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Report

# What helps to improve teacher retention?

## A pathway analysis of factors affecting retention

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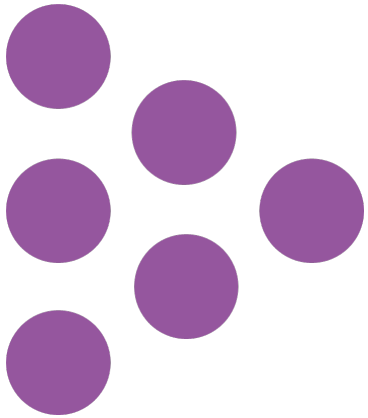

# What helps to improve teacher retention? A pathway analysis of factors affecting retention

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# Executive Summary

Teacher retention remains a key focus for education policy, with ongoing challenges in ensuring sufficient teacher supply, particularly for key subjects in secondary schools. A key Government objective is its pledge to recruit 'an additional 6,500 new expert teachers across secondary and special schools, and in our colleges, over the course of this Parliament' (UK Parliament, 2025). Improving retention matters both for delivering this goal and for teacher sufficiency because, all else equal, more teachers retained leads to fewer vacancies, an increase in workforce size and lower ITT recruitment targets.

This NFER research, funded by the Nuffield Foundation, explores the factors associated with the leaving decisions of teachers, to understand in greater detail what actions policymakers might take to further improve teacher retention rates. Previous research has highlighted a range of factors that matter for retention including workload, supportive leadership, pupil behaviour, flexible working opportunities, autonomy/ agency and pay and financial incentives.

We aim to address two main research questions:

1. To what extent, and under what circumstances, is stated intention to leave teaching a good predictor or leading indicator of actual leaving?
2. What factors – particularly granular aspects of teacher workload – are most associated with teacher job satisfaction and retention?

We use newly available data from the Department for Education's (DfE) Working Lives of Teachers and Leaders (WLTL) survey (Lorna Adams *et al.*, 2023). We primarily use rich survey data from wave 1 of the survey, covering topics such as job satisfaction, wellbeing, workload, flexible working, perceptions of leadership and management, pupil behaviour and CPD. We crucially supplement this data with longitudinally linked School Workforce Census (SWC) data and wave 2 survey responses to establish which teachers left in the year after their wave 1 survey responses were captured.

We use regression analysis to explore the relationship between a range of potential explanatory factors and retention. We extend the simple retention model using a pathway approach that unpacks the complex relationship between explanatory factors, intermediate outcomes such as job satisfaction and wellbeing, and retention. Our modelling approach captures both the direct effects of explanatory factors on retention, as well as their indirect effects via other intermediate factors: for example, workload influencing job satisfaction and influencing retention through job satisfaction.

The findings reveal important insights about the factors that may be more or less influential for teacher retention. The analysis is based on cross-sectional correlations, so should be interpreted cautiously. The 'effects' identified could have causal implications, but only under strong assumptions. Nonetheless, they reveal patterns and findings that are backed up by other evidence using complementary research methods and can therefore be a useful guide for informing policy development and future research priorities.

## Key findings and recommendations

**Leaving intentions are not a very reliable individual-level predictor of actual leaving behaviour**. A comparison of the retention outcomes of teachers that did and did not report that they were considering leaving the state-funded sector reveals some differences, but a low level of predictive power. A majority (86 per cent) of teachers who said they were considering leaving did not leave in the following year. Four per cent of those who were not considering leaving did subsequently leave. This suggests the predictive power is somewhat limited.

**The trend in leaving intentions appears to be an unreliable leading indicator for actual leaving behaviour**. We compared data from WLTL reports on the proportion of teachers and leaders intending to leave in each of the first four waves to leaving rates in the same years from SWC data. In 2022/23, the proportion considering leaving increased by 11 percentage points while the leaving rate fell by 0.2 percentage points. This sizeable inconsistency in trends demonstrates that trends in leaving intentions cannot be relied on as a leading indicator of leaving rate trends.

**Considering leaving, job satisfaction and, to a lesser extent, wellbeing are key factors associated with retention but likely mask the effect of other factors**. Our regression model identifies considering leaving and job satisfaction as key factors associated with retention, with not many other explanatory factors identified as having a statistically significant association with retention. This includes factors that previous research has identified as important, such as workload and pupil behaviour. However, we establish that considering leaving, job satisfaction and wellbeing are mediating variables that mask the association between a range of explanatory factors and retention. We use a pathway approach to 'unmask' the ultimate influence of these factors on retention.

**School leadership support is an important factor for retention**. Teachers feeling valued, involved in school decision-making and supported with flexible working opportunities are significantly associated with improved retention. At the heart of this is promoting teachers' sense of involvement and engagement in school life and agency over their practice, wherever practical. School leaders have a critical role in ensuring staff feel supported by the school.

**Recommendation: Government should further enhance the coverage of relational leadership approaches within the NPQ suite for middle leaders, senior leaders, headteachers and executive leaders**

**Recommendation: School leaders should explore how teachers can be meaningfully involved and engaged in the way the school defines its organisational development priorities and makes decisions more widely**

**Teachers working in schools with good pupil behaviour and support to deal with disruptive behaviour are more likely to stay**. Teachers' and leaders' perceptions of pupil behaviour in their school have worsened considerably since 2021/22 and the proportion of teachers who say they spend too much time responding to pupil behaviour incidents has increased substantially. This report identifies that too much time spent dealing with pupil behaviour is a significant factor affecting retention, along with too much time spent on pastoral

support. An evaluation of the Behaviour Hubs programme found that staff in participating schools reported improvements in pupil behaviour compared to the period before its implementation, suggesting it could be beneficial at the system level if implemented at larger scale (GOV.UK, 2026).

**Recommendation: Government should further develop its approach for supporting schools to improve pupil behaviour and meet pupils' additional pastoral and learning needs, reinforced by improved external school support services and backed with additional funding.**

**Higher pay satisfaction is a significant factor associated with improved retention**. Teacher pay growth since 2010/11 has lagged behind pay growth in the wider labour market, leading to a loss of competitiveness, particularly for more experienced teachers (McLean and Worth, 2025). This has a detrimental impact on both recruitment and retention (DfE, 2020; Worth, Tang and Galvis, 2022).

**Recommendation: Government should aim to sustain levels of pay satisfaction by at least maintaining the competitiveness of teachers' pay each year (i.e. matching the growth in average earnings outside teaching) and funding schools to deliver it.**

**The impact of CPD on teachers' practice is a significant retention factor**. Ensuring teachers' CPD has impact could improve teacher retention. Teachers' perceptions of the impact of CPD on their practice is likely to be highest where the CPD undertaken aligns with their own CPD priorities. Providing teachers with more input into their CPD activity is therefore likely to be beneficial for improving its impact and improving teacher retention.

**Recommendation: Government should produce guidance around the Standards for Teachers' Professional Development to emphasise how teachers can be given greater involvement in setting their CPD goals and activities.**

**Teachers feeling they spend too much time on lesson planning is a key factor associated with teacher retention**. Leaders should think carefully about what is expected of school staff with respect to planning, while also providing access to shared schemes of work and promoting opportunities for collaborative planning. One evidence-based solution is to consider the use of general artificial intelligence tools to reduce teacher time on mundane aspects of lesson planning, while maximising teachers' intellectual engagement with the planning process. An NFER study found that using ChatGPT helped science teachers save time by helping with lesson planning, with no evidence of negative impacts on the quality of materials or teachers' sense of autonomy or creativity (Roy *et al.*, 2024). However, carefully implementation by school/ trust leaders and teachers would be needed to safeguard against inaccurate or low quality content.

**Recommendation: School and trust leaders should consider whether and how generative AI tools such as ChatGPT could help improve their teachers' planning workload.**

# 1. Introduction

## 1.1. Research motivation and context

Teacher retention remains a key focus for education policy, with ongoing challenges in ensuring sufficient teacher supply, particularly for key subjects in secondary schools. Despite a recent increase in the number of trainees entering initial teacher training (ITT), secondary recruitment was 12 per cent below target in 2025/26.

A key Government objective is its pledge to recruit 'an additional 6,500 new expert teachers across secondary and special schools, and in our colleges, over the course of this Parliament' (UK Parliament, 2025). Improving retention matters both for delivering this goal and for teacher sufficiency because, all else equal, more teachers retained leads to fewer vacancies, an increase in workforce size and lower ITT recruitment targets.

The proportion of teachers leaving the state-funded sector in England has improved over the last decade, falling from 10.6 per cent in 2016/17 to 9.4 per cent in 2018/19 and further to 9.0 per cent in 2023/24 (DfE, 2024a). Nonetheless, that equates to around 40,000 teachers per year leaving the sector, who need to be replaced by newly-qualified and returning teachers to maintain supply.

Findings from the Working Lives of Teachers and Leaders (WLTL) survey suggest high workload, stress and poor wellbeing, pressure relating to pupil outcomes/inspection, lack of state school funding and dissatisfaction with pay were common reasons cited for why teachers were considering leaving and why ex-teachers had left (L Adams *et al.*, 2023; IFF Research, 2024; IFF Research, IOE, and UCL's Faculty of Education and Society, 2024; IFF Research and UCL Institute of Education, 2025). Prior to the 2024 General Election, the Government had a target to reduce teacher working hours by five hours per week, in recognition of the importance of workload for retention (DfE, 2024b).

In 2024, 34 per cent of teachers and leaders indicated that they were considering leaving the English state school sector in the next 12 months for reasons other than retirement (IFF Research, 2024). However, among teachers who responded to both the 2024 and 2025 WLTL surveys, only seven per cent had left English state school teaching by 2025.

This NFER research, funded by the Nuffield Foundation, explores the factors associated with the leaving decisions of teachers, to understand in greater detail what actions policymakers might take to further improve teacher retention rates.

We aim to address the following two main research questions:

1. To what extent, and under what circumstances, is stated intention to leave teaching a good predictor or leading indicator of actual leaving?
2. What factors – particularly granular aspects of teacher workload – are most associated with teacher job satisfaction and retention?

## 1.2. Previous literature

### Wellbeing and Job satisfaction are key factors linked to teacher retention

Across the literature, job satisfaction, wellbeing and burnout are commonly identified as key predictors for teacher attrition, with 'burnout and job satisfaction together explaining 27% of the variance in teachers' intentions to leave the profession, with burnout symptoms accounting for the majority of this explained variance' (Madigan and Kim, 2021). Others have stated that job satisfaction alone is the most important single predictors of a teacher's intention to remain in the profession (Madigan and Kim, 2021). Teachers in England have a lower level of job satisfaction compared to teachers in other OECD countries (Zieger, Sims and Jerrim, 2019; Sims and Jerrim, 2020).

The WLTL wave 1 report presented findings from a regression model of the factors associated with whether teachers were considering leaving, including job satisfaction, workload perceptions and other survey items, as well as employment, school and demographic characteristics. Job satisfaction was identified as a key predictive factor for intention to leave that accounted for 49 per cent of the explained variance in considering leaving (Lorna Adams *et al.*, 2023). The report notes that 'while it is logical that job satisfaction can have a large impact on such career decisions, this meant that its inclusion in the model may have been masking the effect of other factors on likelihood to consider leaving the state education sector'. A second regression model that excluded job satisfaction revealed a more nuanced picture with more factors explaining variance. Factors relating to demographic, employment or school-level characteristics were found to play a less significant role.

Research by Sims and Jerrim combines rich survey data on teachers' working conditions with retention (measured using the SWC) and measures of job satisfaction (Sims and Jerrim, 2020). Key findings include that leadership and pupil discipline are key factors associated with job satisfaction and retention. Using pathway analysis, the authors establish that 'job satisfaction is best thought of as an intermediate step on the path between working conditions and retention'.

On some measures, teachers have low wellbeing. The WLTL Wave 1 report found that state-school teachers had lower wellbeing than equivalent wellbeing scores for the English population. Primary teachers had lower wellbeing scores than secondary teachers. Common reasons for poor mental health given were pupil behaviour as well as workload (L Adams, Sarah Coburn-Crane, *et al.*, 2023). However, other studies have found some aspects of wellbeing are similar to or – particularly feeling things done in life are worthwhile – higher among teachers than otherwise similar graduates in other jobs (Jerrim *et al.*, 2021; McLean, Worth and Faulkner-Ellis, 2023).

It is also well known that there is a close relationship between teacher wellbeing, job satisfaction and pupil behaviour: teacher satisfaction with their job as well as the work environment was correlated with students' life satisfaction and wellbeing (Nalipay, King and Cai, 2024), and is positively linked to pupils' attitudes and motivation to learn, suggesting bidirectional mechanisms (Moskowitz and Dewaele, 2021).

**Job demands, working conditions and CPD opportunities influence whether teachers plan to leave the profession**

Teacher salary, workload and opportunities for flexible working are also important job factors linked to retention (Worth *et al.*, 2018; DfE, 2020; Harland, Bradley and Worth, 2023; Martin *et al.*, 2023). For example, a study on Australian teachers' intention to leave suggested that teachers' working conditions, including emotional demands of the role, workload or stress were positively associated with intention to leave (Arnold and Rahimi, 2025).

Job demands, for example high workloads, but also lack of job resources (such as social support or decision involvement) can turn into job stressors and predict burnout, which in turn leads to intentions to leave the professions (Schaufeli and Bakker, 2004).

