Evaluating teacher recruitment strategies: Using fully randomised paired conjoint experiments

Evaluation report

October 2025

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About the evaluator

This independent evaluation was led by Teacher Tapp. The team members were Professor Rebecca Allen, Iain Ford, Professor John Jerrim, Loic Menzies, Dr Sam Sims, Dr Burak Sonmez and Karen Wespieser.

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Executive summary

The project

This study set out to understand, which job attributes make teaching roles more attractive to teachers, particularly in the context of current school recruitment and retention challenges. The research was conducted over the 2024/2025 academic year and aimed to identify, which job attributes teachers value most, how headteachers perceive and implement such attributes, and what salary or working conditions might encourage teachers to apply to more disadvantaged schools.

To address these questions, we ran large-scale survey experiments with approximately 6,000 teachers across England. These survey experiments asked teachers to make choices between job adverts featuring different combinations of working conditions, allowing us to estimate the relative value placed on each attribute. We also conducted a subsequent survey experiment with over 400 headteachers to explore their views on the desirability of job attributes that teachers value.

In addition, we developed a novel methodology to examine the decisions teachers make when considering moves to specific schools. By asking teachers to name a local school they might apply to, we are able to estimate the salary uplift they would require to make such a move, providing new insight into the scale of incentive needed to attract teachers to more disadvantaged schools.

The study is supported throughout by qualitative work, including teacher and headteacher focus groups and open-ended survey responses. These elements helped to refine our survey instruments and provided rich contextual insight into how schools are currently adapting job roles and what barriers they face. In combination, this mixed-methods approach offers a robust and policy-relevant picture of teacher job preferences, school implementation challenges, and the broader labour market context.

The evaluation was led by the Education Intelligence Ltd venture Teacher Tapp.

Table 1: Key conclusions

Key conclusions
Teachers most value concrete offers such as greater protected Planning, Preparation, and Assessment (PPA) time, smaller class sizes, and free ancillary healthcare. When mentioned in job adverts, these had effects comparable to a 10% salary increase.
Many job attributes that are liked by teachers are expensive to provide, and in some cases, schools would achieve better recruitment outcomes by increasing the salary instead. However, **healthcare offers, childcare subsidies, and flexible working commitments** stand out as both **better value for money** and **more likely to influence application decisions** than increasing salary for many teachers.
Phase differences matter: Primary teachers are more likely to value blocked, off-site PPA and collaboration opportunities; secondary teachers are more likely to prioritise the total amount of PPA. Similarly, implementation costs and feasibility vary across phases.
Secondary schools serving disadvantaged communities face a structural recruitment challenge: On average, teachers require 13% higher pay to consider applying. This is far more than the uplift currently observed in the system.
Retention is critical, especially in disadvantaged schools, because most teachers are reluctant to move without a substantial salary incentive. Also, the aspects they value most, such as culture, pupil behaviour, and leadership, are difficult to signal credibly in a job advert. The attributes that can be signalled effectively tend to be costly to implement, making retention a more viable and affordable strategy.

Additional findings

We tested how teachers responded to a wide range of job attributes presented as they might appear in job adverts. Salary is consistently highly valued, but several specific and concrete working conditions also significantly increase job appeal. Most notably, 30% protected PPA time, smaller class sizes capped at 22 pupils, and free ancillary healthcare including time off for appointments have average preference ratings comparable to a 10% salary increase. Teachers also value, though slightly less, a guaranteed 35-hour working week with structured support and a clear commitment to accommodate flexible

working requests. In contrast, vaguer promises (e.g. 'commitment to health and well-being') have smaller effects. Overall, teachers responded most positively to clear, tangible offers addressing workload, well-being, and flexibility. Prior studies have highlighted the role of salary and working conditions but often focused more narrowly on financial incentives or specific job attributes. Our findings confirm the importance of salary but add new insight by quantifying the relative appeal of a wide range of non-salary attributes.

However, many of the most attractive job attributes identified in the experiments are costly to implement, so much so that, in many cases, schools would be better off using the same funds to raise salaries. A few attributes stood out as cost-effective, including ancillary healthcare (with time off for appointments), a clear commitment to flexible working, and subsidised on-site childcare. The latter is expensive but may offer good value due to limited uptake. Lower-cost additions, like workload reduction statements or promoting a collaborative culture, are unlikely to be decisive alone but still offer strong value when included in job adverts.

Subgroup analysis shows that phase differences between primary and secondary teachers are especially important when interpreting preferences and planning implementation. Both phases value increased PPA time, but primary teachers prefer it to be blocked and taken off-site, with more focus on collaborative planning. Secondary teachers, by contrast, care more about the overall amount of PPA time than how it is scheduled. These differences affect not only job design but also the cost and practicality of implementation, with strategies like blocked off-site PPA often more feasible in primary schools.

Unlike much previous work, our research compares teacher preferences with school-level feasibility and headteacher priorities, highlighting tensions between desirability and deliverability. We found strong headteacher support for government funding of increased PPA time and smaller class sizes, but less backing for capping working hours or enabling blocked PPA. While many heads were enthusiastic about improving working conditions, they stressed the practical and financial constraints, particularly for high-cost changes.

In England, schools serving disadvantaged communities face the greatest recruitment challenges. We provide rare evidence on the scale of financial incentive needed to level the playing field. Using a novel method, which asks teachers under what conditions they would apply to named local schools, we find that teachers typically require a £6,250 (13%) salary uplift to consider moving to a new school with a similar demographic profile. If the local school has a higher FSM proportion, they require an additional £115 per FSM percentage point. This would amount to an additional £4,485 to move from a low- to high-FSM school. The effect is over three times greater in secondary schools than primary schools. Despite extra funding, many disadvantaged schools still struggle to offer competitive job packages, contributing to high turnover and persistent shortages.

For schools, particularly those serving disadvantaged communities, this research underscores the importance of retention. Recruiting new teachers is challenging as most are reluctant to move without a significant salary incentive, and the job attributes that do attract interest are often expensive to provide. While culture, pupil behaviour, and leadership are all known to shape teachers' perceptions of a school, our findings show that these qualities are difficult to communicate credibly through job adverts alone.

A key limitation of this study is the hypothetical nature of the choices presented to participants. Teachers were asked to make decisions about job adverts, employment policies, and potential job moves within a mobile app environment. These scenarios, while carefully designed, do not replicate the real-life context in which such decisions would typically be made. Participants had limited time for reflection or further research on scenarios presented, and their responses may not fully reflect the preferences they would express when faced with genuine employment decisions. As such, while the findings offer valuable insights, they should be interpreted with appropriate caution.

Introduction

Background

Recruiting and retaining qualified teachers remains a persistent challenge for schools across England, particularly those serving disadvantaged communities. While a range of strategies have been trialled to improve teacher supply, including financial incentives, flexible working options, and early career support, the effectiveness of these approaches varies, and many require substantial resources or long-term policy change. In contrast, advertising specific job attributes represent an immediate lever that all schools use but which has received little attention in either research or policy. As the first point of contact between schools and potential applicants, adverts may play a crucial role in shaping perceptions of the role, the working environment, and the ethos of the school. Yet in practice, job adverts are often written under time pressure, with limited guidance or consistency, raising the possibility that simple improvements in messaging could positively influence teacher recruitment.

Although job adverts are a universal element of the teacher recruitment process, their content and structure remain highly variable. A recent scoping review by Mankki (2023) identifies three common elements within education job adverts, which are the candidate descriptions, the position descriptions, and the institutional descriptions. Teachers report valuing clarity and specificity in job descriptions, particularly regarding tangible aspects of workload, flexibility, and career development. However, these attributes are rarely emphasised in existing adverts. Instead, many schools rely on generic phrasing, which may fail to distinguish their posts from others or adequately convey the school's ethos. While there is some research from the United States (US) showing how mission-driven language can attract aligned candidates, so far little UK-based research has explored whether modest adjustments to the wording of teacher job adverts, such as emphasising flexibility, culture, or values, can meaningfully affect candidate behaviour (Shuls and Maranto, 2014). The current study addresses this gap by systematically testing how alternative phrasings and content emphases influence stated preferences and perceived attractiveness of teaching posts, within realistic recruitment scenarios.

A growing body of work in behavioural science suggests that how information is framed can shape decision-making in subtle but powerful ways. In fields ranging from health to finance, so-called 'nudges' have been shown to alter behaviour without restricting choice, by, for example, framing default options, simplifying information, or evoking identity-relevant cues. Some limited studies suggest that teacher recruitment decisions may be influenced by how job attributes are described in adverts. Viano *et al.* (2021) demonstrate that teachers consider not just salary but also perceived support and alignment with school values when weighing job options. Similarly, Lentini *et al.* (2024) show that relatively low-cost in-kind incentives, when clearly communicated, can be persuasive.

Although a variety of policy initiatives have sought to address teacher shortages, most have focused on financial incentives, training routes, or workload reforms, rather than on improving how schools market themselves through recruitment materials. A recent systematic review by See *et al.* (2020a; 2020b) found that while financial incentives have the strongest evidence base for attracting teachers to challenging schools, they are less effective in promoting long-term retention. By contrast, interventions aimed at improving working conditions, mentorship, and support often lack rigorous evaluation, making it difficult to assess their full impact. Similarly, international studies have overwhelmingly focused on salary incentives (e.g. Camelo and Ponczek, 2021; Clotfelter *et al.,* 2008; Prost, 2013).

This study makes a novel contribution by testing, at scale, whether changes to the wording of job adverts around job attributes can influence teacher preferences. Using paired conjoint experiments with responses from thousands of classroom teachers and middle leaders across England, the project systematically evaluates the relative appeal of various job attributes as they might appear in real adverts.

It also examines the intersection between what teachers' value and what headteachers believe they can feasibly offer. A separate paired conjoint experiment with headteachers explores their preferences for policy options relating to job attributes and working conditions. All the attributes presented to teachers are costed, enabling the study to estimate, which attributes represent the best value for money in attracting applicants.

Finally, the study employs a novel methodology to investigate how teachers make decisions about applying to specific schools. By asking participants to name a local school they might consider moving to, we estimate the salary uplift required to prompt such a move. This offers new insights into the scale of incentive needed to attract teachers to more disadvantaged schools.

While this study helps address a significant evidence gap, it represents only a partial account of the complex factors that influence teacher recruitment. Job adverts form just one part of a broader process shaped by school visits, informal networks, interview experiences, and local reputation. A Teacher Tapp survey conducted in April 2024 found that, in addition to the advert itself, school reputation, personal recommendations, and positive impressions during pre-interview visits all significantly affect the teachers' decisions to apply (Allen *et al.,* 2024). These factors, though clearly influential, fall outside the scope of this study.

For readers interested in the wider international literature related to the research questions, a full-length review is provided in Appendix A.

Research questions

The study is guided by three research questions, which collectively explore how teacher preferences align with school priorities in the context of job adverts and recruitment challenges:

1. Which working conditions or benefits do teachers find most attractive in job adverts?
2. What are headteachers' preferences regarding policies to improve working conditions or benefits?
3. What salary increases or job benefits are necessary to encourage teachers to accept positions in schools with a higher proportion of pupils eligible for free school meals (FSM)?

These research questions were selected to inform both policy and practice. Research question 1 addresses a key evidence gap identified in the literature: although schools frequently advertise roles, there is limited rigorous research on which specific attributes are most persuasive to candidates. The framing of this research question builds on findings from four key studies (i.e. Burge *et al.,* 2021; Fuchsman *et al.,* 2020; Johnston, 2021; Lovison and Hyunjung Mo, 2024), with the aim of replicating and extending their most robust insights in a sample large enough to support detailed interaction and subgroup analysis.

Research question 2 complements this by exploring the extent to which headteachers are both willing and able to implement the conditions that teachers value. The wording of research question 2 has been adjusted slightly from the original study plan. Initially, the question focused solely on what schools would prefer to offer to a single candidate applying for a job. During piloting and analysis of research question 1, it became clear that many attributes teachers value could not be offered to one teacher without also offering it to their colleagues. We therefore, switched our focus to understanding what leaders *would like* to offer, given the opportunity, as a more informative and tractable framing.

We bring research questions 1 and 2 together to examine the costs of providing the job attributes most valued by teachers and headteachers, establishing a value-for-money ratio for each attribute.

Research question 3 builds on prior research into financial incentives and social equity by seeking to establish how much more schools serving disadvantaged communities need to pay to attract teachers to apply for roles at their school. This addresses a clear gap in the literature, which has so far: i) established that these schools face greater recruitment challenges; and ii) shown that this remains the case even though they already tend to offer higher salaries for equivalent roles (see the literature review in Appendix A for further detail).

Summary of survey approach

To investigate the first two research questions, we employ a fully randomised paired conjoint experiment methodology. For the third research question, we adopt a non-experimental survey approach. The main paired conjoint experiments examine how teachers make choices between complex job adverts that feature multiple attributes. Our sample size is large enough

to explore variations in job attribute preferences across key demographic groups, which is critical given the uneven distribution of teacher shortages.

Paired conjoint experiments allow us to quantify teachers' relative preferences for different job attributes by requiring them to make trade-offs between potential policy options. The most relevant studies in this area include Burge *et al*. (2021) in the UK and Lovison and Hyunjung Mo (2024) in the US. Burge *et al*. (2021) conducted a discrete choice study of teacher recruitment in England, focusing on pecuniary compensation, including variations in pensions, bonuses, and pay progression. Lovison and Hyunjung Mo (2024) ran a discrete choice survey experiment with approximately 1,000 US teachers to estimate how much teachers value different attributes of hypothetical teaching jobs.

Other relevant US studies include those by Johnston (2021) and Fuchsman *et al*. (2020), which also employ conjoint analysis of teacher job preferences but focus primarily on pension and performance pay structures, making them somewhat less directly applicable to our study. Additionally, Lentini *et al*. (2024) and Viano *et al*. (2021) use conjoint survey experiments to examine how to attract teachers to low-performing schools, in rural Costa Rica and Tennessee, respectively. Several other US studies have been conducted with smaller samples (e.g. Horng, 2009; Chagares, 2016; Abd-El-Hafez, 2015).

Our theoretical framework assumes that teachers make informed job selections based on the attributes that maximise their expected utility or job satisfaction. Similarly, school leaders make hiring decisions based on maximising school outcomes. We conceptualise jobs as a bundle of attributes, many of which are non-pecuniary. Given that some aspects of a teaching job—such as workload, workplace stress, and flexibility—are difficult to quantify in financial terms, there may be efficiency gains from offering employment arrangements that better align with teachers' preferences.

The paired conjoint experiment enables us to estimate the implied pecuniary value of these non-financial job factors, such as the disutility of workload, stressful experiences during the school day, and job flexibilities. To complement this experiment, qualitative research informs and supports the interpretation of our findings. Prior to the experiment, we conduct focus groups to identify a set of relevant job attributes to test. During the experiment, open-ended questions follow each choice task, allowing participants to explain their decisions. Following the experiments, additional focus groups with school leaders explore how schools could implement changes based on the experiment's insights into teachers' preferences. This qualitative component helps assess the credibility of the job adverts presented, enhances our understanding of how stated preferences align with a utility maximisation model, and provides insights for practical implementation.

Ethics and trial registration

Ethical approval for this research project was granted in July 2024 by the ethical review board at University College London (UCL). The review process was comprehensive and encompassed the following key aspects:

- **Focus group materials.** The ethics board thoroughly reviewed the draft Participant Information Sheets and Consent Forms that will be used for the focus groups to be conducted with both teachers and school leaders. These documents detail the purpose of the focus groups, the voluntary nature of participation, data handling procedures, and the rights of participants to withdraw. The review ensured these documents meet ethical standards for informed consent and participant protection.
- **Survey questions and existing protocols.** Recognising that Teacher Tapp is an established research platform with existing ethical protocols, the review process included an evaluation of how the proposed survey questions align with Teacher Tapp's standard terms and conditions (Teacher Tapp, 2024a). This step ensured that the specific questions used in this study adhered to the platform's established framework for ethical data collection.
- **Teacher Tapp privacy statement.** The ethics board also reviewed Teacher Tapp's privacy statement, specifically focusing on its provisions for safeguarding the privacy of panellists (Teacher Tapp, 2024b). This review ensured that the platform's broader data protection measures, adequately protect the privacy of teachers participating in the research.
- **Data transfer and security.** The process of transferring data from Teacher Tapp's secure servers to UCL's secure servers for analysis was also scrutinised. The review focused on ensuring that robust data transfer protocols and security measures are in place to maintain data confidentiality and integrity throughout the research process. This included an examination of the anonymisation procedures to safeguard against the identification of individual teachers or schools.

The ethics review process confirmed that the proposed research adheres to the ethical guidelines set by UCL and the relevant professional bodies. It also addressed specific ethical considerations arising from using the Teacher Tapp platform and conducting research with teachers and school leaders.

This study was registered on the Open Science Framework on 28 October 2024. For further details, follow see: https://osf.io/958zx.

Data protection

All data handling and processing activities associated with this project have complied with the General Data Protection Regulation (GDPR) (GDPR, 2016) and the Data Protection Act 2018. All data collected has been managed to uphold confidentiality, integrity, and security, ensuring the protection of individual privacy throughout the project lifecycle.

In this research, no personally identifiable information (PII) has been collected via surveys. Survey responses are separated from personal data such as users' email addresses and passwords using Google's Firebase System. All data for this project is stored in a GDPR-compliant manner on Education Intelligence Ltd servers, which are designed to securely handle and protect data.

Teacher Tapp employs anonymised data at all times, with app login and password data held on an entirely separate system. The school Unique Reference Number (URN) is the most sensitive piece of data held by Education Intelligence Ltd as part of their routine work as a survey company. For this study, the school URN has not been passed on to the UCL research team, ensuring that the data remains non-identifiable.

The legal basis for processing personal data in this project is GDPR Article 6(1)(f) 'Processing is necessary for the purposes of the legitimate interests pursued by the controller or by a third party, except where such interests are overridden by the interests or fundamental rights and freedoms of the data subject…' (GDPR, 2016). No special category data, as defined under GDPR Article 9, will be processed in this project (GDPR, 2016). Therefore, no legal basis under GDPR Article 9 is required (GDPR, 2016).

The legitimate interests pursued by Education Intelligence Ltd and UCL in this project are:

- **Advancement of educational research.** Conducting research to evaluate educational interventions contributes to academic knowledge and evidence-based practices.
- **Improvement of educational practices.** Findings from the study aim to enhance teaching methodologies and pupil outcomes.
- **Societal benefits.** The research has the potential to positively impact society by improving education systems.

Processing data is necessary to achieve these objectives. Given that no PII or special category data will be processed and that all data will be anonymised, the rights and freedoms of data subjects are unlikely to be adversely affected.

To ensure compliance with GDPR, the project has implemented the following measures:

- **Transparency.** Participants have received clear information about data processing activities through information sheets and privacy notices, outlining the purpose of data collection, handling procedures, and their rights.
- **Data minimisation.** Only data essential for the research objectives has been collected, avoiding unnecessary processing of personal data.
- **Anonymisation.** Data has been anonymised to prevent the identification of individuals. Unique identifiers will be removed, and data will be aggregated where appropriate.
- **Security measures.** Data is stored securely on Education Intelligence Ltd servers, compliant with GDPR standards, with survey responses separated from personal data using Google's Firebase System and with limited transfer to anonymised data to UCL's secure servers.
- **Access control.** Access to data has been restricted to authorised personnel directly involved in the project. The UCL team has not received any PII or school URNs.

- **Data subject rights.** Even though PII is not collected, the project respects data subjects' rights under GDPR, including rights to access, rectify, or erase their data.
- **Personal data.** Any personal data, if collected, will be deleted as soon as it is no longer necessary for the project.
- **Anonymised data.** Will be retained indefinitely for replication and open science purposes, aligning with best practices in scientific research.
- **Third-party compliance.** At project completion, anonymised data will be stored in the Open Science Framework repository, which complies with GDPR and has robust data protection measures.

Data is processed solely for:

- **Conducting educational research.** Evaluating the effectiveness of educational interventions through analysis of anonymised survey responses and focus group data.
- **Advancing knowledge.** Contributing findings to the academic community and informing future educational policies and practices.

Parties with access to data and reasons:

- **Education Intelligence Ltd.** As the data controller, they collect and securely store the data necessary for the project.
- **UCL research team.** Receives only anonymised data for analysis, acting under the instructions of the data controller.
- **Open Science Framework.** Hosts the anonymised dataset post-project for public access, supporting transparency and reproducibility in research.

While no PII is processed, the project ensures:

- **Right to access.** Participants can request access to any data held about them.
- **Right to rectification and erasure.** Participants can request corrections or deletion of their data if applicable.
- **Right to object.** Participants can object to data processing activities.
- **Contact information.** Participants will be provided with contact details to exercise their rights.

This data protection plan ensures compliance with GDPR (GDPR, 2016) and the Data Protection Act 2018 while facilitating valuable educational research. By prioritising data minimisation, anonymisation, and secure data handling practices, the project safeguards individual privacy and upholds ethical research standards.

Project team

- **Professor Rebecca Allen, Chief Analyst, Teacher Tapp.** Led the entire project and had oversight of all areas, particularly in relation to project design, survey question design, survey data collection, and write-up of the research. Conducted the analysis and write-up of research question 3. An expert in surveying teachers, large-scale data collection and analysis, and education policy.
- **Professor John Jerrim, Professor of Education and Social Statistics, UCL Institute of Education.** Brings his expertise in leading substantial projects across the field of education policy research. Has contributed to project design and analysis at all stages.
- **Dr Sam Sims, Associate Professor, Centre for Education Policy and Equalising Opportunities, UCL Institute of Education.** Renowned for his research on teachers. Has contributed to project design and analysis at all stages.
- **Dr Burak Sonmez, Lecturer in Quantitative Social Science, UCL Institute of Education.** Specialises in the design and execution of discrete choice experiments (DCEs). Has led the design of research questions 1 and 2 and has conducted all the quantitative analysis for these parts of the project.
- **Loic Menzies, Researcher and Policy Specialist.** With a distinguished background as the founder and former chief executive officer of the think-tank 'The Centre for Education and Youth', has led the qualitative strand of the project. This has included conducting focus groups and qualitative analysis of open-response survey questions.
- **Iain Ford, Head of Data, Teacher Tapp.** Has made a substantial contribution to the design and visualisation of the survey questions. Has implemented the sampling approach, and other complex quantitative tasks including the fuzzy matching of school names to URNs.
- **Karen Wespieser, Chief Operating Officer, Teacher Tapp.** Has assisted with overall project management and has taken responsibility for recruitment to focus groups.

- **Other members of the Teacher Tapp team.** Members have assisted with technical developments on the survey app to facilitate the project, and on teacher engagement work during the project.

Timeline

Table 2: Project timeline

Date	Activity
July 2024 – August 2024	Project set-up, planning, ethics
July 2024 – September 2024	Teacher Tapp mobile app adjustments for paired conjoint experiment
August 2024 – September 2024	Policy and technical literature review
August 2024 – September 2024	Research question 1: Focus groups—design, data collection, analysis
September 2024	Research question 1: Pilot paired conjoint experiment
October 2024	Research question 1: Data collection
November 2024	Research question 1: Analysis (quant and free-text)
November 2024	Research question 3: Data collection
December 2024	Research question 3: Analysis (quant and free-text)
February 2025	Research question 2: Design and data collection
March 2025	Research question 2: Analysis (quant and free-text)
March 2025	Headteacher focus groups
March 2025	Draft final evaluation report
April 2025 – May 2025	Revisions to the final evaluation report

Methods – research questions 1 and 2

Research question 1: Design

To understand how teachers make job selection decisions, we use a fully randomised paired conjoint experiment, a well-established method for eliciting policy-relevant preferences with minimal choice complexity (Brutger *et al.,* 2023; Zhirkov, 2022). Fully randomised paired conjoint experiments are a specific type of DCE, as we outline in detail below. They allow us to quantify the relative importance of different job attributes by asking teachers to make trade-offs between competing job offers.

At the start of the task, participants are given the following scenario:

> 'You have moved house and need to find a new school. Take a look at these job adverts and see which ones you prefer.'

Teachers are then presented with two job adverts, each comprised of four job attributes, accompanied by the following prompt:

> 'Which job advert do you prefer?'

For each of the two jobs, we randomly assign the value of each of the four attributes from a finite list of possible values.

