities tend to have a higher proportion of workers who have stayed longer at their jobs (Figure 49). Independent providers have a higher proportion of workers who have worked fewer years at their job. ('Other' providers have been omitted due to the low sample size.)

Figure 49. Retention pattern distribution, by provider type

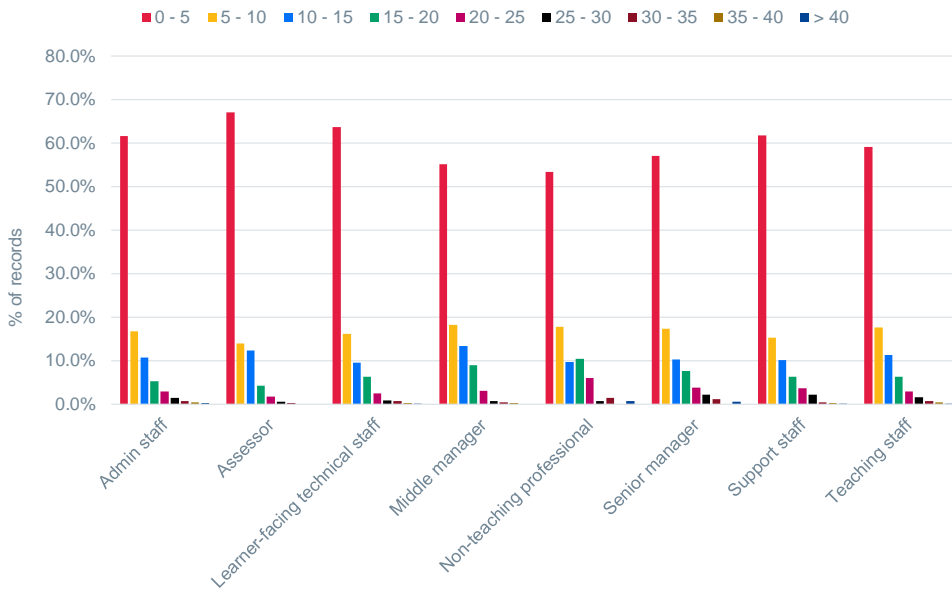


Source: Frontier Economics analysis of SIR 27 data

Figure 50 shows the retention patterns within each occupation.³³ We can see that for every occupation type, the majority of staff have only worked 0 to 5 years. There are some slight variations in the exact percentages across occupation types, but in general the proportion of those who have worked beyond 10 years is about 20-30% for all occupations, except for assessors.

³³ Apprentices excluded.

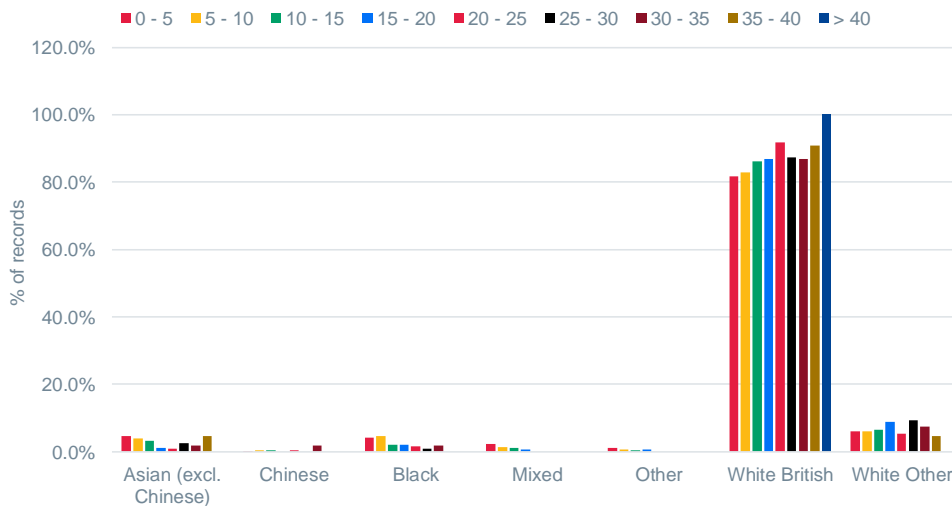
Figure 50. Retention pattern distribution, by occupation



Source: Frontier Economics analysis of SIR 27 data

Finally, Figure 51 considers the composition within each retention band by ethnicity. That is, within a certain retention band, say, those who have worked 0 to 5 years, what is the breakdown by ethnicity? We observe that the lengthier retention bands consist of a higher proportion of more “White British” staff. In particular, in our sample, all staff who have worked more than 40 years are white British.³⁴

Figure 51. Retention pattern composition, by ethnicity



Source: Frontier Economics analysis of SIR 27 data

³⁴ However, in line with earlier caveats, this may be an artefact of the sample and not necessarily reflective of the entire FE sector as a whole.

4. PROFILE OF FE TEACHING STAFF

In this section we look specifically at the characteristics of teaching staff within FE, the largest occupational category accounting for 41% of staff.

Age

Figure 52 below compares the proportion of teaching staff in different age bands compared to all staff, across all provider types. Other than a notably lower proportion of teaching staff who are under 25, there are only minor differences between the age distribution of teaching staff and all staff.

The age distribution of teaching staff is similar to that observed in SIR 26, though the median age has risen from 47 in SIR 26 to 48 in SIR 27.

Figure 52. Age of teaching staff compared to all staff

Age	Proportion – all staff	Proportion – teaching staff
Under 25	3%	1%
25 – 29	7%	6%
30 – 34	9%	10%
35 – 39	11%	12%
40 – 44	11%	12%
45 – 49	13%	14%
50 – 54	16%	16%
55 – 59	15%	15%
60 and over	14%	14%
Mean age	46	47
Median age	47	48
Mode age band	50 - 54	50 - 54

Source: Frontier Economics analysis of SIR 27 data

Ethnicity

As shown by Figure 53 below, the ethnicity of teaching staff does not differ significantly from the ethnicity of all staff, when looking across all provider types.

The ethnicity distribution of teaching staff is very similar to that observed in SIR 26.

Figure 53. Ethnicity of teaching staff compared to all staff

Ethnicity	Proportion – all staff	Proportion – teaching staff
Asian (excl. Chinese)	5%	5%
Black	3%	4%
Chinese	0.3%	0.2%
Mixed	2%	2%
Other	1%	1%
White British	84%	83%
White Other	5%	5%

Source: Frontier Economics analysis of SIR 27 data

Subject taught

Figure 54 below shows the proportion of teaching staff (in FTE terms) in the SIR 27 dataset for each subject. The three largest subjects by proportion of staff are Health, public services and care; Arts, media and publishing; and Preparation for life and work.

Figure 54. Proportion of staff by subject taught (teaching staff only)

Subject	% of total
Health, public services and care	11.2%
Arts, media and publishing	10.7%
Preparation for life and work	9.7%
Engineering and manufacturing technologies	8.9%
Construction, planning and the built environment	7.5%
English (including literacy)	7.2%
Business, administration and law	7.1%
Leisure, travel and tourism	5.8%
Mathematics	5.6%
Retail and commercial enterprise	4.7%
Agriculture, horticulture and animal care	4.0%
Science	3.9%
Information and communication technology (ICT)	3.6%
Education and Training	2.6%
Humanities	2.1%
Languages, literature and culture	2.1%
Social Sciences	1.6%
Community development	1.1%
Family learning	0.5%

Source: Frontier Economics analysis of SIR 27 data

Note: this measures the proportion of staff for each subject, as opposed to the proportion of contracts. We calculate figures on an FTE basis, meaning that if a single teacher spends 50% of their time teaching ICT and 50% of their time teaching Science, they will contribute 0.5 towards the totals of both ICT and Science.

Figure 55 below shows the proportion of teaching staff (in FTE terms) for each subject, by provider type. We observe some variation both in the proportion of teaching staff and relative position for each subject across different provider types. For example, health, public service and care is by far the largest subject at independent providers (with 48.4% of staff), but is only the fifth-largest at local authorities (with 6.9% of staff). For non-college providers, the total number of staff with subject information is relatively low, so these proportions at the subject-provider level should be interpreted with some caution.