Other job demands, for example student misbehaviour, correlates directly with teacher attrition (Kelly, 2004). These demands are further intertwined with wider factors, for example, early career teachers are more often affected by job stressors such as managing difficult student behaviour than more experienced colleagues (e.g.,Luekens, Lyter and Fox, 2004).

Pay satisfaction is negatively linked to teachers' job satisfaction and therefore attrition (Stockard and Lehman, 2004; Imazeki, 2005). In turn, it has been reported that more positive school cultures and less challenging pupil behaviour can compensate for lower pay or lack of progression and therefore reduce attrition (Burge, Lu and Phillips, 2021).

CPD is another key factor for teacher satisfaction and retention. A 2020 survey by the Department for Education (DfE) found that 52 per cent of teachers who left the further education (FE) sector indicated that more progression opportunities and better training might have encouraged them to stay (29 per cent and 23 per cent respectively) (Thornton *et al.*, 2020).

**Teacher gender and career stage also interacts with intention to leave**

Working conditions can vary by teachers' personal profile and demographics, such as gender, ethnicity, career stage or educational qualifications. As such, there might be different pathways or links between job demands and intention to leave for different sub-groups.

Findings from the 2024 State of the American Teacher Survey (Doan, Steiner and Pandey, 2024) revealed that gender plays an important role, with female teachers reporting higher rates of frequent job-related stress and burnout than male teachers, whilst also receiving a lower base pay than male teachers for working the same hours per week.

Career stage is also commonly associated with intention to leave. For example, Arnold and Rahimi (2025) found that mid-career teachers and late-mid-career/advanced-career teachers were more likely to express intentions to leave than early-career teachers. However, retention data from the School Workforce Census indicates that it is early-career teachers who are most likely to leave. The relationship between career-stage and intention to leave is further affected by the level of support available for early career-teachers (DeAngelis, Wall and Che, 2013), with a more supportive teaching environment, such as providing induction support for early-career teachers, linked to less teacher attrition amongst early-career teachers.

**School and student demographics influence intention to leave**

Data from TALIS 2013 suggested that teacher's intentions to leave vary greatly across schools (Qin, 2021). Many school-wide factors, such as student demographics, can influence teacher attrition. For example, teachers are more likely to leave the profession when working in schools with a higher proportion of disadvantaged (Bonhomme, Jolivet and Leuven, 2016) or low-performing students (Qin, 2021). Qin (2021) further suggested that teachers from high-poverty schools (30% or more low-SES students) as well as those who teach a higher proportion of students with special needs were more likely to leave their job.

Location also matters: international TALIS data suggested that teachers in rural areas are more likely to consider leaving, reflecting a decreasing teaching force in rural areas (see also Ingersoll and Tran (2023) for US data), although this difference disappeared once teacher-salary was added to the equation (Qin, 2021). This suggests that pay can compensate for working in more rural areas and keep teachers in the job for longer. There is currently no clear connection between class size and job satisfaction, especially when controlling for other working conditions (Reeves, Pun and Chung, 2017).

## 1.3. Our approach

The research literature highlights that many different job-related and personal factors have evidence of being associated with teachers' retention decisions, including job satisfaction, wellbeing, workload, pupil behaviour and pay satisfaction. Many of these factors are measured in the WLTL survey, as well as whether teachers are considering leaving. Moreover, new WLTL data linkage provides an opportunity to explore the relationship with the actual retention behaviour of teachers.

However, the previous literature also demonstrates that the linkages between these various factors is complex and inter-related, which a standard multivariate regression approach may not fully capture or reveal.

We therefore deploy a pathway analysis approach, with actual retention as the key outcome variable of interest. Given the likely relationship between retention and whether a teacher is considering leaving, we treat leaving intentions as a mediator that sits between some of the key job-related factors that matter for retention and retention itself. We also explore the strength of the relationship between intentions and actual behaviour, especially given that the proportion of teachers who are considering leaving (in WLTL, between 25-36 per cent) is often much higher than the proportion who leave (around nine per cent).

Likewise, the literature highlights that job satisfaction and personal wellbeing are also strong candidates as mediators that are both associated with job-related factors and retention. As explained in the methodology section below, we sequentially build a pathway regression analysis that accounts for these intermediate effects and

aims to highlight the underlying association between job-related factors and retention.

## 1.4. Structure of this report

Section 2 explains our regression methodology in detail. Section 3 presents the findings on our first research question: whether leaving intentions are predictive of retention behaviour. Section 4 presents findings from our regression analysis. Section 5 unpacks the implications of the findings for policy, while section 6 offers conclusions and recommendations for policy and practice.

# 2. Methodology

## 2.1. Working Lives of Teachers and Leaders survey data

We use data from wave 1 of the WLTL survey, which was conducted in spring 2022. The survey received responses from 11,177 teachers and leaders in state-funded sector schools and was weighted to be representative of the population of teachers and leaders in England.

The questionnaire contains rich survey data on teachers' experiences and perceptions, including workload, perceptions of leadership and management support, pupil behaviour, continuing professional development and career reflections. Since many of the survey items were only presented to teachers, or asked differently to teachers and leaders, we focus our analysis on responses from teachers (which includes classroom teachers and middle leaders). This is the largest group as well as being a group of key interest for this research.

Crucially for our analysis we matched respondents to two sources of information on their retention after the end of the 2021/22 academic year. First, we accessed data from wave 2 of the survey – which was conducted in spring 2023 – to identify wave 1 respondents who also responded at wave 2. Wave 2 respondents were asked 'are you still teaching or leading in a state school in England?'. If they answered yes, then they were directed to the main survey, whereas if they responded 'no' then they were directed to a 'leaver' module of the questionnaire. This enabled us to identify those who had left state-sector teaching. However, a sizeable proportion of wave 1 teachers did not respond to the wave 2 survey, so we also drew on information from School Workforce Census (SWC) records from November 2022 to identify leavers. The next section explains in more detail how we constructed this outcome measure.

## 2.2. Measure definitions

### 2.2.1. Retention outcome measure

Our key outcome measure is whether a teacher who was working in a state-sector school in the 2021/22 academic year left working in the state sector in the following year. As noted above, we had two potential sources of information on this from 1) longitudinal responses to the wave 2 survey and 2) administrative records from the November 2022 SWC. Some teachers did not complete the wave 2 survey, so for their outcome we rely solely on whether they were present in the 2022 SWC to determine their leaver status. The SWC has very good coverage and completeness, so this status should have high accuracy.

For a large group of teachers, we have information on their leaver status from both sources. In most cases these sources agree with each other, which allows us to assign a leaver status with added confidence. However, for a small minority of cases the sources disagree. For respondents who completed a teacher survey in wave 2 even though their SWC record indicated they were not present, we assume they had not left. The teacher may have taken up a new post between the sources' collection (e.g. in January 2023) and the survey is a more recent source than the SWC. They may also have had their records left out of the SWC collection, perhaps due to recently moving school, or mismatched across censuses. For teachers who completed a leaver survey in wave 2 but were present in the SWC, we assume they had left. The teacher may have left a post between the sources'

collection and, again, the survey is the more recent source than the SWC. They may also have been erroneously included in the SWC return even though they had left before the census date.

Table 1 summarises these decisions and shows the number of teachers by leaver status. The definition results in 729 leavers out of a sample of 8,964 teachers, which is a leaver rate of 8.1 per cent. Reassuringly, the number of teachers where the information sources disagreed were small (1.5 and 1.7 per cent) and similar to each other. Nonetheless, since only 8.1 per cent of the sample is determined to have left, this allocation decision makes a significant difference to the composition of the group assessed to be 'leavers', which should be borne in mind in interpretation.

**Table 1 Defining leaver status based on longitudinal survey responses and administrative records**

| WLTL wave 2 survey response | Has a SWC 2022 record? | N | % | Leaver status |
|---|---|---|---|---|
| Teacher | Yes | 5,113 | 57.0 | Retained |
| Leaver | No | 222 | 2.5 | Left |
| No response | Yes | 2,985 | 33.3 | Retained |
| No response | No | 352 | 3.9 | Left |
| Teacher | No | 137 | 1.5 | Retained |
| Leaver | Yes | 155 | 1.7 | Left |
| **Total** | | **8,964** | **100** | |

### 2.2.2. Factor analysis

Many of the questionnaire items are from banks of questions on a similar topic. For example, in the career ambitions module, teachers are asked: 1) to what extent they are satisfied with their current job, and 2) to what extent they enjoy classroom teaching. The questions are presented together and are measured on the same scale (1 = 'all the time' to 5 = 'not at all'). Teachers may give similar responses to both questions, which may be underpinned by the questions relating to an underlying construct, in this case 'job satisfaction'.

Conducting multivariate analysis, which tries to uncover the association between an item and the outcome variable while holding the effect of other outcomes constant, using items that are part of the same underlying construct and are correlated with one another can be

problematic. The underlying correlation (known as multicollinearity) can mean it is challenging to disentangle the distinct effects of the two. Further, in many cases it is the underlying construct that is of primary interest for the model interpretation.

Therefore, combining these items into 'latent factors' is common statistical practice. We conduct factor analysis to explore the inter-correlation between items that are presented to respondents in blocks and measured using the same scales. We assessed the factors for whether they demonstrated an underlying construct by analysing eigenvalues, factor loadings and rotated factor loadings. Where we identified a factor we created a variable by taking the average across the constituent items.

Our analysis identified seven factors: job satisfaction, personal wellbeing, school leadership support, pupil behaviour, manager support, workload perceptions and pay satisfaction. More information about how these are derived is in the Appendix.

We considered the case for the items relating to whether teachers spend too much/ too little/ about right amount of time on non-teaching tasks as a factor. The tasks include: individual planning or preparation of lessons either at school or out of school ('lesson planning'); marking/correcting of pupils' work ('marking'); recording, inputting, monitoring, and analysing data in relation to pupil performance and for other purposes ('pupil data'); general administrative work ('admin'); pupil counselling, supervision and tuition ('pastoral support') and following up on behaviour incidents ('behaviour').

As shown in the Appendix, the evidence for a common factor was somewhat weak, but it could have passed inclusion as a factor. We decided to include them in the modelling as individual items, partly because the evidence of it forming an underlying construct was weak but also because how teachers feel about different tasks in terms of their workload is of particular policy interest. Nonetheless, the possibility of multicollinearity being an issue for the interpretation of the coefficients relevant to these items should be considered.

### 2.2.3. Other explanatory variables

As well as the seven factors and workload variables mentioned above, we include other potential explanatory variables in our modelling from the WLTL dataset. These included:

- In the next 12 months, are you considering leaving the state school sector, excluding retirement ('considering leaving')
- In your most recent full working week, approximately how many hours did you work? ('working hours')
- In your most recent full working week, approximately how many hours did you spend on teaching in the classroom ('teaching hours')
- My school's leadership team sets high expectations for pupil behaviour supported by clear rules and processes (agree/ disagree/ neither)
- Taking into account all of the CPD you've done in the last 12 months, how would you rate the overall impact on your ability to perform your role? (Scale of 1-10, where '1' means 'no impact' and

'10' means 'extremely positive impact') (referred to as 'CPD impact')[1]
- As a teacher, in the last 12 months, have you experienced discrimination ('experienced discrimination)
- As a teacher, in the last 12 months, have you experienced bullying and harassment ('experienced bullying and harassment')
- Whether teacher works in flexible way: one or more options selected from the list: part-time; job share; annualised hours; compressed hours; with the option to reclaim time off in lieu (TOIL); staggered hours; phased retirement; home / remote working (formally agreed); planning, preparation and assessment (PPA) time offsite; ad-hoc personal days off at my manager's discretion, for ad-hoc requests or to start late/ finish early (referred to as 'flexible working')
- School quintile of pupils eligible for free school meals
- School type: academy; local authority; free schools; other
- School phase: primary; secondary; special
- Teaching for fewer/ more than five years
- Sex: male/ female
- Age: 10-year age categories.

Where respondents have selected 'don't know' to a question or where the response is missing, we exclude the teacher from our regression analysis. This results in total sample attrition of 41 per cent, as the sample reduces from a total of 8,964 to 5,274. Under the strong assumption that this sample attrition is conditionally missing at random (MAR) then it will not result in biased findings, but reduces the amount of statistical precision. However, data may not be MAR and therefore to some extent biased. However, we cannot test for the presence or extent of this bias directly in the data, but it is important to recognise that this could impact on the interpretation of findings.

We considered using missing data methods such as multiple imputation to include the data of respondents who had at least one item of missing data. However, we decided against this because these methods introduce estimation complexity, which would have been added to the complexity of the pathway regression methods and bootstrapping approaches we were already deploying (see next section). However, the feasibility of implementing complex multivariate regression methods alongside complex approaches to dealing with missing data should be an area for future exploration of this data.

The WLTL includes modular questions that are only asked to one third of respondents, with each respondent randomised to receive questions from one module. We considered including explanatory variables from these modules, but decided against it because data for these items is missing for two thirds of respondents. Because respondents are randomly allocated to modules, this data is missing at random, meaning that these items could be more confidently dealt with and interpreted using missing data methods. However, for the reasons noted above, we decided not to deploy missing data methods so did not consider.

[1] This question was only asked to respondents who reported that they had received one or more form of CPD, meaning some respondents who said they had not were dropped from the analysis. However, almost all teachers (98 per cent) reported receiving some form of CPD.