This design has three key advantages over many alternative research approaches. First, the random assignment of attribute values helps break the link between observable school characteristics and unmeasured factors that may influence job selection, a key limitation of observational studies. This is particularly important given that many non-salary job characteristics, such as working conditions, are correlated with the socio-demographic profile of pupils. Second, the hypothetical moving-house scenario ensures that teachers are not influenced by unstated attributes of their current school, which could otherwise bias responses. For example, without this framing, participants might implicitly compare each job option to their current role, which is shaped by factors such as familiarity with colleagues, proximity to home, or trust in school leadership—all of which are rarely made explicit in job adverts but strongly influence real-world decisions. The moving scenario helps to reduce this kind of status quo bias by requiring participants to consider all options as if starting afresh. Third, the paired conjoint design allows for the simultaneous estimation of the effects of multiple job attributes, providing efficiency advantages over quasi-experimental studies that examine policy interventions one at a time (Hainmueller *et al.,* 2014).

The prompt above asks respondents which job they would 'prefer', rather than 'choose'. This decision was based on feedback from focus groups, in which teachers expressed that 'choosing' between schools on the basis of a job advert felt unrealistic and misaligned with their experience. We therefore, opted for more naturalistic wording that reflected how teachers actually discuss job opportunities. We analyse and interpret the resulting data using the Average Marginal Component Effects (AMCE) framework suggested by Hainmueller *et al.* (2014). In this framework, estimation is based on observed choice frequencies, rather than on utility maximisation. Hence, we do not impose a specific utility function or assume a particular model of choice behaviour, such as a logit framework. Instead, identification of effects relies on the randomised assignment of attribute levels. Additionally, there is no interference between units, as each respondent's choices are independent and attribute levels are fully randomised across profiles.

While paired conjoint experiments offer valuable insights into decision-making, they also have some limitations. Designing decision-making tasks that are both realistic (contain a sufficiently wide range of relevant attributes) and cognitively manageable can be challenging. Overly complex profiles may overwhelm participants and compromise response quality. Additionally, because conjoint experiments use hypothetical scenarios, they may not fully capture the complexity of real-world decision-making, introducing the risk of hypothetical bias. Finally, although non-parametric approaches like AMCEs avoid strong model-based assumptions such as Independence of Irrelevant Alternatives (IIA), the repeated exposure to certain attributes across tasks may influence how respondents interpret their importance. These limitations are especially

relevant when studying how teachers evaluate job adverts, as real-life decisions are likely to be more deliberative and contextually rich than the structured, time-limited comparisons within an experimental setting.

Job advert attributes

The process of developing job attributes for this study followed a structured, multi-phase scoping and pretesting process, incorporating desk research, focus groups, survey question testing, and technical validation. This process was designed to ensure that the final set of job attributes used in the conjoint experiment were valid and provided a reasonable approximation to real-world teacher decision-making. We consider the scoping and pretesting phase a key strength of our study design. As Campoamor *et al.* (2024) highlight, pretesting is critical to enhancing the validity, reliability, and relevance of survey-based experiments while minimising bias, burden, and error. Despite its importance, pretesting is often overlooked in DCE research: fewer than one-fifth of DCE studies report including pretesting in their development (Campoamor *et al.,* 2024, p. 109, p. 116).

Phase 1: Desk research

Our initial phase involved a comprehensive review of existing discrete choice studies, as well as broader survey literature, to establish, which job attributes teachers value most. Particular attention was given to studies from both the UK and the US, with a focus on attributes for which teachers' have shown willingness to forgo a salary (e.g. Burge *et al.,* 2021; Lovison and Hyunjung Mo, 2024). The full literature review is in Appendix A, so here we summarise the rationale for inclusion of attributes in relation to key papers.

Burge *et al.* (2021) is the most closely related study and directly informed several aspects of our research design. Their work provides detailed evidence on how teachers in England respond to changes in pay, pension arrangements, and pay scale progression. Given our specific focus on job attributes that could be influenced by school leaders, we chose not to replicate their analysis of these financial attributes. Instead, we drew on their findings to identify a subset of non-financial job characteristics that were both policy-relevant and less well researched. In particular, Burge *et al.* (2021) found that professional development opportunities, job flexibility, pupil behaviour, and total working hours had measurable effects on teacher preferences. We therefore, selected and refined these attributes for inclusion in our study, as they are both actionable at the school level and often difficult to specify clearly in job adverts (highlighting the value of further investigation).

In the US, Lovison and Hyunjung Mo (2024) found that both full-time school nurses and school counsellors were more attractive than pay rises in attracting teachers to schools. However, neither of these jobs is directly translatable to the UK context. Instead, we focused on the development of proxies to support staff provision that could be applicable to both English primary and secondary school settings. Clearly, the risk is that other workload reduction approaches are less clear and concrete than the provision of support staff and this could affect their appeal. Their study also found that class size reductions and childcare subsidies were valued by teachers, which motivated us to include them in our study. In addition, we drew on Chong *et al.'s* (2024) survey of senior leaders and their analysis of job adverts in England. This provided a broad set of attributes commonly mentioned in adverts and perceived as important by school leaders. Their research highlighted the frequent use of loosely specified 'soft' job attributes, including references to school culture, pupil behaviour, workload, professional development, and respect for teachers within the local community.

Phase 2: Focus groups

Following the desk research, we conducted four online focus groups with primary and secondary school teachers to refine the job attributes, improve clarity, and minimise bias. These focus groups were advertised via Teacher Tapp to classroom teachers in mainstream state schools. The groups, each comprising four to eight teachers, were split by phase to allow for more focused discussion.

A semi-structured protocol guided the focus groups, addressing four key domains:

1. **Content.** Ensuring that the attributes captured the key factors teachers consider when selecting roles.
2. **Comprehension.** Evaluating whether teachers could envision the proposed scenarios and decision contexts.

3. **Presentation.** Identifying the most effective wording and format for the attributes.
4. **Elicitation.** Exploring trade-offs and the heuristics underlying decision-making.

We prioritised testing 'soft' attributes such as school culture and ethos, as these are inherently more difficult to define and assess than 'hard' attributes like salary. The first two focus groups cognitively pretested the proposed attributes, while the latter two reviewed revised statements and examined the design of the choice task that would later be presented in the Teacher Tapp mobile app.

The focus groups suggested that school ethos, leadership, staff well-being, and professional culture, were the most valued job attributes. Participants also flagged potential omissions, such as leadership structures and school demographics. There was notable variation in how teachers interpreted attribute descriptions, with some preferring concrete details and others favouring broader, more flexible statements. Additionally, credibility varied across job attributes, for example, parents' surveys were seen as more reliable than staff surveys or Ofsted (Office for Standards in Education, Children's Services and Skills) reports, and terms like 'protected Planning, Preparation, and Assessment (PPA) time' were highly valued. A full summary of the focus group methodology and findings is provided in Appendix B.

Phase 3: Survey testing

To further refine the attribute levels, we conducted a series of survey questions via the Teacher Tapp mobile app, focusing on attributes that were challenging to define clearly in words—namely professional development, pupil behaviour, workload, and leadership (see Appendix C). These survey questions asked teachers, which job attribute they preferred from short lists. The survey findings provided valuable insights into teacher preferences:

- **Continuing Professional Development (CPD).** Around 45% of teachers preferred external courses chosen by the teacher, when presented with a short list of alternative professional development options.
- **Workload.** Around 70% of teachers favoured a 35-hour work week with centralised support for non-core tasks over soft statements expressing a commitment to reduce workload (though some expressed scepticism about its feasibility).
- **Leadership.** Around 79% of teachers valued proactive support from school leaders over autonomy.
- **Behaviour management**. Teachers preferred statements describing clear policies and consistent expectations over feedback from parent and pupil surveys.

Phase 4: Technical validation

As a final step, we conducted a technical check of the paired conjoint experiment on an ineligible sample (mostly teachers working outside England or with incomplete demographic data). While these teachers were excluded from the main experiment, their job characteristics were similar to those of the target sample, making them suitable for piloting. This step allowed us to ensure clarity in wording and task comprehension without depleting the primary sample. An open-ended response section was included to capture any potential misunderstandings or ambiguities in the attribute descriptions.

Number of attributes to display

Studies exploring teacher job preferences typically present between four and seven attributes in each school profile. Deciding how many attributes to include involves a trade-off that depends on the study context (Bansak *et al.,* 2019). Including too many attributes can overwhelm respondents, leading them to engage in *satisficing*, that is, providing less thoughtful responses to reduce effort. For instance, Lovison and Hyunjung Mo (2024) found that when teachers were shown seven attributes, they paid noticeably less attention to the fourth item in the list compared to those at the top or bottom. By contrast, including too few attributes can hinder interpretation. If respondents assume that a presented attribute is linked to an omitted attribute, this can distort results. More precisely, the effect of the omitted attribute becomes bundled into the effect of the presented attribute, which is known as *masking*. In an empirical study, Bansak *et al.* (2019; 2021a) found only modest increases in survey satisficing when respondents faced large numbers of attributes, which suggests that displaying more attributes in a given choice task may represent the best trade-off. However, a distinctive challenge in our study is that, unlike in Banksak *et al.* (2019; 2021a) papers, participants responded via their mobile phone, rather than on a large computer screen. This makes presenting large numbers of attributes in a single choice task more challenging than normal.

One way to mitigate the trade-off described above is to use a partial profile design. This involves only including a subset of job attributes in the study in any given choice task. For example, some choice tasks would include different approaches to organising PPA time, while others would not. This approach has the advantage of allowing for a large total number of attributes to be included in the study, while keeping the number of attributes in any given choice task more manageable. Given the small screens on which our participants responded, we chose to adopt this partial profile design. More precisely, we split our attributes into four sets (or 'decks'), each of which contained four attributes. We included salary in all decks and therefore, all choice tasks. This ensures that the effects of all attributes could still be (indirectly) compared in terms of how much salary respondents would be willing to give up to obtain them.

One downside of the partial profile design is that the results from choice tasks containing different attributes are not directly comparable. This is because the (average marginal component) effects for each attribute are estimated over the margins of all the other attributes included in a choice task. In a partial profile design, different choice tasks include different attributes, which means we are estimating subtly different quantities. To test whether our results are robust, we run an additional conjoint experiment in which we take the most highly valued attributes from each deck, combine them in a new deck, and then rerun the survey. This allows us to check whether the effects of each highly valued attributes differ depending on which attributes appear next to them in a choice task.

Specifying salary options

Within the experiment, salary options are presented as 'same salary as present', '5% increase', and '10% increase', rather than using nominal amounts such as '£5,000 increase'. This approach has been widely adopted in other job choice conjoint survey experiments because the proportional changes have a more consistent meaning when applied across teachers with salaries varying from £27,000 to £76,000 or more. Using cash values, by contrast, would lead to a situation in which, for example, a £5,000 increase for a teacher with a £27,000 salary would likely have a very different value to a £5,000 increase for a teacher with a £76,000 salary. Presenting nominal amounts would risk introducing irrelevant or unrealistic options for respondents at different salary levels. For instance, a £15,000 increase might be plausible for a teacher moving into a leadership position but would be implausible for early career teachers.

We acknowledge that this approach may introduce some cognitive burden, as respondents need to calculate percentage changes to their salary during the task. However, we believe the benefits of using percentages outweigh the drawbacks. To mitigate cognitive burden, the instructions explicitly clarify that the percentages apply to respondents' current gross salary and include only simple calculations that are straightforward to process. This approach helps ensure that salary choices are equitable and meaningful across the diverse range of teaching roles.

Table 3 below sets out the final list of attributes used in the teacher paired conjoint experiments. The column 'Deck' shows how they were grouped in the main round of experiments, with salary appearing in every deck.

Table 3: Final list of job advert attributes and levels

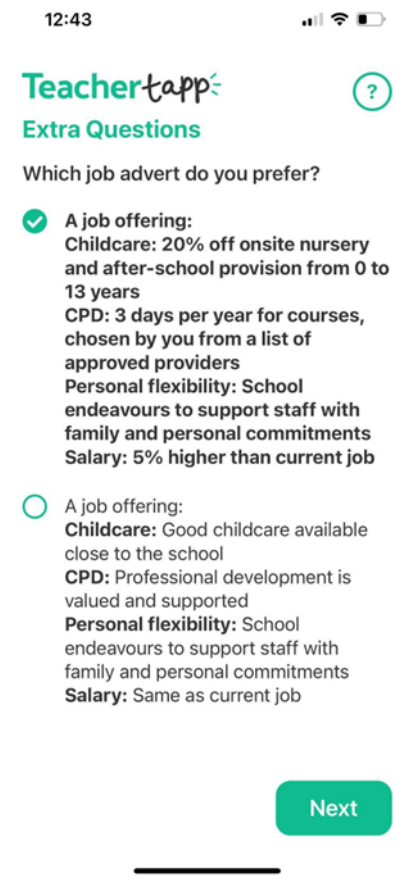
Deck	Level 1 (baseline)	Level 2	Level 3
ALL	**Salary:** Same as the current job	**Salary:** Around 5% higher than the current job	**Salary:** Around 10% higher than the current job
1	**Flexible working:** Requests considered within statutory frameworks	**Flexible working:** Accommodated wherever practical	**Flexible working:** Commitment to meet all requests
1	**Healthcare:** Staff health and well-being is supported	**Healthcare:** Time off for appointments and a well-being helpline	**Healthcare:** Free dentistry, physio, counselling, time off for appointments and a well-being helpline
1	**Collegiality:** Friendly staff community	**Collegiality:** Collaborative and friendly staff community with protected co-planning time	
2	**Personal flexibility:** School endeavours to support staff with family and personal commitments	**Personal flexibility:** Flexibility, within reason, to meet all important family and personal commitments	

2	**Childcare:** Good childcare available close to the school	**Childcare:** Around 20% off on-site nursery and after-school provision from birth to 13 years	**Childcare:** Around 40% off on-site nursery and after-school provision from birth to 13 years
2	**CPD:** Professional development is valued and supported	**CPD:** Three days per year for courses, chosen by you from a list of approved providers	**CPD:** Six days per year for courses, chosen by you from a list of approved providers
3	**Protected PPA time:** Minimum 10% for all staff	**Protected PPA time:** Minimum 20% for all staff	**Protected PPA time:** Minimum 30% for all staff
3	**PPA working location:** PPA time distributed throughout the week and to be taken on school site	**PPA working location:** Option to block PPA time to facilitate late starts and/or early finishes	
3	**Workload:** Commitment to support staff with manageable workloads	**Workload:** Commitment to cut workload through manageable expectations	**Workload:** 35-hour week guaranteed, with support for planning, marking, and data, plus central management of non-core activities
4	**Leadership:** Supportive school leadership team	**Leadership:** Leaders and staff set priorities together, with proactive support as needed	
4	**Class sizes:** No more than 30 pupils	**Class sizes:** No more than 26 pupils	**Class sizes:** No more than 22 pupils
4	**Behaviour management:** Pupil behaviour is consistently good	**Behaviour management:** High standards of behaviour based on clear policies and consistent expectations	

In addition to the conjoint profiles, we always finish with an open-ended question inviting teachers to explain the choices they made.

An example of the survey questions asked to teachers is shown below in Figure 1.

Figure 1: Screenshot of the Teacher Tapp mobile app



Paired conjoint experiment – design considerations

Typically, in DCEs, the levels of each attribute are not fully randomised. Instead, they are deliberately structured to support more efficient statistical analysis and clearer data interpretation. These structured designs often rely on model-based approaches, such as the McFadden model, to estimate how people make decisions.[1]

This study takes a different approach. Rather than using a traditional structured DCE design, we use a fully randomised design in which attribute levels are assigned without constraints across job profiles. This makes the analysis simpler: we can estimate stated preferences using straightforward Ordinary Least Squares (OLS) regression because the random assignment automatically introduces enough variation in the data. We do not need to build complex experimental structures in advance.

The next section outlines the advantages of using fully randomised paired conjoint experiments, especially when compared with standard DCEs. In studies with large sample sizes such as this one, full randomisation ensures that each attribute level appears equally often (a property known as orthogonality that can also be achieved through fractional factorial designs). This reduces the risk of hidden biases caused by design choices and makes it possible to explore how different attributes interact, without needing to predefine combinations (Hainmueller *et al.,* 2014; Egami and Imai, 2019; Leeper *et al.,* 2020; Bansak *et al.,* 2021b; Abramson *et al.,* 2022). Given our focus on understanding the complex trade-offs teachers make when evaluating jobs (or that school leaders consider when recruiting) we believe that this randomised paired design offers a strong alternative to traditional factorial designs. This type of design is well-established. It combines standard conjoint analysis with a potential outcomes' framework used for causal inference. A key advantage is that it allows for the estimation of the AMCE. This means we can identify and estimate the causal effect of each attribute level without making strong assumptions about the model.

We use both AMCEs and Marginal Means in our analysis. AMCEs show how changing one attribute (e.g. salary) affects the likelihood of a job being chosen, holding everything else constant. This helps us understand the causal impact of specific job features. Marginal means, in contrast, show the overall popularity of each attribute level, averaging across all possible levels of the other attributes. They offer a useful descriptive snapshot of teacher preferences, without being dependent on a reference category. We summarise the differences between these design choices in Table 4 below.

Table 4: Comparisons of different factorial designs

Feature	Traditional conjoint	DCE	Fully randomised paired conjoint
Design methodology	Fractional factorial or orthogonal	D-efficient or Bayesian designs	Full randomisation
Attribute-level combinations	Constrained	Constrained	Unconstrained (within plausible ranges)
Flexibility	Limited by design constraints	Limited by design constraints	High
Bias control	Structured designs ensure balance	Structured designs ensure balance	Balance achieved via randomisation over large samples
Statistical model	Part-worth utilities (OLS, logit)	Utility-based models (logit)	AMCEs using linear regression

Altogether, this design is empirically tractable under four empirically testable assumptions. First, we assume there are no carryover or deck order effects, meaning that responses in one round of assessing profiles do not influence responses in

[1] The McFadden model, also known as the conditional logit model, is a foundational approach in discrete choice analysis. It estimates the probability that an individual selects a particular option from a set, based on the attributes of the alternatives. The model assumes that individuals choose the option with the highest utility and that the unobserved components of utility follow a Gumbel distribution, allowing for tractable estimation and interpretation of attribute effects.

subsequent rounds. To validate this, we empirically test whether observations from each respondent can be treated as independent. Second, we assess whether our randomisation procedure has produced a balanced within-subjects design. Specifically, we check that each level of the conjoint attributes is equally likely to appear across different participant characteristics (covariates), ensuring that the design is not confounded by observable differences in the sample. Third, we show whether the positionality of the profiles (e.g. top or bottom on the screen) affects our estimates. Finally, we check the frequency distribution of each attribute level across all profiles to confirm that the randomisation process worked as intended.

Forced choice design

This experiment employs a forced choice conjoint design, requiring participants to choose between the two presented options without the possibility of opting out. A key advantage of this approach is that it compels respondents to make trade-offs, potentially revealing relative preferences with greater clarity. By removing the option to 'opt out' or select 'none of the above', this design can encourage participants to carefully consider and prioritise attributes, providing insights into the comparative importance of attributes. It has been found to encourage respondents to more carefully consider the information about the profiles and increase their engagement with the task, while matching with behavioural benchmarks remarkably well (Hainmueller *et al.,* 2015).

However, not allowing respondents to opt out of the choices may lead to upwardly biased estimates, as this set-up does not fully mirror real-world decision-making, where individuals often have the option to reject all available alternatives or simply stay in their current job. In our design, neither of the schools presented in research question 1 represents the status quo of remaining in one's current role. This is why the scenario is framed as a house move: it creates a context in which respondents are plausibly choosing between two new schools, rather than defaulting to their existing post.

Even so, the absence of an opt-out option can still contribute to hypothetical bias, as participants may make choices in the experiment that they would not make in real life (Carson *et al.,* 1994; Hensher, 2010). It can also raise concerns about incentive compatibility, that is, whether participants are genuinely motivated to express their real preferences. If they feel compelled to choose even when neither option is appealing, their responses may become more random or less thoughtful. Despite these drawbacks, forced choice is particularly suited for studies aiming to rank or prioritise attributes rather than assess absolute acceptability. It may also reduce certain biases, such as an over-reliance on status quo or default options, and can yield richer data on preference rankings.

Research question 2: Design

The design of research question 2 is analogous to that used in research question 1, albeit with a smaller sample of headteachers. The ideal counterpart to research question 1 would have been to ask headteachers to evaluate whether to employ a teacher conditional on needing to provide them with job attributes found to be valuable in research question 1. However, most of the job attributes that were developed for research question 1 could not be given to a single teacher within a school without giving them to other teachers, so this scenario was implausible. We considered asking headteachers to choose how to allocate additional budget towards giving all their teachers these job attributes, but in discussions with headteachers, found it was not possible for them to quickly make these types of budgetary decisions. We therefore, settled on a government policy framing to elicit their high-level views on the policies they found most appealing:

> 'A government is considering new education policies. If your school's budget is increased to cover costs and more teachers are available nationally, which policy combination would you prefer?'

Note that in this wording we ask them to consider what they would 'prefer' for 'their school'. We used the word 'prefer' to ensure they took a broad view of the policy within a normal decision-making process. Some respondents might prioritise the impact on pupil learning, while others may focus more on the implications for the teacher workforce. We deliberately wanted them to consider what was preferred for 'their school' rather than schools across the country, to encourage reflection based on the reality of actual teachers and pupils, rather than imagined schools elsewhere.

Recognising that paired conjoined experiments are a relatively unusual way to look at policy combinations, all respondents saw the following text before the experiment questions:

> 'Heads up! Some of the next questions may look a little unusual – we're testing different way of asking about education policies'.
>
> 'However, your answers really matter, and we need you to consider each question carefully. Your insights will help shape how we understand school leadership priorities'.

Following five such questions, headteachers were invited to share their thoughts on the questions with an open-response question:

> 'Please use this space to share any additional thoughts or context regarding your answers to these questions'.

The far smaller sample of headteachers constrained the number of policies that we could test. We therefore, chose to ask about the government policies associated with job attributes that were most valued by teachers in research question 1. Table 5 below lists the job attributes that were included in the research question 2 experiment.

Table 5: Policy attributes for research question 2

Level 1 (baseline)	Level 2 (reform)
Protected PPA time: Minimum 10% for all staff, as at present	**Protected PPA time**: Funded to cover the costs of a minimum of 20% for all staff
PPA working location: No new government rules on PPA location or timing within the week	**PPA working location**: Funded to cover the costs of blocking PPA time to facilitate late starts and/or early finishes
Workload: Same as now—teachers handle planning, marking, and data management as needed	**Workload**: Funded to cover the costs of capping teacher hours at 35 hours per week, via additional support for marking and admin
Class sizes: Funded at current levels, i.e. classes of 30 are common	**Class sizes**: Funded to cover the costs of reducing classes to a maximum of 26 pupils across all schools

Outcome measures

For research question 1, the primary outcome variable is derived from participants' responses to the conjoint task question:

> 'You have moved house and need to find a new school. Take a look at these job adverts and see which ones you prefer'.
>
> 'Which job advert do you prefer?'

This response allows us to estimate teachers' job preferences based on the randomly assigned job attributes. To quantify these preferences, we report both the **AMCEs** and **Marginal Means**, which measure the relative importance of each job attribute in teachers' selection decisions.

For research question 2, the primary outcome variable is based on a similar conjoint task, where headteachers are asked:

> 'Which policy combination would you prefer?'

This outcome allows us to measure policy preferences based on randomly assigned policy attributes. As with research question 1, we use a fully randomised paired conjoint experiment, which allows us to report the AMCEs and Marginal Means to quantify the relative importance of each policy feature in participants' choices.

Participant selection

Teacher Tapp is the largest teacher survey platform in England, collecting responses from approximately 10,000 teachers each day across the state and private sectors via a mobile app. After downloading the mobile app and verifying their school credentials, teachers receive daily notifications at 3:30 p.m. inviting them to participate in surveys. These surveys include a variety of question types, such as multiple choice, single response, open-ended text, and discrete choice questions. While teachers receive three questions each day as standard, they may opt to respond to extra questions if they wish.

Teacher Tapp continuously collects and updates information on teachers' current schools and demographic characteristics. This approach eliminates the need for pre-treatment background questions within experiments, thereby reducing response fatigue and avoiding any priming effects that could influence responses.

As the country's largest teacher survey platform, Teacher Tapp is exceptionally well-suited for conducting paired conjoint experiments, which require substantial sample sizes. Although the Teacher Tapp panel is not a randomly selected sample, Jerrim (2023) notes that no teacher survey achieves true randomisation due to low-response rates, which typically do not exceed 10%. Furthermore, given the widespread use of smartphones among teachers (Laricchia, 2024), an app-based survey method is no less inclusive than other data collection approaches.