Figure 55. Proportion of staff by subject taught, by provider type (teaching staff only)

Subject	% of total			
	College	Independent	Local Authority	Other
Health, public services and care	10.8%	48.4%	6.9%	1.1%
Arts, media and publishing	10.8%	0.0%	9.0%	25.4%
Preparation for life and work	8.6%	6.9%	21.7%	55.6%
Engineering and manufacturing technologies	9.5%	3.3%	1.5%	0.9%
Construction, planning and the built environment	8.0%	0.7%	0.6%	0.0%
English (including literacy)	6.8%	2.2%	19.9%	3.1%
Business, administration and law	7.1%	16.5%	4.7%	0.5%
Leisure, travel and tourism	6.1%	5.1%	1.9%	0.2%
Mathematics	5.6%	1.5%	8.9%	2.1%
Retail and commercial enterprise	4.8%	10.5%	0.9%	0.5%
Agriculture, horticulture and animal care	4.3%	0.0%	0.2%	0.0%
Science	4.2%	0.0%	0.3%	0.2%
Information and communication technology (ICT)	3.6%	1.6%	5.8%	0.7%
Education and Training	2.5%	3.3%	4.7%	3.7%
Humanities	2.3%	0.0%	0.5%	0.3%
Languages, literature and culture	2.0%	0.0%	5.4%	0.0%
Social Sciences	1.7%	0.0%	0.3%	2.2%
Community development	0.9%	0.0%	3.3%	3.6%
Family learning	0.4%	0.0%	3.5%	0.0%

Source: Frontier Economics analysis of SIR 27 data

Note: this measures the proportion of staff for each subject, as opposed to the proportion of contracts. We calculate figures on an FTE basis, meaning that if a single teacher spends 50% of their time teaching ICT and 50% of their time teaching Science, they will contribute 0.5 towards the totals of both ICT and Science.

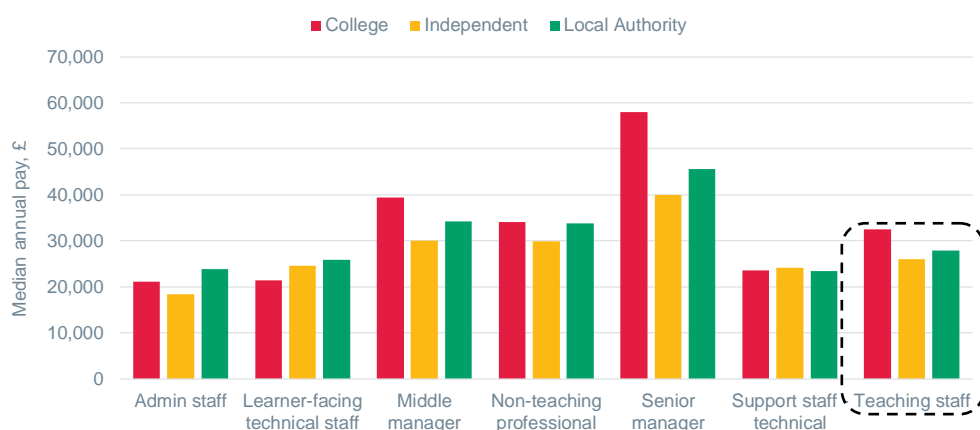
Annual pay

Median annual pay for different occupations is shown in Figure 56 below. Median pay for all teaching staff is £32,500. College teachers (£32,500) are paid more than teachers at independents (£26,000) and local authorities (£27,900), but lower than teachers at 'other' providers (£33,800).³⁵

Mean pay for all teaching staff is slightly below median pay, at £31,900. In comparison, mean annual pay for secondary schoolteachers is £35,300.³⁶

Teaching staff have the 4th-highest median pay of all occupations, when looking across all provider types.

Figure 56. Median annual pay by provider type and occupation



Source: Frontier Economics analysis of SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

Figure 38 below shows mean and median pay for different provider types.³⁷

Teacher pay is higher at colleges than independent and local authority providers, as is the case when looking across all occupations.

The pay of teachers is no worse than other occupations, across all provider types. For colleges and independent providers, median pay for teaching staff is higher than the median pay across all occupations in their respective provider types. For local authorities, median pay for teaching staff is the same as the median pay across all occupations.

³⁵ The earlier caveats about relatively small sample sizes for independents and 'other' providers apply here too.

³⁶ Based on provisional 2019 gross annual pay figures for 'Secondary education teaching professionals' in the Annual Survey of Hours and Earnings (ASHE).

³⁷ We have excluded 'other' provider types due to the low number of 'other' providers in the sample with annual pay information.

Figure 57. Average pay by provider type (teaching staff only)

Provider type	Mean pay	Median pay
All providers	£31,900	£32,500
College	£32,000	£32,500
Independent	£26,300	£26,000
Local Authority	£28,100	£27,900

Source: Frontier Economics analysis of SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

Figure 58 shows that average pay for teaching staff has not changed substantially over time. This is also true even if we look only at colleges, the main difference being that pay in colleges tends to be slightly higher than in other provider types.

Figure 58. Average pay, change over time (teaching staff only)

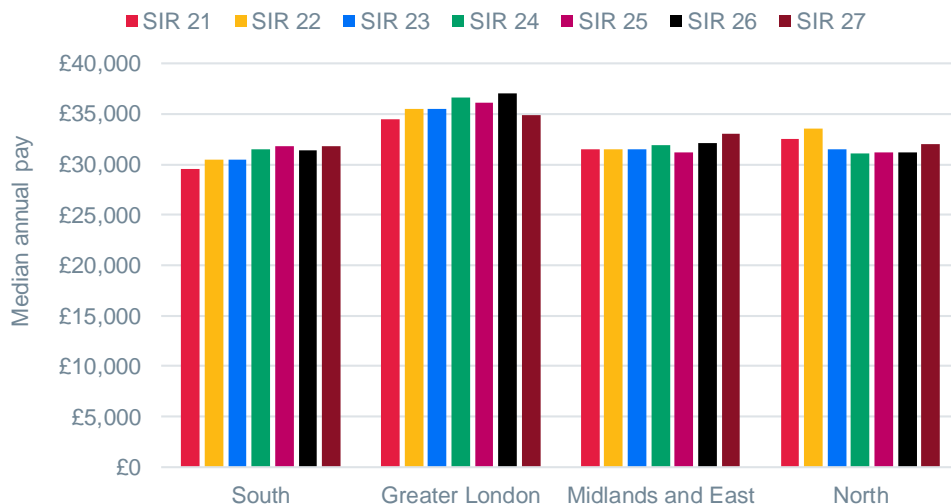
Year	Mean pay	Median pay
SIR 21	£31,300	£32,500
SIR 22	£31,500	£32,500
SIR 23	£31,500	£31,500
SIR 24	£31,100	£31,800
SIR 25	£31,200	£31,500
SIR 26	£31,400	£31,700
SIR 27	£31,800	£32,300

Source: Frontier Economics analysis of SIR 21-27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Figure 59 replicates the analysis of regional pay discrepancies presented in Section 3, specifically for teaching staff. On the whole, teacher pay has grown in Greater London, the South, and in the Midlands & East. In Greater London, much of the growth was erased in the decline between SIR 26 and SIR 27. In contrast, much of the growth for the Midlands & East came between SIR 26 and SIR 27. In the North, teacher pay has decreased slightly on the whole.

Figure 59. Regional pay discrepancies for teaching staff, change over time (colleges only)



Source: Frontier Economics analysis of SIR 21-27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Figure 60 below shows median pay for teachers in different subject areas.³⁸ There are some shifts in the relative position of subjects by median pay. For example, in SIR 27, the top three subjects by median pay are (in order) Humanities, Science, and Social Science. In SIR 26, the top three subjects were Education and Training (7th in SIR 27), Humanities (1st in SIR 27), and ICT and Social Science (tied; 11th and 3rd in SIR 27 respectively).

The results for multiple subject areas rely on small samples, however (in particular, Family learning and Community development) and so should be treated with caution.

³⁸ We are aware that the lack of agency staff in our dataset may affect our results for median pay, given that some subjects (such as 'Engineering and manufacturing technologies') have many teachers recruited and paid via agencies. Also note that our results differ when looking across the entire SIR 27 dataset, instead of only including those who worked full-time throughout the entire academic year. For example, when using the entire dataset, the median pay of Engineering and Manufacturing Technologies teachers is highest of all subjects.

Figure 60. Median pay by subject (teaching staff only)

Subject	Median pay
Agriculture, horticulture and animal care	£28,100
Arts, media and publishing	£33,100
Business, administration and law	£33,500
Community development	£33,700
Construction, planning and the built environment	£33,300
Education and Training	£33,100
Engineering and manufacturing technologies	£33,000
English (including literacy)	£31,400
Family learning	£26,600
Health, public services and care	£32,300
Humanities	£35,500
ICT	£32,400
Languages, literature and culture	£31,100
Leisure, travel and tourism	£31,700
Mathematics	£31,800
Preparation for life and work	£31,200
Retail and commercial enterprise	£32,500
Science	£34,300
Social Sciences	£34,000

Source: Frontier Economics analysis of SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

Below we look in detail at differences in median annual pay between genders, specifically for teaching staff.