## 2.3. Retention analysis

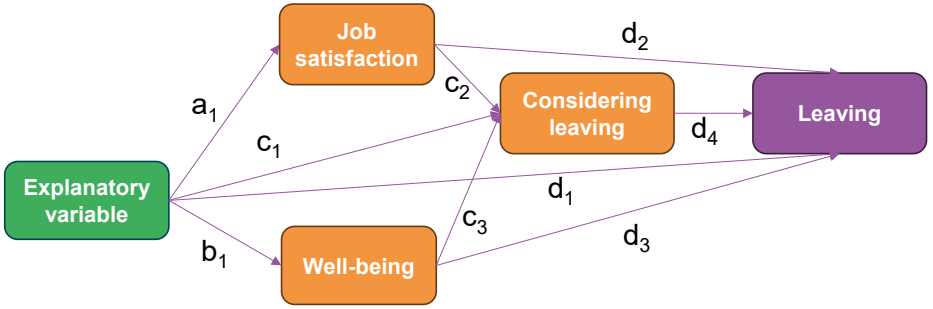
### 2.3.1. Regression modelling

Our exploration of the factors associated with retention in this report is based on multivariate regression modelling techniques. We explore the relationship between potential explanatory factors and retention, while holding constant the effect of other potential explanatory factors that are also included in the model.

We begin our approach with a logistic regression model that takes account of the binary (0 or 1) nature of retention, the main outcome variable. We include all potential explanatory variables in the regression model and assess which are statistically significant. Where variables are not statistically significant, we remove them from the final model with the retention outcome variable. This is to reduce the risk of over-fitting and avoid retaining links for estimating total and indirect effects (see below for more on this) that are not statistically significant. However, there remains the possibility that coefficients with meaningfully large associations that don't reach the conventional threshold for statistical significance (five per cent) are excluded, which could alter interpretation compared to leaving them in. Our large sample size, which provides good levels of estimation precision, should mitigate against this risk.

Among the variables that are statistically significant, we consider the potential for mediating variables to be 'masking' the effects of other potential explanatory factors. As noted above and based on the literature, our main candidates for potential mediators are considering leaving, job satisfaction and personal wellbeing. The evidence we consider for a variable being a mediator include: a hypothesis from theory and the previous literature; the variable being a significant explanator in the model; and other coefficients changing when that variable is excluded from the model. Figure 1 shows our *hypothesised* pathway diagram.

**Figure 1 Hypothesised pathway diagram**




Where we identify a mediator variable we estimate a regression model with that variable as the outcome variable. We use a logistic regression model for considering leaving to reflect the binary nature of the outcome. We use linear regression models for factors, such as job satisfaction and wellbeing. We take the same approach to estimating the models, by first including all potential explanatory variables in the model to start with and refining the independent variable selection according to statistical significance.

A key aspect of pathway analysis is ensuring the pathway through mediator variables is not circular by having a clear hierarchy of mediators that establishes the path. The hypothesised pathways shown in Figure 1 demonstrate this non-circularity principle.

### 2.3.2. Estimating total effects

Figure 1 shows a series of lines with arrows, which correspond to hypothesised effects. Across the pathways, explanatory factors can have a range of effects on mediator variables and on the ultimate outcome of interest, retention. Indeed, the total effect of each explanatory variable on retention is a web of indirect effects, which could plausibly go via associations with job satisfaction, wellbeing and considering leaving into an ultimate association with retention.

Some of these paths may not be active for some explanatory variables, where the effect is not found to be statistically significant. Moreover, the concept of 'masking' mentioned above indicates that for many explanatory variables the indirect effects may be the most relevant to understanding the total effects than the direct effect (represented by the $d_1$ arrow in Figure 1).

We estimate total effects for each explanatory variable on retention by multiplying the indirect effects that represent each pathway together and then summing them across the pathways[2]. While in the main regression estimates we use logistic regressions for the retention and considering leaving models, we re-estimate them as linear probability models (LPM, i.e. linear regressions with a dichotomous outcome) to ease the computation of total effects. We first test and verify that the coefficients in the LPM and the marginal effects from the logistic regression are similar. We estimate standard errors and confidence intervals for the total effects using a statistical technique called 'bootstrapping'.

## 2.4. Limitations

There are several key limitations to our analysis.

First, the analysis is based on cross-sectional correlations, so the findings can only be interpreted as causal under strong assumptions. A key assumption is that there are no confounding factors that could also be influencing the relationship between the explanatory factor and retention but are not measured and accounted for in the modelling.

The pathway analysis approach is designed to allow for the effect of confounding factors that are observed in the data, by measuring them and accounting for their mediating effect separately. However, there is still the possibility of unobserved confounding factors affecting the interpretation of the estimated effects.

Second, despite the richness of the WLTL data, the model does not capture all possible factors that we know matter for retention. For example, the availability of job opportunities in the wider labour market is known to influence retention behaviour, but this is not captured in the WLTL survey and there is no satisfactory way of accounting for this cross-sectionally in the model. Such factors are assumed to be accounted for in the model by unexplained variance in retention and uncorrelated with any of the explanatory variables, but this is challenging to test fully.

[2] The formula being: total effect = $d_1 + a_1 (c_2 \times d_4 + d_2) + b_1(c_3 \times d_4 + d_3) + c_1 \times d_4$.

Finally, there is a possibility that particular data cleaning and modelling decisions made by the research team could be drivers of some findings rather than the underlying relationships. Given our research design and careful approach to testing the sensitivity of our findings, we believe this risk is small. Nonetheless, we have not tested the sensitivity of all possible analysis decisions, so key decisions such as the refinement of the model to only include statistically significant variables and refinement of the analysis sample due to missing data (both discussed above) could remain meaningful drivers of findings.

# 3. Are teachers' intentions to leave a good predictor of actual leaving behaviour?

Our first research question is are leaving intentions a good predictor of actual leaving behaviour? It is important to answer this question as data on intentions from surveys is often more quickly and readily available compared to administrative records on who actually left. For example, WLTL findings for teachers in the 2024/25 academic year were published in autumn 2025, whereas retention data covering the same period will not be available until June 2026. Having a reliable leading indicator would therefore be useful for informing policymaking.

However, the proportion of teachers considering leaving tends to be much higher (in the range of 25-36 per cent in WLTL) than the typical actual leaving rate according to the SWC (around nine per cent). A degree of imperfection in the predictiveness should be expected, but it is crucial to understand the extent to which the perceptions and experiences that lead teachers to consider leaving crystallise into actual decisions to do so. Likewise, teachers can leave for a range of reasons and could leave without having previously intended to (for example, suddenly being offered a better-paid job outside of teaching).

## 3.1. Leaving intentions are not a very reliable individual-level predictor of actual leaving behaviour

To answer our first research question, we compare the retention outcomes of teachers that responded to WLTL wave 1 (as measured by a combination of their WLTL wave 2 response and/or subsequent SWC record) with whether they reported in their wave 1 response that they were considering leaving. Table 2 shows the crosstabulation of the two variables.

**Table 2 Teachers who were considering leaving at wave 1 were slightly more likely to leave, but the majority stayed**

| In the next 12 months, are you considering leaving the state school sector (excluding retirement)? | Proportion of the sample (%) | Proportion of teachers who left in the following academic year (%) |
|---|---|---|
| Yes | 26.9 | 13.8 |
| No or don't know | 73.1 | 4.4 |
| Total | | 6.9 |

Note: unweighted N = 6,987.

The data shows that the proportion of teachers who were considering leaving who left in the following year (13.8 per cent) was higher than the proportion among those who were not considering leaving (4.4 per cent). This suggests that a teacher considering leaving provides some ability to predict subsequent behaviour. However, 86.2 per cent of teachers who said they were considering leaving did not leave in the following year, suggesting the predictive power is limited. This group of teachers may still have a higher propensity to leave teaching over the longer-term and this analysis is limited by only looking at short-term leaving behaviour. Future research would benefit from exploring the relationship with longer-term retention outcomes.

Further, four per cent of teachers who said they were not considering leaving actually did. This suggests that there are also a wider set of factors involved in leaving decisions.

Overall, a teacher considering leaving provides some predictive information about short-term retention decisions, but the amount of information is limited.

## 3.2. Is the overall trend of leaving intentions a good leading indicator for the trend in the leaving rate?

Despite individual teachers leaving intentions being of limited predictive value at an individual level, a related question for informing policymaking is whether the trend in the proportion of teachers considering leaving is a good leading indicator for the trends in the proportion of teachers who leave.

To explore this, we looked at the data from the WLTL reports on the proportion of teachers and leaders intending to leave in each of the first four waves. We compared the trends to the leaving rates in those same years from the School Workforce Census data. Note that at the time of writing, retention data for the 2024/25 academic year is not yet available.

Table 3 shows that the proportion of those considering leaving has varied considerably across the four waves, particularly between the low of 25 per cent in 2021/22 and the high of 36 per cent in 2022/23. The spike coincided with the teacher strike action in spring 2023. However, the proportion of those who left has remained more stable, with a small but steady decrease since 2021/22. In 2022/23, there was an 11 percentage point increase in the proportion of teachers considering leaving, but this did not match the trend in the rate of actual leavers, which decreased by 0.2 percentage points compared to the previous year. The trends went in the same direction between 2022/23 and 2023/24, with a two percentage point decrease in those considering leaving and a 0.3 percentage point decrease in the proportion leaving. The picture is very similar when broken down separately by phase.

**Table 3 The trend in leaving intentions appears to be an unreliable leading indicator for actual leaving behaviour**

| | 2021/22 | 2022/23 | 2023/24 | 2024/25 |
|---|---|---|---|---|
| Proportion considering leaving (%, WLTL) | 25 | 36 | 34 | 29 |
| (year-on-year change) | | +11 | -2 | -5 |
| Proportion who left state-funded sector (%, SWC) | 9.5 | 9.3 | 9.0 | |
| (year-on-year change) | | -0.2 | -0.3 | |

Overall, while it is only based on a small number of years' data, the predictive power of the trend in teachers considering leaving on the trend in actual leaving rates appears to be low. In particular, the sizeable inconsistency in the trends in 2022/23 demonstrates that trends in teacher leaving intentions cannot be relied on as a leading indicator of actual leaving rate trends.

# 4. What factors are associated with teachers leaving the state-funded school sector?

As explained in section 2, our modelling approach begins with a regression model of the factors that are associated with retention in the state-funded sector. Our analysis then proceeds to unpack the role of mediating factors that the theory suggests are likely to be important for understanding the complexity of retention behaviour: considering leaving, job satisfaction and wellbeing. This unpacking process involves additional regression models, which we finally estimate as a set of inter-related models. This enables the estimation of total effects that explore the overall associations between a range of explanatory factors and retention.

## 4.1. Factors associated with retention

Table 4 summarises the findings from the refined retention model. We began by estimating a logistic regression model with whether the teacher left as the outcome variable and all the potential explanators included in the model (see Appendix Table 19). We then estimated the refined model by only including explanatory variables that were statistically significant at the five per cent level. Where categorical variables entered the model as a set of indicators (e.g., age categories) we assessed significance using a test of joint significance and either retained or removed all the associated indicators. The associations in the second column are percentage point differences derived from marginal effects.

**Table 4 Considering leaving and job satisfaction are both key factors associated with retention**

| Explanatory factor | Association with leaving state-funded school sector (pp) | Standard error (pp) | Sig |
|---|---|---|---|
| Considering leaving (vs not) | 5.3 | 0.8 | * |
| Job satisfaction (1sd) | -2.4 | 0.4 | * |
| School leadership support (1sd) | -0.8 | 0.4 | * |
| Works flexibly (vs not) | 3.2 | 0.8 | * |
| Teaching for five or more years (vs fewer than five) | -2.9 | 0.9 | * |
| Age 30-39 (vs 20-29) | -0.7 | 1.1 | |
| Age 40-49 (vs 20-29) | -0.7 | 1.2 | |
| Age 50-59 (vs 20-29) | 4.0 | 1.2 | * |
| Age 60+ (vs 20-29) | 6.7 | 2.3 | * |
| Local authority maintained (vs academy) | 2.2 | 1.0 | * |
| Free school (vs academy) | 2.0 | 2.5 | |
| Special (vs academy) | -0.7 | 2.2 | |
| Other (vs academy) | -2.2 | 0.9 | * |

Note: The ‘Sig’ column indicates statistical significance (shown by *) at the five per cent level.

As expected given the findings in section 3, whether a teacher is considering leaving is a significant explanator of whether they do. Considering leaving, holding constant the effect of other variables, is associated with a 5.3 percentage point higher likelihood of leaving.

In line with the findings from wave 1 and from the literature, job satisfaction is also a strong predictor of retention behaviour. A one standard deviation increase in job satisfaction, holding constant other factors, is associated with a 2.4 percentage point lower leaving rate. However, as shown in Appendix Table 19, wellbeing was not a significant explanator of retention, after accounting for other factors. This suggests that while wellbeing may be important to individuals at a personal level, it is job satisfaction and other factors that are bigger determinants of career decisions.

Holding constant the effect of other factors, school leadership support is also a significant factor associated with retention. A one standard deviation increase in school leadership support is associated with a 0.8 percentage point lower leaving rate. Consistent with previous evidence, staff feeling valued by their school, having opportunities to participate in school decisions and having support with flexible working all matter for retention (Worth *et al.*, 2018; Sims and Jerrim, 2020; Harland, Bradley and Worth, 2023).