To enhance representativeness, Teacher Tapp employs several strategies:

- Restricting the sample to teachers who provide a valid school name and job information, ensuring relevance to the study.
- Applying post-stratification weights based on observable characteristics such as educational phase, school funding type, gender, age, and job position.
- Cross-checking the panel against key findings from the Organisation for Economic Co-operation and Development (OECD) Teaching and Learning International Survey (TALIS) 2018 survey to validate its representativeness.

Table 6 summarises the target population for research questions 1 and 2.

Table 6: Sample for survey and primary analysis of outcomes

Research question	Targeted for survey	Included in primary analysis of outcomes
1. Teacher paired conjoint experiment	Teachers working in a state or private school in England Excluding headteachers	Teachers working in a state or private school in England Excluding all senior leaders With full demographic information available
2. Headteacher paired conjoint experiment	Headteachers working in a state or private school in England	Headteachers working in a state or private school in England

Sample size

Statistical power in fully randomised conjoint experiments is a function of the number of choice tasks performed by each respondent, the maximum number of levels for any one attribute, and the size of the measured effect in the population. Stefanelli and Lukac (2020) show that effect sizes in conjoint experiments are often small despite large sample sizes. This tends to be the case because researchers either overload their design with a high number of experimental conditions or

have limited trials. The app 'Cjpowr' for conjoint experiments enabled us to calculate power and determine the minimum required sample sizes in forced choice conjoint experiments (Freitag and Schuessler, 2020; Schuessler and Freitag, 2020).

For research question 1, our focus is on treatment probabilities, with a desire to also detect causal interaction effects. We employ uniform randomisation, which ensures that the four possible interaction combinations are presented equally across tasks, each with a probability of 0.25. Based on this design, our calculations with two profiles, each including maximum three levels for each attribute over three trials, we estimated the need for a sample size of at least $N_{individuals}$ = 4,680 and $N_{observations}$ = 28,079 is necessary to achieve the conventional power threshold of 0.8 or higher with a 0.5 alpha. This sample size ensures a satisfactory level of power for detecting interaction effects in the experiment. This information is summarised in Table 7 below.

For research question 2 we base our evaluation of statistical power on the AMCE, rather than the Average Marginal Component Interaction Effects (AMCIE). This estimand allows us to understand how the change in each attribute, relative to a baseline, would affect the probability that headteachers would prefer a certain policy bundle. With just two levels of each attribute with two potential policy bundles over five choice tasks, our calculations suggest that a sample size of at least $N_{individuals}$= 313 and $N_{observations}$= 1,565 is necessary to achieve a power of 0.8.

Table 7: Sample size calculations for research questions 1 and 2

Input criteria	Research question 1 Input values	Research question 2 Input values
Power	0.8	0.8
AMCE	0.05	0.05
Levels of attributes (max)	3	2
Alpha (P rejecting null when true)	0.05	0.05
Number of choice tasks per participant	3	5
Minimum sample size for estimating AMCE	783	313
Minimum sample size for estimating AMCIE	4,680	Not reported

Statistical analysis

In the analysis for research questions 1 and 2, to assess the impact of the attributes on job/policy preferences, we regress the teacher or headteacher choice on all attribute levels (through survey::svyglm() function in R; Lumley *et al.,* 2025) with clustered standard errors to account for the fact that multiple choices are nested within respondents (Hainmueller *et al.,* 2014).

Specifically, we regress the binary choice outcome, Y, for teacher, *i*, who is viewing profile, *j*, for task, *k*, on a vector of indicator variables for each job attribute using the following model:

$$Y_{ijk} = \beta X_{jk} + \epsilon_{ijk}$$

The choice outcome variable, Y_{ijk}, is a binary variable equal to 1 when a teacher selects a profile as preferred, and 0 otherwise. The vector *X* includes indicators for each attribute shown in the profile. Because both the attributes and the profiles are randomly assigned, the model can estimate the independent effect of each attribute on the likelihood that a teacher prefers a particular job (for research question 1) or policy (for research question 2), averaged over all combinations of the other attributes.

These effects are summarised as AMCEs. An AMCE tells us how much the probability of choosing a job or policy changes, on average, when a single attribute level is changed—for example, moving from 'no healthcare benefit' to 'free ancillary healthcare'—while holding everything else constant.

AMCEs are straightforward to estimate using familiar statistical techniques such as differences-in-means or OLS regression. Because they measure the effect of changing just one part of a profile at a time, they isolate the influence of each attribute in a clear and interpretable way.

To understand how one attribute (such as salary) interacts with another (such as class size), we also estimate Average Component Interaction Effects (ACIEs). These capture whether a combination of two attribute levels has a bigger or smaller effect than the sum of their individual effects. This helps us understand which combinations of attributes matter most to teachers or headteachers.

AMCEs and ACIEs are calculated relative to a reference category, for example, comparing 'smaller class sizes' to a default of 'no class size limit'. This means the interpretation can vary depending on which category is used as the baseline, which can be a limitation when comparing across groups (Leeper *et al.,* 2020).

To address this, we also **report Marginal Means—the average favourability** of each attribute level, regardless of reference categories. Marginal Means are not regression coefficients; they simply reflect the proportion of times a given attribute level was chosen whenever it appears. Marginal Means describe how positively or negatively a given attribute level is viewed across all respondents. We calculate these using the mm() function from the cregg package in R.

Robustness checks and sensitivity analysis

We evaluate the robustness of our findings through a series of internal validity checks designed to test whether the experimental design or implementation introduce any systematic biases. Collectively, these checks are designed to provide assurance that the results are not driven by artefacts of the experimental design or the mobile app interface.

1. We conduct an **attribute composition test** to assess whether preferences for individual job attributes are consistent when high-value attributes were presented in combination, rather than isolation.
2. We test for **deck order effects** by randomising the sequence in which participants complete each experiment, allowing us to identify any influence of experiment order on responses.
3. We examine **profile order effects** by randomising the vertical position of profiles within each choice task to check whether participants showed a preference for the first or second option presented.
4. We assess **round effects** by analysing whether the position of a task within an experiment (i.e. first, second, or third) affects response patterns.

The Teacher Tapp panel is sufficiently large to identify differences in job attribute preferences by demographic groups. The existing literature finds some differences, for example, by phase and by age of teacher (Burge *et al.,* 2021; Lovison and Hyunjung Mo, 2024).

To get the correct demographic-based differences in preferences for schools/teachers, we calculate conditional Marginal Means. As recommended by Leeper *et al*. (2020), in order to descriptively characterise differences in preference level between subgroups, we will directly estimate the subgroup difference using conditional Marginal Means and differences between conditional Marginal Means rather than relying on the difference-in-AMCEs.

Qualitative analysis of open-ended responses

To analyse the open-ended responses from the surveys for research questions 1 and 2, we employed an artificial intelligence (AI)-assisted coding approach that combined machine-driven classification with human oversight (using OpenAI ChatGPT 4.0). Our analysis aimed to explore four key research questions: how participants found the decision-making process; the rationale behind their choices; any unexpected factors influencing decisions; and what shaped their valuation of particular job attributes. Responses were first categorised using AI-driven text classification, guided by a

predefined framework based on job attributes (e.g. salary, workload, professional development). Additionally, the AI suggested inductive themes, allowing us to capture any overlooked nuances in responses. However, the inductive approach was applied minimally, as most responses were structured around the existing framework.

The AI-assisted coding process followed an iterative validation approach. Initially, the AI categorised responses, and a sub-sample of 50 responses was manually coded to assess reliability. Adjustments were made based on discrepancies, with multiple rounds of refinement to improve accuracy. However, challenges emerged, including inconsistencies in AI coding across different rounds and a tendency for certain codes to disappear over time. Manual coding of 200 responses provided essential grounding for the analysis, ensuring that the AI-generated categorisation was robust and reliable. This mixed-methods approach balanced efficiency with qualitative depth, allowing researchers to focus on interpretation while mitigating risks associated with AI bias or misclassification.

Finally, manual thematic analysis was conducted on a subset of 30 responses per category, focusing on prevalent themes and respondent rationales. Particular attention was given to ecological validity concerns, such as whether respondents trusted the job adverts' claims or whether they would make different decisions in a real-world setting. A final review of the human-coded sub-sample provided additional insights, particularly for categories where AI classification proved unreliable. While AI-assisted coding had initially appeared promising for rapid categorisation, the human-driven review process proved essential for ensuring accuracy and depth, reinforcing the need for careful validation when applying AI in qualitative research.

This qualitative analysis can be found in Appendix F.

Results – research questions 1 and 2

Participant flow

The teacher job preferences survey experiment took place between 30 October 2024 and 6 November 2024. Participants were required to open the mobile app twice during this period and opt to respond to the questions. As a reminder, while the questions were sent to all panellists who were not headteachers, the analysis was further restricted to those who met the following criteria:

- classroom teachers or middle leaders (i.e. all senior leaders excluded);
- currently working in a school in England; and
- provided sufficient demographic information to be included in the sample.

Table 8 sets out the participant flow for research question 1. Since Teacher Tapp is a mobile app, there are some limitations in measuring the target sample. For example, the mobile app cannot always determine whether it remains installed on a device, nor can it measure whether notifications are enabled. However, given that Teacher Tapp operates as a convenience sample rather than a random sample, these limitations are not particularly significant.

To account for this, the participant flow begins by identifying the number of active non-headteachers in the panel over the four weeks preceding the end of the experiment. 'Active' is defined as having engaged with the mobile app at least three times within this period. The experiment questions were offered as 'extra questions', meaning panellists could choose not to answer them.

The final analysis sample includes 6,666 non-senior leadership teachers with complete demographic data who answered at least one question. Of these, around 87% participated in at least one of the four experiments (one experiment per deck), and 75% participated in all four experiments. Because the order of experiments was randomised across the panel, we did not experience differential attrition between Experiments 1 and 4.

Table 8: Participant mobile app flow for research question 1

Mobile app flow	N	%
Active non-headteacher panellists seen at least three times in a four-week period up to 6 November 2024	11,928	
Non-headteacher panellists who opened the mobile app on one of the experiment days between 30 October 2024 and 6 November 2024	11,660	98% of active panel
Non-headteacher panellists who elected to answer at least one experiment question	10,075	86% of those active on relevant days
Analysis sample: Non-senior leadership teacher with correct demographics who elected to answer at least one experiment question	6,666	
Analysis sample participating in Experiment 1	5,850	88% of analysis sample
Analysis sample participating in Experiment 2	5,821	87% of analysis sample
Analysis sample participating in Experiment 3	5,800	87% of analysis sample
Analysis sample participating in Experiment 4	5,789	87% of analysis sample
Analysis sample participating in all four experiments	5,006	75% of analysis sample

The participant flow for the headteacher policy experiment was straightforward, as it was conducted on a single day—18 February 2025—and included all headteachers in the analysis sample. Table 9 shows that of the 797 headteachers active

on Teacher Tapp in the four weeks prior to 18 February 2025, 664 opened the mobile app on that day, and 424 chose to answer the extra questions. This response rate is consistent with typical engagement levels for extra questions on the app.

Table 9: Participant mobile app flow for research question 2

Mobile app flow	N	%
Active headteacher panellists seen at least three times in a four-week period up to 18 February 2025	797	
Headteacher panellists who opened the mobile app on 18 February 2025	664	83% of active panel
Analysis sample: Headteacher panellists who elected to answer at least one experiment question	424	86% of those opening on day

Teacher and school characteristics

We compare the demographic characteristics of our main sample with those from the 2023/2024 School Workforce Census (DfE, 2024). Since our main sample includes teachers from both state and private schools, we also provide demographic statistics for the state sector subset in Table 10.

The Teacher Tapp sample has a higher proportion of secondary teachers compared to primary teachers. Post-stratification sample weights are not applied; instead, we use subgroup analysis to explore systematic differences in job preferences across demographic groups. The sample is also slightly underrepresented in female teachers and those based in London, likely due to the underrepresentation of primary teachers.

Table 10: Demographic characteristics of teachers in the main analysis for research question 1

Characteristics	Full sample in main analysis (Experiment 1)	State sector in sample	School Workforce Census 2023/2024
Number of (non-senior leader) teachers	N = 5,866	N = 5,426	N = 438,599
Secondary phase %	60%	59%	47%
Female %	75%	76%	77%
Age 40 and over %	48%	48%	44%
London Government Office Region (GOR) %	11%	11%	15%
Three northern GORs %	24%	25%	27%

Table 11 shows that the Teacher Tapp headteacher sample includes a slightly higher proportion of respondents from the secondary phase. As with teachers, we report differences by this subgroup in the analysis below. The proportion of female headteachers in the sample closely aligns with the population.

Table 11: Demographic characteristics of headteachers in research question 2

Characteristics		Full sample	State sector in sample	School Workforce Census 2023/2024
Number of headteachers		N = 424	N = 414	N = 22,517
Of which:	Secondary (% of total)	25%	26%	17%
	Female (% of total)	69%	68%	68%

Research question 1: Main results

We present the results of the teacher job preference experiment, organised by the four separate experiments conducted. For each experiment, we report regression estimates quantifying the value of different job attributes, including salary, alongside relevant insights from the open-ended responses. A full description of the qualitative analysis of these responses can be found in Appendix F.

Each experiment included salary as a baseline attribute alongside up to three additional job attributes. Our sample size is sufficiently large to allow for interaction analyses, enabling us to estimate how the salary level offered influences the value placed on other attributes. As expected, salary increases were consistently highly valued across all experiments, and we report how other attributes compare in relative importance.

In the open-ended responses, salary was the most frequently mentioned theme, appearing in approximately one-third of comments. Many respondents emphasised its importance in the context of a cost-of-living crisis or in light of their personal circumstances. Others highlighted that factors such as work–life balance, job flexibility, and working conditions held greater significance for them. We include relevant quotes alongside each of the experiments below.

How to read the experiment results

In the results below, we present each experiment's findings in a single figure, with the underlying data available in Appendix D. Each figure consists of three panels, each providing different insights into how teachers respond to job attributes.

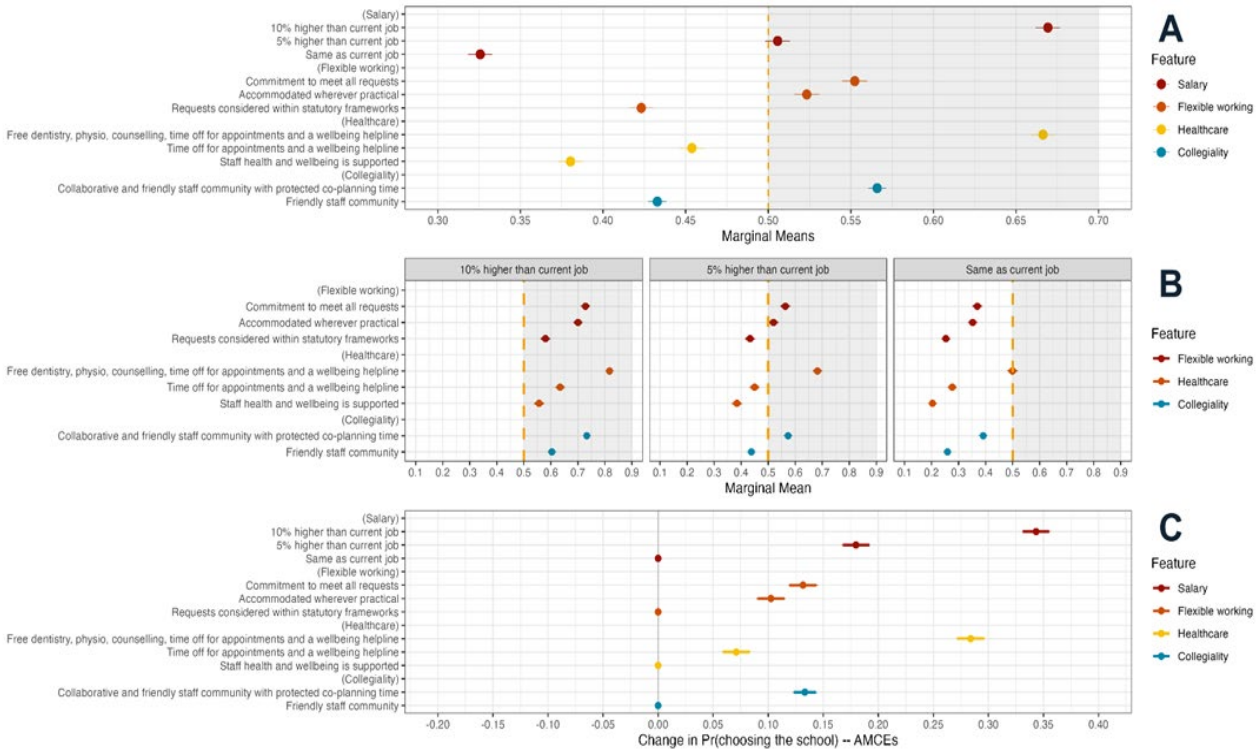
- **Panel A (top) – Marginal Means.** The top part of the figure reports the Marginal Means for each level within each attribute. In a fully randomised paired conjoint experiment, the Marginal Mean represents the proportion of times a job profile containing that attribute level was chosen. This allows us to see how different options within an attribute (e.g. different levels of flexible working) influence job selection. We use this panel to examine whether the ranking of attribute levels aligns with our expectations and to identify, which attributes show the greatest variation in preference.
- **Panel B (middle) – Marginal Means by salary level.** The middle panel presents Marginal Means for the three non-salary attributes, grouped by the salary level offered in the job advert. We first check whether the pattern of preferences within each attribute is consistent with the top panel and whether these patterns hold across different salary levels. We are particularly interested in whether certain job attributes are valued highly enough to compensate for lower salaries—or, conversely, if salary increases overshadow all other factors.
- **Panel C (bottom) – AMCEs.** The bottom part of the figure shows the AMCEs, which represent the change in probability of selecting a job advert when a particular attribute level is included, compared to the baseline (lowest) level of that attribute. Since we designed our attribute levels so that the lowest level roughly reflects the status quo in most schools, these estimates help us understand the relative impact of proposed changes. The AMCEs provide a more direct measure of how much each attribute level shifts job preferences, holding all else constant.

Experiment 1: The value of flexible working, healthcare, and collegiality

Our first experiment examines how teachers value flexible working, healthcare benefits, and collegiality, alongside salary. Figure (panels A and C) shows that teachers strongly prefer schools that offer a 10% salary increase, free ancillary healthcare with time off for appointments, and flexible working arrangements. Specifically, offering a 10% salary increase made a job profile 34 percentage points more likely to be chosen ($p<0.001$), relative to flexible working, healthcare, and collegiality. Similarly, providing free healthcare benefits and time off for health appointments increased selection probability by 28 percentage points ($p<0.001$).

Teachers also expressed a preference for schools accommodating flexible working requests (MM = 0.52, $p<0.001$) or committing to meeting all such requests (MM = 0.55, $p<0.001$), as well as those offering protected co-planning time to foster collaboration (MM = 0.57, $p<0.001$). However, these non-financial benefits were not as strongly valued as free healthcare services (MM = 0.67, $p<0.001$) or a 10% salary increase (MM = 0.67, $p<0.001$), which were the two most preferred attributes. Panel B of Figure 2 further clarifies that when salary remains the same as a teacher's current job, these non-financial benefits are less likely to be decisive factors in job selection.

Figure 2: Job preferences Experiment 1 – AMCEs and Marginal Means for each attribute value



Note: The 95% confidence intervals (CIs) are shown for each point estimate, clustered by individuals. Panel A shows Marginal Means, Panel B focuses on Marginal Means by the salary attribute, and Panel C displays AMCEs. $N_{individuals}$ *= 5,850 and* $N_{observations}$ *= 35,100.*

The open-ended responses highlighted that teachers were more inclined to favour tangible **healthcare** benefits over vague commitments to staff well-being. For example, one respondent noted:

> *I seemed to prefer the ones with tangible benefits rather than vague claims that may or may not prove true like 'commitment to health and wellbeing' which many schools will claim, [similar] but what do they actually do?* (Teacher, open-ended survey response)

For some, healthcare benefits were unnecessary, while others with existing health concerns found them particularly valuable:

> *I do have medical conditions that involve dental treatment, physio and appointments that it's hard to juggle with school hours and I currently have to wait longer to avoid time off school. This has affected my selections.* (Teacher, open-ended survey response)

Teachers expressed frustration at the **lack of flexibility** in current school settings, with many highlighting how personal circumstances, such as childcare or caring for elderly parents, influenced their interest in flexible working. However, some respondents were sceptical about flexible working's feasibility, particularly in terms of its impact on schools and pupils.

Many teachers valued collaborative working environments, particularly where co-planning time was explicitly protected. One respondent noted:

> *Time with colleagues to plan, massively lowers stress and workload.* (Teacher, open-ended survey response)

However, opinions varied on the structure of co-planning. Some preferred optional participation, while others worried about PPA time being repurposed for planning with colleagues. We return to these tensions in research question 2.

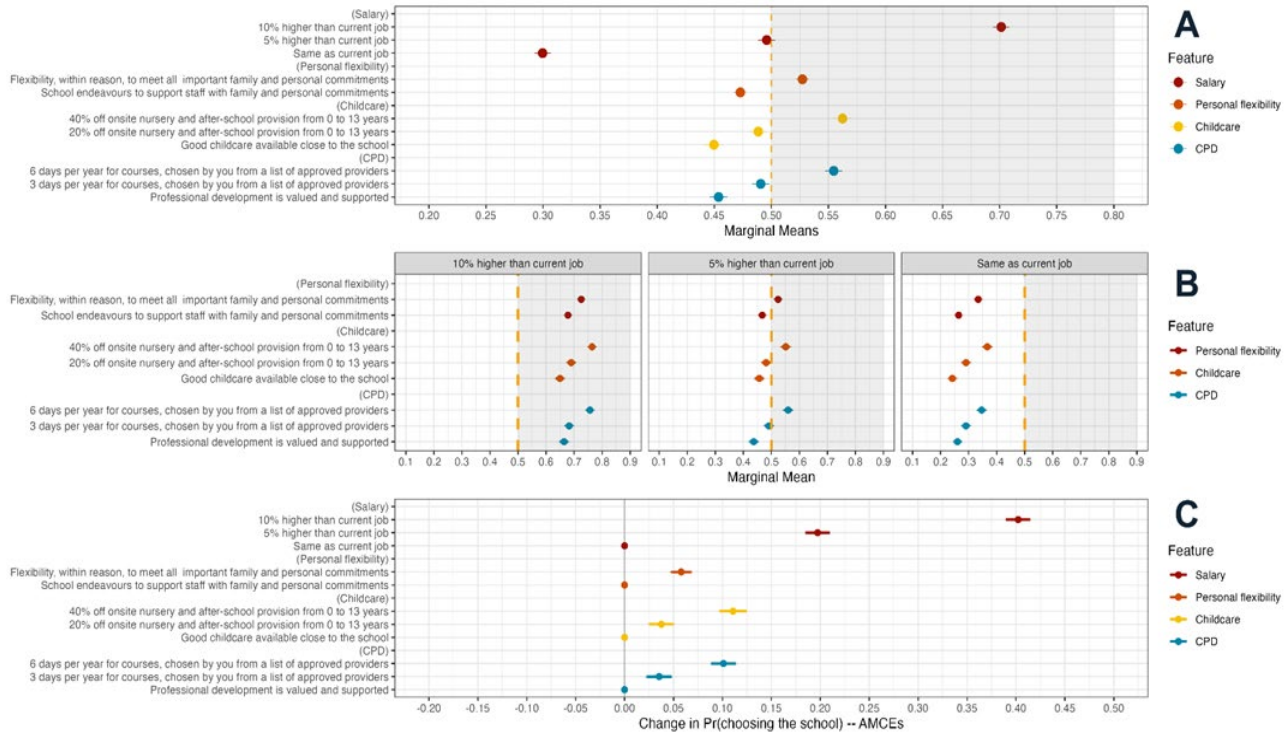
Experiment 2: The value of personal flexibility, childcare, and CPD

The results of Experiment 2 indicate that, relative to salary, personal flexibility, childcare provision, and CPD opportunities are significantly less valued by teachers when making job choices. Figure 3 (Panel A and C) shows that a 10% salary increase raises the probability of teachers choosing a job by 40 percentage points ($p<0.001$), making it the dominant factor in decision-making. In contrast:

- providing six days per year of external CPD increases job selection probability by just ten percentage points ($p<0.001$);
- offering a 40% discount for an on-site nursery has a similar effect, increasing preference by about 11 percentage points ($p<0.001$); and
- offering flexibility for family and personal commitments raises selection probability by only six percentage points ($p<0.001$).

As in Experiment 1, Panel B of Figure 3 demonstrates that none of these non-salary benefits are significantly favoured when salary remains at its current level.