Figure 61 shows that the gender pay gap is 4.2% across all provider types when looking at median teacher pay (as above, this is only for full-time staff who were employed for the entire 2018-19 academic year). This is higher than the 2.5% gap observed in SIR 26.³⁹

Figure 61. Gender pay gap by provider type (teaching staff only)

Provider type	Median pay - male staff	Median pay - female staff	Male-female % pay gap
All providers	£33,000	£31,600	4.2%
College	£33,000	£31,900	3.3%
Local Authority	£27,900	£26,300	5.7%

Source: Frontier Economics analysis of SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of 2018-19.

³⁹ As before, we have excluded 'other' providers due to the low number of 'other' providers in the sample with annual pay information. We also exclude independent providers here due to the low number of observations after splitting by gender.

Figure 62 below shows the gender pay gap over time, across all providers. We can see that the gender pay gap was originally negligible, increased to 2.4% in SIR 24, and has fluctuated around that level since. If we focus only on college providers (not illustrated), the key difference is that instead of starting with a negligible gender pay gap in SIR 21, the gender pay gap starts at 3.2% in SIR 21, then becomes negligible in SIR 22.

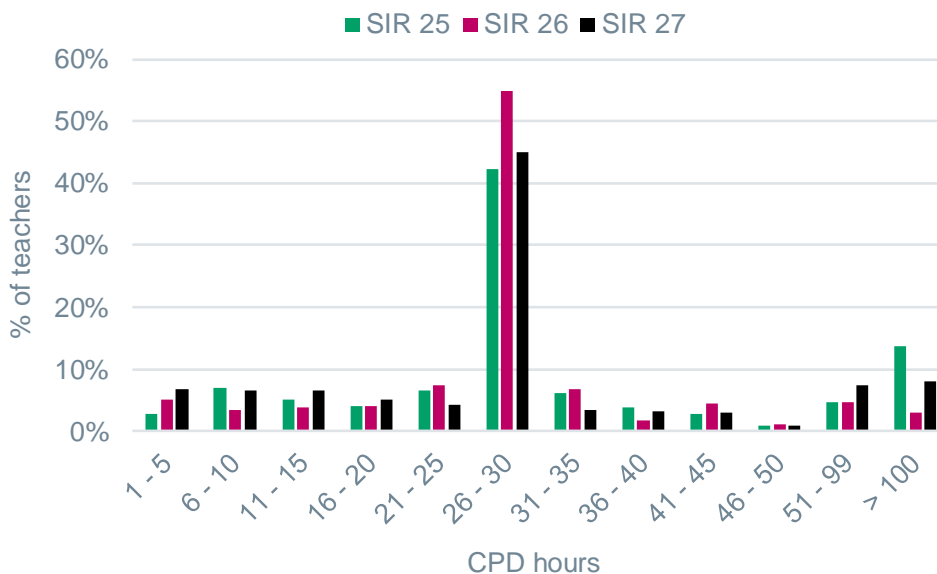
Figure 62. Gender pay gap, change over time (teaching staff only)

Year	Median pay - male staff	Median pay - female staff	Male-female % pay gap
SIR 21	£32,500	£32,500	0.0%
SIR 22	£32,500	£32,500	0.0%
SIR 23	£31,500	£31,500	0.0%
SIR 24	£32,000	£31,200	2.4%
SIR 25	£32,100	£31,000	3.2%
SIR 26	£32,200	£31,300	2.7%
SIR 27	£33,000	£32,000	2.8%

Continuing professional development

Figure 63 shows the distribution of hours spent by teaching staff on continuing professional development (CPD), in SIR 25-27.

Figure 63. Hours spent by teaching staff on continuing professional development, SIR 25-27



Source: Frontier Economics analysis of SIR 25-27 data

45% of teachers spent 26-30 hours per year on CPD in 2018-19, of which 96% spent exactly 30 hours.

Despite previous expectations of at least 30 hours per year spent by each teacher on CPD, 31% of teachers appear to have spent fewer than 30 hours on CPD in 2018-19. This is also higher than 27% in SIR 25 and 24% in SIR 26.⁴⁰

Compared to SIR 26, the number of CPD hours in SIR 27 appears to have dispersed. The proportion of those with less than 20 CPD hours per year have increased from 16% to 25%, but the proportion of those with more than 50 CPD hours have also increased from 8% to 15%.

The median number of hours spent on CPD has not changed substantially over time. It has increased only slightly from 29.5 in SIR 26 to 29.8 in SIR 27. As for the mean CPD hours, after decreasing from 46 in SIR 25 (due to the small number of staff reporting a high number of CPD hours in SIR 25) to 35 in SIR 26, mean CPD hours have increased slightly to 38 in SIR 27.

⁴⁰ In SIR 25 and SIR 26, we excluded responses of zero hours per year because CPD hours was a new variable introduced in SIR 24, and many providers did not have systems in place for recording CPD hours, so entries of zero hours could reflect this lack of a recording mechanism rather than truly having zero hours spent on CPD. In SIR 27, we have also excluded the responses of zero hours per year to keep the comparison consistent.

Qualifications

In this section, we look at two key qualifications held by teachers:

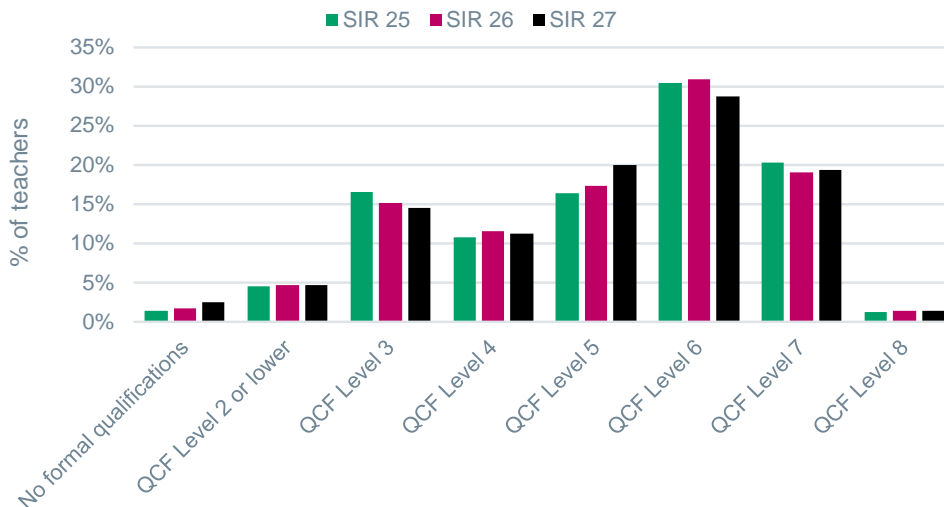
- 1) Highest subject-specific qualification; for example, a Bachelor's Degree in Mathematics (which would be classed as a Level 6 qualification).
- 2) Highest general teaching qualification; for example, a PGCE (which would be classed as a Level 7 qualification).

Subject-specific qualifications

Figure 64 looks at the highest qualification held by teachers in their main subject area of teaching. As in SIR 25 and SIR 26, the most common category is QCF Level 6 (corresponding to a Bachelor's Degree or equivalent).

The distribution of teaching qualification levels in SIR 27 is broadly similar to that observed in previous years. The proportion of teachers with QCF Level 3 or below (including 'no formal qualifications') has declined slightly from 22.5% in SIR 25 to 21.7% in SIR 27.

Figure 64. Teaching staff – highest qualification held in main subject area, SIR 25-27



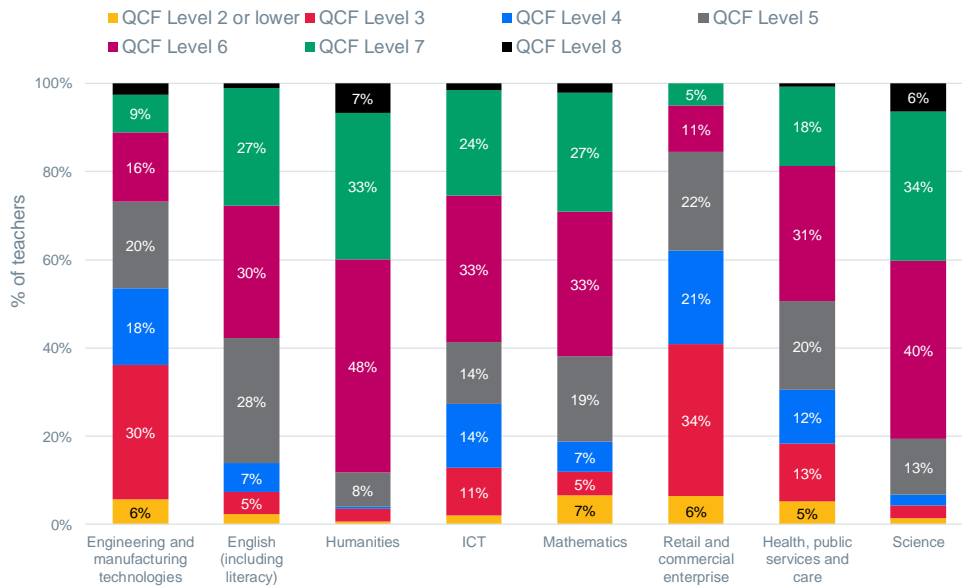
Source: Frontier Economics analysis of SIR 25-27 data

Figure 65 shows how the qualifications held by teachers in their main subject area varies depending on the subject taught.