While working flexibly itself is also a significant predictive factor in the retention model, the direction of the effect is counterintuitive and is likely to be confounded. The positive association in Table 3 suggests that teachers who work flexibly are more likely to leave. However, the literature suggests that having the opportunity to work flexibly is associated with higher retention and improved wellbeing (Harland, Bradley and Worth, 2023). This is likely explained by confounding: rather than representing the causal relationship between being able to work flexibly and retention, the coefficient captures the effect of other underlying differences between teachers who work flexibly and those who do not. For example, teachers who work flexibly may be more likely to have caring responsibilities and the estimated effect in this model could be picking up the demands of teachers having caring responsibilities on teacher retention, rather than the effect of flexible working. A similar difference is seen in national data when comparing teachers with different contracted working patterns: SWC statistics show that in 2023/24 the leaving rate among part time teachers was 11.6, compared to 8.5 among full time teachers.

As shown by Appendix Table 19, a large number of potential explanatory factors that were entered into the model were not statistically significant. For example, workload perceptions, pay satisfaction, whether teachers feel they spend too much time on certain non-teaching tasks were all not significant explanators of retention, after holding constant other factors. However, as noted by the wave 1 report, this may be due to the masking effect of other significant factors, such as considering leaving and job satisfaction, that are operating as mediators. We therefore extend our analysis to include further pathways to retention, by first estimating a considering leaving model.

## 4.2. Factors associated with considering leaving

Table 5 summarises the findings from the refined considering leaving model. We take the same refinement approach as explained above for the retention model and the full model is shown in Appendix Table 20.

Again in line with the findings from wave 1 and from the literature, job satisfaction is a strong predictor of considering leaving. A one standard

deviation increase in job satisfaction, holding constant other factors, is associated with an 11.2 percentage point lower rate of considering leaving. In contrast to the retention model, wellbeing is a significant explanator of considering leaving, after accounting for other factors. However, the effect is much smaller than for job satisfaction, with a one standard deviation increase in wellbeing, holding constant other factors, associated with a 2.9 percentage point lower rate of considering leaving. Together these findings again suggest that while wellbeing may be important to individuals at a personal level, job satisfaction is a bigger determinant of career decisions.

**Table 5 Job satisfaction, wellbeing and school leadership support are key factors associated with considering leaving**

| Explanatory factor | Association with considering leaving (pp) | Standard error (pp) | Sig |
|---|---|---|---|
| Job satisfaction (1sd) | -11.2 | 0.7 | * |
| Wellbeing (1sd) | -2.9 | 0.6 | * |
| School leadership support (1sd) | -2.5 | 0.7 | * |
| Workload perceptions (1sd) | -3.7 | 0.8 | * |
| Pay satisfaction (1sd) | -4.6 | 0.7 | * |
| Pupil data: too much time (vs about right) | 2.9 | 1.3 | * |
| Pupil data: too little time (vs about right) | 5.7 | 3.4 | * |
| Behaviour: too much time (vs about right) | 3.3 | 1.2 | * |
| Behaviour: too little time (vs about right) | -0.8 | 3.0 | |
| Experience bullying and harassment (vs not) | 5.2 | 1.6 | * |
| Male teacher (vs female) | 7.3 | 1.3 | * |
| Works flexibly (vs not) | 3.2 | 0.8 | * |
| Age 30-39 (vs 20-29) | 4.0 | 1.6 | * |
| Age 40-49 (vs 20-29) | 2.4 | 1.7 | |
| Age 50-59 (vs 20-29) | -3.2 | 1.9 | |
| Age 60+ (vs 20-29) | -12.8 | 5.5 | * |

Note: The 'Sig' column indicates statistical significance (shown by *) at the five per cent level.

Holding constant the effect of other factors, school leadership support is a significant factor associated with considering leaving. A one standard deviation increase in school leadership support is associated with a 2.5 percentage point lower rate of considering leaving.

Teachers having more positive workload perceptions and having higher pay satisfaction are both associated with a lower likelihood of considering leaving. Holding constant other factors, a one standard deviation increase in workload perceptions is associated with a 3.7 percentage point lower rate of considering leaving. For pay satisfaction, a one standard deviation increase is associated with a 4.6 percentage point lower rate of considering leaving.

Teachers saying they spend too much time on some non-teaching tasks is also significantly associated with considering leaving, whereas none of the same factors were statistically significant in the retention model. Holding constant other factors, teachers saying they spend too much time on pupil data is associated with a 2.9 percentage point higher rate of considering leaving, compared to teachers who say the amount of time they spend is 'about right'. Similarly, teachers saying they spend too *little* time on pupil data is associated with a 5.7 percentage point higher rate of considering leaving.

The amount of time teachers spend following up on behaviour incidents being perceived as too much is also significantly associated with considering leaving, being associated with a 3.3 percentage point higher rate of considering leaving. However, there was no significant association with teachers saying that they spent too little time on behaviour. Further, time spent on planning, marking and admin were not statistically significant in the considering leaving model.

Teachers reporting that they have recently experienced bullying and harassment is associated with considering leaving. Experiencing bullying and harassment is associated with a 5.2 percentage point higher rate of considering leaving. The wave 1 WLTL report and NFER analysis has identified that teachers from ethnic minority backgrounds are more likely than their white counterparts to report experiencing bullying and harassment (Lorna Adams *et al.*, 2023; Kotonya *et al.*, 2025).

Some personal characteristics are also significantly associated with considering leaving. All else equal, male teachers are more likely than female teachers to be considering leaving and teachers in their 30s are more likely than teachers in their twenties. However, teachers older than 60 are less likely to be considering leaving than teachers in their twenties. This could reflect that these teachers are more likely to say they are considering leaving in the next 12 months for retirement, which was a separate response item. It could also be because some are over retirement age, so are actively choosing to remain in teaching. Similar to the retention model, working flexibly is associated with a higher rate of considering leaving, but this is likely to also be confounded and not reflective of the impact of flexible working opportunities on retention.

Overall, there are more significant factors in the considering leaving model than in the retention model, with some explanatory factors only appearing in the former. This highlights the potential for factors to be associated with retention, but mainly through an effect that is mediated via considering leaving rather than a direct effect on retention. Moreover, job satisfaction, which the wave 1 report analysis identified as a key mediator on considering leaving is a highly significant factor in the considering leaving model. It is therefore likely to still be masking the impact of other potential explanators, so we proceed to estimate a job satisfaction model to reveal more indirect pathways from explanatory factors to retention. Given that it appears in the considering leaving model as significant and the literature suggests it is also a potential mediator, we also estimate a wellbeing model.

## 4.3. Factors associated with job satisfaction

Table 6 summarises the findings from the refined job satisfaction model. We take the same refinement approach as explained above for the retention and considering leaving models and the full model is shown in Appendix Table 21. Job satisfaction is the outcome variable, standardised to have a mean of zero and a standard deviation of one.

Coefficients are therefore interpretable as proportions of a standard deviation.

**Table 6 School leadership support, pupil behaviour, manager support and workload perceptions are key factors associated with job satisfaction**

| Explanatory factor | Association with job satisfaction (standardised) | Standard error (pp) | Sig |
|---|---|---|---|
| School leadership support (1sd) | 0.162 | 0.017 | * |
| Pupil behaviour (1sd) | 0.225 | 0.015 | * |
| Manager support (1sd) | 0.121 | 0.017 | * |
| Workload perceptions (1sd) | 0.113 | 0.012 | * |
| Pay satisfaction (1sd) | 0.031 | 0.012 | * |
| Impact of CPD (1 unit on a scale 1-10) | 0.057 | 0.006 | * |
| Behaviour: too much time (vs about right) | -0.075 | 0.027 | * |
| Behaviour: too little time (vs about right) | -0.060 | 0.065 | |
| Lesson planning: too much time (vs about right) | -0.168 | 0.027 | * |
| Lesson planning: too little time (vs about right) | -0.130 | 0.041 | * |
| Pastoral support: too much time (vs about right) | -0.121 | 0.029 | * |
| Pastoral support: too little time (vs about right) | 0.067 | 0.046 | |
| Male teacher (vs female) | -0.108 | 0.030 | * |
| Works flexibly (vs not) | -0.083 | 0.026 | * |
| Teaching for five or more years (vs fewer than five) | -0.094 | 0.032 | * |
| Age 30-39 (vs 20-29) | -0.001 | 0.038 | |
| Age 40-49 (vs 20-29) | 0.015 | 0.041 | |
| Age 50-59 (vs 20-29) | 0.150 | 0.047 | * |
| Age 60+ (vs 20-29) | 0.428 | 0.099 | * |

Note: The 'Sig' column indicates statistical significance (shown by *) at the five per cent level.

As with both the retention and considering leaving models, school leadership support is a significant factor associated with job satisfaction. A one standard deviation increase in school leadership support is associated with job satisfaction being 16 per cent of a standard deviation higher. Having good pupil behaviour in the school and feeling supported to deal with persistent disruptive behaviour effectively is also significantly associated with higher job satisfaction.

Likewise, support from a manager with work-life balance and wellbeing and trust to work independently is also associated with higher job satisfaction. Positive perceptions about workload and pay satisfaction are both also significantly associated with higher job satisfaction.

Teachers saying they spend too much time on pupil behaviour is significantly associated with lower job satisfaction. Holding constant other factors, teachers saying they spend too much time on lesson

planning and pastoral support is also associated with lower job satisfaction, compared to teachers who say the amount of time they spend is 'about right'. Similarly, teachers saying they spend too *little* time on lesson planning is associated with lower job satisfaction. However, perceptions of the amount of time spent on pupil data, marking and admin as being either too much or too little are not statistically significant in the job satisfaction model.

Teachers perceiving that the CPD they have done in the past year had a high impact on their ability to perform their role is associated with significantly higher job satisfaction.

Some personal characteristics are also significantly associated with job satisfaction, including being male, working flexibly and being a teacher with more than five years' experience all being associated with lower job satisfaction. All else equal, teachers age 50 and over have higher job satisfaction then teachers in their twenties.

## 4.4. Factors associated with wellbeing

Table 7 summarises the findings from the refined wellbeing model. We take the same refinement approach as for the previous models and the full model is shown in Appendix Table 22. As with job satisfaction, wellbeing is standardised, so coefficients are interpretable as proportions of a standard deviation.

As with all the models, school leadership support is significantly associated with higher wellbeing. Good pupil behaviour, a supportive manager, positive workload perceptions and higher pay satisfaction are all also significantly associated with higher wellbeing. Teachers perceiving that the CPD they have done in the past year had a high impact on their ability to perform their role is also associated with significantly higher wellbeing. Teachers reporting that they have recently experienced bullying and harassment is also significantly associated with lower wellbeing.

Having not been a significant factor in any of the other models, longer total working hours are associated with lower wellbeing. However, the estimated effect is small, with one additional hour, holding other factors constant, being associated with a decrease in wellbeing of one per cent of a standard deviation.

Having also not been a significant factor in any of the other models, teachers saying that they spend too much time on marking is associated with significantly lower wellbeing. Holding constant other factors, teachers saying they spend too much time on lesson planning, pupil data and pastoral support are also all significantly associated with lower wellbeing. Teachers saying they spend too *little* time on pupil data is also associated with lower wellbeing. However, perceptions of the amount of time spent on pupil behaviour and admin as being either too much or too little are not statistically significant in the job satisfaction model.

**Table 7 School leadership support, pupil behaviour, manager support and workload perceptions are key factors associated with wellbeing**

| Explanatory factor | Association with wellbeing (standardised) | Standard error (pp) | Sig |
|---|---|---|---|
| School leadership support (1sd) | 0.076 | 0.018 | * |
| Pupil behaviour (1sd) | 0.141 | 0.019 | * |
| Manager support (1sd) | 0.080 | 0.016 | * |
| Workload perceptions (1sd) | 0.131 | 0.014 | * |
| Pay satisfaction (1sd) | 0.086 | 0.013 | * |
| Total working hours | -0.012 | 0.001 | * |
| Impact of CPD (1 unit on a scale 1-10) | 0.043 | 0.007 | * |
| Pupil data: too much time (vs about right) | -0.070 | 0.028 | * |
| Pupil data: too little time (vs about right) | -0.145 | 0.076 | * |
| Lesson planning: too much time (vs about right) | -0.096 | 0.030 | * |
| Lesson planning: too little time (vs about right) | 0.017 | 0.045 | |
| Marking: too much time (vs about right) | -0.069 | 0.028 | * |
| Marking: too little time (vs about right) | -0.003 | 0.057 | |
| Pastoral support: too much time (vs about right) | -0.107 | 0.030 | * |
| Pastoral support: too little time (vs about right) | -0.050 | 0.044 | |
| Experience bullying and harassment (vs not) | -0.147 | 0.045 | * |
| Age 30-39 (vs 20-29) | -0.055 | 0.034 | |
| Age 40-49 (vs 20-29) | -0.062 | 0.037 | * |
| Age 50-59 (vs 20-29) | 0.050 | 0.042 | |
| Age 60+ (vs 20-29) | 0.293 | 0.097 | * |
| Local authority maintained (vs academy) | -0.126 | 0.039 | * |
| Free school (vs academy) | -0.150 | 0.108 | |
| Special (vs academy) | -0.098 | 0.075 | |
| Other (vs academy) | -0.041 | 0.030 | |

Note: The ‘Sig’ column indicates statistical significance (shown by *) at the five per cent level.