Figure 3: Job preferences Experiment 2 – AMCEs and Marginal Means for each attribute value



Note: The 95% CIs are shown for each point estimate, clustered by individuals. Panel A shows Marginal Means, Panel B focuses on Marginal Means by the salary attribute, and Panel C displays AMCEs. $N_{individuals} = 5{,}821$ *and* $N_{observations} = 34{,}926$.

While childcare was frequently referenced in open-ended responses, many comments focused on its lack of relevance to the respondent's own situation. Some teachers valued the provision highly, particularly those with young children, while others saw it as unnecessary. A number of respondents acknowledged its broader value for colleagues, particularly in retaining talented female teachers:

> *I don't need the cheaper childcare now, but many of my colleagues do, and I have seen too many talented female teachers dropping hours and dropping back from leadership due to childcare costs.* (Teacher, open-ended survey response)

However, some respondents without children expressed resentment about what they perceived as the lack of equivalent benefits for non-parents:

> *Childcare isn't an issue for me, and I actually find it incredibly annoying the amount of flexibility given to parents compared to those who don't have children.* (Teacher, open-ended survey response)

Some respondents noted that on-site childcare might not be appealing to everyone, especially if they already have their child settled in another childcare setting. In such cases, using on-site childcare would mean moving the child, which could be disruptive or inconvenient.

CPD was viewed with scepticism by many teachers, particularly when opportunities were restricted to an approved list of providers:

> *I appreciate CPD but like to choose my own, related to my subject, as it is useful—the school-chosen ones are variable.* (Teacher, open-ended survey response)

Respondents expressed frustration with generic or impractical CPD, preferring hands-on training or subject-specific development:

> *Too much educational guff is forced on staff without extra training. Teaching a practical subject, learning new practical skills would be more beneficial.* (Teacher, open-ended survey response)

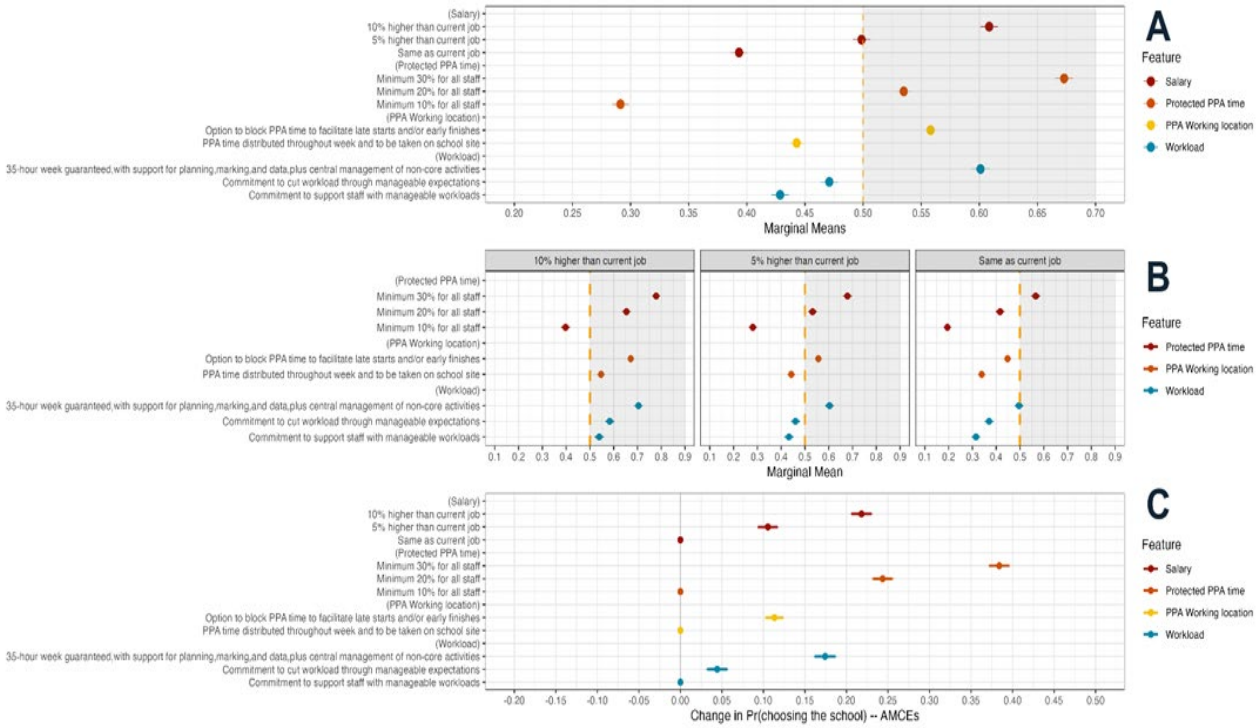
Experiment 3: The value of PPA time, PPA working location, and workload

Unlike Experiments 1 and 2, Experiment 3 finds that some job attributes—particularly increased protected PPA time—are valued more highly than salary increases. Figure 4 (Panels A and C) shows that increasing PPA time from 10% to 30% increases the likelihood of job selection by 38 percentage points ($p<0.001$), relative-to-salary PPA working location, and workload. A 10% salary increase, by contrast, raises job preference by 22 percentage points ($p<0.001$), making it less impactful than a significant boost in PPA time. The effect of increasing PPA time from 10% to 20% is approximately equivalent to a 10% salary increase, demonstrating that structured workload reduction is a powerful incentive.

Teachers also favour blocking PPA time (having it all on the same afternoon or morning) to facilitate late starts or early finishes increasing job preference (MM = 0.56, $p<0.001$). A guaranteed 35-hour work week with structured support for planning, marking, and data is also well-received (MM = 0.60, $p<0.001$).

Critically, minimum 30% PPA time remains attractive even when salary remains at its current level, highlighting the strength of preference for workload reductions (see Panel B).

Figure 4: Job preferences Experiment 3 – AMCEs and Marginal Means for each attribute value



Note: The 95% CIs are shown for each point estimate, clustered by individuals. Panel A shows Marginal Means, Panel B focuses on Marginal Means by the salary attribute, and Panel C displays AMCEs. $N_{individuals}$ = 5,800 and $N_{observations}$ = 34,800.

Many respondents described workload as a more pressing concern than salary, with teachers frequently using terms like *reasonable* or *manageable* when discussing job demands:

> *Whilst an increase in pay would be good, this is always weighed against the experience of the work. Workload and wellbeing outweigh increases in pay.* (teacher, open-ended survey response))

While some respondents welcomed the idea of a guaranteed 35-hour work week, others expressed scepticism, questioning whether such promises would be implemented credibly:

> *A guaranteed 35-hour week sounds like fantasy, but if it could ever happen, I'd love that.* (teacher, open-ended survey response))

PPA was one of the most frequently referenced attributes in open-ended comments. However, preferences for how PPA should be scheduled varied. Some teachers favoured blocking PPA into longer periods to support work–life balance. Others preferred distributing PPA throughout the week to avoid overwhelming stretches of teaching time.

> *Blocking PPA would make work–life balance better—it being distributed through the week doesn't work for me.* (teacher, open-ended survey response))

Teachers were also divided on whether PPA should be taken off-site. Some welcomed the flexibility of working from home, while others saw benefits in staying at school to access resources:

> *The option to take PPA off-site will always be a key factor for me.* (teacher, open-ended survey response))

> *I don't mind having my PPA time on-site, as it helps me keep work at work.* (teacher, open-ended survey response))

Overall, while preferences for how PPA is structured vary, the desire for increased PPA time itself is strong and widely shared.

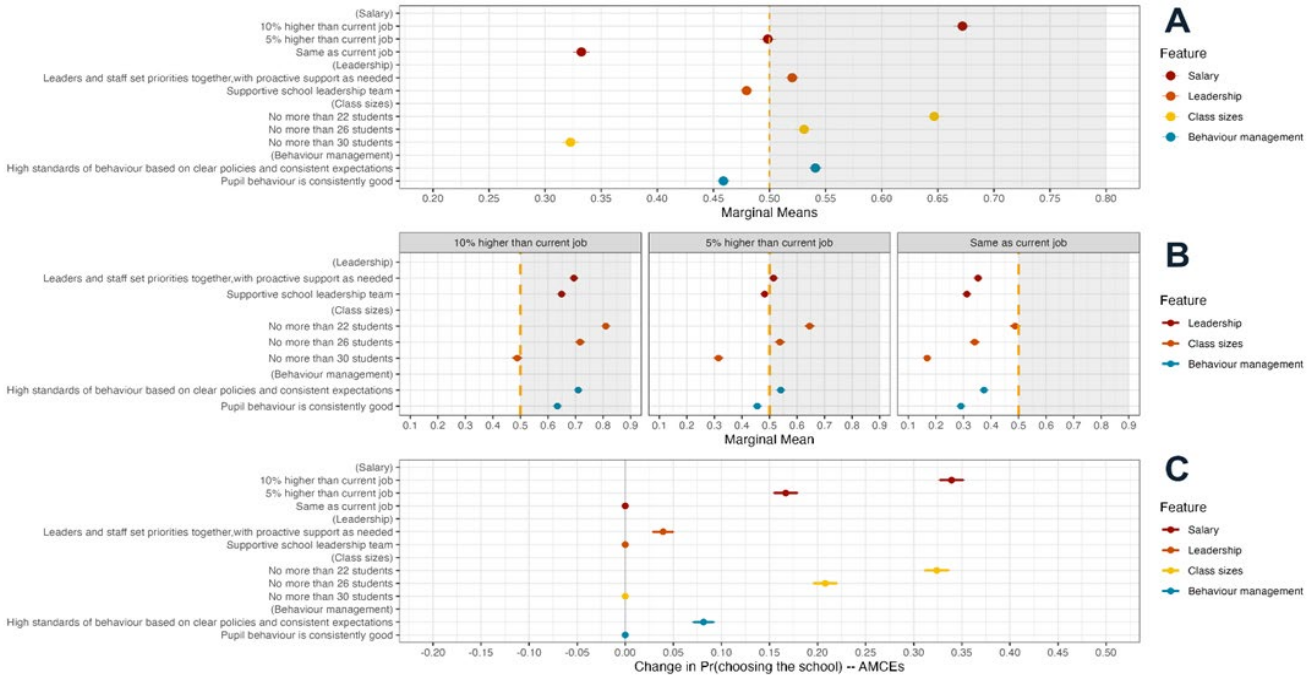
Experiment 4: The value of leadership, class size, and pupil behaviour

Experiment 4 finds that class size reductions are valued nearly as highly as salary increases, while leadership and behaviour management statements are seen as less influential. Figure 5 (Panel A) shows that a 10% salary increase makes teachers 67% more likely to select the job (MM = 0.67, $p<0.001$). A maximum class size of 22 pupils makes teachers 65% more likely to select the job (MM = 0.65, $p<0.001$), indicating that class size reductions are highly attractive. There is non-linearity in class size preferences—that is, the resulting effect is not constant, teachers respond more positively to a reduction from 30 to 26 pupils than to a further reduction from 26 to 22 pupils.

Statements about strong behaviour management and proactive leadership are less influential, with schools offering these being chosen 54% and 52% of the time, respectively (MM = 0.54, $p<0.001$ and MM = 0.52, $p<0.001$, respectively).

These findings suggest that workload-related attributes such as smaller class sizes are stronger drivers of teacher job preference than broad claims about school leadership or behaviour expectations.

Figure 5: Job preferences Experiment 4 – AMCEs and Marginal Means for each attribute value



Note: The 95% CIs are shown for each point estimate, clustered by individuals. Panel A shows Marginal Means, Panel B focuses on Marginal Means by the salary attribute, and Panel C displays AMCEs. $N_{individuals}$ = 5,789 and $N_{observations}$ = 34,734.

Teachers viewed smaller class sizes as beneficial for three key reasons:

1. **Reduced workload.** Smaller classes were seen as a way to make teaching less intense and more manageable:

   Small class sizes are very appealing and have a real impact on workload. (teacher, open-ended survey response))

2. **Greater professional satisfaction.** Some teachers saw smaller classes as enabling them to teach more effectively and support pupils better:

   Smaller class sizes to ensure more effective teaching can take place. (teacher, open-ended survey response))

3. **Better outcomes for pupils.** Others viewed class size reductions as morally desirable, believing they enhance learning and pupil experience:

   Lower class sizes will always be a draw to the moral teacher in me who wants students to have the best possible education. (teacher, open-ended survey response))

However, some respondents downplayed the importance of class size, noting that salary could compensate for larger classes:

> *I've been teaching classes of 60 this last term, money talks more than class sizes.* (teacher, open-ended survey response))

Others pointed out that the impact of class size depends on the nature of the class—for instance, larger groups may be manageable in top sets but much harder with mixed-ability or high-needs groups.

While high expectations for pupil behaviour were generally welcomed, respondents were sceptical of vague claims in job adverts, questioning how behaviour standards would be maintained:

> *'High expectations of pupil behaviour' sounds like BS. Who says behaviour is consistently good?* (teacher, open-ended survey response)

Teachers preferred clear policies on behaviour management rather than generic assurances. Some noted that behaviour management was closely tied to school leadership, with one respondent stating:

> *Student behaviour and a supportive senior leadership team go hand in hand. Behaviour is as good as the structures and consistency in place, which are set and reinforced by leadership.* (teacher, open-ended survey response))

Leadership was not a strong determinant of job preference in the quantitative results, and open-ended responses suggest teachers find leadership claims difficult to evaluate from job adverts alone.

Most teachers wanted supportive leadership but struggled to define what this would look like. Some highlighted the importance of leaders being actively involved rather than just setting policies:

> *There's a big difference between leadership having policies and leadership providing on-the-ground support.* (teacher, open-ended survey response))

Many teachers noted that leadership and behaviour policies can only truly be judged by visiting a school, rather than relying on an advert's description.

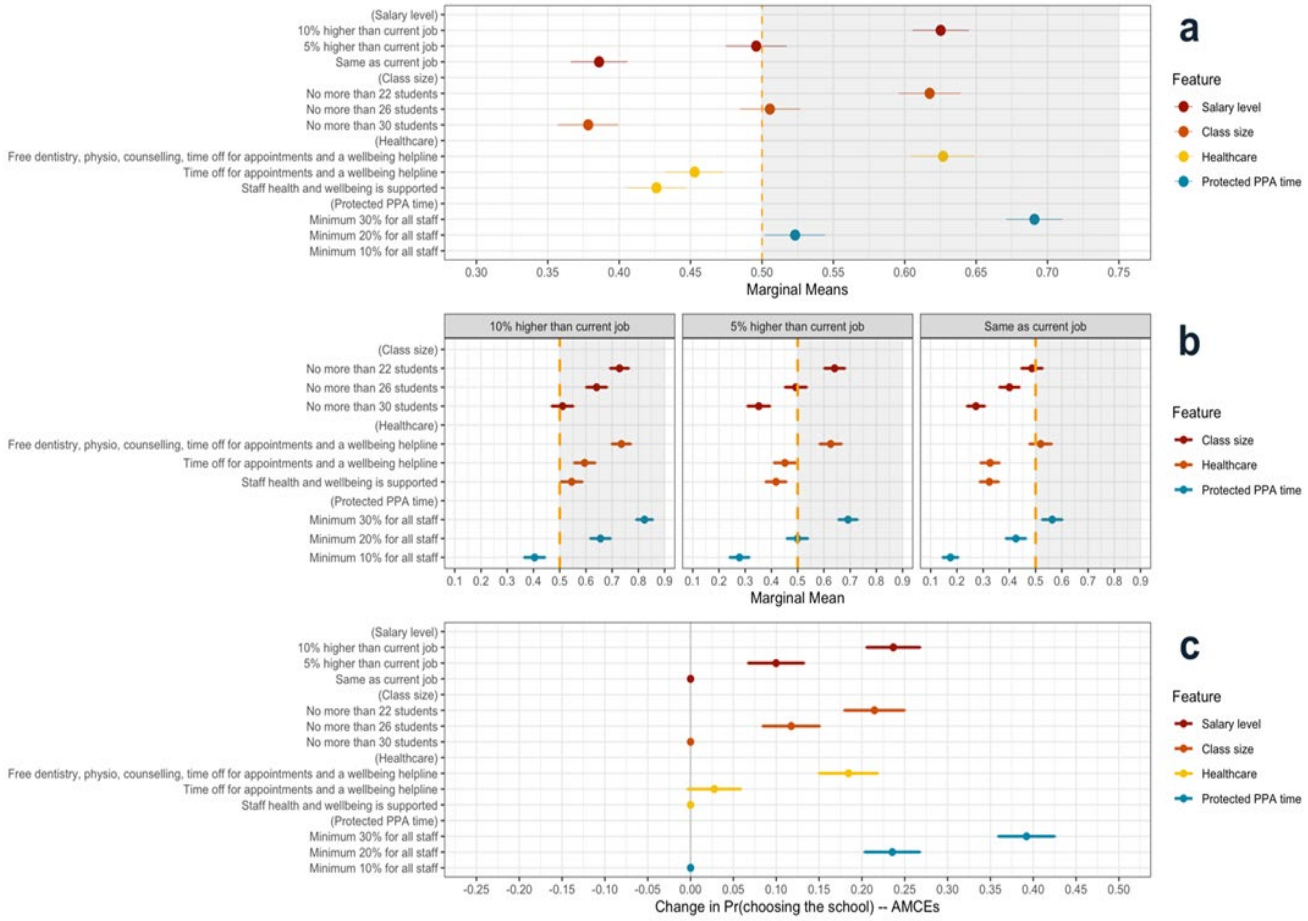
Research question 1: Robustness checks

Attribute composition effects

We conducted a series of internal validity checks to ensure the robustness of our findings. Most notably, we ran a fifth conjoint experiment to test for attribute composition effects. This was intended to check whether preferences for specific job attributes change when those attributes appear alongside different attributes. In this conjoint, we combined the most preferred attributes from the four experiments reported above: salary; class size; healthcare provision; and protected PPA time. This test helps identify whether respondents evaluate each attribute independently or whether certain combinations produce unexpected effects (e.g. if a popular attribute becomes less appealing when paired with others).

Figure 6 shows that the results from this experiment were consistent with the previous experiments. Teachers continued to value 30% protected PPA time most highly, with 69% selecting this option (MM = 0.69, $p<0.001$). This was followed by a 10% salary increase (MM = 0.63, $p<0.001$), well-being-related benefits such as free healthcare and counselling (MM = 0.63, $p<0.001$), and smaller class sizes capped at 22 pupils (MM = 0.62, $p<0.001$). These results provide reassurance that the earlier preference estimates are stable and not substantially altered by the presence of other favourable attributes within the same profile. This strengthens the case for interpreting each attribute's effect as distinct and additive.

Figure 6: Job preferences Experiment 5 – attribute composition effect



Deck order effects

To assess whether the order of presentation influenced responses, we randomised the sequence in which teachers completed the experiments (i.e. the decks). For example, on Day 1:

- 25% of teachers saw Experiment 1 followed by Experiment 2;
- 25% of teachers saw Experiment 2 followed by Experiment 1;
- 25% of teachers saw Experiment 3 followed by Experiment 4; and
- 25% of teachers saw Experiment 4 followed by Experiment 3.

On Day 2, teachers were shown the remaining experiments in a similarly randomised order. Deck order could potentially affect responses if, for example, participants experienced response fatigue and began to focus on a single attribute (such as salary), or if exposure to certain attributes in earlier decks influenced how they assessed later ones.

Figure A13 in Appendix E shows no evidence of deck order effects on response patterns, providing reassurance that the order in which experiments were presented did not bias the results.

Profile order effects

In each task, teachers were shown two job advert profiles stacked vertically and asked to select the one they preferred. The order in which profiles were displayed was randomised by the app, meaning that profile order should not systematically bias preference estimates. However, differences in position could affect the precision of estimates if respondents were marginally more likely to select one position over the other.

Figure A14 in Appendix E shows no statistically significant profile order effect. However, there is a slight tendency for respondents to select the profile that appeared second in the list. This minor bias is unlikely to have meaningfully impacted the results.

Round effects

Within each experiment, participants answered three choice tasks. The position of a question—whether it appeared first, second, or third—can potentially affect responses. Such round effects may arise due to fatigue or because participants' understanding of the task evolves as they progress through it.

Figure A15 in Appendix E shows little evidence of round effects overall, with the possible exception of questions involving statements about PPA levels and blocking. While this is most likely due to chance, it could also reflect something substantive about those questions—for example, more complex language or a higher level of difficulty in making a choice.

Research question 1: Subgroup analysis

In this section, we descriptively characterise differences in preference level between subgroups by directly estimating conditional Marginal Means. Here, we simply summarise the important subgroup differences, with the relevant data presented in Appendix D.

Secondary versus primary phase

Primary and secondary teachers show notably different preferences regarding PPA time. Figure A1 in Appendix D illustrates that primary teachers have a stronger preference for their PPA time to be *blocked*—to allow for late starts or early finishes—rather than distributed across the week. In contrast, secondary teachers show only a weak preference for this working pattern (MM = 0.60 for primary vs 0.54 for secondary). While both phases value an increase in PPA time to 20% equally, secondary teachers place greater value on increasing it to 30% (MM = 0.64 for primary vs 0.69 for secondary).

Other differences in job preferences between the phases are marginal. Primary teachers place slightly more value on a collaborative working environment with protected co-planning time (MM = 0.58 vs 0.56), and slightly less value on statements relating to pupil behaviour (MM = 0.52 vs 0.55).

Private versus state sector

Teachers currently working in private schools show some distinct preferences, likely reflecting the typical working conditions within their sector. For example, Figure A2 in Appendix D shows that private school teachers place significantly greater value on smaller class sizes, with a Marginal Mean of 0.73 for a maximum class size of 22 pupils, compared to 0.64 among state sector teachers. For many private school teachers, a class size of 30 pupils would represent a substantial increase from their usual experience. As a result, they may be more concerned about the potential impact on teaching quality and workload, and thus, more willing to trade-off salary to avoid larger classes.

Private school teachers also place greater value on on-site childcare subsidies (MM = 0.59 vs 0.56). This may reflect the fact that such provision is relatively common in private schools, meaning teachers may already be using it and can immediately quantify its value. Even if they are not current users, they may have a clearer appreciation of the benefit compared to state sector teachers, who generally work in settings without access to on-site childcare.

By contrast, private school teachers place slightly less value on some other job attributes. They are less attracted to statements about collaborative working environments with protected co-planning time (MM = 0.54 vs 0.57), and they place lower value on high standards of pupil behaviour (MM = 0.51 vs 0.54).

Seniority, experience, and age

The demographic variables of seniority, experience, and age are closely correlated. For simplicity, we use experience (as shown in Figure A5 in Appendix D) as the basis for the analysis presented here.

There is some weak evidence that early career teachers place slightly higher value on CPD days (MM = 0.57 for those with less than five years of experience vs 0.54 for those with over 20 years). However, this should be viewed in the context of a relatively low overall value placed on CPD across all groups.

Newer teachers also appear to place greater value on statements about high standards of pupil behaviour (MM = 0.55 for those with less than five years of experience vs 0.53 for those with over 20 years).

Figure A4 in Appendix D presents the job attribute preferences of senior leaders—specifically deputy and assistant heads—who were included in the data collection but excluded from the main analysis sample, as many do not spend the majority of their time in the classroom.

As might be expected given the nature of their roles, senior leaders place slightly lower value on certain classroom-focused attributes. For example, they value 30% protected PPA time less highly (MM = 0.65 vs 0.67 for the main sample) and place slightly less value on smaller class sizes (MM = 0.63 for a class size cap of 22 pupils, compared to 0.65 in the main sample). They are also less responsive to strong workload reduction policies that might be complex to implement such as a 35-hour working week (MM = 0.57 vs 0.60).

Salary and household financial position

We include two measures of household financial position in our dataset: i) an indicator of whether the teacher feels their household has sufficient income to get by each month; and ii) a measure of teacher salary, grouped into four categories.

There is no evidence that teachers in financially precarious households have job attribute preferences that differ meaningfully from other teachers. While they naturally value higher salaries, they appear to value other job characteristics—such as reduced workload and improved working conditions—just as highly as their peers.

Teachers in the highest salary band do tend to place greater value on a 10% salary increase compared to other groups (see Figure A7 in Appendix D). This is perhaps unsurprising, as the nominal value of such a percentage increase would be largest for those already on higher salaries, as discussed in the 'Methods' section.

Children and caring duties

We include two measures of teachers' caring responsibilities outside of work. The first captures the age of the youngest child living at home, grouped into four categories. The second is a binary indicator of whether the teacher has regular caring duties for someone—typically their own child, but potentially an elderly or disabled relative.