While 88% of humanities teachers have qualifications at Level 6 or above, only 27% of engineering and manufacturing technologies teachers have qualifications at this level. This may be linked to the greater prevalence of apprenticeships and intermediate-level vocational qualifications such as Higher National Diplomas (HNDs) and Higher National Certificates (HNCs) in areas such as engineering and manufacturing. A similar pattern is observed in retail and commercial enterprise, which is also a more vocational subject – the vast majority of

teachers have qualifications at Level 5 or below.

Figure 65. Teaching staff – highest qualification held in main subject area, selected subjects



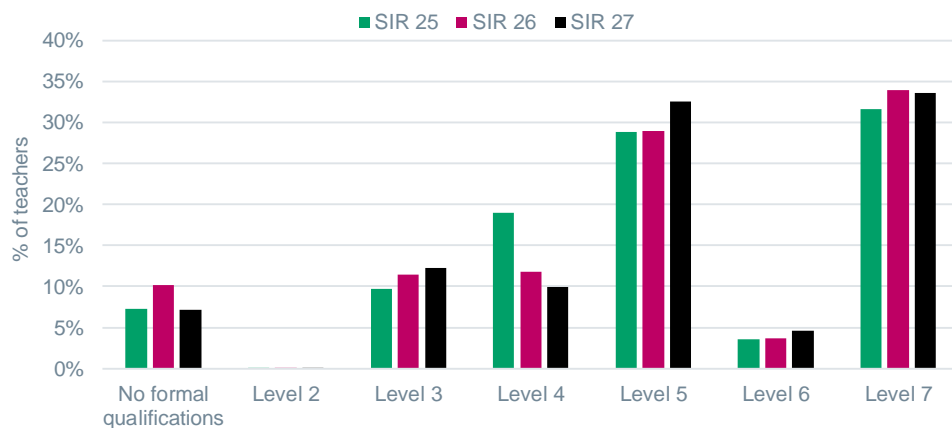
Source: Frontier Economics analysis of SIR 27 data

General teaching qualifications

Figure 66 below shows the proportion of teachers with different levels of general teaching qualifications. As in SIR 25 and SIR 26, the most common category is Level 7, which includes PGCEs.

The distribution of general teaching qualifications is broadly similar to that observed in previous years. We observe that the proportion of teachers with Level 4 teaching qualifications has continued to decline, while the proportion with Level 3 teaching qualifications has continued to increase. The proportion of those with Level 5 teaching qualifications also increased between SIR 26 to SIR 27, leaving it just under the proportion of those with Level 7 teaching qualifications in SIR 27.

Figure 66. Teaching staff – highest general teaching qualification held, SIR 25-27



Source: Frontier Economics analysis of SIR 25-27 data

Offender / SEND / community learning

In this section, we look at three specific areas of learning covered by some FE teachers:

- Offender learning: teaching offenders as part of the Offenders' Learning and Skills Service (OLASS).
- SEND learning: teaching those with special educational needs and disabilities.
- Community learning: providing teaching to the community, for example through public classes.

The majority of contracts which specify that the individual is involved in offender, SEND, or community learning are classified as teaching staff. Figure 67 below shows the occupational distribution for each category.

Of those involved in SEND learning, a substantial minority are learner-facing technical staff, of which the majority are learning support staff. About 25% of learning support staff contracts state that the individual is engaged in SEND learning.⁴¹

Figure 67. Staff breakdown by occupational group, staff engaged in offender/SEND/community learning

Occupation	% of records – offender learning	% of records – SEND learning	% of records – community learning
Admin staff	0.0%	1.2%	9.3%
Apprentice	0.0%	0.1%	0.4%
Assessor	0.0%	0.1%	0.1%
Learner-facing technical staff	0.0%	33.2%	19.6%
Middle manager	0.0%	4.4%	4.1%
Non-teaching professional	5.0%	0.4%	0.6%
Senior manager	0.0%	0.3%	1.3%
Support staff - caring	0.0%	0.0%	1.2%
Support staff - technical	0.0%	0.2%	1.5%
Support staff - trades	0.0%	0.0%	0.2%
Support staff - other	0.0%	1.2%	2.9%
Teaching staff	95.0%	58.9%	58.5%

Source: Frontier Economics analysis of SIR 27 data

⁴¹ This is 25% of those learning support staff contracts which reply “Yes” or “No” to the question of whether the individual is engaged in SEND learning. There are a further 7,000+ learning support staff contracts in our dataset which do not reply to the question, reply “Not Known”, or reply that the question is not applicable because the individual is not a member of teaching staff.

As the majority of contracts for those involved in offender, SEND, or community learning are classified as teaching staff, we focus only on teaching staff for our analysis below.

Number of teachers

A relatively small number of teachers are involved in each of these different types of teaching. As shown in Figure 68, across all teaching contracts in the SIR 27 data, 0.1% are involved in offender learning, 2.8% in SEND learning, and 4.4% in community learning.⁴² Of those contracts that involve some community learning, the majority (76%) state that 100% of their teaching takes place in the community.

Figure 68. Number of teaching contracts engaged in offender, SEND, or community learning

	% of records – offender learning	% of records – SEND learning	% of records – community learning
Involved	0.1%	2.8%	4.4%
Not involved	46.6%	38.0%	52.0%
Unknown	53.4%	59.2%	43.6%

Source: Frontier Economics analysis of SIR 27 data

Terms of employment

Across all teaching contracts engaged in offender learning, SEND learning, and community learning, permanent staff is the largest category of employment type.

However, whereas 94.7% of teaching contracts engaged in offender learning are permanent, only 36.4% of teaching contracts engaged in community learning are permanent. In community learning, casual staff and those on zero hours contracts are much more prevalent (23.9% and 25.4% respectively). The majority of teaching contracts involved in community learning also tend to be from local authorities (64.2%).

The prevalence of zero hours contracts also differs markedly across the three – no teaching contracts engaged in offender learning were classified as being on a zero hours contracts, 1.4% of SEND learning contracts were on zero hours contracts, but 25.4% of community learning contracts were on zero hours.

⁴² We conduct our analysis at the contract level given that a single teacher could have multiple contracts, one or more of which includes some offender/SEND/community learning, and one or more of which do not.

Figure 69. Distribution of employment type, teachers engaged in offender/SEND/community learning

Terms of employment	% of records – all teaching staff	% of records – offender learning	% of records – SEND learning	% of records – community learning
Casual staff	12.9%	5.3%	8.6%	23.9%
Employed through an agency	0.2%	0.0%	0.0%	0.4%
Fixed term staff	9.1%	0.0%	7.9%	13.3%
Permanent staff	70.5%	94.7%	80.0%	36.4%
Self-employed	0.1%	0.0%	1.2%	0.0%
Voluntary staff	0.1%	0.0%	0.9%	0.6%
Zero hours contract	7.1%	0.0%	1.4%	25.4%

Source: Frontier Economics analysis of SIR 27 data

Note: all figures rounded to one decimal place. Figures may not add up to 100% due to rounding.

Turnover and in-year employment change

Figure 70 below shows turnover and in-year employment changes for staff engaged in offender, SEND, and community learning. Turnover of teaching staff involved in either of the three categories is lower than that of all teaching staff.

For all three categories of offender, SEND, and community learning, in-year employment growth was above the average for all teaching staff. Note, however, that the small number of teachers involved in these areas of learning – in particular for offender learning (which was omitted due to small samples) – means that the results should be interpreted with caution.