## 4.5. Insights from regression analysis

The four models summarised in this section have shown that a range of factors are significant to different outcomes and all are therefore potentially important factors for retention.

The number of statistically significant explanatory variables in the retention model is small, suggesting that few factors have a direct effect on retention that is significant over and above the effect of two key factors: considering leaving and job satisfaction. However, more factors are significant explanators of considering leaving and job satisfaction, suggesting that there are important indirect effects from a range of explanators via these two key factors to retention.

We hypothesised that wellbeing would also be a significant mediator of retention effects as it appears in the research literature. However, wellbeing is not a significant explanator in the retention model and, while it is a significant explanator in the considering leaving model, its association with considering leaving is much smaller than for job satisfaction. This implies that wellbeing is a less significant pathway to retention than via indirect effects on considering leaving and job satisfaction. In turn, this implies that factors that are only significantly associated with wellbeing are unlikely to be major explanatory factors of retention.

We confirm this in the next section, where we present estimates of the total effects of explanatory variables on retention, which take into account both direct and indirect effects through the various pathways established in this section.

# 5. Implications of the findings

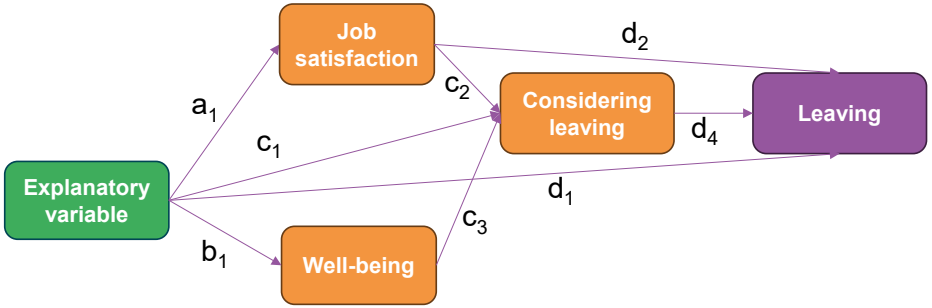
In this section, we present estimates of the total effects of explanatory variables on retention. As explained in section 2, the total effect represents the overall association with retention, accounting for both direct and indirect effects through the various pathways established in the regression models presented in section 4. We also explore the implications of the estimated total retention effect findings for policy.

## 5.1. Total effects

Figure 2 shows an updated pathway diagram, using Figure 1 as a starting point. The two are very similar but Figure 2 captures the fact that the direct wellbeing path to retention is not significant in the retention model, so link $d_3$ is removed[3].

As noted in section 2, we re-estimate the retention and considering leaving models described in section 4 using a linear probability model instead of a logistic regression to ease the computational intensity of estimating total effects. We test and verify that the coefficients match the marginal effects estimated in the two logistic regressions closely enough to do this [see Appendix Tables 22 and 23].

**Figure 2 Estimated pathway diagram**




### 5.1.1. Job and working environment perceptions

Table 8 presents estimates of the total effects for two key mediator variables – job satisfaction and wellbeing – and five factor variables that were entered into the models as explanatory variables. The total effects are presented in two different ways. First, the association between a one standard deviation change in the variable and the change in leaving rate. The change in leaving rate is shown in percentage point terms; for reference the leaving rate in 2023/24 was nine per cent. Each variable is a factor composed of more than one survey item.

The second presentation of the total effect shows the association between a ten percentage point change in each of the underlying items and the change in leaving rate. For example, job satisfaction is composed of two items: 'satisfied with current job' and 'enjoy classroom teaching'. The second presentation of the total effect

[3] Since $d_3$ is set to zero, the updated formula for the total effect = $d_1 + a_1 (c_2 \times d_4 + d_2) + b_1 \times c_3 \times d_4 + c_1 \times d_4$.

represents the effect of, for example, the proportion of teachers who agree with both statements increasing by ten percentage points. Figure 3 shows the total effects graphically with their estimated confidence intervals.

The table confirms a key finding from the modelling presented in section 4 that job satisfaction is a much more influential factor for retention than wellbeing. A ten percentage point increase in the component items for job satisfaction is associated with a 0.58 percentage point decrease in the leaving rate, whereas the same change in wellbeing is associated with only a 0.01 percentage point decrease in the leaving rate. This suggests that while wellbeing may be important to individuals at a personal level, it is job satisfaction and other factors that are bigger determinants of career decisions.

School leadership support is the most influential non-mediator explanatory factor, with a ten percentage point increase in its component items being associated with a 0.22 percentage point decrease in the leaving rate. This aligns with previous findings that teachers' relationship with leadership plays a prominent role in retention decisions (Sims and Jerrim, 2020).

**Table 8 A range of job-related factors are significantly associated with retention, via direct or indirect**

| Explanatory factor | Association between a 1sd increase and leaving rate (pp) | Association between a 10pp increase and leaving rate (pp) | Standard error (pp) | Sig |
|---|---|---|---|---|
| Job satisfaction | -3.9 | -0.575 | | |
| Wellbeing | -0.2 | -0.011 | | |
| | | | | |
| School leadership support | -1.5 | -0.215 | 0.055 | * |
| Pupil behaviour | -0.9 | -0.113 | 0.017 | * |
| Workload perceptions | -0.6 | -0.086 | 0.012 | * |
| Manager support | -0.5 | -0.076 | 0.015 | * |
| Pay satisfaction | -0.4 | -0.067 | 0.013 | * |

Note: The 'Sig' column indicates statistical significance (shown by *) at the five per cent level.

Pupil behaviour is also an influential factor for retention, with a ten percentage point increase in its component items being associated with a 0.11 percentage point decrease in the leaving rate. This aligns with previous findings that emphasise pupil behaviour, and effective

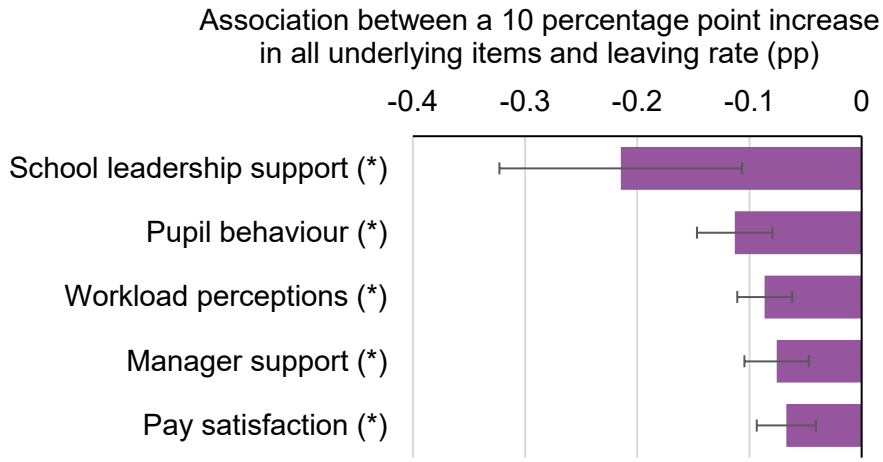
support in dealing with it from school leaders, as a key factor in retention decisions (Burge, Lu and Phillips, 2021).

Positive workload perceptions – having an acceptable workload and sufficient control over workload – are also associated with a lower leaving rate. This finding aligns with findings from previous research emphasising the role of teachers' workload perceptions and autonomy/ agency as key factors, rather than the total number of working hours, *per se* (Sims and Jerrim, 2020; Worth and Van den Brande, 2020; Martin *et al.*, 2023). This is also supported by the WLTL finding that around 90 per cent of teachers who left cited 'high workload' as a reason for having left teaching in the state sector.

Support from a teachers' manager and higher pay satisfaction are both also associated with a lower leaving rate. Pay satisfaction being a significant factor aligns with findings from econometric research and evaluation studies showing that relative increases in remuneration are associated with increased retention. Likewise, WLTL data shows that around 50-60 per cent of teachers who left state-sector teaching cited 'dissatisfaction with pay' as a reason for leaving (IFF Research and UCL Institute of Education, 2025). It is therefore not surprising that the effect is lower than for workload perceptions.

In sum, the modelling suggests that improving the quality of school leadership and manager support, improving pupil behaviour and overall perceptions of workload and increasing pay satisfaction may all reduce the leaving rate.

**Figure 3 School leadership support is a key factor associated with retention**




Note: Asterisks indicate a total effect on retention that is statistically significant.

### 5.1.2. Time spent on non-teaching tasks

Table 9 presents estimates of the total retention effects of teachers reporting spending too much or too little time on non-teaching tasks, compared to saying the time they spend is 'about right'. The effects are presented in terms of a ten percentage point change, i.e. the proportion of teachers reporting that they spend 'too much' time on a task increasing by ten percentage points. Figure 4 shows the same total effects graphically with their estimated confidence intervals.

**Table 9 Teachers spending too much time on lesson planning, behaviour and pastoral support are key factors associated with retention**

| Explanatory factor | | Association between a 10pp increase and leaving rate (pp) | Standard error (pp) | Sig |
|---|---|---|---|---|
| Too much time (vs about right) | Lesson planning | 0.068 | 0.014 | * |
| | Behaviour | 0.050 | 0.014 | * |
| | Pastoral support | 0.049 | 0.014 | * |
| | Pupil data | 0.020 | 0.009 | * |
| | Marking | 0.001 | 0.001 | * |
| Too little time (vs about right) | Lesson planning | 0.051 | 0.017 | * |
| | Behaviour | 0.015 | 0.035 | |
| | Pastoral support | -0.025 | 0.020 | |
| | Pupil data | 0.038 | 0.023 | |
| | Marking | 0.000 | 0.001 | |

Note: The 'Sig' column indicates statistical significance (shown by *) at the five per cent level.

The table shows that teachers reporting that they spend too much time on lesson planning is associated with a significantly higher leaving rate. Teachers reporting that they spend 'too little' time on lesson planning is also associated with a significantly higher leaving rate. This suggests that while lesson planning is an important task for effective teaching, where too little can affect a teachers' confidence in lessons, it can also risk being overly burdensome in terms of the time teachers spend. This aligns with findings from NFER's workload review, which found that lesson planning was seen as a vital part of teachers' work that they would not wish to relinquish because it helped them to prepare for their teaching by thinking through the steps they would take during lessons, but 37 per cent of teachers cited 'lesson planning and preparation' as a high priority for reducing workload (Martin *et al.*, 2023). Having a 'central source of high quality curriculum materials to reduce planning time' was cited by 29 per cent of teachers surveyed as a key enabler of workload reduction.

Teachers reporting that they spend too much time on dealing with pupil behaviour and pastoral support are also both associated with a significantly higher leaving rate. This also aligns with NFER's workload review, which found that 'behaviour management and pastoral care' was the highest priority for reducing workload among teachers surveyed (Martin *et al.*, 2023). 'More support from outside agencies for specific pupil needs such as SEND support, mental health and safeguarding' was seen as a key enabler of workload reduction, cited by 63 per cent of teachers surveyed (Martin *et al.*, 2023).

Teachers reporting that they spend too much time on pupil data is associated with a significantly higher leaving rate, but the effect is smaller than for lesson planning, behaviour and pastoral support. Removing unnecessary workload associated with data management was the focus of a reports by teacher workload advisory groups in March 2016 and November 2018 (Independent Teacher Workload Review Group, 2016b; DfE, 2018).

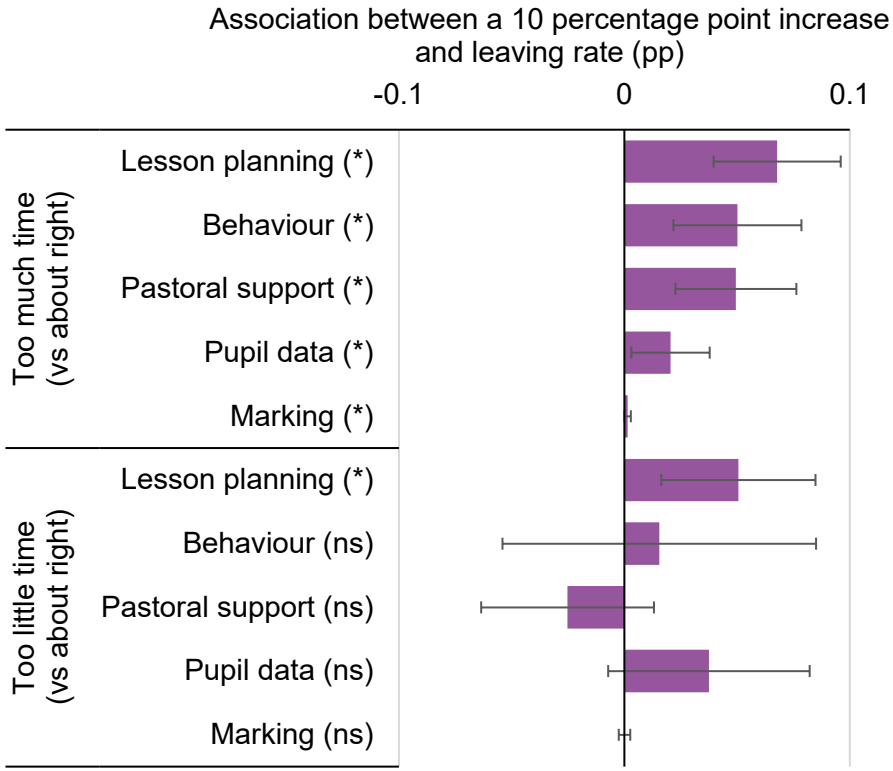
Marking was also the focus of an independent workload advisory group report in March 2016 (Independent Teacher Workload Review Group, 2016a). However, while the proportion of teachers who report that they spend too much time on marking remains high at 38 per cent in 2025, it has a very small estimated total retention effect. While the total effect for marking time is statistically significant, it is very close to zero. This is primarily because marking time only entered as a significant explanator in the wellbeing model, which means its indirect effect on retention is very small. This suggests that while marking may be a burden on teachers' time that can reduce their wellbeing if excessive, it does not have much influence on teachers' decisions about whether to leave the profession.