As expected, these groups place particular value on two specific job attributes (summarised in Figure A9 in Appendix D). First, they value assurances that all flexible working requests will be accommodated (MM = 0.59 for those with children under five, compared to 0.55 for those without children at home). Second, those with children under five place especially high value on the 40% childcare subsidy (MM = 0.67 vs 0.55 for those without children at home).

In the cost estimates that follow, we assess whether the value placed on this childcare provision is in line with, or exceeds the value placed on salary, given previous studies' findings (Lovison and Hyunjung Mo, 2024).

Other demographic subgroups

Appendix D includes data for additional demographic subgroups not discussed above, including region (Figure A12) and teacher sex (Figure A11). There is no evidence of variation in job attribute preferences by region. While some differences emerge by teacher sex, these likely reflect broader structural patterns—such as the higher proportion of male teachers in the secondary phase and their lower likelihood of taking on caring responsibilities within the household.

Research question 1: Conclusion

The research question 1 experiments provide clear evidence that improving working conditions, particularly through tangible workload reductions, can substantially increase the attractiveness of teaching roles. Three attributes consistently stood out: offering 30% protected PPA time; reducing class sizes to 22 pupils; and providing ancillary healthcare including

time off for appointments. Each of these had a Marginal Mean comparable to, or exceeding, the effect of a 10% salary uplift, indicating that they are valued as much as significant pay increases.

Other attributes with a positive effect included guaranteed 35-hour working weeks, flexible working arrangements, and subsidised on-site childcare. While these were generally less powerful than PPA, class size, or healthcare offers, they were still preferred to the status quo. In contrast, more generic statements, such as a commitment to reduce workload or promote supportive leadership, had modest effects on their own.

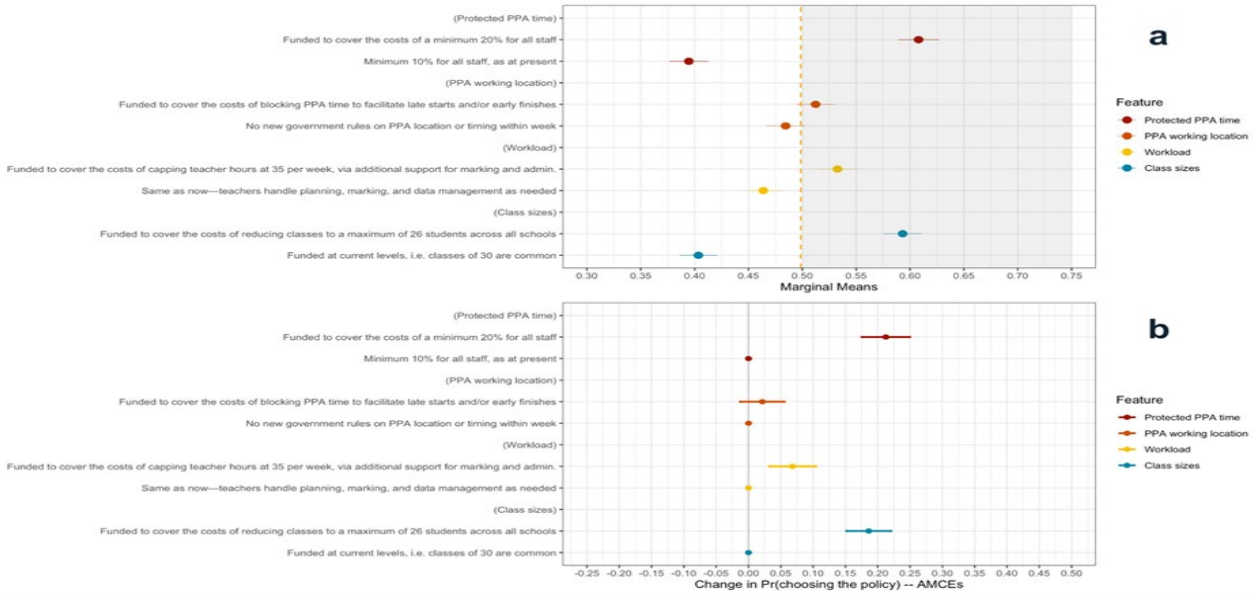
The findings also point to important differences between primary and secondary teachers. Primary teachers placed greater emphasis on blocked and off-site PPA, as well as collaborative planning time, whereas secondary teachers valued total PPA time more consistently. These phase-based differences have clear implications for the feasibility and impact of policy design.

Research question 2: Main results

This section presents the results of the headteacher policy preference experiment, examining the relative importance placed on different policy initiatives. Specifically, we analyse headteachers' preferences for policies that fund increased PPA time, reduce class sizes, and provide additional support to cap working hours. These were selected because they were valued by teachers in research question 1 and because we felt they were most amenable to a national government policy initiative.

Figure 7 (Panels A and B) reveals that headteachers strongly favour policies that fund increased PPA time, reduce class sizes, and provide additional support to cap working hours.

Figure 7: Headteacher policy experiment – AMCEs and Marginal Means for each attribute value



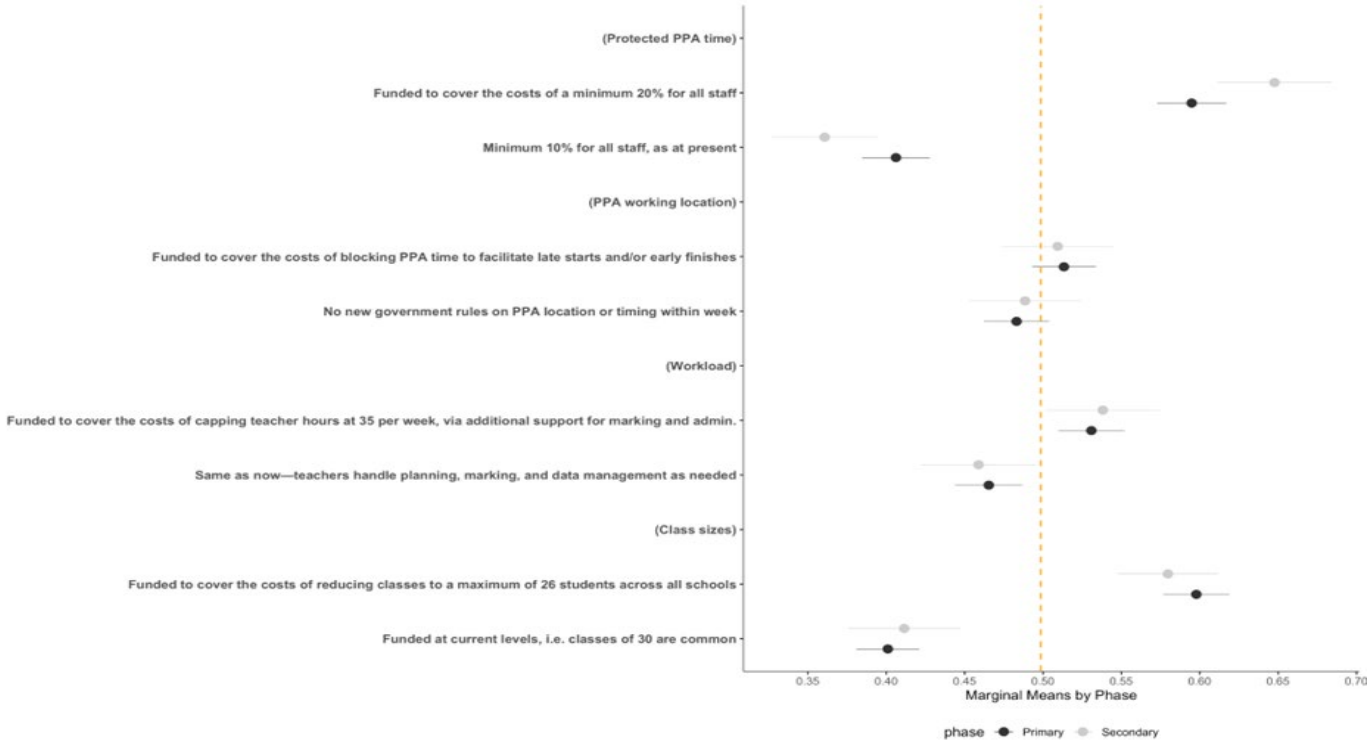
Note: The 95% CIs are shown for each point estimate, clustered by individuals. Panel (A) shows Marginal Means and Panel (B) displays AMCEs. $N_{individuals}$ *= 424 and* $N_{observations}$ *= 4,240.*

- Headteachers preferred policies proposing a minimum of 20% PPA time to policies proposing a 10% minimum, with 21% more headteachers selecting this option.
- Headteachers preferred a policy to provide funding to reduce class sizes to a maximum of 26 pupils, with 19% more headteachers selecting this option over no additional funding for class size reduction.
- Headteachers less decisively preferred a policy to provide financial support to cap teacher hours at 35 hours per week, by offering additional assistance for marking and admin, with an additional 7% selecting this option.

In contrast, proposed changes to PPA working location do not significantly influence headteachers' policy preferences (Panel A). This suggests that headteachers prioritise workload reduction through structural reforms, such as PPA time and class size reductions, over flexibility in how PPA is taken.

Figure 8 illustrates the differences in policy preferences between primary and secondary headteachers. Overall, their preferences are largely similar. There is some weak evidence that secondary headteachers are more supportive of increasing PPA time to 20% compared to primary headteachers. However, the smaller sample sizes result in relatively large CIs.

Figure 8: Headteacher policy experiment – Marginal Means by phase



A total of 56 headteachers provided usable open-ended responses. Many used their comments to emphasise the constraints that funding and teacher shortages placed on their decision-making, pointing to unfunded pay rises and increasing expectations on schools. Several headteachers expressed the view that additional funding was needed simply to maintain the status quo, rather than to introduce greater flexibility. As one headteacher put it:

> *There is not sufficient funding to maintain even what we must already do.* (Headteacher, open-ended survey response)

Others were more optimistic, suggesting that additional funding could help recruitment or retention by enabling schools to offer greater flexibility. Some primary leaders also saw an opportunity to use funding for specialist teachers in subjects like Physical Education (PE) and Modern Foreign Languages (MFL), freeing up classroom teachers in the process. However, two headteachers warned against delivering reforms on the cheap, arguing that any increase in PPA time must be covered by high-quality, qualified teachers:

> *If PPA % was to increase then it has to be covered by a high-quality, qualified teacher, which comes at a significant cost.* (Headteacher, open-ended survey response)

Funding was not the only lens through which headteachers viewed policy proposals. Several leaders, particularly in primary schools, raised concerns about the pedagogical implications of reducing teacher workload. Some noted that marking plays a critical role in informing planning and identifying pupil misconceptions. Others were wary of increasing PPA time, believing it could cause disruption for pupils:

> *More PPA means more disruption to pupils.* (Headteacher, open-ended survey response)

Some leaders argued that planning time should not be reduced, while others felt that PPA should take place in school to facilitate staff collaboration. One headteacher expressed doubts about shifting marking and admin responsibilities to other staff, stating:

> *We need to reduce marking and admin, not find someone else to do it. I also think that would be logistically very challenging and probably end up adding to teacher workload. Also—when teachers do mark, it is them who need the assessment information.* (Headteacher, open-ended survey response)

Several respondents highlighted the practical challenges of blocking PPA time. One noted that it would be particularly difficult in schools with many part-time staff:

> *PPA is only useful if teachers can be off timetable together; otherwise, as a manager, I have to find more directed time for them to plan together. Really tricky when you have part-time staff as well.* (Headteacher, open-ended survey response)

Others raised concerns about fairness, school operations, and teachers missing key briefings. Several leaders also felt that the 35-hour week pledge was unrealistic, with one criticising further government prescription around working hours as a backward step.

Given the challenges associated with policies around PPA time and flexibility, some leaders instead emphasised the link between workload and class size, arguing that the most effective way to reduce teacher burden was to decrease pupil numbers. While two headteachers questioned whether class size should be a priority, most argued that smaller classes would improve both working conditions and teaching quality:

> *Smaller class sizes would…reduce the time needed for 'admin' tasks. I also feel that marking both class work and test work is beneficial for teachers to understand what children are finding difficult so they can adapt accordingly.* (Headteacher, open-ended survey response)

> *Class sizes impact workload, stress, marking, and quality of relationships. I have taught classes of 35. No matter what you do, class sizes matter more than anything else. Smaller classes help children learn, improve attendance, and benefit both educational and emotional well-being…Class sizes matter to children, parents, and teachers. It is why the wealthy pay for private schools. If you want to close gaps in social inequality, class size matters.*

Five leaders proposed alternative policy priorities, all of which focused on Special Educational Needs and Disabilitiles (SEND) provision. They argued that mainstream classes were accommodating too many pupils with complex needs without adequate funding or specialist support:

> *The main issue is too many complex, poorly funded SEND children in mainstream classes—all these other issues are red herrings!* (Headteacher, open-ended survey response)

> *The biggest thing I would change is support for SEND: more specialist places, less parent choice, and more funding for children with EHCPs [Education, Health, and Care Plans] to fully support the staffing they need in school.* (Headteacher, open-ended survey response)

Several headteachers described steps their schools had already taken, particularly regarding flexibility and blocked PPA. One secondary head described a major structural change to their timetable:

> *We already finish at 1.30 on a Friday because we have introduced longer days Monday to Thursday. Teachers have their PPA in a block Monday to Thursday and we still have trouble recruiting.* (Headteacher, open-ended survey response)

Research question 2: Conclusion

The research question 2 policy preference experiment reveals that headteachers strongly support national policy initiatives that fund structural workload reductions, particularly increases to PPA time and reductions in class size. Support was highest for proposals offering 20% protected PPA and class sizes capped at 26 pupils, both of which were significantly more popular than the status quo. Policies supporting capped working hours also received moderate backing, though headteachers were more divided on their practicality.

Qualitative responses reinforced these findings, while also highlighting widespread concerns about funding sufficiency, implementation feasibility, and potential unintended consequences. Many headteachers stressed the need for high-quality cover staff if PPA time is increased and expressed scepticism about outsourcing marking or enforcing rigid working hours. Class size reduction was repeatedly cited as the most effective and desirable way to improve workload and teaching quality. Several headteachers also identified SEND provision as a more urgent policy priority.

Together, these findings suggest that while headteachers are receptive to government action on workload, policy design must account for practical constraints, staffing shortages, and the nuanced ways in which reforms play out across different school settings.

Cost calculations and implementations

Cost calculations for job attributes

The cost of providing each job attribute tested in research question 1, on a per-teacher basis and relative to the status quo, was estimated using a combination of desk research and additional survey questions to headteachers. These estimates were further refined following the headteacher focus groups described below.

Table12 summarises the per-teacher costs associated with each attribute, with full details of the calculations set out in Appendix I. In general, there is greater certainty around the higher cost estimates compared to the lower ones. This is because high-cost attributes, for example, reducing class sizes or increasing PPA time, involve directly proportionate increases in teacher salary costs. In contrast, lower-cost attributes often involve organisational changes, for which the direct financial implications are less clear.

Table 12: Per-teacher cost of providing each job attribute

Attribute	Level	Per-teacher cost (£)	Notes
Salary	5% higher than current job	£3,342	These are direct calculations of the all-in cost of increasing teacher salaries, based on average teacher pay and on-costs of £66,847
	10% higher than current job	£6,685	
Flexible working	Accommodated wherever practical	£2,206	Based on headteacher estimates, accommodating widespread flexible working would raise staffing costs by 7.5%, due to the need for additional staff and timetable inefficiencies
	Commitment to meet all requests	£5,014	
Protected PPA time	Minimum 20% for all staff	£8,356	Costed as the additional salary required to reduce teaching load from 90% to 80% or 70%
	Minimum 30% for all staff	£16,712	
PPA working location	Option to block PPA time to facilitate late starts and/or early finishes	£5,014	Costs reflect timetable disruption in secondary schools if all PPA must allow for late starts or early finishes, with an estimated 7.5% rise in staffing costs averaged across phases
Class sizes	No more than 26 pupils	£10,294	Costs are based on the percentage increase in the number of classes required when reducing maximum class sizes from 30 to 26 pupils (15.4%) or to 22 pupils (36.4%)
	No more than 22 pupils	£24,332	
Personal flexibility	Flexibility, within reason, to meet all important family and personal commitments	£1,028	Assumes three days of flexible leave per year per teacher, with typical internal cover costed at £343 per day
Healthcare	Time off for appointments and a well-being helpline	£358	Combines estimated costs of time off for appointments (£343), employee assistance programmes (£15), and comprehensive health cash plans (£360 annually)
	Free dentistry, physio, counselling, time off for appointments and a well-being helpline	£718	
Childcare	20% off on-site nursery and after-school provision from birth to 13 years	£508	Calculates the average per-teacher cost of a 20% childcare discount (£508), based on usage patterns, family size estimates, and typical term-time childcare costs
	40% off on-site nursery and after-school provision from birth to 13 years	£1,016	
CPD	Three days per year for courses, chosen by you from a list of approved providers	£1,718	Combines the cost of internal cover (£343), course fees (£200), and travel (£30), giving a total of £573 per CPD day
	Six days per year for courses, chosen by you from a list of approved providers	£3,437	

Attribute	Level	Per-teacher cost (£)	Notes
Workload	Commitment to cut workload through manageable expectations	£500	Assumes one-third of a teaching assistant role per teacher is needed to support planning, marking, and admin, given teachers' limited ability to delegate these tasks
	35-hour week guaranteed, with support for planning, marking, and data, plus central management of non-core activities	£7,722	
Leadership	Leaders and staff set priorities together, with proactive support as needed	£500	Minimal direct costs to cover additional meeting and preparation time
Collegiality	Collaborative and friendly staff community with protected co-planning time	£3,342	Estimated as 1/20th of a teacher's weekly timetable to enable timetabled co-planning with colleagues
Behaviour management	High standards of behaviour based on clear policies and consistent expectations	£2,095	Based on staffing an on-call system, time-out room, and centralised detentions across a typical secondary school, at a per-teacher cost of £2,095

In particular, some attributes, such as 'collaborative and friendly staff community with protected co-planning time' or 'leaders and staff set priorities together, with proactive support as needed', describe complex professional relationships or school-wide cultures that are not directly costed in school budgets. In these cases, we have based costings on the most tangible components (e.g. allocated co-planning time) while recognising that broader cultural shifts may require more extensive institutional support. We therefore, advise that these cost estimates be interpreted with caution.

It is also important to note that some job attributes, such as those related to flexible working or healthcare, may generate indirect cost savings that are not captured in these estimates. For example, improvements in staff well-being could potentially reduce sickness absence or turnover, leading to lower cover and recruitment costs. However, such effects are highly context-dependent and have not been quantified in this analysis.

To compare the relative value of different job attributes across experiments, we express the AMCE of each attribute level relative to the AMCE of a 10% salary increase within the same experiment. This approach allows us to express the effect of all the attributes from our four experiments on an intuitive monetary scale. Having said that, we acknowledge that our partial profile design means that the estimand in each of our four experiments is slightly different. This means that the estimates from across the four different experiments not perfectly comparable, despite being in a common monetary unit. Each AMCE represents the change in the probability of a job being chosen when that attribute level is present, compared to the status quo baseline level for that attribute.

Expressing other AMCEs as a proportion of the salary AMCE enables straightforward interpretation: a relative value greater than 1.0 indicates the attribute level is valued more highly than a 10% salary increase, while a value below 1.0 indicates it is valued less. This method supports cross-experiment comparisons and aligns with the cost estimates, which are similarly defined relative to the status quo. It also provides a practical basis for assessing value for money across different potential policy changes.

Figure 9 presents the relative-to-salary AMCE for each attribute on the left-hand side and the estimated cost per teacher of providing the attribute on the right. Figure 9 highlights attributes that are both highly valued and costly—such as 30% protected PPA time and class sizes capped at 22 pupils—as well as those that are highly valued but relatively low cost, such as ancillary healthcare insurance.

If the goal is to include job attributes in adverts that appeal to teachers while remaining cost-effective, the most efficient strategy for headteachers is to select those attributes that are more valued than a 10% salary increase, relative to the cost of delivering them. To assess this, we calculate a value-for-money ratio: the AMCE of each attribute level (relative to a 10% salary increase) divided by its estimated per-teacher cost and scaled in proportion to average salary.

Figure 9: Preference and cost of attributes

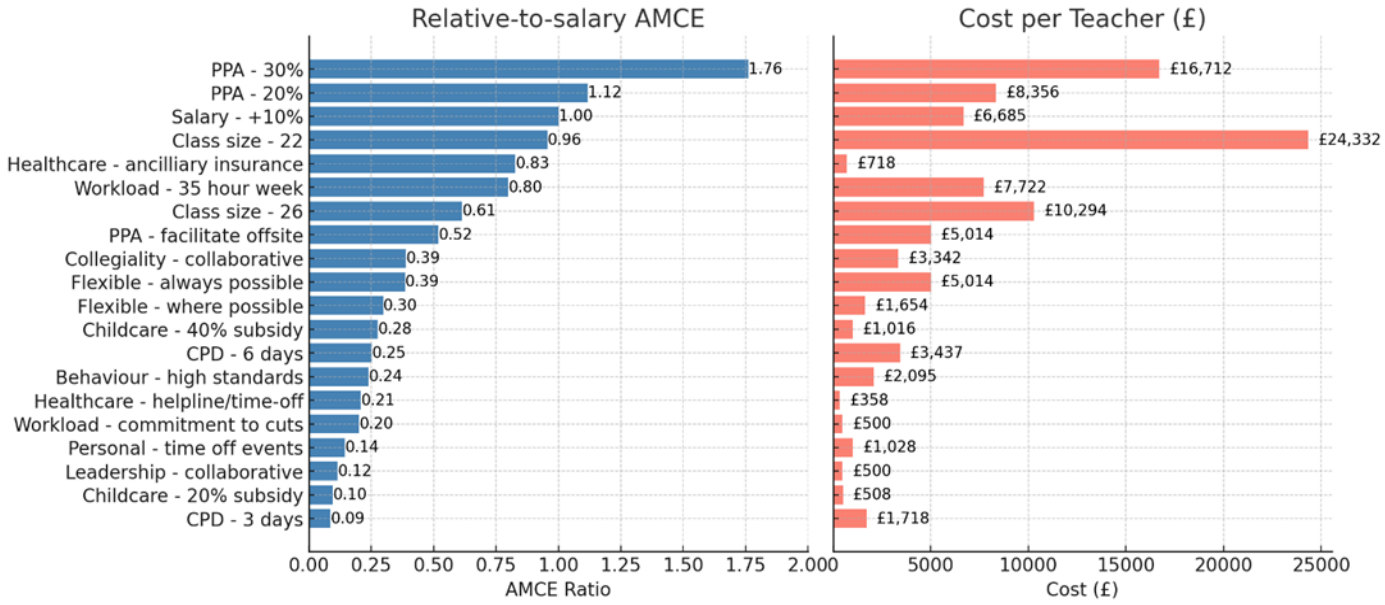


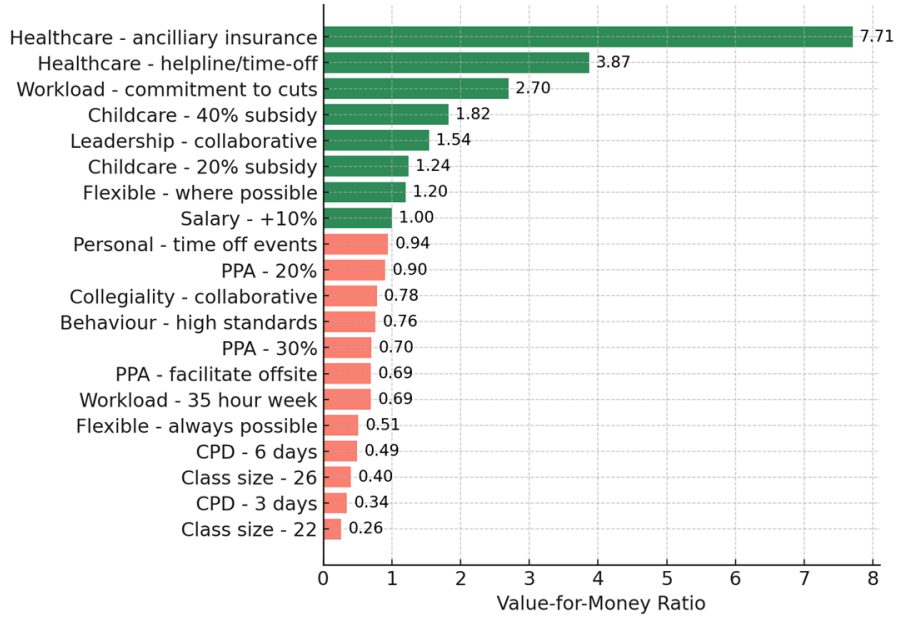
Figure 10 presents the value-for-money ratios for all tested attributes. Several emerge as particularly favourable:

- **Healthcare**. Both the lower-cost option (a well-being helpline with time off for appointments) and the more expensive offer (ancillary healthcare provision) are valued by teachers in proportion to their cost. Although such benefits are rare in education, their popularity may help explain why similar perks have become common in other parts of the labour market.
- **Workload.** A general statement expressing a ‘commitment to cut workload’—without specifying a structured intervention such as a 35-hour week—represents good value for money, primarily because it is cheap to implement. While unlikely to be a decisive factor in application decisions, it may enhance perceptions of the school and contribute positively to recruitment.
- **Leadership.** Statements emphasising a collaborative and supportive leadership culture also score well on value-for-money grounds, again because their implementation costs are minimal. However, their AMCE is low, suggesting they are worth including but will not be pivotal.
- **Childcare.** Subsidies for on-site childcare offer reasonable value for money, partly because few teachers use them and those who do only claim them for a limited period. Our qualitative findings suggest that, beyond direct users, such benefits may positively signal supportive employment conditions to prospective applicants more generally.
- **Flexible working.** A statement that flexible working ‘will be accommodated where possible’ offers better value for money than a stronger guarantee that ‘all requests will be met’. This is because the stronger guarantee is only marginally more appealing to teachers but significantly more expensive to deliver.