Figure 70. Turnover rate and in-year employment change, teaching staff engaged in offender/SEND/community learning

	Turnover rate	In-year employment change
All teaching staff	12.1%	2.3%
Teaching staff engaged in:		
<i>Offender learning</i>	N/A	N/A
<i>SEND learning</i>	8.9%	3.2%
<i>Community learning</i>	5.9%	13.5%

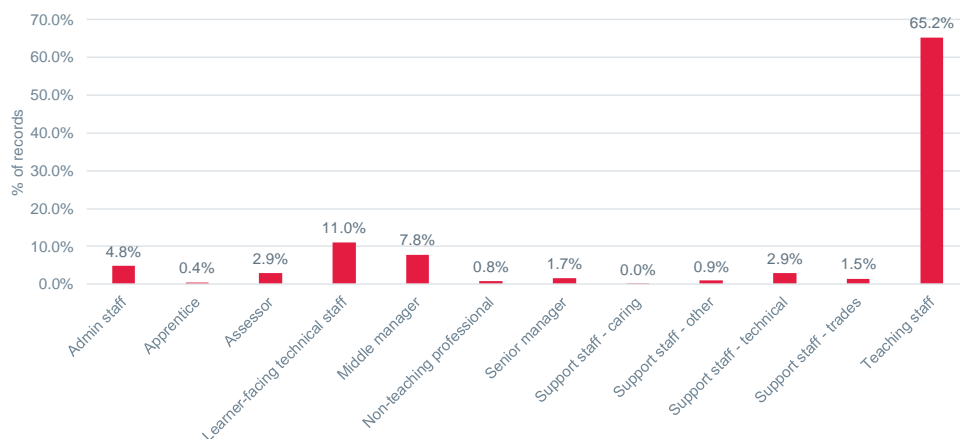
Source: Frontier Economics analysis of SIR 27 data

Qualified Teacher Learning and Skills (QTLS)

In this section, we look at the Qualified Teacher Learning and Skills (QTLS) certification.

Figure 71 shows the distribution of QTLS certification by occupation. Perhaps unsurprisingly, we see that majority of those with QTLS certification are teaching staff. However, there is also a non-negligible minority of QTLS certifications held by learner-facing technical staff (11%) and middle managers (7.8%).

Figure 71. QTLS distribution



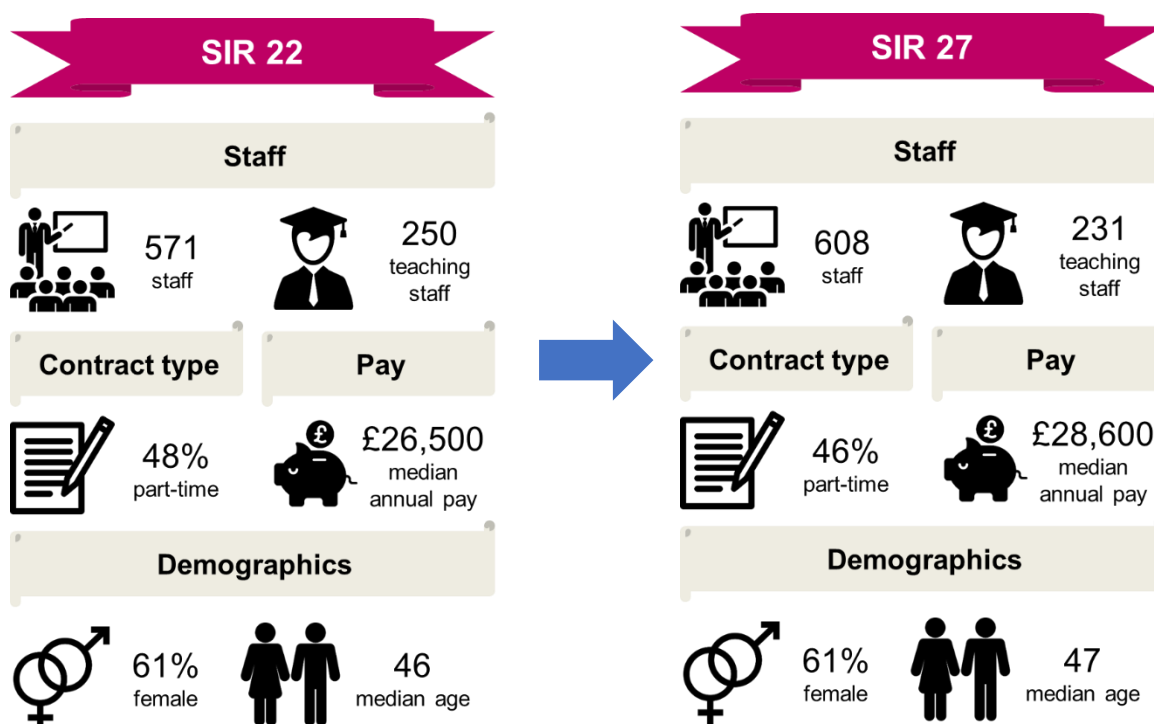
Source: Frontier Economics analysis of SIR 27 data

5. CHANGES IN TYPICAL COLLEGE CHARACTERISTICS SINCE SIR 22

In this section we look at the big picture of changes that have taken place in the characteristics of colleges since SIR 22 (the 2013/14 academic year). We focus specifically on colleges for this analysis to ensure a consistent picture over time.⁴³

Figure 72 summarises some of the key typical characteristics of FE colleges in SIR 22 and SIR 27. We provide further detail below.

Figure 72. Key typical characteristics of FE colleges, SIR 22 and SIR 27



Source: Frontier Economics analysis of SIR 22 and SIR 27 data

⁴³ We define 'colleges' in the same way as in Section 2. This means that National Specialist Colleges are not included in either SIR 22 or SIR 27 – due to the fact that NSCs tend to be very different to other colleges (e.g. in the specialist support that they offer to students with learning difficulties), we classify these as an 'Other' provider type. Also note that we generally do not account for the difference in the sample of providers submitting data in SIR 22 and SIR 27. In other words, we do not restrict our sample for analysis to those providers which submitted data in both SIR 22 and SIR 27; instead, we look separately at the entire datasets available for SIR 22 and SIR 27, and then compare the two. However, we do exclude Sixth Form Colleges from most comparisons over time, in line with earlier sections, as this was the only provider type to have decreased over time even though the total number of providers in the sample has increased on the whole.

Number of providers and records

Overall, the number of colleges that submitted data as part of the SIR data return has increased from 84 in SIR 22 to 110 in SIR 27. See Figure 73 for a breakdown.

Despite the total number of providers increasing, the number of Sixth Form Colleges in the sample has declined. Sixth Form Colleges are also the only college type to have reduced numbers in SIR 27. In line with earlier sections, we therefore exclude Sixth Form Colleges from subsequent comparisons across time to minimise the effect of a changing sample composition.

Figure 73. Number of providers by provider type, SIR 22 and SIR 27

Provider type	Number of providers – SIR 22	Number of providers – SIR 27
General Further Education College	64	93
Agriculture and Horticulture College	6	6
Sixth Form College	12	6
Specialist Designated College	2	4
Art, Design and Performing Arts College	0	1
Total	84	110

Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Figure 74 shows the number of records submitted for each type of college in SIR 22 and SIR 27. Again, the numbers have increased for every type of college except for Sixth Form Colleges.

Figure 74. Number of records by provider type, SIR 22 and SIR 27

Provider type	Number of records – SIR 22	Number of records – SIR 27
General Further Education College	54,103	76,455
Agriculture and Horticulture College	3,500	3,689
Sixth Form College	3,125	1,479
Specialist Designated College	172	578
Art, Design and Performing Arts College	0	165
Total	60,900	82,366

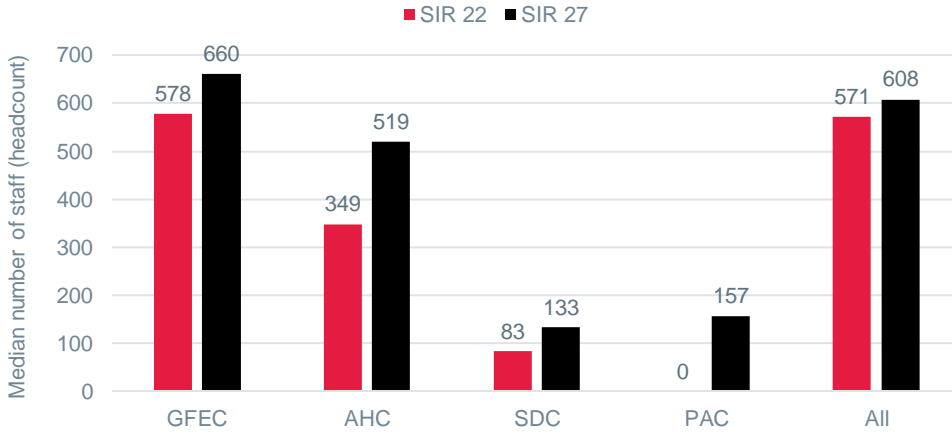
Source: Frontier Economics analysis of SIR 22 and SIR 27 data

In both SIR 22 and SIR 27, a small number of colleges made up a sizeable proportion of the records submitted. For example, in SIR 22 the top 10 providers submitted 33.1% of the records; in SIR 27, the top 10 providers submitted 22.8% of the records.