General administration is regularly the most cited non-teaching task that teachers report that they spend too much time on. Most recently, in 2025 it was reported by 71 per cent of teachers, making it the most cited task that teachers spent too much time on. However, admin time does not have an estimated total retention effect in our model as it did not enter as a significant explanator in any of the four models. This suggests that while admin tasks can be unengaging and a drag on teachers' time, it does not factor into teachers' decisions about whether to leave the profession.

Lesson planning was the only task for which teachers reporting that they spend too little time on it was associated with a change in the leaving rate. Too little time spent on behaviour, pastoral support, pupil data and marking were all not significantly associated with a total retention effect.

In sum, the modelling suggests that reducing the proportion of teachers who report spending too much time on lesson planning, behaviour, pastoral support and pupil data may reduce the leaving rate, while reducing the proportion of teachers who report spending too much time on marking and admin may not have much impact on retention.

**Figure 4 Teachers spending too much time on lesson planning, behaviour and pastoral support are key factors associated with retention**




Note: Asterisks indicate a total retention effect that is statistically significant, while 'ns' indicates that it is not significant.

### 5.1.3. Total working hours

As noted above, workload perceptions and teachers reporting spending too much time on some non-teaching tasks are significantly associated with retention. Total working hours is also an explanatory variable that we included in the models, and it is a significant explanator of wellbeing. However, explanatory factors that only have a pathway through wellbeing tend to have very small total retention effects, since wellbeing itself has a small total effect.

As a result, teacher working hours have a very small estimated total retention effect. While statistically significant, reducing total working hours by one hour per week is associated with a 0.003 percentage point fall in the leaving rate. This effect is so small as to be meaningless.

This suggests that workload reduction is likely to be most effective for improving retention when it focusses on reducing teachers' time spent on particular key non-teaching tasks and improving teachers' perceptions of their workload (perhaps by affording teachers more influence over their work) rather than reducing hours *per se*. However, since reducing the proportion of teachers who report spending too much time on certain tasks may result in a fall in overall working hours (unless that time reduction is instead substituted for other tasks), then working hours remain an important indirect barometer for monitoring the progress of workload reduction efforts. Nevertheless, it is critical that other aspects of workload also continue to be measured and that working hours are used as part of a basket of measures.

### 5.1.4. Impact of CPD

Our regression models found that teachers perceiving that the CPD they have done recently has had an impact on their ability to perform their role is significantly associated with job satisfaction and wellbeing. This results in CPD impact having a significant total retention effect. CPD impact is measured on a scale of 1-10, where '1' means 'no impact' and '10' means 'extremely positive impact'. For context, the average score in wave 1 was 6.1. An increase of one in the scale is associated with a 0.23 percentage point reduction in the leaving rate.

Ensuring teachers' CPD has impact may therefore have an important role to play in improving teacher retention. Teachers' perceptions of the impact of CPD on their practice is likely to be highest where it aligns with teachers' own priorities for improving their practice. This therefore aligns with previous findings that teachers' sense of influence over their own CPD goals has a significant association with job satisfaction and leaving intentions, over and above the association of teachers' sense of influence over other aspects of their work (Worth and Van den Brande, 2020). Providing teachers with more input into their CPD activity is therefore likely to be beneficial for improving its impact and improving teacher retention.

### 5.1.5. Bullying and harassment

Teachers reporting that they have recently experienced bullying and harassment is significantly associated with considering leaving and wellbeing. It has a statistically significant total retention effect. Reducing the proportion of teachers who experience bullying and harassment by ten percentage points is associated with a 0.47 percentage point reduction in the leaving rate. However, it is important to note for context that 15 per cent of teachers currently report experiencing bullying and harassment.

Reducing bullying and harassment may therefore play an important role in improving teacher retention. Bullying and harassment is also particularly concentrated among ethnic minority teachers, explaining a significant proportion of ethnic disparities in retention (Kotonya *et al.*, 2025). In 2024, 19 per cent of teachers from ethnic minority backgrounds (excluding white minorities) experienced bullying and harassment compared to 14 per cent of teachers from a white ethnic background (IFF Research, 2024).

## 5.2. Policy implications

The total retention effects presented in this section provide avenues for policymakers to reflect on and explore as routes for improving teacher retention. However, for many of the areas identified as important for retention there is not a clear route to how they translate into policy action that can lead on to positive change experienced by teachers. As there is a lack of rigorously evaluated programmes aimed at improving retention, there is also limited evidence on what it might cost to shift some of these factors and how effective those actions are.

Moreover, the effects appear somewhat small. School leadership support is one of the most influential explanatory factors in the model, yet a ten percentage point change in the underlying component items – quite a substantial shift – is only associated with a reduction in the leaving rate by 0.2 percentage points. That is the equivalent of shifting the current leaving rate of 9.0 per cent to 8.8 per cent.

Policymakers may therefore consider more conventional policy levers for improving retention, such as pay and financial incentives. While

costly, such interventions have good evidence that they work to improve retention and clearer implications for the total spending required.

However, a comparison between the evidence base on teacher pay and the findings in this report are potentially instructive for policy design for influencing non-financial factors associated with retention. A DfE evidence review concluded that a reasonable assumption for the pay elasticity of retention is -1.5 (DfE, 2020). This means that an extra one per cent increase in pay is associated with a 1.5 per cent reduction in the leaving rate.

Adding an extra one per cent to a pay award might therefore be associated with a reduction in the leaving rate of 0.135 percentage points, from 9.0 per cent to 8.87 per cent. This appears of a similar magnitude to many of the total retention effect estimates presented in this section. We estimate that if applied in the 2026/27 academic year, such a teacher pay increase would cost an additional £340m per year (including school on-costs such as national insurance and pension contributions).

This worked example therefore provides a useful guide to thinking about the cost effectiveness of developing policy solutions to influence non-financial factors associated with retention. For example, based on our estimates, spending up to £540m per year on a policy that improves all the component items of the school leadership support factor by ten percentage points could be more cost effective than spending the same money on a pay increase. It is possible to estimate implied cost effectiveness envelopes for a range of explanatory factors. Table 10 provides a list for the explanatory factors in our analysis.

CPD impact is measured on a different scale: 1-10, where ‘1’ means ‘no impact’ and ‘10’ means ‘extremely positive impact’. The total retention effect is that an increase of one in the scale is associated with a 0.23 percentage point reduction in the leaving rate. The implied maximum cost effectiveness envelope compared to an equivalent pay increase is therefore £590m. In other words, if it were possible to develop a policy for less than £590m per year that increases the average CPD impact reported by teachers by one point in the 1-10 scale, then it would be more cost effective than spending the same money on a teacher pay increase.

**Table 10 Government spending could be more effective if spent on policies to improve non-financial retention factors compared to spending on further teacher pay increases**

| Explanatory factor | Association between a 10pp improvement and leaving rate (pp) | Implied maximum cost effectiveness envelope compared to an equivalent pay increase (£m) |
|---|---|---|
| School leadership support | -0.215 | 540 |
| Pupil behaviour | -0.113 | 280 |
| Workload perceptions | -0.086 | 220 |
| Manager support | -0.076 | 190 |
| Time spent on lesson planning | -0.068 | 170 |
| Pay satisfaction | -0.067 | 170 |
| Time spent on behaviour | -0.050 | 130 |
| Time spent on pastoral support | -0.049 | 120 |
| Bullying and harassment | -0.047 | 120 |
| Time spent on pupil data | -0.020 | 50 |
| Time spent on marking | -0.001 | 0 |
| Time spent on admin | 0 | 0 |

# 6. Conclusions and recommendations

## 6.1. Conclusions

The findings in this research reveal important insights about the factors that may be more or less influential for teacher retention. They are based on cross-sectional correlations, so should be interpreted cautiously as 'effects' that could have causal implications, but only under strong assumptions. Nonetheless, they reveal patterns and findings that are backed up by other evidence using complementary research methods and can therefore be a useful guide for informing future research priorities and policy development.

First, many of the total retention effects are relatively small compared to the overall leaving rate of around nine per cent. This implies that the retention rate is influenced by many factors that are not captured in this model and may not be amenable to policy intervention, such as the availability and relative attractiveness of outside job opportunities. For policymaking, it implies that a strategic approach is needed, with a range of approaches covering different areas of teachers' working lives are needed to improve retention. Nevertheless, small improvements in retention can have significant ramifications for teacher supply: all else equal, reducing the teacher leaving rate by one percentage point per year would lead to a 26 per cent reduction in the ITT targets. Moreover, while there are interventions that have a more robust evidence base and clearer cost implications, such as increasing teacher pay, there is plenty of scope for developing policies that focus on improving non-financial retention factors in a more cost effective way.

Second, the findings echo a key finding from much previous research that teachers' workload is critically important for retention. However, the findings provide the nuanced insight that it is teachers perceptions of their workload and time spent on particular non-teaching tasks that is most influential for retention, not working hours *per se*. This research suggests that policy development should especially focus on solutions affecting teacher lesson planning, pastoral support and behaviour time. In contrast, the findings suggest that despite being the task that the highest proportion of teachers report spending too much time on, effort reducing teachers' time on general admin may yield very little benefit in terms of retention.

Third, teachers having influence over their working lives appears to be associated with improved retention. Previous NFER research found that teachers sense of influence over their work was associated with higher job satisfaction, better workload perceptions and increased intention to stay in teaching (Worth and Van den Brande, 2020). The school leadership support factor, which is one of the most influential explanatory factors in our models, includes a component item on teachers having opportunities to actively participate in whole school decisions. The workload perceptions factor, another influential explanatory factor, includes a component item on teachers having sufficient control over their own workload. Moreover, CPD impact is a key retention factor and teachers shaping what CPD they do is likely to result in it having a greater perceived impact. This suggests that promoting teachers' sense of autonomy and agency is important for teacher retention.

Finally, disruptive pupil behaviour and the demands of providing pastoral and additional learning support for pupils are a significant workload factor that affect teacher retention. This is echoed in previous

research such as a discrete choice experiment that highlighted how undesirable disruptive pupil behaviour is for teachers' career decisions (Burge, Lu and Phillips, 2021). The core role of teachers is to teach in class and perform necessary non-teaching tasks that support effective teaching, such as planning, assessment and marking. While developing positive and nurturing relationships with students is also at the core of effective teaching, the demands of disruptive pupil behaviour and providing additional support can add too much to many teachers' workloads. NFER's workload review highlighted that a 'lack of specialist support for specific pupil needs such as SEND, mental health and safeguarding' was seen by teachers as a key barrier to workload reduction and 'more support from outside agencies for specific pupil needs' was seen as a key enabler (Martin *et al.*, 2023).

## 6.2. Recommendations

### 6.2.1. Recommendations for policy

School leadership support, including teachers feeling valued, involved in school decision making and supported to work flexibly, is a very influential factor for retention. The Government's main lever for influencing how school and trust leaders develop as managers of people is the content of the national professional qualifications (NPQ) for leadership.

**Recommendation 1: Government should further enhance the coverage of relational leadership approaches within the NPQ suite for middle leaders, senior leaders, headteachers and executive leaders**

Teachers' and leaders' perceptions of pupil behaviour in their school have worsened considerably since 2021/22 and the proportion of teachers who say they spend too much time responding to pupil behaviour incidents has increased substantially. This report identifies that too much time spent dealing with pupil behaviour is a significant retention factor, along with too much time spent on pastoral support. An evaluation of the Behaviour Hubs programme found that staff in participating schools reported improvements in pupil behaviour compared to the period before its implementation, suggesting it could be beneficial at the system level if implemented at larger scale (Befani *et al.*, 2026).

**Recommendation 2: Government should further develop its approach for supporting schools to improve pupil behaviour and meet pupils' additional pastoral and learning needs, reinforced by improved external school support services and backed with additional funding.**

Teacher pay growth since 2010/11 has lagged behind pay growth in the wider labour market, leading to a loss of competitiveness, particularly for more experienced teachers. This has a detrimental impact on both recruitment and retention. This report identifies pay satisfaction as a significant retention factor, which Government has a key role in deciding and funding annual teacher pay awards.

**Recommendation 3: Government should aim to sustain levels of pay satisfaction by at least maintaining the competitiveness of teachers' pay each year (i.e. matching the growth in average earnings outside teaching) and funding schools to deliver it.**

The impact of CPD on teachers' practice is a significant retention factor, so ensuring teachers' CPD has impact could improve teacher retention. Teachers' perceptions of the impact of CPD on their practice is likely to be highest where it aligns with their own CPD priorities.

Providing teachers with more input into their CPD activity is therefore likely to be beneficial for improving its impact and improving teacher retention. The Standards for Teachers' Professional Development is a key Government framework for shaping the approach schools take to delivering CPD.