It is important to note that these value-for-money ratios are sensitive to assumptions about implementation costs. Our estimates reflect average conditions across schools, but there remains considerable uncertainty about how these costs would play out in practice. Individual schools may find that attributes appearing less cost-effective in our analysis are, in fact, affordable within their specific context. And of course, if a school is already implementing a costly and valued attribute, such as co-planning arrangements, it is very worthwhile to mention it within a job advert.

Finally, differences between phases should be considered. In primary schools, blocking PPA time to allow for off-site working is both more valued by teachers and less costly to implement, due to fewer timetabling constraints. By contrast, secondary teachers place greater value on increased PPA time rather than its location. For these schools, investing in additional PPA time may be a more worthwhile strategy. Similarly—as noted below—the cost of providing disruption-free learning is likely to be much lower in primary schools, but so is the degree to which high behaviour standards acts as a magnet to teachers.

Figure 10: Value-for-money ratio for attributes



Implementation focus groups

The final focus groups offered valuable insight into how schools are attempting to implement job attributes that appeal to teachers. Conducted over four sessions—two with primary headteachers and two with secondary headteachers—the discussions highlighted both opportunities and challenges. This section summarises the key findings, with a full account provided in Appendix J.

Headteachers were notably enthusiastic about the impact of innovations such as increased or blocked PPA time, reporting significant improvements in recruitment, retention, and staff morale (particularly when paired with timetabled co-planning time). However, these benefits came with clear financial trade-offs, and several schools had been forced to scale back enhanced allocations in response to budget pressures. The overall message was that while such reforms can be highly effective, they are often expensive and difficult to sustain at scale.

One of the most consistent themes was the tension between offering flexibility—such as off-site PPA time—and supporting collaboration through co-planning. Many headteachers actively sought to balance the two by alternating between individual and shared time on a weekly basis, often aided by two-week timetables. Achieving this balance required careful timetable design, early planning, and a degree of overstaffing, which was more easily managed in schools with stable teams and fewer part-time contracts. A number of schools had invested in AI-assisted timetabling or introduced ‘common working days’ to ensure overlap among job-share teachers.

The calibre and deployment of additional staff—particularly teaching assistants—was viewed as critical to the success of workload reduction initiatives. In primary schools, higher level teaching assistants (HLTAs) were commonly used to prepare classroom resources, supervise routines, or support SEND Coordinators (SENDCOs). Several heads emphasised that quality mattered: unless support staff were sufficiently skilled, teachers were reluctant to delegate tasks. A few schools had invested in specialist staff, including qualified teachers working on HLTA pay, to undertake tasks such as marking or question-level analysis. These models also supported teacher development pipelines, with teaching asistants often training as future teachers.

Behaviour management emerged as a particularly complex issue in secondary schools. Headteachers highlighted the cost difference between exclusion-based models and inclusive systems that required extensive staffing and wraparound support. Several schools had invested heavily in centralised detention systems, pastoral teams, and specialist provision for pupils with social, emotional, and mental health (SEMH) needs, with one head estimating the combined cost at approximately £500,000 per year. Others were instead relying on alternative provision due to a lack of internal capacity or

scarce resources. There was a strong sense that achieving disruption-free learning within an inclusive model could not be done cheaply.

By contrast, primary heads focused more on preventative and relational strategies, including leadership presence on the playground, buddying schemes, and structured play initiatives such as OPAL. Some used external training programmes or coaching models to improve behavioural consistency. A few also referred to tailored SEND provision, such as sensory circuits or dedicated nurture classes, which they believed improved behaviour by reducing inappropriate placements.

Several other points of interest arose. Only two schools were operating with reduced class sizes, both noting the recruitment benefits but also highlighting the space constraints and capital costs involved—especially in growing schools. A number of heads expressed surprise that CPD had scored poorly in the survey and suggested that more flexible, staff-directed development opportunities would be more appealing. Others pointed to the importance of progression opportunities and the perceived prestige of belonging to a well-regarded trust, which were believed to support staff retention but had not been fully captured in the survey design.

Taken together, the focus group findings underscore the complexity of implementing popular reforms in practice. While many attributes are clearly valued by teachers, delivering them at scale requires careful planning, high-quality staffing, and—above all—a realistic assessment of cost. Phase differences matter, and schools will need to adapt their approaches accordingly.

Methods – research question 3, willingness to work in schools serving disadvantaged communities

The primary goal of this project is to identify the job attributes that teachers find most appealing, with the aim of helping schools make more informed recruitment decisions. However, a particular focus of this research is on supporting schools serving disadvantaged communities, as these schools are disproportionately affected by teacher shortages, as outlined in the literature review.

Schools in disadvantaged areas receive additional funding through the national funding formula and Pupil Premium, which they can use to attract teachers by offering higher salaries or improved working conditions, as explored in this study. Existing research has shown that disadvantaged schools have both lower average salaries *and* higher salaries for a given level of teacher experience, reflecting both their relatively inexperienced staff and their difficulties in attracting staff (Allen and Sims, 2018). However, no research in England has quantified the level of additional pay or enhanced conditions required to encourage teachers currently working in more affluent schools to apply for roles in disadvantaged schools.

Research question 3 seeks to address this gap by estimating the salary increase necessary to make a position at a given local school attractive, based on the proportion of pupils eligible for FSM. We employ a contingent valuation technique within a teacher survey to establish their willingness to apply for a role at another local school, establishing a relatively narrow minimum salary increment band. This is a real-world scenario with high ecological validity since it is straightforward for teachers to imagine applying for a job at another local school. Our methodology is designed to sidestep social desirability bias[2] by determining how the necessary salary adjustment to motivate a teacher to move from their current school to another nearby school correlates with the FSM disparity between the two schools.

It does not address the question of what non-salary school or job attributes might make schools more attractive. Thus, just one attribute of the hypothetical job is varied: the salary offered. All other attributes of the school, including the deprivation of the pupil intake, the characteristics of the leadership, the curriculum, and so on, are not randomly varied. Indeed, they are necessarily bundled since we know that the allocation of all these school attributes are highly correlated. Furthermore, there will be a large number of unmeasured characteristics that the teacher might have in mind as they respond to the questions, and yet we will not be able to measure.

The task does not assume that teachers know the precise percentage of pupils eligible for FSM in the alternative school. Rather, it relies on their general awareness or perceptions of the school's pupil intake and environment, which are likely to be reasonably informed. Respondents were not provided with an exact FSM figure; instead, they were asked to consider a named local school that might be more disadvantaged, similarly disadvantaged, or less disadvantaged than their current school. The aim was to capture teachers' willingness to move in response to perceived socio-economic differences and other contextual factors, reflecting real-world job choice scenarios in which teachers often rely on broad, experience-based knowledge rather than specific metrics. Our principal goal is to estimate how the required salary increase varies with the difference in FSM rates between a teacher's current school and a potential destination school. Importantly, a preference for schools with certain FSM profiles should not be interpreted as a causal preference for particular pupil demographics. Rather, FSM is used as a proxy for broader school characteristics associated with disadvantage, such as workforce composition, school culture and leadership, Ofsted ratings, curriculum offerings, and governance structures. All of these factors are bundled within the FSM indicator.

Formally, the endogeneity of school attributes and teaching sorting can be described as follows:

[2] Social desirability bias refers to the tendency of respondents to answer questions in a way they believe is socially acceptable. In this context, teachers may feel pressure to understate the importance of salary or to appear more willing to work in disadvantaged schools than they actually are.

School attributes, such as qualities of leadership, culture, pupil behaviour, and curriculum, are developed to reflect the characteristics of the pupils who attend the school.

$$School\ attributes_j = f(pupil\ characteristics_j)$$

Teachers of particular levels of experience and qualifications, and so on, are attracted to schools based on the pupil characteristics and the school attributes such as the leadership, culture, and curriculum.

$$Teacher\ average\ characteristics_j = f(school\ attributes_j, pupil\ characteristics_j)$$

Most importantly for this study, the salary that teacher *i* would require to work at school *j* is determined by their own characteristics and preferences, by the school attributes and directly by the pupil characteristics.

$$Teacher\ minimum\ required\ salary_{ij} = f(teacher\ characteristics_i, school\ attributes_j, pupil\ characteristics_j)$$

Thus, in this study, when we estimate the change in salary (salary increment) required to consider working at another local school, and how this relates to a pupil characteristic in the form of FSM eligibility, the relationship reflects both the direct effects of the pupil body composition on their desire to work at a school, and the indirect effects that the pupil body composition has on all other attributes of the school, including its leadership and culture.

$$Salary\ increment\ to\ apply\ to\ local\ school_{ij} = f(FSM\%\ at\ local\ school - FSM\%\ at\ current\ school)$$

It is important to note that, as teachers are not randomly allocated to their current schools, the overall willingness to apply estimates cannot be straightforwardly interpreted due to the confounding effect of initial placement. For instance, teachers currently employed at affluent schools might demand a higher salary increase to transfer to a school with a ten-percentage point higher proportion of FSM, compared to their counterparts who initially chose to teach in less advantaged schools. This would happen if these teachers had a set of characteristics, such as their own personality and mission, that caused them to seek out and teach in a more affluent school.

This means it is better to think of a teacher's current school FSM % as a proxy for both what the school is like, and the personality that caused the teacher to seek out that type of school. This increases the complexity of interpretation of the estimates in our study. Nevertheless, the findings for teachers within a specific FSM bracket are both meaningful and policy-relevant, especially if the aim is to encourage those who have so far preferred working in more affluent schools to consider positions in more disadvantaged settings.

Another disadvantage to using real-life scenarios is that teachers will only be able to name schools that are close to their existing school, and given the stratification of demographics across the country, the school they name will typically be quite similar to their existing school. This means that only a limited number of teachers will be asked about a possible job move from a very affluent school to a very disadvantaged one. That said, this is the policy reality in the sense that it would be difficult and expensive to incentivise teachers to move larger distances across the country for a job at a different type of school. By contrast, the descriptive estimates of additional salary required to induce a group currently working at more affluent schools to apply for jobs at more disadvantaged schools is meaningful in policy terms, even if we cannot establish their motivation for demanding additional salary.

In addition to estimating the key relationship between school FSM % and salary increments required to move, teachers may require a salary increment to switch even to a local school with similar characteristics. This 'stickiness' within the teacher labour market can be explained by several factors:

1. **Uncertainty.** There is a risk inherent in moving to any new job where there may be negative aspects of the school that cannot be observed before working there.
2. **Relationships.** A teacher has established relationships with pupils and colleagues. These not only bring pleasure to daily life at the school but can improve their behaviour management of pupils.

3. **Costs of investing in new systems and curriculum.** Teachers usually have to adopt a new curriculum and other systems such as assessment and behaviour management systems when they join a new school. This can make working hours longer in their first years at a new school.
4. **Unobserved attributes of their existing school.** The very fact they chose their existing school and have chosen not to leave yet, suggests there are attributes of the school that may not be obvious in the data but which they value. It could be anything from a more convenient travel route to the ability to lead particular extra-curricular activities.

Survey questions asked

We first asked teachers the following question:

> 'Think of a state school close to the school where you currently work that teaches the same age group of children. Type the name of this state school here'.

Note that the language we use asks teachers to think of a school 'close to' the one they currently teach at, rather than the 'nearest' state school. In pilot testing, teachers found it hard to know exactly which state school was the nearest rather than naming one that was merely close to their existing school, so we decided to alter the planned language. This decision does have consequences. The positive is that they are more likely to name a school they know something about and so remain in the sample. The downside is that this local school might have shared characteristics with their existing school or be otherwise well-known. For example, the school might belong to the same Multi-Academy Trust (MAT), be within the same secondary catchment area, or be well-known, either positively or negatively, within the local community.

We then ask teachers questions with the following structure:

> 'Suppose the school you named advertised a job with the same role and a salary [e.g. £25,000 lower; £5,000 higher] than you currently receive. Would you consider applying for it?'

It is important that we hold the type of role constant in asking them to consider the relative merits of their current school versus an alternative local school. One group for whom this is strange is those teachers who are currently teaching in a role for which they were not trained and who would not in real life seek out a similar role in another school. For example, PE teachers who currently teach maths full-time. There is nothing we can do within this experiment to deal with this.

We settled on giving teachers just two response options to the question, which are:

1. Probably, yes.
2. Probably not.

We considered a longer Likert scale with responses such as 'Definitely, yes' but settled on this binary scale for ease of answering, ecological validity (nothing is definite in a hypothetical question), scheduling ease and redundancy in analysis. We note that our response format — a binary choice between 'Probably, yes' and 'Probably, not'—departs from classical contingent valuation approaches, which are typically grounded in deterministic utility models (Arrow *et al.,* 1993; Carson, 2000). However, our intention was to capture willingness to apply, a behavioural proxy that is necessarily mediated by uncertainty, hesitation, and trade-offs in real-life decision-making. Teachers may not have perfect information or fixed preferences about hypothetical job opportunities, especially when salary levels are varied around small or moderate amounts. Hence, we adopted a probabilistic response frame to increase ecological validity and reduce overstatement, a known concern in hypothetical valuation (Blumenschein *et al.,* 2008).

Moreover, our approach aligns more closely with discrete choice and conjoint analysis traditions (Louviere *et al.,* 2000), which model ordinal preferences or binary choices conditional on attributes, rather than attempting to elicit precise monetary valuations. In this context, the 'Probably, yes'/'Probably, not' distinction serves as a behavioural threshold: it reflects the point at which an offer becomes psychologically viable, if not definite. We acknowledge this deviation from

contingent valuation best practice and encourage caution when interpreting our findings as literal measures of willingness to pay. Instead, we suggest they be interpreted as relative preference structures under bounded rationality, suitable for informing recruitment policy or job design scenarios.

Iterative or stepwise question structure

In our study, we utilised an iterative salary offer approach to determine respondents' minimum salary increment they would require to consider applying (the economics literature refers to reservation prices or salaries but we will simply call it the salary increment). Participants were presented with a series of salary offers and asked whether they would apply for a job at each level. The salary offers were adjusted iteratively based on their responses, allowing us to efficiently identify their minimum acceptable salary increment for a named local school.

This survey method approach is a type of contingent valuation technique, designed to elicit teachers' willingness to accept a salary or a job, or reservation salary. Teachers are asked if they would consider applying for a job at a specific advertised salary. Based on their response, the next question adjusts the salary increment offer:

- if they respond 'Probably, yes' they are asked about a lower salary; and
- if they respond 'Probably, not' they are asked about a higher salary.

This process continues iteratively until the minimum required salary increment is pinpointed to the nearest £5,000 for most of the range and the nearest £2,500 for the +/- £20,000 range that we expect most teachers to fall within. The values included in the questions are as follows (bold indicates it will be the terminal question for those who reach it):

1. £0 – i.e. same salary.
2. £10,000 higher; £10,000 lower.
3. £20,000 higher; £5,000 higher; £5,000 lower; £20,000 lower.
4. £30,000 higher; £15,000 higher; **£7,500 higher; £2,500 higher; £2,500 lower; £7,500 lower**; £15,000 lower; £30,000 lower.
5. £40,000 higher; £25,000 higher; **£17,500 higher; £12,500 higher; £12,500 lower; £17,500 lower**; £25,000 lower; £40,000 lower.
6. £50,000 higher; **£35,000 higher; £35,000 lower**; £50,000 lower.
7. **£45,000 higher; £45,000 lower; ladder with options from £50,000 to over £100,000 higher; ladder with options from £50,000 to over £100,000 lower.**

These contingent valuation techniques are commonly used in economic valuation, marketing research, and policy studies. It allows an individual to reveal their salary increment using a straightforward set of questions that are simply to administer and understand. Compared to a salary ladder—a simpler single question where respondents are shown a range of salaries and asked to indicate the lowest salary at which they would consider applying—it is generally seen as less cognitively demanding and less susceptible to strategic bias where respondents seek to strategically overstate their required salary or bias caused by a tendency to pick a midpoint. However, iterative question structures can still be susceptible to anchoring bias, where the initial salary influences subsequent responses. Furthermore, respondents may find the iterative salary offer tedious, leading to survey fatigue. And of course, the hypothetical nature of the scenario may cause hypothetical bias, as respondents might not act the same way in real-life situations.

For teachers whose required salary increment is a long way from zero, they potentially face a large number of questions. To reduce frustration or disengagement for this group, we use an iterative salary offer followed by a single salary ladder question for the small number of respondents whose required salaries remain unclear because they have consistently answered 'Probably, yes' or 'Probably, not' to all salary increments offered in the first six questions.

The iterative questions follow a bouncing or bracketing approach, by moving in large £10,000 increments up or down the scale, followed by smaller increments up and down to narrow in on the reservation price. This approach is efficient for quickly narrowing down a wide range and reduces the number of iterations needed. It does have disadvantages in that it can

confuse respondents if the jumps feel unpredictable. However, with a maximum of only seven questions and with many receiving far fewer, we felt respondents would cope with the cognitive burden.

At the end of the iterative process, there are a small number of teachers whose required salary remains unclear because they have consistently answered 'Probably, yes' or 'Probably, no'. At this point, we trigger a single question salary ladder that extends beyond the limits used in the iterative phase to ensure full coverage.

There are some challenges in switching between the iterative salary offer and the single salary ladder approach. First, respondents might give inconsistent answers between the iterative and ladder questions. We can restrict this by only giving them valid responses in the ladder, given their responses so far, but we need to decide how to interpret the teachers who do not wish to select any reservation salary. Second, respondents might be confused because the wording of the final ladder question needs to be quite different.

At the pilot testing stage, we tested this stepwise (iterative bidding) versus a ladder (payment card) approach. Each method has distinct advantages and potential biases, and while several academic studies have examined their efficacy, we felt our questioning was novel enough to justify testing both approaches (Breidert *et al.,* 2006; Schmidt and Bijmolt, 2019; Fonta *et al.,* 2010; Uehleke, 2016). This experiment at the pilot stage showed that the stepwise approach yielded a more plausible distribution of required salary increments and resulted in far fewer teachers at the ends of the distribution (i.e. no amount of money was higher enough, or they would work for free). See Appendix G for details of this pilot experiment.

Perceptions of the characteristics of the local school

Once teachers have completed the salary questions, we asked some perception questions to explore how their views of the named local school is associated with the required salary increment to apply for the role. We developed these questions by finding out what teachers tended to know about local schools through a single survey question asked a month before the study began. This survey question revealed that few teachers know about either working hours or levels of collegiality in local schools, so we dropped these school characteristics from the study.

An open-ended question was included to allow them to either comment on the experience of answering some relatively unfamiliar questions or give explanations for the decisions they made.

The questions are as follows:

- Which of the following aspects do you believe are better at the school you named, compared to your current school? [Behaviour; Leadership; Culture; Curriculum; Travel time from your home; None of the above; I don't know; Not relevant / cannot answer].
- Which of the following aspects do you believe are worse at the school you named, compared to your current school? Tick all that apply. [Behaviour; Leadership; Culture; Curriculum; Travel time from your home; None of the above; I don't know; Not relevant / cannot answer].
- [Open-ended question] Please use this space to share any additional thoughts or context regarding your answers to these questions.

Target population and achieved sample

Our target population of study for this research question looking at willingness to apply to a named local school is all mainstream teachers in England. We elected to exclude teachers in special and alternative provision settings from the sample because they do not generally have other special or alternative settings close to their existing school. Thus, travel time is likely to become an important deciding factor in any decision to apply for another job. Teachers in Sixth Form and other post-16 settings were able to answer the questions but were excluded from the analysis because no FSM information is available on these schools. We elected to retain all senior leaders, including headteachers, in the sample since the questions equally apply, though their responses might systematically differ and so we present subgroup analysis below.

Of all teachers opening the Teacher Tapp mobile app on Thursday 12 December 2024, many would be ineligible to form part of the analysis below, based on one of the following exclusion criteria:

1. They elected not to answer these extra questions. Approximately 40% fell into this category, which is typical for the mobile app.
2. They had not provided us with the school name information that yielded a valid URN of a mainstream school in England.
3. They did not enter free-text information that we were able to code up into a destination school name and URN close to their existing school.
4. They said they did not know anything at all about the school they had named when asked the question: How well do you feel you know the school you just named? [I know nothing about it; I know a little about it; I know a moderate amount about it; I know a lot about it; Not relevant / cannot answer].
5. They failed to complete all the salary increment questions.

Table13 below shows the key demographic characteristics of those in the target population who met the sample criteria. These are nested rows so the respondents in each row also meet all the criteria for the earlier rows.

Table 13: Sample achieved for research question 3

Characteristics	N	Private %	Female %	In 20s %	In 50s+ %	Senior leadership %
Answering main questions on the mobile app that day	8,075	7%	70%	12%	22%	26%
With a valid URN	7,534	7%	70%	12%	21%	27%
Elected to answer extra questions	4,858	7%	72%	11%	23%	25%
Knew something about the named school	3,868	6%	72%	9%	24%	27%
Completed all the reservation salary questions	3,652	6%	72%	9%	24%	27%
Able to clean named school into a valid URN	3,196	6%	73%	9%	22%	26%
Passed review of school distances and rank	3,037	6%	73%	9%	21%	26%
Has valid values for salary increment, salary, and both school FSM %	2,918	6%	73%	9%	21%	26%

Note that about one-in-five teachers were excluded from the sample, and not asked the salary increment questions, because they responded that they did not know anything about the school that they had named. These teachers were slightly more likely to be in their 20s and classroom teachers without middle leadership responsibilities, and it is worth noting that these groups are likely to have different salary expectations given their lesser knowledge of local schools. We made the decision that we would exclude teachers who say they know nothing about the school they name from the subsequent job advert questions for reasons of ecological validity. Within our survey questions, they have no basis on which to answer the questions about whether they would consider applying for a job if the school advertised. By contrast, in the real world, they would be able to go online and learn something about the school in advance.

We rejected two alternative approaches to dealing with these teachers who knew very little about the schools. First, we decided not to introduce a response choice to the salary questions that could accommodate them better, such as ‘I don’t know enough to say’. Our hesitation was that this type of equivocation would also be used as a response by teachers who did know the school very well but were close to the required salary increment. Second, we decided not to force them to decide whether to apply for a job even though they claim not to know anything about the school. We felt their responses would be random and that this would attenuate all of our estimates. The limitation of their exclusion is in the generalisability of our estimates to the full sample of teachers, that is, both those who have knowledge of local schools and those who do not.

Ensuring current school URN is up to date

This analysis rests on correctly identifying both their current school URN and the URN on the school that they name (which we call the destination school in the analysis below). The current school URN is given by teachers at sign-up and is re-affirmed each September and on any occasion where they tell us they have moved schools. In the weeks leading up to the data collection, we asked all panellists to check their school name was correct. In addition, we identified panellists who were likely to have an incorrect URN (because we knew they had moved school and yet their URN was not updated) and those who had no valid URN. These groups had further targeted messaging encouraging them to update their URN.

After the data collection had taken place, we dropped almost 100 teachers where the destination school they had chosen to name was some considerable distance away from the current URN we held for them. The most likely explanation would be that their current URN was incorrect, but regardless of reason it was not possible to use their data in the analysis.

Results – research question 3, willingness to work in schools serving disadvantaged communities

The analysis proceeds as follows. We describe the local school that the teacher chose to name (we call it the destination school), in order to better understand the thought experiment that they go through. We then look at how the survey questions are translated into an additional salary, which we call the salary increment. Our core analysis looks at how the size of the salary increment demanded relates to the difference in FSM % between the current and destination schools. We then provide some exploratory analysis of how the salary increment varies by teacher and school demographics. Finally, we look at whether the teachers' views of the local school's working environment are associated with the salary increment they require.