Number of employees

Colleges have grown since SIR 22, when measured by the average number of employees. Figure 75 below shows the median number of employees in SIR 22 and SIR 27 for all colleges and for each type of college separately.

Figure 75. Median number of staff (headcount) by provider type, SIR 22 and SIR 27

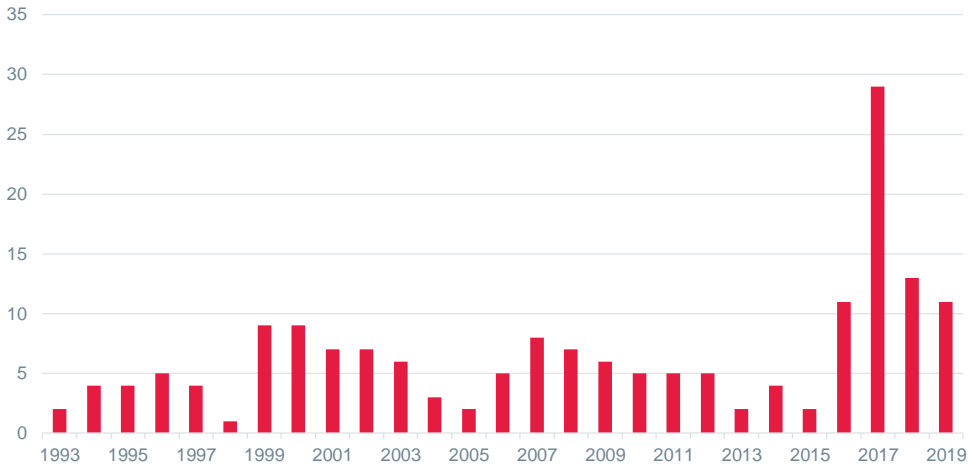


Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Note: GFEC = General Further Education College; AHC = Agriculture and Horticulture College; SDC = Specialist Designated College; PAC = Art, Design and Performing Arts College.

All college types have increased in size over time, most notably Specialist Designated Colleges and Agriculture and Horticulture Colleges, which have increased their median employee size by about 60% and 49% respectively. This is unsurprising given the large number of mergers in the FE sector over the last few years (see Figure 76 below).

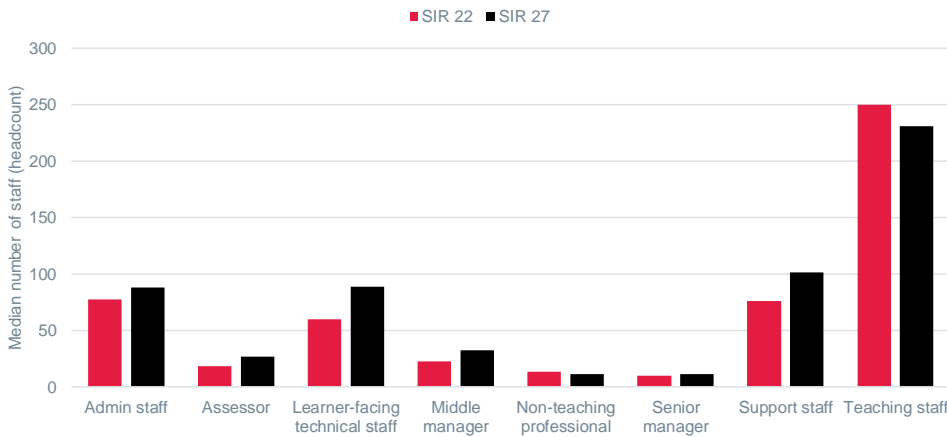
Figure 76. Number of FE college mergers by year (1993-2019)



Source: Association of Colleges

We have also looked at the median number of employees in specific occupational categories (Figure 77). While the median number of total employees at colleges rose between SIR 22 and SIR 27, the median number of teaching staff fell from 250 to 231. The biggest (absolute) changes in headcount numbers were seen in learner-facing technical staff (60 to 89) and support staff (76 to 102). The median number of senior managers increased from 10 to 11 between SIR 22 and SIR 27.

Figure 77. Median number of staff (headcount) by occupation, SIR 22 and SIR 27



Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Note: totals may not equal totals reported in Figure 75 above, due to observations for which occupational category is unknown.

Subjects offered

In this section, we look at how the subjects offered by providers have changed over time. As subject names and reporting methods have changed over time, we restrict our analysis to those subjects which have stayed relatively constant in the data over time.⁴⁴

Figure 78 below presents data on seven subjects whose names are comparable between SIR 22 and SIR 27. See the annex for details on how subject names have changed over time.

We compare SIR 22 and SIR 27 in two ways, for each subject:

1. **% of providers.** We count the number of colleges with at least one contracted individual (at any point during the academic year, for any duration), for the subject and year in question. We then divide this by the total number of college providers submitting data on subject taught for that year.⁴⁵
2. **FTE contracts per provider.** We count the total number of contracts for each subject and each year, weighting each by the proportion of full-time worked to find the FTE-equivalent number of contracts. We then divide by the number of providers offering each subject to find the number of FTE contracts per provider.

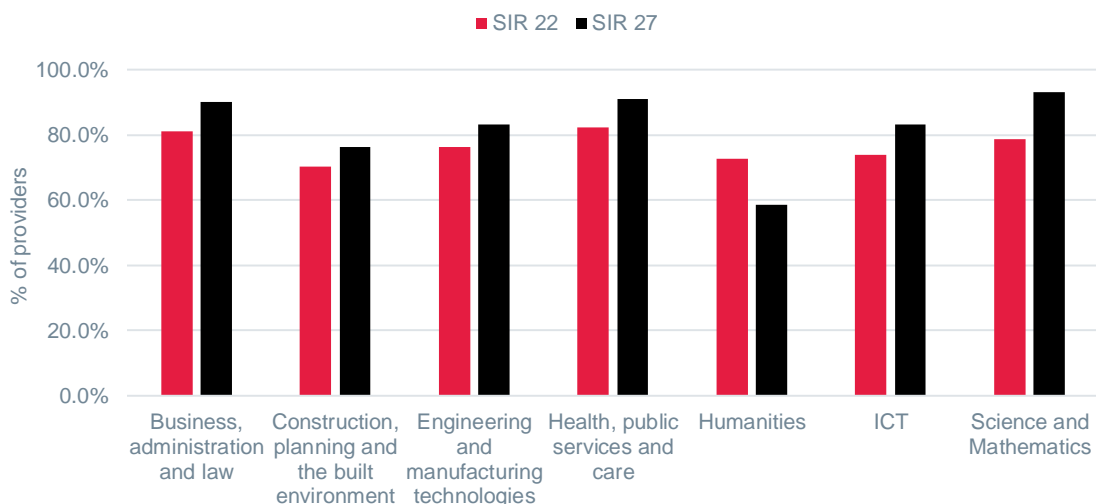
Note that we look across all contracts in the SIR data for this analysis – not only those classified as teaching staff.

The proportion of providers offering each of the subjects in Figure 78 has increased between SIR 22 and SIR 27, except the humanities. For example, whereas 74% of providers submitting data in SIR 22 had at least one contract with subject specified as ICT, in SIR 27 this increased to 83%. Similarly, engineering and manufacturing technologies was present at 76% of providers in SIR 22; this increased to 83% in SIR 27. In contrast, the proportion of providers offering humanities fell from 73% in SIR 22 to 58% in SIR 27.

⁴⁴ If we did not restrict our analysis to subjects which have stayed relatively constant in the data over time, it may appear that subjects have disappeared from the curriculum offered or been added to the curriculum, when in fact it is simply that the categorisation of different subjects has changed over time.

⁴⁵ In SIR 22, two provider did not provide any information on subject taught; in SIR 27, nine providers did so. In other words, for these providers, all responses were blank, 'not a member of staff providing teaching and promoting learning', 'not a teacher', teaching staff lower than NQF level 4', or 'unknown'. We exclude these providers from our calculations.