**Recommendation 4: Government should produce guidance around the Standards for Teachers' Professional Development to emphasise how teachers can be given greater involvement in designing content, processes and goals.**

### 6.2.2. Recommendations for schools and trusts

Many of the factors that are identified in this report are heavily influenced by the practice and behaviour of school and trust leaders. Promoting working cultures and environments that ensure teachers feel valued and have opportunities for flexible working and engaging in impactful CPD are crucial for improving retention. At the heart of this is promoting teachers' sense of involvement and engagement in school life and agency over their practice, wherever practical.

**Recommendation 5: School leaders should explore how teachers can be meaningfully involved and engaged in the way the school defines its organisational development priorities and makes decisions more widely**

This report identifies teachers feeling they spend too much time on lesson planning as a key retention factor. Another retention factor is teachers feeling they spend too little time on lesson planning. Getting the balance right is strongly influenced by school policies and support from leaders and managers. Leaders should think carefully about what is expected of school staff with respect to planning, while also providing access to shared schemes of work and promoting opportunities for collaborative planning. One evidence-based solution is to consider the use of general artificial intelligence tools to reduce teacher time on mundane aspects of lesson planning, while maximising teachers' intellectual engagement with the planning process. An NFER study found that using ChatGPT helped science teachers save time by helping with lesson planning, with no evidence of negative impacts on the quality of materials or teachers' sense of autonomy or creativity (Roy *et al.*, 2024). However, carefully implementation by school/ trust leaders and teachers would be needed to safeguard against inaccurate or low quality content.

**Recommendation 6: School and trust leaders should consider whether and how generative AI tools such as ChatGPT could help improve their teachers' planning workload.**

### 6.2.3. Implications for future research

The WLTL study provides a large-scale, representative dataset on teachers' working lives that the sector depends on for a rich understanding. The underlying data also provides a range of opportunities for new in-depth research, such as in this study. The data is available to accredited researchers, which enables them to analyse it to gain new insights. As more data becomes available from new waves, including longitudinal data from teachers responding at multiple time points, it will be possible to gain further insights.

However, there is currently a delay of around two years from the data being collected to it being available for analysis. Making the data available to researchers in a more timely way would be beneficial for the research community.

This research study has benefitted from wave 1 survey data being linked longitudinally to the SWC, enabling us to derive a retention outcome measure for all wave 1 teachers. Such linking will continue to provide useful information. For example, while our analysis suggests that considering leaving is only weakly predictive of short-term retention behaviour, future research could explore whether it is a better predictor of medium-term retention outcomes. Linking wave 2 responses to subsequent SWCs would also increase the sample size available for conducting the type of regression analysis we have undertaken.

Our study has focussed on unpicking the pathways from potential explanatory factors through job satisfaction, wellbeing and considering leaving to retention. Guided by theory, findings from previous studies and what our analysis shows, we have shown the links and estimated total effects. However, it is possible that different and further pathways exist in the data. Further analysis using this data and other sources to explore the complex interactions between factors, plus other forms of research to establish theory and develop hypotheses, would be beneficial to developing this research area further.

The robustness of the findings from this study are somewhat limited as they are based on cross-sectional correlations that could be confounded by unobserved factors and/or masked by the effects of other factors that are included in the models. Therefore, developing and rigorously evaluating programmes that aim to improve retention, for example by reducing workload or increasing the quality of CPD, remains of critical importance to developing the evidence base on what works to improve teacher retention and supply in the most cost effective ways. One aim of this research is to guide commissioners of programmes towards considering areas where impact is likely to be greatest.

We did not explore whether the association between explanatory factors and retention significantly varied by teacher or school characteristics. It is plausible that teachers' sex, age, years of experience, ethnicity, subject and school context could all have a bearing on which factors matter most for retention. This could be explored in future research, but would depend on sufficient sample size being available for robust analysis.

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# Appendix A

## Factor analysis

### Job satisfaction factor

We constructed a job satisfaction factor from two items relating to job satisfaction. While the Cronbach's alpha was somewhat low, the eigenvalues and factor loadings (rotated and unrotated) supported its inclusion as a factor.

**Table 11**

| Component item | Scale | Factor loading |
|---|---|---|
| To what extent would you say that you are satisfied with your current job | 1=Not at all<br>2=On occasion<br>3-Some of the time<br>4=Most of the time<br>5=All of the time | 0.73 |
| To what extent would you say that you enjoy classroom teaching | | 0.73 |
| Cronbach's alpha = 0.61 | | |

### Wellbeing factor

We constructed a wellbeing factor from four items relating to wellbeing. The items are derived from the ONS measures of national wellbeing. Eigenvalues, Cronbach's alpha and factor loadings (rotated and unrotated) supported its inclusion as a factor. We reverse-coded the anxiety item in the factor as it is a negative aspect of wellbeing, compared to the other three which are positive aspects.

**Table 12**

| Component item | Scale | Factor loading |
|---|---|---|
| Overall, how satisfied are you with your life nowadays? | 0-10, where 0 = not at all satisfied; 10 = completely satisfied | 0.89 |
| Overall, to what extent do you feel that the things you do in your life are worthwhile? | 0-10, where 0 = not at all worthwhile; 10 = completely worthwhile | 0.84 |
| Overall, how happy did you feel yesterday? | 0-10, where 0 = not at all happy; 10 = completely happy | 0.87 |
| On a scale where 0 is "not at all anxious" and 10 is "completely anxious", overall, how anxious did you feel yesterday? | 0-10, where 0 = not at all anxious; 10 = completely anxious. | -0.53 |
| Cronbach's alpha = 0.84 | | |

### School leadership support factor

The school leadership support factor was identified as a distinct factor, having been considered alongside the pupil behaviour variables. A fourth item in the block of items presented in the questionnaire 'My school's leadership team sets high expectations for pupil behaviour supported by clear rules and processes' did not load into the school leadership support factor. Eigenvalues, Cronbach's alpha and factor loadings (rotated and unrotated) supported its inclusion as a factor.

**Table 13 Summary statistics for the school leadership support factor**

| Component item | Scale | Factor loading |
|---|---|---|
| I feel valued by my school | 1 = Strongly disagree/ tend to disagree<br>2 = Neither agree nor disagree<br>3 = Strongly agree/ tend to agree | 0.87 |
| My school provides staff with opportunities to actively participate in whole school decisions | | 0.85 |
| My school's SLT supports flexible working | | 0.62 |
| Cronbach's alpha = 0.72 | | |

### Pupil behaviour factor

We constructed a pupil behaviour factor from two items relating to pupil behaviour. Eigenvalues, Cronbach's alpha and factor loadings (rotated and unrotated) supported its inclusion as a factor.

**Table 14 Summary statistics for the pupil behaviour factor**

| Component item | Scale | Factor loading |
|---|---|---|
| In general, how would you rate pupil behaviour in your school? | 1=Very poor/ poor<br>2=Acceptable<br>3=Good / very good | 0.83 |
| When dealing with persistently disruptive behaviour from specific pupils or classes, do you feel that you are supported to deal with it effectively? | 1=Never<br>2=Occasionally<br>3=Sometimes<br>4=Mostly<br>5=Always | 0.79 |
| Cronbach's alpha = 0.78 | | |

### Manager support factor

We constructed a manager support factor from three items relating to managerial support. Eigenvalues, Cronbach's alpha and factor loadings (rotated and unrotated) supported its inclusion as a factor.

**Table 15 Summary statistics for the manager support factor**

| Component item | Scale | Factor loading |
|---|---|---|
| To what extent would you agree or disagree that your manager trusts you to work independently | 1 = Strongly disagree/ tend to disagree<br>2 = Neither agree nor disagree<br>3 = Strongly agree/ tend to agree | 0.76 |
| To what extent would you agree or disagree that your manager is considerate of your work-life balance | | 0.95 |
| To what extent would you agree or disagree that your manager supports your wellbeing | | 0.93 |
| Cronbach's alpha = 0.80 | | |

### Workload perceptions factor

We constructed a workload perceptions factor from two items relating to workload. Eigenvalues, Cronbach's alpha and factor loadings (rotated and unrotated) supported its inclusion as a factor.

**Table 16 Summary statistics for the workload perceptions factor**

| Component item | Scale | Factor loading |
|---|---|---|
| I have sufficient control over my own workload | 1 = Strongly disagree/ tend to disagree<br>2 = Neither agree nor disagree<br>3 = Strongly agree/ tend to agree | 0.89 |
| I have an acceptable workload | | 0.89 |
| Cronbach's alpha = 0.75 | | |

### Pay satisfaction factor

We constructed a pay satisfaction factor from five items relating to pay satisfaction. Eigenvalues, Cronbach's alpha and factor loadings (rotated and unrotated) supported its inclusion as a factor.

**Table 17 Summary statistics for the pay satisfaction factor**

| Component item | Scale | Factor loading |
|---|---|---|
| I am satisfied with the salary I receive for the work I do | 1 = Strongly disagree/ tend to disagree 2 = Neither agree nor disagree 3 = Strongly agree/ tend to agree | 0.77 |
| I am satisfied overall with national-level changes to teachers' pay in the last year | | 0.77 |
| At this stage in my career, teaching offers me a good salary compared to other careers I could follow if I leave | | 0.81 |
| I am satisfied with my longer-term salary prospects compared with other career paths I could follow if I leave | | 0.85 |
| The teacher pay structure allows for my pay to increase at a rate that fairly reflects my growing expertise, regardless of whether I take on additional duties and responsibilities | | 0.70 |
| Cronbach's alpha = 0.79 | | |

### Time spent on non-teaching tasks

We had a strong theoretical desire to include time spent perception items in the models separately, to tease out the distinct contributions that time spent on different tasks plays in retention. However, including individual items that should be a single factor risks multicollinearity, which could lead to inaccuracies in teasing out coefficients. We tested a factor from six items relating to time spent on non-teaching tasks. Eigenvalues and Cronbach's alpha provided some weak support for a factor. The factor loadings (rotated and unrotated) were consistently low, reducing the support for its inclusion as a factor.

**Table 18 Summary statistics for a potential time spent on non-teaching tasks factor**

| Component item | Scale | Factor loading |
|---|---|---|
| Across the whole school year, is the amount of time you spend outside lessons on the following far too little, too little, about right, too much, far too much, or is the statement not applicable to you? | | |
| Individual planning or preparation of lessons either at school or out of school | 1 = Far too little/ too little<br>2 = About right<br>3 = Far too much/ too much | 0.35 |
| Marking/correcting of pupils' work | | 0.42 |
| Recording, inputting, monitoring, and analysing data in relation to pupil performance and for other purposes | | 0.54 |
| General administrative work | | 0.61 |
| Pupil counselling, supervision and tuition | | 0.48 |
| Following up on behaviour incidents | | 0.57 |
| Cronbach's alpha = 0.65 | | |

# Full regression models

**Table 19 Full retention model before refinement**

| Explanatory factor | Marginal effect on leaving (pp) | Standard error (pp) | Sig |
|---|---|---|---|
| Considering leaving (vs not) | 6.4 | 1.0 | * |
| Job satisfaction (1sd) | -2.5 | 0.4 | * |
| Wellbeing (1sd) | 0.2 | 0.4 | |
| Total working hours | -0.0 | 0.0 | |
| Total teaching hours | -0.0 | 0.0 | |
| Lesson planning: too much time (vs about right) | -0.8 | 0.9 | |
| Lesson planning: too little time (vs about right) | -1.1 | 1.3 | |
| Marking: too much time (vs about right) | -0.1 | 0.8 | |
| Marking: too little time (vs about right) | -3.7 | 1.3 | * |
| Pupil data: too much time (vs about right) | 0.4 | 0.8 | |
| Pupil data: too little time (vs about right) | -1.3 | 2.0 | |
| Admin: too much time (vs about right) | -1.1 | 1.1 | |
| Admin: too little time (vs about right) | 5.7 | 5.1 | |
| Pastoral support: too much time (vs about right) | -1.0 | 0.8 | |
| Pastoral support: too little time (vs about right) | -2.2 | 1.3 | |
| Behaviour: too much time (vs about right) | 1.1 | 0.8 | |
| Behaviour: too little time (vs about right) | 5.7 | 3.6 | |
| Workload perceptions (1sd) | 0.2 | 0.5 | |
| School leadership support (1sd) | -1.0 | 0.5 | * |
| Manager support (1sd) | 0.1 | 0.4 | |
| Pupil behaviour (1sd) | -0.2 | 0.5 | |
| Impact of CPD (1 unit on a scale 1-10) | -0.1 | 0.2 | |
| Pay satisfaction (1sd) | 0.3 | 0.4 | |
| Experience discrimination (vs not) | -0.3 | 1.1 | |
| Experience bullying and harassment (vs not) | -0.1 | 1.0 | |
| Works flexibly (vs not) | 2.6 | 0.9 | * |
| FSM quintile 2 (vs lowest) | -0.3 | 1.0 | |
| FSM quintile 3 (vs lowest) | -0.4 | 1.0 | |
| FSM quintile 4 (vs lowest) | 0.7 | 1.1 | |
| FSM quintile 5 (vs lowest) | 0.3 | 1.4 | |
| Secondary (vs primary) | 0.1 | 0.8 | |
| Local authority maintained (vs academy) | 2.8 | 1.3 | * |
| Free school (vs academy) | 1.9 | 3.3 | |
| Special (vs academy) | -4.0 | 2.6 | |
| Other (vs academy) | -2.1 | 0.8 | * |
| Teaching for five or more years (vs fewer than five) | 3.2 | 1.1 | * |
| Male (vs female) | -1.6 | 0.8 | * |
| Age 30-39 (vs 20-29) | -0.5 | 1.0 | |
| Age 40-49 (vs 20-29) | -0.4 | 1.1 | |
| Age 50-59 (vs 20-29) | 5.5 | 1.5 | * |
| Age 60+ (vs 20-29) | 11.3 | 4.6 | * |

Note: The 'Sig' column indicates statistical significance (shown by *) of individual coefficients at the five per cent level. For testing inclusion of categorical items in the main models, we tested joint significance, which can differ from individual significance.