Destination school named by teachers

In designing the survey questions, we invited teachers to name a 'state school close to the school where you currently work', rather than identify their closest state school. A total of 39% named the nearest state school, 69% named one of the three closest, with the remainder naming one further away. Table A11 in Appendix H shows that teachers are least likely to name their nearest school in London, where there are often many schools in close proximity, but that variation across the country is not large.

When teachers name a school that is close, but not the nearest, Table14 shows it is 1.4 times (or 40%) further away than the nearest (rank 1) school if it is the second closest, rising to 3.4 times further away if it is the tenth closest. There are some named destination schools that have a very large number of schools that are closer than the named one.

In Table14, note that the average FSM % in their current school is typically lower than in the destination school they name. This is because we include private school teachers in the sample, and they are coded as 0% FSM for the purposes of looking at FSM differences between schools. Excluding private school teachers, the mean average difference between current and destination school FSM is less than one percentage point.

Table 14: Distance in metres and FSM (%) of named destination school, grouped by rank of distance from current school

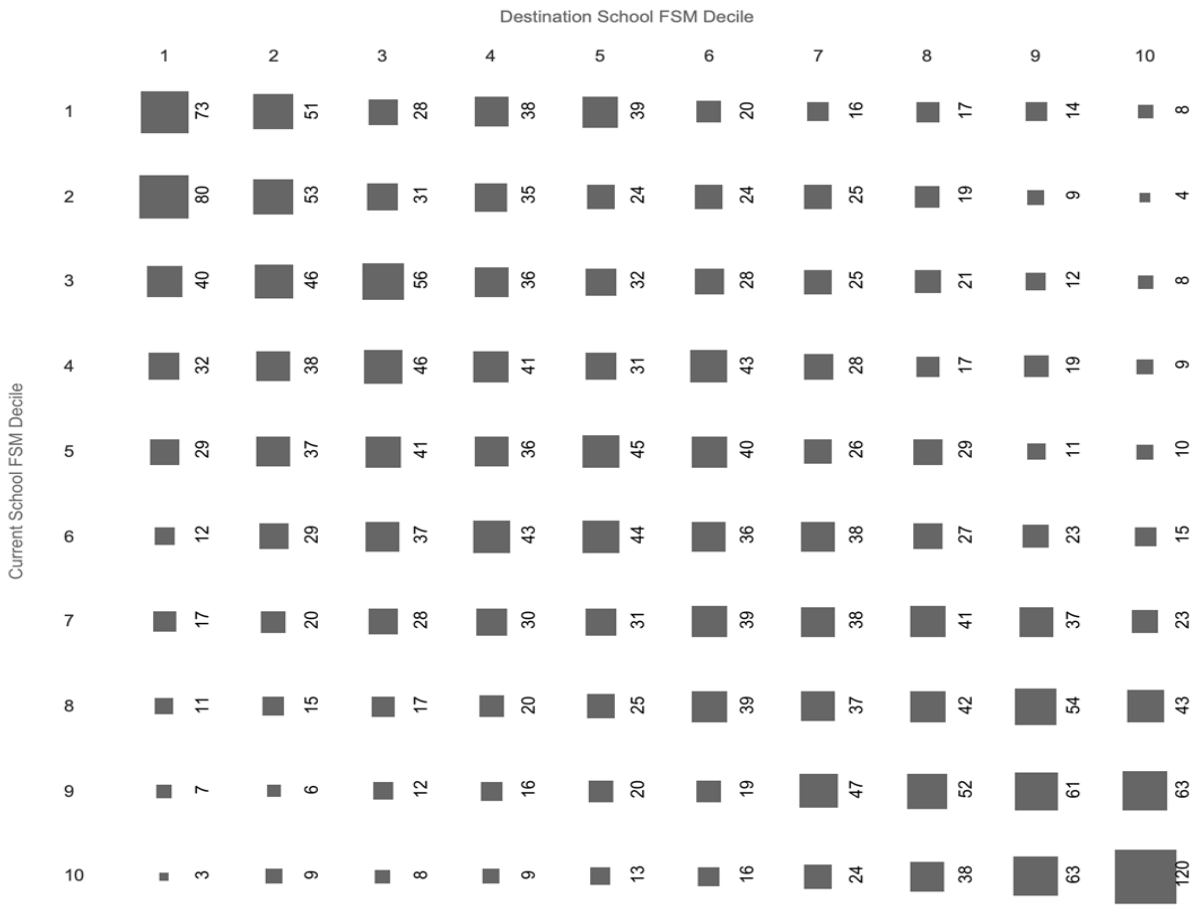
Rank	N	Mean average distance to destination school	Standard deviation (SD) of distance to destination school	Mean average distance to nearest (rank=1) school	Average FSM % for current school	Average FSM % for current school (excluding private schools)	Average FSM % for destination school	FSM difference (state schools only)
1	1,184	1,922	2,369	1,922	21	23	24	2.0
2	555	2,646	3,651	1,893	22	24	25	1.6
3	361	3,037	3,299	1,974	23	24	25	1.1
4	221	3,683	3,429	1,961	23	24	23	-0.2
5	179	4,353	4,027	2,163	23	24	25	1.0
6	116	5,109	4,626	2,386	21	24	24	0.3
7	85	4,445	4,183	1,957	24	26	24	-0.8
8	57	5,056	4,610	2,270	23	25	23	-1.8
9	45	6,345	5,800	2,462	24	24	22	-2.1
10	44	6,783	6,036	1,970	25	26	23	-3.3
11–20	165	6,591	5,050	2,235	22	23	21	-1.2
21–30	25	6,378	5,136	1,288	24	24	21	-3.5

Note: FSM % taken from Get Information About Schools for 2024/2025 academic year (DfE, 2025).

Figure 11 shows the FSM % of their current school, as a decile, compared to the FSM % decile of the destination school they named. Teachers disproportionately name schools with similar FSM profile to their current school, largely because nearby schools serve similar pupil populations reflecting local demographics. Note that private schools will necessarily fall into decile 1 here and that these private school teachers disproportionately name quite affluent state schools due to the social demographics of the area.

This phenomenon will have implications for the analysis that follows, since we have fewer observations where teachers consider whether to apply to school with an extremely different intake. This also matters a great deal for policymakers: it will be hard to persuade those in affluent schools to move to teach in highly disadvantaged settings if this also requires a home move or a substantial commute.

Figure 11: Number of responses in each decile of current versus destination school



Size of salary increment

Teachers generally require a substantial pay increase—which we call the *salary increment*—to consider applying for a job at the destination school they name. The median salary increment is £6,250, or 13% of the current salary. Table15 summarises this salary increment, showing how it is derived as the midpoint of an upper and lower bound that are determined by the survey responses. The mean average salary increment is over £3,000 higher than the median, reflecting the large number of teachers that responded they would require a very high (up to £50,000) pay increase to consider such a move. This general unwillingness to move (or stickiness) reflects patterns found in Burge *et al.*'s (2021) study of pay, rewards, and employment characteristics within a DCE.

In later analysis, we will look at how this is related to their relative perceptions of the two schools, so here we should just note the policy implications of this very high attachment to their current school and a general unwillingness to consider these types of non-promotion-related local moves. Indeed, in the open-ended responses teachers gave at the end of the

survey, a number mentioned that they were at the stage of their career where they would not move without promotion at this stage.

Some respondents indicated a willingness to accept lower pay to move to the alternative school, resulting in negative salary increments in a minority of cases. While our analysis treats salary differences as a continuous trade-off, it is important to note that this framework implicitly blends willingness to pay and willingness to accept. These are not theoretically equivalent, and there is substantial empirical evidence that willingness to accept values are often higher than willingness to pay values due to factors such as loss aversion, entitlements, and reference dependence. This asymmetry may contribute to the observed status quo bias and should be borne in mind when interpreting the direction and magnitude of salary-based trade-offs.

Table 15: Summary statistics on salary increment

Salary increment	N	Distinct values	Mean	Min	25th percentile	Median	75th percentile	Max
Middle bound of band	3,037	23	£9,327	-£42,500	£3,750	£6,250	£13,750	£47,500
Lower bound of band	3,037	23	£7,939	-£45,000	£2,500	£5,000	£12,500	£45,000
Upper bound of band	3,037	23	£10,716	-£40,000	£5,000	£7,500	£15,000	£50,000
% of salary	2,983	182	18%	-89%	7%	13%	26%	130%

We show the salary increment required by the current salary band in Table16 below. Not surprisingly, it shows that the nominal salary increment required rises with current salaries, while the salary increment as a percentage of current salary falls. In most of the analysis that follows, we use nominal salary increments in our analysis.

Table 16: Salary increment, grouped by current salary

Current salary		N	(Reservation) salary increment	
Range in survey responses	Imputed midpoint		Mean (nominal)	Mean (percentage of current salary)
Less than £30,000	£25,000	69	7,065	28%
£30,000 to £34,999	£32,500	163	7,707	24%
£35,000 to £39,999	£37,500	205	7,720	21%
£40,000 to £44,999	£42,500	392	7,997	19%
£45,000 to £49,999	£47,500	534	9,389	20%
£50,000 to £54,999	£52,500	497	9,283	18%
£55,000 to £59,999	£57,500	318	9,080	16%
£60,000 to £69,999	£65,000	399	10,097	16%
£70,000 to £79,999	£75,000	197	11,288	15%
£80,000 to £89,999	£85,000	82	11,098	13%
£90,000 to £99,999	£95,000	30	15,458	16%
£100,000 or more	£120,000	32	14,609	12%

Table A12 in Appendix H shows the mean average salary increment by teacher demographic characteristics. It should not be surprising that the greatest salary increments are demanded by those who are headteachers, those with the longest tenure both in their current school and in the profession overall. Table A13 in Appendix H shows the marginal impact of having these teacher demographics on salary increment via an OLS-regression model that includes controls for current salary. Overall, conditioning on other demographics, headteachers, and those with long tenure at their existing school require the largest salary increments to consider a job move. In open-text responses, headteachers expressed particular reservations about taking a headship at another school. For example:

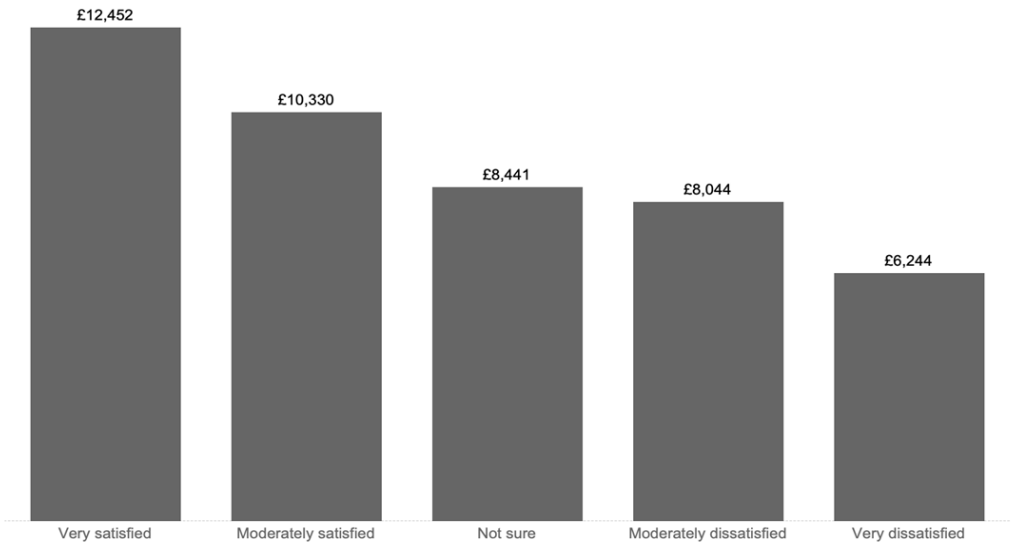
As headteacher you have a loyalty to your school which means that even at the amount stated I'm not certain I would apply for a job at another local school. (Headteacher, Open-ended survey response)
I would feel uncomfortable leaving my school for a local one. (Headteacher, Open-ended survey response)

For those with long tenure, their existing school is likely an excellent match for them, otherwise they would have moved on! And even if there are elements of the existing school that do not suit them, they may have strong longstanding relationships and excellent knowledge of existing systems that they do not wish to leave behind. Male teachers and those with children at home are more likely to be willing to consider a lower salary increment to move. We know that teachers with children are most likely to be income constrained and male teachers are more likely to be the primary breadwinner in the household, so this could explain why they are willing to consider a risky job move in exchange for a relatively low salary increment (Teacher Tapp, 2022).

However, in all this analysis, recall that these are not causally descriptive associations since there is already non-random assignment of teachers into schools. Furthermore, current salaries are a function of both their current school assignment and their personal characteristics, as shown in Allen and Sims (2018). All this means that the salary increment requested will reflect both their personal circumstances and their current school.

We can observe an association between the salary increment they require to consider and move and their current job satisfaction for 88% of this sample, who on 11 October 2024, responded to a question about how satisfied they feel at work at the moment. Figure 12 12 clearly shows that those who are satisfied with their current school demand higher salary increments to consider applying for a role elsewhere.

Figure 12: Average salary increment, by level of satisfaction at current school



Relationship between salary increment and deprivation in schools

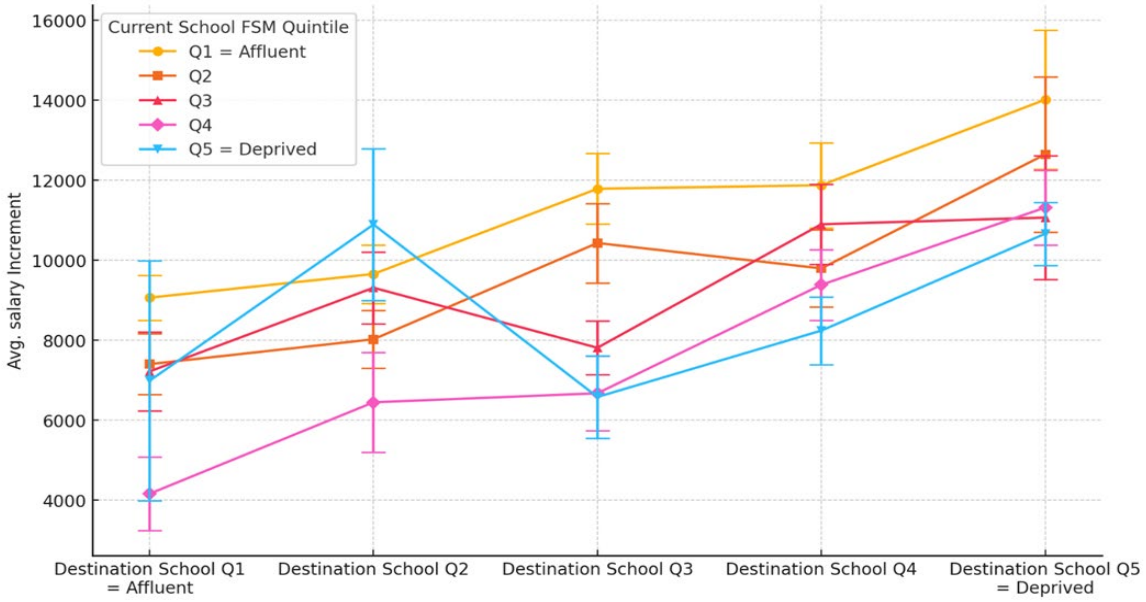
We now explore the key relationship between school deprivation and salary increment requested. For much of the analysis that follows, schools are grouped into quintiles based on their FSM levels. Figure 13 13 below plots the average salary increment requested against the FSM quintile of the named local school. It does this separately by the current FSM quintile of the school, a category which reflects both the existing conditions of their workplace but also the unobserved characteristics of the teachers who tend to work there.

In Figure 13, the chart allows us to observe the following three key features:

1. Regardless of current school FSM quintile, teachers typically request a higher salary increment to apply for jobs at higher FSM quintile schools.
2. Those teaching in the most affluent schools (shown as circles for quintile 1 [Q1] and squares for quintile 2 [Q2]) typically request a higher salary increment than those currently in less affluent schools.
3. The number of observations underlying some of these data points on the chart are quite small, which is represented by the size of the shape marker.

Figure 13 illustrates the challenge that more disadvantaged schools face in attracting job applicants. Even those who are currently in another high-FSM school say they would require a salary increment of over £10,000 to consider a role in another high-FSM school.

Figure 13: Average salary increment requested for each FSM quintile of local school, grouped by FSM quintile of current school



We now move to analysing these relationships as set out in our theoretical framework. Our hypothesis is that there would be a relationship between the change in FSM % and the salary increment requested. We model this relationship separately for groups of teachers who work in similar current schools, to capture the potential unobserved teacher characteristics of these groups.

Before we estimate the regression model, Figure 14 and Table 17 below show the average salary increment plotted against change in FSM, which has been grouped into quintiles for illustrative purposes. Generally, the relationship between change in FSM % and salary increment required is positive, as expected, and does not appear to vary systematically between groups based on current FSM quintile (with perhaps the exception of those currently in disadvantaged schools).

Figure 14: Average salary increment by change in FSM quintile, grouped by current school FSM quintile

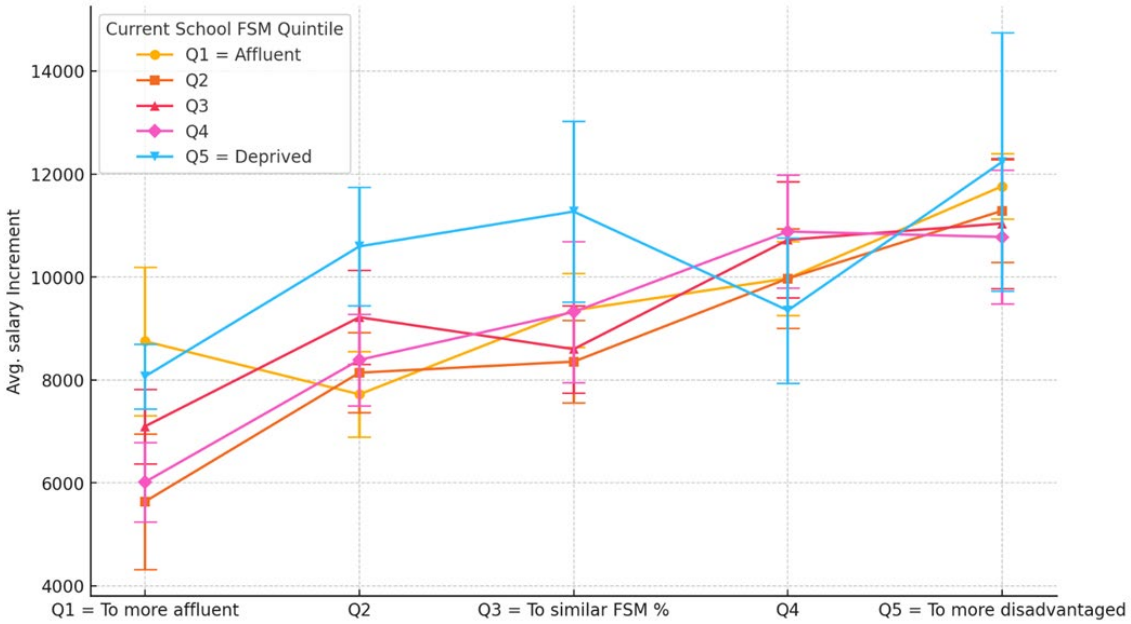


Table 17: Summary statistics (N and average salary increment) for change in FSM quintile versus current school FSM quintile

Current school FSM quintile	Change in FSM quintile									
	Quintile 1 = To more affluent		Quintile 2		Quintile 3 = To similar FSM %		Quintile 4		Quintile 5 = To more disadvantaged	
	N	Mean	N	Mean	N	Mean	N	Mean	N	Mean
1 = Affluent	1	£6,250	57	£6,864	128	£9,717	149	£10,193	273	£11,113
2	25	£5,950	130	£8,913	163	£8,696	160	£9,727	130	£12,423
3	98	£6,250	167	£8,757	142	£8,336	110	£10,761	90	£12,181
4	176	£6,236	148	£7,618	91	£7,720	109	£10,344	83	£10,783
5 = Deprived	306	£7,982	105	£10,679	86	£12,093	77	£9,756	33	£11,932

Figure 15 presents five separate regression lines, each estimating the relationship between the required salary increment and the change in FSM % when considering a move to a nearby school, stratified by the teacher's current school FSM quintile. Each line reflects teachers currently in schools in that quintile and shows how the salary they would require varies depending on whether the alternative school is more or less disadvantaged. For example, a positive slope indicates that teachers in that quintile generally require higher pay to move to a more disadvantaged school.

Figure 15 also illustrates important disparities in the data across quintiles. Teachers in quintile 1 schools (the least disadvantaged) cannot move to significantly less disadvantaged schools, so the available data is concentrated on the right-hand side of the plot (i.e. moves to more disadvantaged schools only). In contrast, teachers in quintile 5 schools (the most disadvantaged) can name nearby schools that are either more or less advantaged (because the FSM band for quintile 5 ranges from 34% to 71%), leading to a wider distribution of FSM changes and more variation in the underlying data. This affects the precision and interpretation of the trendlines, particularly at the extremes.

1515: Salary increment by change in FSM, by current school FSM quintile

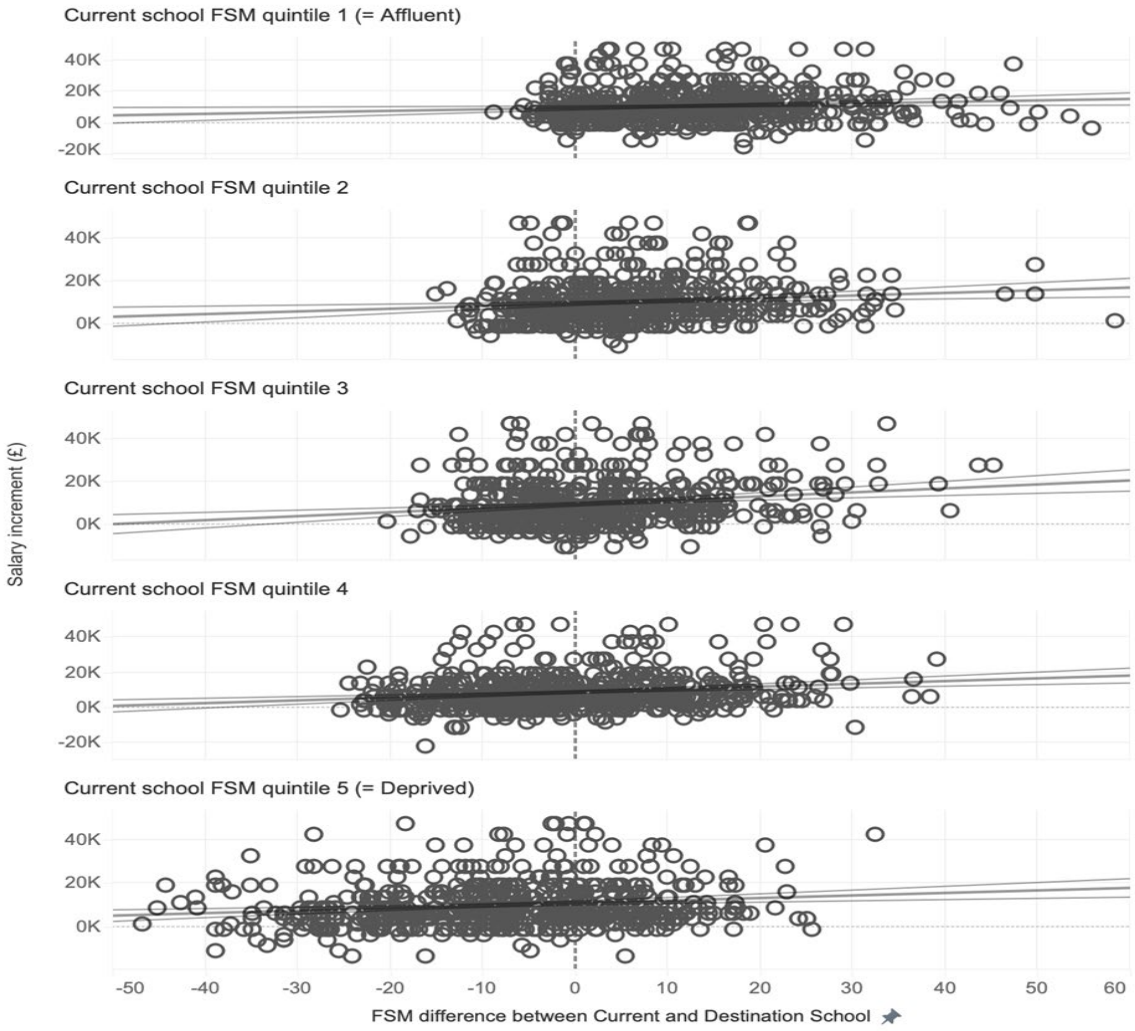


Table18 shows the output from the five regressions of salary increment on change in FSM, with no other explanatory variables. First, note that the R-squared is low in all cases. In other words, the FSM profile of the school does not strongly determine the teacher's willingness to consider working there. That is, personal and school factors matter a great deal. Second, the intercept, representing the salary increment required to move to a school with the same FSM %, is not very different across the five models, and does not follow a discernible pattern. Third, while the estimate of the salary increment required for each additional FSM % at the local school varies across models from £94 to £195, it does not do so in a consistent manner.