Figure 78. Proportion of providers offering selected subjects, SIR 22 and SIR 27



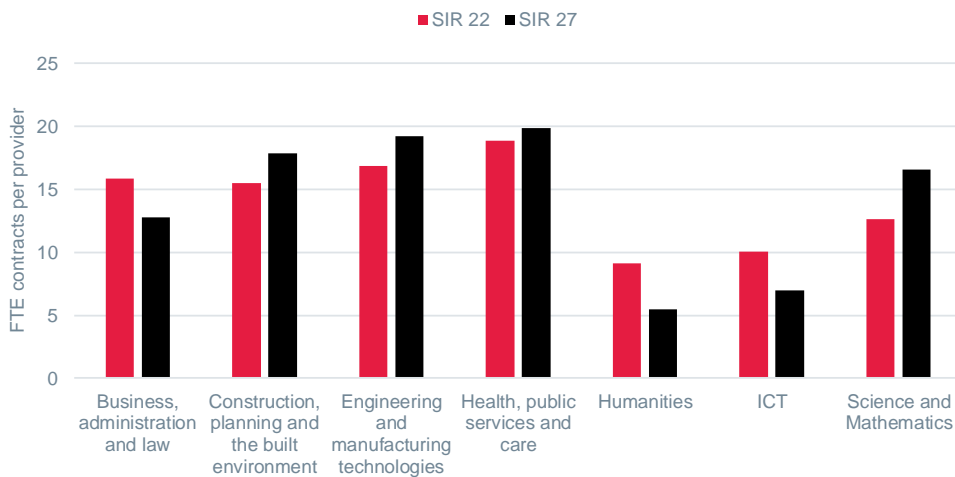
Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Note: subject names have changed over time. We have only included subjects in this table that were reported on a comparable basis in SIR 22 and SIR 27. We have also combined Science and Mathematics in SIR 27 to enable a comparison with SIR 22 (when Science and Mathematics were reported together under one subject name). See the annex for details of the SIR 22 and SIR 27 subjects included under the consolidated subject categories reported in this table. % of providers refers to the proportion of providers which have at least one contract for the subject in question in the year in question.

In Figure 79, we show the average number of FTE contracts per provider, *for those providers which offer the subject in question*.

Figure 79 shows a mixed picture. For business, administration and law, as well as ICT, we see that the FTE contracts per provider have decreased though the number of providers offering this subject has increased. On the other hand, some subjects like engineering and manufacturing technologies, as well as science and mathematics saw an increase in the average FTE contracts per provider. The pattern of the decline in the humanities continues here too; not only did the proportion of providers offering humanities decrease, the average FTE contracts per provider pertaining to the humanities have also decreased as well.

Figure 79. Average number of FTE contracts per provider, selected subjects, SIR 22 and SIR 27



Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Note: we calculate FTE contracts per provider only including those providers which offer the subject in question. Subject names have changed over time. We have only included subjects in this table that were reported on a comparable basis in SIR 22 and SIR 27. We have also combined Science and Mathematics in SIR 27 to enable a comparison with SIR 22 (when Science and Mathematics were reported together under one subject name). See the annex for details of the SIR 22 and SIR 27 subjects included under the consolidated subject categories reported in this table.

Occupation

Figure 80 below shows the change in the distribution of occupations between SIR 22 and SIR 27. Note that because the SIR is based on a sample of providers, the numbers presented in Figure 80 **do not** represent the total number of contracts in the entire FE sector (for example, there are more than 30,687 contracts for teaching staff in the entire FE sector).

The key change that has occurred over the last five years is that teaching staff now make up a smaller proportion of all staff (51% in SIR 22 to 40% in SIR 27). This drop in teaching staff is partly made up for by an increase in the proportion of learner-facing technical staff between SIR 22 and SIR 27.

Changes across the rest of the distribution are relatively minor. Note that apprentices were not included as an occupational category in SIR 22.

Figure 80. Staff breakdown by occupational group

Occupation	Number of records – SIR 22	% of total – SIR 22	Number of records – SIR 27	% of total – SIR 27
Admin staff	7,128	13%	11,241	14%
Apprentice	n/a	n/a	1,016	1%
Assessor	1,713	3%	3,034	4%
Learner-facing technical staff	6,255	11%	12,731	16%
Middle manager	1,852	3%	4,137	5%
Non-teaching professional	1,441	3%	1,355	2%
Senior manager	1,010	2%	1,418	2%
Support staff - caring	420	1%	1,164	1%
Support staff - other	3,210	6%	5,695	7%
Support staff - technical	3,674	7%	4,286	6%
Support staff - trades	170	0.3%	861	1%
Teaching staff	27,879	51%	30,687	40%
Total	54,752	100%	77,625	100%

Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Note: records are reported on a non-FTE basis, i.e. simply counting the number of records present, regardless of the proportion of full-time worked.

Demographics

The demographics of the FE college workforce have not changed substantially since SIR 22. (Figure 81)

The workforce remains predominantly female; 61% of all staff are female in both SIR 22 and SIR 27. However, the proportion of women in teaching and senior management roles has decreased between SIR 22 and SIR 27 by 3-4 percentage points each.

Although the median age of all staff and teaching staff has not changed substantially over time, there has been an increase in the proportion of older staff, with the percentage of all staff aged 60 and over rising from 10% in SIR 22 to 14% in SIR 27.

The workforce remains predominantly white British – this has not changed over time.

Figure 81. Demographic breakdown of staff, SIR 22 and SIR 27

	SIR 22	SIR 27
<u>Gender</u>		
<i>% female – all staff</i>	61%	61%
<i>% female – teaching staff</i>	56%	53%
<i>% female – senior managers</i>	58%	54%
<u>Age</u>		
<i>Median age – all staff</i>	46	47
<i>Median age – teaching staff</i>	47	47
<i>% 60 and over – all staff</i>	10%	14%
<i>% 60 and over – teaching staff</i>	10%	14%
<u>Ethnicity</u>		
<i>% white British – all staff</i>	85%	85%

Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Part-time work

Figure 82 below shows the change in the proportion of staff working part-time between SIR 22 and SIR 27.

Overall, the changes suggest that a lower proportion of staff are working part-time in SIR 27 than in SIR 22. Across all staff, the proportion has fallen from 48% to 46%, and for teaching staff it has fallen from 50% to 46%.

The decline in the prevalence of part-time work is concentrated amongst male staff, for whom less than a third worked part-time in SIR 27 compared to over half of female staff.

Figure 82. Prevalence of part-time work, SIR 22 and SIR 27

	SIR 22	SIR 27
<u>% working part-time – all staff</u>		
<i>All</i>	48%	46%
<i>Male</i>	34%	30%
<i>Female</i>	56%	55%
<u>% working part-time – teaching staff</u>		
<i>All</i>	50%	46%
<i>Male</i>	38%	32%
<i>Female</i>	58%	57%

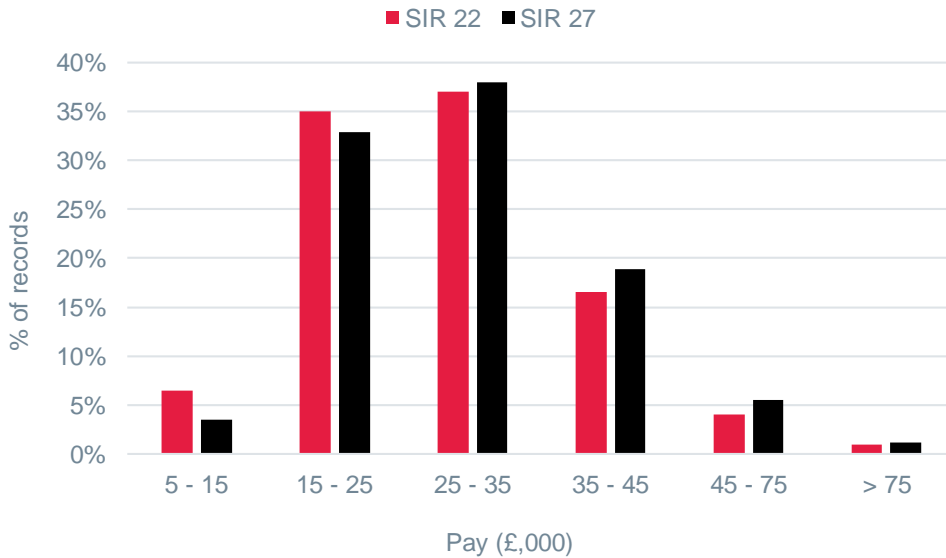
Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Pay

Looking across all college staff, pay has not changed significantly since SIR 21. Not accounting for inflation, there has been a rise in median gross pay of 2.8% in the five years between SIR 22 and SIR 27 (an annualised rate of 0.55%), from £26,500 to £28,600.

This small change is reflected in Figure 83, which shows the distribution of annual pay in SIR 22 and SIR 27. The proportion of records with pay of less than £25,000 per year is slightly lower in SIR 27, while the proportion of records above £25,000 per year is slightly higher.