**Table 20 Full considering leaving model before refinement**

| Explanatory factor | Marginal effect on considering leaving (pp) | Standard error (pp) | Sig |
|---|---|---|---|
| Job satisfaction (1sd) | -11.5 | 0.7 | * |
| Wellbeing (1sd) | -2.6 | 0.7 | * |
| Total working hours | 0.1 | 0.1 | |
| Total teaching hours | -0.1 | 0.1 | |
| Lesson planning: too much time (vs about right) | 0.9 | 1.4 | |
| Lesson planning: too little time (vs about right) | 2.2 | 2.1 | |
| Marking: too much time (vs about right) | 0.1 | 1.3 | |
| Marking: too little time (vs about right) | -6.0 | 2.5 | * |
| Pupil data: too much time (vs about right) | 2.2 | 1.3 | |
| Pupil data: too little time (vs about right) | 10.1 | 4.5 | * |
| Admin: too much time (vs about right) | 1.9 | 1.8 | |
| Admin: too little time (vs about right) | -3.8 | 4.6 | |
| Pastoral support: too much time (vs about right) | 1.9 | 1.4 | |
| Pastoral support: too little time (vs about right) | 4.9 | 2.3 | * |
| Behaviour: too much time (vs about right) | 3.6 | 1.4 | * |
| Behaviour: too little time (vs about right) | -0.6 | 3.3 | |
| Workload perceptions (1sd) | -2.8 | 0.8 | * |
| School leadership support (1sd) | -2.5 | 0.8 | * |
| Manager support (1sd) | -1.2 | 0.7 | |
| Pupil behaviour (1sd) | 1.4 | 0.8 | |
| Impact of CPD (1 unit on a scale 1-10) | -0.5 | 0.3 | |
| Pay satisfaction (1sd) | -4.4 | 0.7 | * |
| Experience discrimination (vs not) | -0.5 | 2.2 | |
| Experience bullying and harassment (vs not) | -5.1 | 1.9 | * |
| Works flexibly (vs not) | 3.4 | 1.4 | * |
| FSM quintile 2 (vs lowest) | -1.4 | 1.7 | |
| FSM quintile 3 (vs lowest) | 0.6 | 1.8 | |
| FSM quintile 4 (vs lowest) | -3.2 | 1.8 | |
| FSM quintile 5 (vs lowest) | -4.7 | 2.2 | * |
| Secondary (vs primary) | 0.0 | 1.5 | |
| Local authority maintained (vs academy) | -0.6 | 1.9 | |
| Free school (vs academy) | 0.9 | 4.4 | |
| Special (vs academy) | 2.1 | 9.4 | |
| Other (vs academy) | 0.2 | 1.4 | |
| Teaching for five or more years (vs fewer than five) | -0.8 | 1.6 | |
| Male (vs female) | 7.2 | 1.8 | * |
| Age 30-39 (vs 20-29) | 3.9 | 1.8 | * |
| Age 40-49 (vs 20-29) | 2.6 | 2.0 | |
| Age 50-59 (vs 20-29) | -2.9 | 2.2 | |
| Age 60+ (vs 20-29) | -10.0 | 4.2 | * |

Note: The 'Sig' column indicates statistical significance (shown by *) of individual coefficients at the five per cent level. For testing inclusion of categorical items in the main models, we tested joint significance, which can differ from individual significance.

**Table 21 Full job satisfaction model before refinement**

| Explanatory factor | Association with job satisfaction (% of a sd) | Standard error (pp) | Sig |
|---|---|---|---|
| Total working hours | -0.1 | 0.1 | |
| Total teaching hours | 0.4 | 0.2 | * |
| Lesson planning: too much time (vs about right) | -14.7 | 2.8 | * |
| Lesson planning: too little time (vs about right) | -10.0 | 4.2 | * |
| Marking: too much time (vs about right) | -5.7 | 2.6 | * |
| Marking: too little time (vs about right) | -2.8 | 5.6 | |
| Pupil data: too much time (vs about right) | 0.5 | 2.6 | |
| Pupil data: too little time (vs about right) | -7.8 | 8.0 | |
| Admin: too much time (vs about right) | -4.1 | 3.3 | |
| Admin: too little time (vs about right) | -7.8 | 8.0 | |
| Pastoral support: too much time (vs about right) | -11.0 | 2.8 | * |
| Pastoral support: too little time (vs about right) | 8.0 | 4.7 | |
| Behaviour: too much time (vs about right) | -7.0 | 2.7 | * |
| Behaviour: too little time (vs about right) | 1.7 | 7.2 | |
| Workload perceptions (1sd) | 10.2 | 1.3 | * |
| School leadership support (1sd) | 16.6 | 1.8 | * |
| Manager support (1sd) | 11.2 | 1.7 | * |
| Pupil behaviour (1sd) | 25.0 | 1.9 | * |
| Impact of CPD (1 unit on a scale 1-10) | 6.0 | 0.6 | * |
| Pay satisfaction (1sd) | 2.6 | 1.2 | |
| Experience discrimination (vs not) | 8.1 | 5.5 | |
| Experience bullying and harassment (vs not) | 5.9 | 4.5 | |
| Works flexibly (vs not) | -6.8 | 2.8 | * |
| FSM quintile 2 (vs lowest) | -3.0 | 3.4 | |
| FSM quintile 3 (vs lowest) | 1.5 | 3.6 | |
| FSM quintile 4 (vs lowest) | 4.7 | 3.7 | |
| FSM quintile 5 (vs lowest) | 3.5 | 4.5 | |
| Secondary (vs primary) | 6.0 | 3.0 | * |
| Local authority maintained (vs academy) | -5.2 | 3.8 | |
| Free school (vs academy) | -11.8 | 10.7 | |
| Special (vs academy) | 4.0 | 24.0 | |
| Other (vs academy) | -6.6 | 3.0 | * |
| Teaching for five or more years (vs fewer than five) | -10.1 | 3.3 | * |
| Male (vs female) | -13.1 | 3.1 | * |
| Age 30-39 (vs 20-29) | -0.3 | 3.8 | |
| Age 40-49 (vs 20-29) | 1.1 | 4.2 | |
| Age 50-59 (vs 20-29) | 14.3 | 4.7 | * |
| Age 60+ (vs 20-29) | 44.5 | 10.1 | * |

Note: The 'Sig' column indicates statistical significance (shown by *) of individual coefficients at the five per cent level. For testing inclusion of categorical items in the main models, we tested joint significance, which can differ from individual significance.

**Table 22 Full wellbeing model before refinement**

| Explanatory factor | Association with wellbeing (% of a sd) | Standard error (pp) | Sig |
|---|---|---|---|
| Total working hours | -1.2 | 0.1 | * |
| Total teaching hours | 0.1 | 0.2 | |
| Lesson planning: too much time (vs about right) | -10.7 | 3.1 | * |
| Lesson planning: too little time (vs about right) | 1.0 | 4.6 | |
| Marking: too much time (vs about right) | -7.1 | 2.8 | * |
| Marking: too little time (vs about right) | 0.5 | 5.8 | |
| Pupil data: too much time (vs about right) | -6.2 | 2.9 | * |
| Pupil data: too little time (vs about right) | -16.3 | 8.4 | |
| Admin: too much time (vs about right) | -5.9 | 3.5 | |
| Admin: too little time (vs about right) | 0.5 | 10.2 | |
| Pastoral support: too much time (vs about right) | -11.6 | 3.2 | * |
| Pastoral support: too little time (vs about right) | -2.4 | 4.9 | |
| Behaviour: too much time (vs about right) | 3.8 | 3.0 | |
| Behaviour: too little time (vs about right) | -6.7 | 7.6 | |
| Workload perceptions (1sd) | 12.5 | 1.5 | * |
| School leadership support (1sd) | 6.8 | 1.9 | * |
| Manager support (1sd) | 8.5 | 1.7 | * |
| Pupil behaviour (1sd) | 14.6 | 1.9 | * |
| Impact of CPD (1 unit on a scale 1-10) | 4.2 | 0.7 | * |
| Pay satisfaction (1sd) | 9.0 | 1.3 | * |
| Experience discrimination (vs not) | 3.0 | 5.5 | |
| Experience bullying and harassment (vs not) | 12.5 | 4.7 | * |
| Works flexibly (vs not) | 2.5 | 3.0 | |
| FSM quintile 2 (vs lowest) | -1.5 | 3.8 | |
| FSM quintile 3 (vs lowest) | 0.6 | 3.9 | |
| FSM quintile 4 (vs lowest) | 4.9 | 4.0 | |
| FSM quintile 5 (vs lowest) | 3.1 | 4.7 | |
| Secondary (vs primary) | -4.8 | 3.3 | |
| Local authority maintained (vs academy) | -14.6 | 4.1 | * |
| Free school (vs academy) | 14.6 | 11.0 | |
| Special (vs academy) | 8.3 | 20.2 | |
| Other (vs academy) | -5.2 | 3.2 | |
| Teaching for five or more years (vs fewer than five) | 2.6 | 3.7 | |
| Male (vs female) | 6.3 | 3.3 | |
| Age 30-39 (vs 20-29) | -6.4 | 4.1 | |
| Age 40-49 (vs 20-29) | -7.1 | 4.6 | |
| Age 50-59 (vs 20-29) | 3.7 | 5.0 | |
| Age 60+ (vs 20-29) | 26.6 | 10.3 | * |

Note: The 'Sig' column indicates statistical significance (shown by *) of individual coefficients at the five per cent level. For testing inclusion of categorical items in the main models, we tested joint significance, which can differ from individual significance.

**Table 23 Comparison of retention model coefficients from logistic regression (marginal effects) and linear probability models**

| Explanatory factor | Marginal effect from logistic, pp (s.e.) | Association from linear regression, pp (s.e.) |
|---|---|---|
| Considering leaving (vs not) | 5.3 (0.8) | 6.4 (1.0) |
| Job satisfaction (1sd) | -2.4 (0.4) | -3.1 (0.5) |
| School leadership support (1sd) | -0.8 (0.4) | -0.7 (0.4) |
| Works flexibly (vs not) | 3.2 (0.8) | 3.2 (0.8) |
| Teaching for five or more years (vs fewer than five) | -2.9 (0.9) | -3.0 (1.0) |
| Age 30-39 (vs 20-29) | -0.7 (1.1) | -0.7 (1.1) |
| Age 40-49 (vs 20-29) | -0.7 (1.2) | -0.7 (1.1) |
| Age 50-59 (vs 20-29) | 4.0 (1.2) | 4.6 (1.4) |
| Age 60+ (vs 20-29) | 6.7 (2.3) | 8.2 (3.6) |
| Local authority maintained (vs academy) | 2.2 (1.0) | 2.6 (1.2) |
| Free school (vs academy) | 2.0 (2.5) | 2.3 (3.4) |
| Special (vs academy) | -0.7 (2.2) | -0.6 (2.1) |
| Other (vs academy) | -2.2 (0.9) | -1.9 (0.8) |

**Table 24 Comparison of considering leaving model coefficients from logistic regression (marginal effects) and linear probability models**

| Explanatory factor | Marginal effect from logistic, pp (s.e.) | Association from linear regression, pp (s.e.) |
|---|---|---|
| Job satisfaction (1sd) | -11.2 (0.7) | -12.8 (0.7) |
| Wellbeing (1sd) | -2.9 (0.6) | -3.3 (0.7) |
| School leadership support (1sd) | -2.5 (0.7) | -2.8 (0.7) |
| Workload perceptions (1sd) | -3.7 (0.8) | -2.0 (0.6) |
| Pay satisfaction (1sd) | -4.6 (0.7) | -3.7 (0.6) |
| Pupil data: too much time (vs about right) | 2.9 (1.3) | 3.0 (1.2) |
| Pupil data: too little time (vs about right) | 5.7 (3.4) | 5.4 (3.4) |
| Behaviour: too much time (vs about right) | 3.3 (1.2) | 3.3 (1.2) |
| Behaviour: too little time (vs about right) | -0.8 (3.0) | -1.3 (3.0) |
| Experience bullying and harassment (vs not) | -5.2 (1.6) | -6.9 (2.0) |
| Male teacher (vs female) | 7.3 (1.3) | 7.7 (1.4) |
| Works flexibly (vs not) | 2.9 (1.2) | 2.6 (1.2) |
| Age 30-39 (vs 20-29) | 4.0 (1.6) | 4.0 (1.6) |
| Age 40-49 (vs 20-29) | 2.4 (1.7) | 2.6 (1.7) |

| Explanatory factor | Marginal effect from logistic, pp (s.e.) | Association from linear regression, pp (s.e.) |
|---|---|---|
| Age 50-59 (vs 20-29) | -3.2 (1.9) | -2.3 (1.8) |
| Age 60+ (vs 20-29) | -12.8 (5.5) | -9.0 (3.8) |

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