Figure 83. Annual pay distribution, SIR 22 and SIR 27



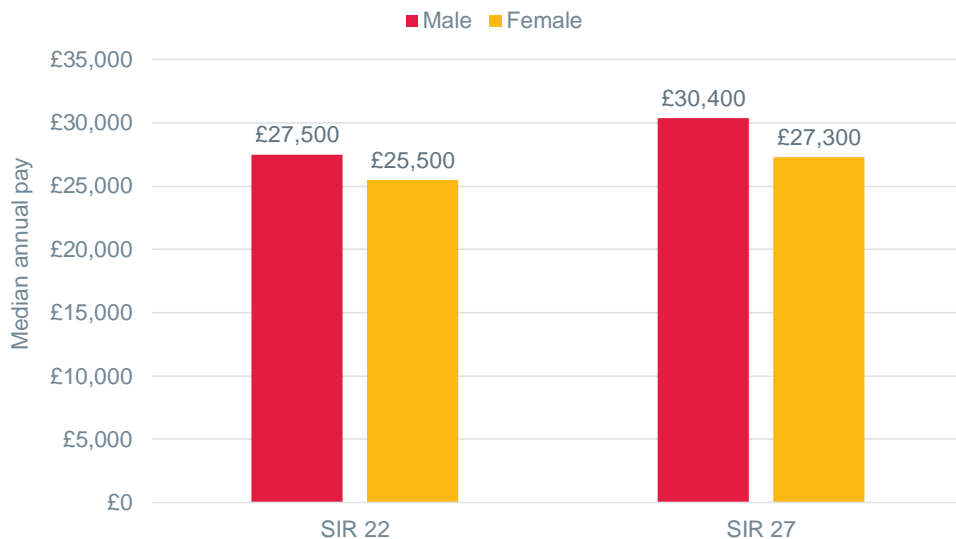
Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

Looking specifically at teaching staff, median pay has fallen slightly since SIR 22, within the sample of college providers submitting data to the SIR. In SIR 22, median pay of teaching staff was £32,500; in SIR 27, this was £32,400.

The gender pay gap – using median pay – has increased for colleges since SIR 22. Whereas pay for male staff has increased by 10.4%, from £27,500 to £30,400, pay for female staff has increased by 6.9%, from £25,500 to £27,300. This implies a gender wage gap – looking across all staff at colleges – of 10.2% in SIR 27, compared to 7.3% in SIR 22.

Figure 84. Median pay by gender, SIR 22 and SIR 27



Source: Frontier Economics analysis of SIR 22 and SIR 27 data

Note: to ensure comparability, we report the annual pay for full-time staff only, and only include pay for contracts in existence throughout the whole of the academic year.

ANNEX – DATA PROCESSING

This annex will describe the data processing we have carried out in order to compile the final SIR 27 dataset.

Original dataset

The analysis in this report is based on Staff Individualised Record (SIR) data from the academic year 2018-19 ('SIR 27', following on from SIR 26 carried out for the year 2017-18). ETF collected data through the SIR Data Insights website (www.sirdatainsights.org.uk). ETF also contacted some providers directly to improve the quality of their data returns following specific analysis.

In total, we received 92,196 individual contract records from 187 different providers for the academic year 2018-19. After the data processing described below, 91,800 individual contract records remained, from 186 different providers.

Data processing

Below, we list the key elements of data processing we have carried out in order to prepare the SIR dataset for the analysis presented in this report. This process is very similar to that described in last year's report for SIR 26.

1. Age

- We replaced as missing the age variable where age is entered as below 16 or above 100 on or after the date they were appointed.⁴⁶

2. Full-time / part-time

- We defined 'full-time' to be FTE of 90% or above.

3. Continuous professional development (CPD)

- We replaced as missing the CPD variable for a given provider when all CPD hours responses from that provider were entered as zero or unknown.⁴⁷

4. Region

- We classified providers into four regions: the South (excluding Greater London), Greater London, the Midlands and East, and the North.

5. FTE

⁴⁶ Replacing values as missing simply means that the data point in question is ignored for the purposes of our analysis. Replacing specific unreliable values (e.g. the age value) as missing for a given contract ensures that while the unreliable data is ignored, the rest of the (reliable) data is still included – the rest of the information entered for that contract is left intact.

⁴⁷ From discussions with providers, we are aware that many entered CPD hours as zero simply because their internal systems do not currently record CPD hours, rather than because an individual actually carried out zero CPD hours.

- We standardised the FTE variable by converting all figures into percentages. We do this by assuming that any entry greater than 0 and less than 1 was intended as a proportion, and therefore multiply these entries by 100 to convert them into percentages.
- For permanent staff with FTE equal to exactly 1, with above £20,000 annual pay, we assumed that the 1 was meant to represent 100% rather than 1%.⁴⁸
- Replaced FTE as missing where the figure is above 120% (this is outside the range defined by the data specification). This includes both (i) cases of FTE being greater than 120% for an individual contract, and (ii) cases of FTE being greater than 120% for a given individual across all their contracts.⁴⁹
- Replaced as missing the FTE variable where FTE = 0, annual pay > 0, and the contract is not zero hours, casual, voluntary, self-employed, or unknown.⁵⁰
- We created a new FTE variable, adjusted to reflect the proportion of the year worked. This is used a number of times throughout our analysis, when weighting observations based on the proportion of full-time worked.

6. Annual pay

- Replaced the annual pay variable as missing where it was non-zero and below £3.90 (the hourly apprentice rate in the first half of tax year 19/20).
- Replaced as missing the annual pay variable where annual pay = 0, and either FTE > 0 or recorded days worked > 0, and the contract is not classified as voluntary (i.e. only voluntary staff should be working without being paid).
- Replaced as missing the annual pay variable for permanent and fixed-term staff where annual pay < £100, and FTE is missing, with at least 20 days worked.⁵¹
- We replaced as missing the annual pay variable where pay is below our calculation of the 'minimum wage' for the year. This minimum wage is calculated based on the number of days worked, the percentage of full-time worked, and the apprentice rate of £3.90 per hour in the first half of tax year

⁴⁸ An FTE of exactly one could be meant as either 100% or 1%. However, earning £20,000 on 1% FTE seems rather implausible.

⁴⁹ A given individual may have more than one contract, e.g. two contracts for teaching two different subjects.

⁵⁰ Although the FTE variable should measure the number of hours *actually worked*, we are aware that the FTE variable may have been entered as zero for individuals on these contract types due to the fact that hours were informal and unknown.

⁵¹ Under these circumstances, low pay seems rather implausible here too.

19/20.

7. FTE and annual pay

- Replaced as missing the annual pay and FTE variables where pay = 0, FTE = 0, and the contract is not classified as voluntary.

8. Appointment/leaving date

- Removed all observations with an appointment date after the end of the academic year (31/07/2019).
- Removed all observations with a leave date before the beginning of the academic year (01/08/2018).
- We assumed an appointment date of 01/08/2018 (i.e. the beginning of the academic year) where appointment date is missing. This ensures that these records are included in calculations of the number of staff present at the beginning of the academic year (e.g. when calculating the turnover rate and net employment change).

9. Provider type

- Changed the provider type for two providers which should have been classified as local authority providers but who had been classified incorrectly in the original data.

10. Subject taught – teachers only

- Replaced as missing the subject taught variable where it is entered as “Science and Mathematics”. This is because providers should now split teachers out between Science and Mathematics rather than group them together. Only one observation was returned with subject taught entered as “Science and Mathematics” in SIR 27.

11. Trends over time

- There are two main options for data processing when looking at trends in the data over time:
 - i. Use all data available, for each year.
 - ii. Use only data from providers who were present in every year of the SIR dataset (a ‘consistent’ provider sample), to exclude potential impacts on observed trends from the composition of providers in each dataset.
- There are benefits and drawbacks to each approach. To maximise the benefit of the increased quality and quantity of data received from SIR 24 onwards, we have chosen the first option – to keep most of the data in the dataset for our analysis of trends over time.

- We recognise that this will affect the interpretation of our results, and that caution is required. For example, if we observe a change of 10% in average pay for a given group of staff between SIR 21 and SIR 27, this may be because individual members of staff at specific providers are earning 10% more now than they did in SIR 21, but it may also mean that new providers are now included in the data who happen to pay higher wages than the previous average (and always did).
- As a way to strike a balance between the two approaches, we have dropped Sixth Form Colleges (SFCs) in most of our comparisons over time. Despite the sample size and provider counts increasing over time, the number of SFCs and records from SFCs have been declining over the iterations of SIR. Removing SFCs is therefore a way to remove some of these composition effects, without excessively reducing the data quantity as SFCs do not constitute a large proportion of our data.s