From this, we conclude that teachers tend to require similar salary increases to move between schools with different levels of disadvantage. In other words, the additional pay needed to move from a school with 5% of pupils on FSM to one with 25% FSM is likely to be similar to the pay needed to move from a 25% FSM school to one with 45% FSM.

However, the total salary increase a teacher expects depends on where they are starting from. A teacher currently working in a more affluent school (e.g. 5% FSM) would typically need a larger pay rise to move to a highly disadvantaged school (e.g. 45% FSM) than a teacher already working in a mid-range school (e.g. 25% FSM). This suggests that while the *step between contexts* matters equally, the *distance from a teacher's current context* plays a significant role in the salary they require.

Table 18: Five regressions of salary increment on change in FSM, for each FSM quintile of current school

Current school			Intercept				Change in FSM			
Quintile	N	R-sq	Beta	Standard error	T-stat	P-value	Beta	Standard error	T-stat	P-value
Quintile 1	608	1%	£9,067	£651	13.93	0.00	£94	£40	2.35	0.02
Quintile 2	608	2%	£8,921	£460	19.40	0.00	£135	£40	3.39	0.00
Quintile 3	607	3%	£8,795	£429	20.51	0.00	£195	£42	4.67	0.00
Quintile 4	607	3%	£8,272	£404	20.49	0.00	£155	£34	4.54	0.00
Quintile 5	607	2%	£10,416	£512	20.33	0.00	£116	£33	3.55	0.00

Subgroup analysis

Given that the key coefficients on the models above did not follow consistent patterns of difference by current school profile, we look at how salary increment required to move varies by teacher subgroups across all teachers in the data set. Again, this is merely a descriptive analysis, recalling that these groups of teachers are already unevenly distributed across schools. Many of the demographic groups are grouped here to maintain reasonable sample sizes.

Table 19 below shows the output of the 15 regressions of salary increment on change in FSM for different subgroups of teachers. The first row in Table 19 shows the model for all teachers, showing a teacher requires an average of £9,089 in salary increment to move to a school with a similar FSM to their current one. In addition, they require an average of an additional £115 for each one percentage point increase in FSM.

The most important results relate to differences by phase. In the primary phase, teachers are largely indifferent to FSM %, with no additional salary increment required to compensate for greater school disadvantage. By contrast, secondary phase teachers require £151 for each additional FSM % at the local school. Female teachers require less than male teachers, but this simply reflects their greater prevalence in the primary sector. Headteachers and other senior leaders appear to require less to compensate for greater FSM. The sample sizes are a little too small to interrogate this closely, but it generally seems that secondary headteachers are very sensitive to the school's FSM % but other senior leaders are not.

In additional interaction models (not shown), we examined whether preferences for FSM levels vary within the same model across demographic groups. These regressions indicate that while the slope (i.e. sensitivity to FSM change) varies only by school phase, the intercepts (i.e. the baseline salary increment required to move to a similarly disadvantaged school) differ meaningfully by tenure, seniority, experience, gender, and age. That is, some groups (such as newer teachers or classroom teachers) require systematically less than others to consider moving at all, even when FSM is held constant. However, across all groups other than school phase, the marginal penalty for disadvantage (FSM) remains remarkably stable.

Table 19: The 15 separate regressions of salary increment on change in FSM, by demographic groups

Demographic groups			Intercept				Change in FSM			
Subgroup	N	R-sq	Beta	Standard error	T-stat	P-value	Beta	Standard error	T-stat	P-value
All teachers	3,037	2%	£9,089	£191	47.56	0.00	£115	£14	7.98	0.00
Age 20s and 30s	1,271	2%	£8,556	£264	32.41	0.00	£104	£20	5.30	0.00
Age 40s and 50s+	1,762	2%	£9,475	£268	35.31	0.00	£123	£20	6.04	0.00
Female	2,232	2%	£9,479	£227	41.82	0.00	£101	£17	5.95	0.00
Male	789	4%	£7,998	£350	22.88	0.00	£154	£26	5.88	0.00
Experience less than ten years	952	3%	£8,036	£303	26.52	0.00	£111	£22	5.00	0.00
Experience ten plus years	2,045	2%	£9,576	£243	39.35	0.00	£116	£18	6.29	0.00
Middle leader and classroom teacher	2,163	3%	£8,610	£218	39.56	0.00	£130	£16	8.01	0.00
Senior leadership teacher and headteacher	793	1%	£10,428	£410	25.40	0.00	£81	£31	2.62	0.01
No children at home	1,259	2%	£9,345	£308	30.35	0.00	£107	£23	4.71	0.00
Children (various ages)	1,760	2%	£8,878	£241	36.86	0.00	£122	£18	6.68	0.00
Tenure less than five years	1,028	3%	£8,100	£296	27.32	0.00	£123	£22	5.48	0.00
Tenure five plus years	1,762	2%	£9,822	£266	36.89	0.00	£110	£20	5.50	0.00
Secondary phase	2,087	3%	£9,014	£232	38.78	0.00	£151	£18	8.52	0.00
Primary phase	950	0%	£9,069	£338	26.85	0.00	£44	£25	1.81	0.07

Other costly school attributes

As a tangent to the main research question, we look at whether particular types of school moves require additional compensation, over and above the school's FSM proportion. Sample sizes are not large enough to include indicators for every possible type of move (e.g. private to MAT, local authority school to MAT, etc.). Instead, we look at the following associations, which reflect some of the comments made in the open-text responses:

- current school is a private school;
- current school is a Roman Catholic school;
- current school is any other religious school;
- named local school is a Roman Catholic school;
- named local school is any other religious school;
- named local school is in a MAT; and
- named local school is a stand-alone Academy.

Table 20 below shows whether the size of the salary increment requested is associated with other school characteristics, after the change in FSM is taken into account. Only two coefficients are significant. Those currently working in a Roman

Catholic school require a larger salary increment (£2,190) to leave their school, but there is not any evidence that these Catholic schools are particularly attractive to those not currently working at them. Teacher Tapp has a recent survey question on the teacher's own religious affiliation, which shows that 41% of teachers in Catholic schools in this sample are Roman Catholic, and an additional 21% are another Christian denomination. We can observe that the Catholic teachers in Catholic schools have much higher salary increments required to leave, followed closely by the other Christian teachers. The non-Christian teachers do not have a high salary increment, which suggests that it is the alignment of the religious values of the teacher with the school that is a cause of the greater salary increment, rather than other social aspects of the school.

This reflected open-ended comments by those working in Catholic schools:

> *I teach in a faith school. It's the only one in the local area. This would make me reluctant to change jobs because I would have to move out of Catholic education.* (Teacher, Open-ended survey response)

> *I work in a Catholic school so a different ethos and a large reason why I would remain where I am.* (Teacher, Open-ended survey response)

> *I teach in a Catholic school and I would prefer to teach in that context than in a non-faith school. The other school is actually really good and very popular.* (Teacher, Open-ended survey response)

The evidence that teachers would require a larger salary increment (£769) to move to a school in a MAT is quite weak, though reservations about this did appear in many open-ended comments:

> *An academy trust [MAT] that centralises everything and uses booklets. No thanks.* (Teacher, Open-ended survey response)

> *It is part of a highly restrictive academy trust [MAT] which has had a huge impact on staff morale and teacher self-determination. I would not want to work there without a significant financial incentive.* (Teacher, Open-ended survey response)

> *I would not choose to work at a large multi-academy trust (MAT) school.* (Teacher, Open-ended survey response)

> *I wouldn't really want to go as it's a Trust [MAT] and I work and really want to remain in a local authority school. £10,000 would make me give it serious thought.* (Teacher, Open-ended survey response)

> *I've previously worked for that MAT and workload was untenable so this would make me hesitant to rejoin.* (Teacher, Open-ended survey response)

Perhaps surprisingly, those working in private schools do not require a greater salary increment to move, compared to those working in the most affluent state schools. Some open-ended comments explained how these types of decisions to move are influenced by quite different factors:

> *My school may decide to leave TPS [Teachers' Pension Scheme] which influences my decision about where to work.* (Teacher, Open-ended survey response)

> *I am looking to move because I need a change, it's a good school but I worry the jump back to state would be difficult. I have applied for 1/2 jobs but they are reluctant to consider me coming from a private school even though my personal value added is +1 above my colleagues in the same subject.* (Teacher, Open-ended survey response)

I currently work in an independent school and get fee remission for my children as a member of staff. (Teacher, Open-ended survey response)

It's hard to weigh up the monetary value, I suspect that even at £20,000 I would not be prepared to go to a school with such notorious behaviour issues. (Teacher, Open-ended survey response)

The regression analysis of these other school characteristics also shows that teachers require a higher premium, given other school characteristics, to consider a school judged as 'Requires Improvement' or 'Unsatisfactory' by Ofsted. Similarly, they require a smaller premium if they are currently teaching at a school with one of these judgements. However, there is little evidence that an 'Outstanding' judgement by Ofsted is associated with different premiums, compared to a 'Good' judgement.

Table 20: Regression of salary increment on other school characteristics

Variable	Beta	Standard error	T-stat	P-value
Constant	£8,395	£436	19.25	0.00
Change in FSM	£97	£15	6.47	0.00
Primary phase	£195	£450	0.43	0.66
Current school = Private school	£0	£0	1.42	0.15
Current school = Roman Catholic	£2,190	£757	2.89	0.00
Current school = Other Religious	-£373	£545	-0.69	0.49
Destination school = Roman Catholic	£886	£888	1.00	0.32
Destination school = Other Religious	-£62	£651	-0.10	0.92
Destination school = MAT	£769	£431	1.78	0.07
Destination school = Stand-alone Academy	-£123	£659	-0.19	0.85
Current school = Ofsted Outstanding	£1,063	£577	1.84	0.07
Current school = Ofsted Requires Improvement/Unsatisfactory	-£1,755	£642	-2.73	0.01
Destination school = Ofsted Outstanding	-£54	£550	-0.10	0.92
Destination school = Ofsted Requires Improvement/Unsatisfactory	£2,195	£664	3.31	0.00

Note: N=3,037; R-sq.=3.2%.

Beliefs about the character of the local school

We asked teachers to tick any of the following five attributes that they felt were either (i) better or (ii) worse at the named destination school: pupil behaviour; leadership; culture; curriculum; and travel time. Figure 16 below shows how their views—measured as the percentage of teachers who felt each attribute was worse—varied according to the change in FSM between their current and destination school.

The results show that perceptions of behaviour are strongly linked to changes in FSM. Views on culture and curriculum show a weaker relationship, while perceptions of leadership and travel time appear unrelated to changes in FSM. This suggests that concerns about behaviour are a key factor underlying the link between salary expectations and FSM differences.

Figure 16: Percentage of teachers who say attribute is worse at the destination school, by change in FSM quintile

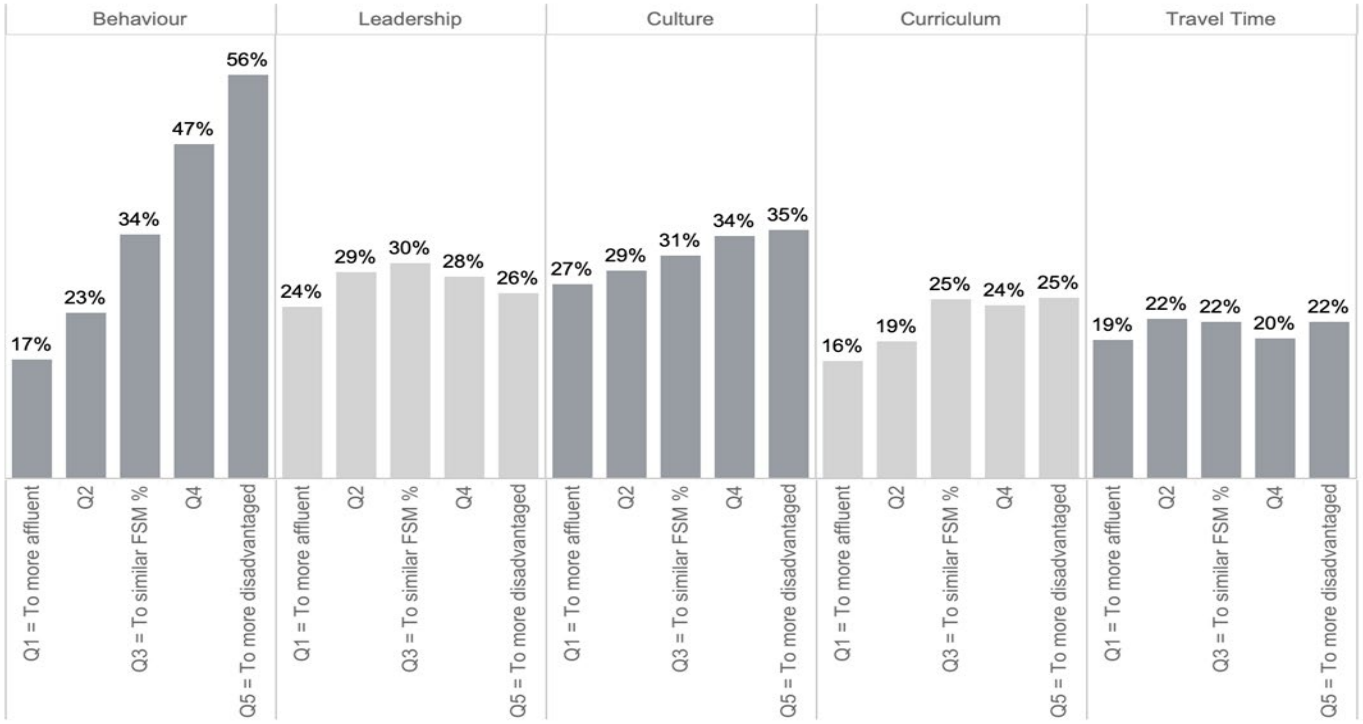
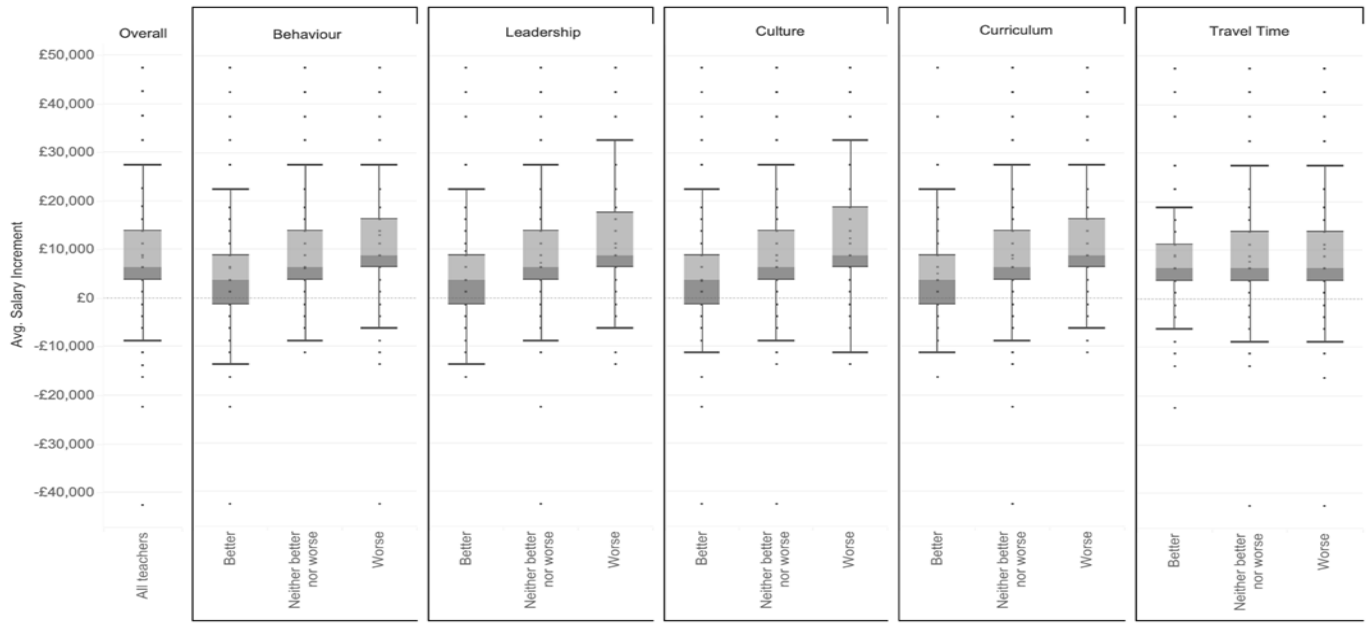


Figure 17 below shows how teachers' views of the local school relate to the distribution of the salary increment required. In general, perceptions of pupil behaviour, leadership, culture, and curriculum are all associated with the salary increment, whereas travel time is not.

Figure 17: Distribution of salary increment, by views on relative characteristics of destination school



Teachers' views across these five dimensions are correlated with one another. When we regress the required salary increment on binary indicators of their views for each attribute—alongside the change in FSM—we find that, in general, teachers are willing to accept a lower salary increment for schools they perceive to be better in any of these areas. Among the five attributes, perceptions of culture are associated with the largest differences in salary increment required.

Importantly, the coefficient on change in FSM remains statistically significant in the regression. This indicates that the basic information we collected on teachers' views of these five attributes does not fully explain why they would require higher pay to move to a school with greater disadvantage.

Table 21: Regression of salary increment on teacher views of destination school

Variable	Beta	Standard error	T-stat	P-value
Constant	£8,865	£311	28.50	0.00
Behaviour is better	-£1,944	£547	-3.55	0.00
Behaviour is worse	£64	£470	0.14	0.89
Leadership is better	-£1,466	£610	-2.40	0.02
Leadership is worse	£1,966	£487	4.04	0.00
Culture is better	-£2,155	£602	-3.58	0.00
Culture is worse	£2,548	£499	5.11	0.00
Curriculum is better	-£1,066	£631	-1.69	0.09
Curriculum is worse	£1,425	£485	2.93	0.00
Travel time is better	-£2,033	£522	-3.89	0.00
Travel time is worse	£23	£464	0.05	0.96
Change in FSM between schools	£80	£15	5.49	0.00

Note: N=3,037; R-squared=10.7%.

Research question 3: Conclusion

This relatively unusual survey approach—asking teachers about the conditions under which they would apply to a named local school—has proven effective. It enabled us to quantify the salary uplift that teachers require to consider changing jobs, rather than relying on hypothetical preferences alone. Teachers are generally reluctant to move and typically require a substantial pay increase to do so: the median salary increment required to consider applying to a new school was £6,250, equivalent to 13% of the current salary.

Against this backdrop, we were able to identify the additional uplift required to attract applicants to more disadvantaged schools. Teachers require significantly higher salary increments to apply to schools with higher levels of pupil disadvantage, as measured by FSM eligibility. This finding aligns with existing evidence that such schools face greater recruitment and retention challenges and already tend to pay more to retain staff. We estimate that teachers require an additional £115 per annum for every percentage point increase in a school's FSM rate. For example, persuading a teacher currently working in a quintile 1 FSM quintile school (average 5% FSM) to apply to a quintile 5 FSM quintile school (average 44% FSM) would require a salary uplift of approximately £4,485—compared to a move between two quintile 1 schools.

This effect varies markedly by phase. In secondary schools, the required uplift is £151 per FSM percentage point, whereas in primary schools it is just £44—and may be statistically indistinguishable from zero due to a wide CI. This means that persuading a teacher to move from a quintile 1 to a quintile 5 FSM quintile school—compared to a move between two quintile 1 schools—would cost £5,889 in the secondary phase, but only £1,716 in the primary phase. This mirrors other findings suggesting that teacher dissatisfaction is more acute in disadvantaged secondary schools than in primary settings.

Given a median teacher salary of £46,525 (see Appendix I and details in the following section), our findings imply that the most disadvantaged schools may need to offer an average salary premium of up to 9.6%, or equivalently attractive job attributes—such as 20% PPA time or class sizes of 22 pupils—in order to attract an applicant pool comparable to that of more affluent schools. This salary premium required in the secondary phase is even higher at 12.7% (and just 3.7% in the primary phase). While such schools do receive additional funding via the Pupil Premium and the National Funding Formula, this funding is subject to multiple competing pressures.

We can compare our estimates of a 12.7% (secondary) and 3.7% (primary) required uplift to the figures reported in Allen and Sims (2018), who found that high-FSM secondary schools were paying 3.4% more (£1,289 on a £38,000 salary), and high-FSM primary schools were paying just 1.5% more (£530 on a £36,000 salary), for teachers with identical characteristics in the same area. Our analysis suggests that current salary differentials fall significantly short of what would be needed to equalise recruitment appeal—helping to explain ongoing challenges with teacher turnover and staffing shortages in disadvantaged schools.

A key limitation of the analysis is that it does not directly measure how accurately teachers perceive the disadvantage level of the alternative school. While the design assumes respondents have some general awareness of local school contexts, the strength and accuracy of those perceptions are likely to vary. Teachers may not have interpreted the task as requiring them to value a single marginal change in FSM %; instead, their responses may reflect broader beliefs about the profile and working conditions of more disadvantaged schools. These beliefs could be shaped by personal experiences (such as past job applications, rejections, or informal reputational knowledge), which may introduce bias. As a result, the observed preferences may reflect a bundle of perceived attributes rather than a narrowly defined intervention. This, combined with the strong preference for remaining at one's current school (suggestive of status quo or endowment effects), complicates interpretation of the estimated salary increments. We recommend that future work more tightly isolate the valuation target if the aim is to estimate precise trade-offs.

Conclusion

Table 22: Key conclusions

Key conclusions
Teachers most value concrete offers such as greater protected PPA time, smaller class sizes, and free ancillary healthcare. When mentioned in job adverts, these had effects comparable to a 10% salary increase.
Many job attributes that are liked by teachers are expensive to provide, and in some cases, schools would achieve better recruitment outcomes by increasing salary instead. However, **healthcare offers, childcare subsidies, and flexible working commitments** stand out as both **better value for money** and **more likely to influence application decisions** than increasing salary for many teachers.
Phase differences matter: Primary teachers are more likely to value blocked, off-site PPA and collaboration opportunities; secondary teachers are more likely to prioritise the total amount of PPA. Similarly, implementation costs and feasibility vary across phases.
Secondary schools serving disadvantaged communities face a structural recruitment challenge: On average, teachers require 13% higher pay to consider applying. This is far more than the uplift currently observed in the system.
Retention is critical, especially in disadvantaged schools, because most teachers are reluctant to move without a substantial salary incentive. Also, the aspects they value most, such as culture, pupil behaviour, and leadership, are difficult to signal credibly in a job advert. The attributes that can be signalled effectively tend to be costly to implement, making retention a more viable and affordable strategy.

This study set out to understand, which job attributes make teaching roles more attractive to teachers, and how these preferences vary across different school contexts. Using a combination of large-scale surveys and paired conjoint experiments with teachers and headteachers, along with qualitative research, we explored not only teacher's stated preferences but also the practical challenges of implementing changes to job design.

Using a series of fully randomised paired conjoint experiments, we tested how teachers responded to a wide range of job attributes as they might be presented in job adverts. While salary was consistently a highly valued attribute, a number of specific and concrete working conditions also significantly increased the likelihood that teachers would prefer a job. Most notably, offering 30% protected PPA time (MM = 0.67), smaller class sizes capped at 22 pupils (MM = 0.65), and free ancillary healthcare including time off for appointments (MM = 0.67) all had Marginal Means comparable to, or slightly below, the effect of a 10% salary increase (MM = 0.67–0.69 across experiments). Teachers also valued a guaranteed 35-hour working week with structured support (MM = 0.60), and a clear commitment to accommodate flexible working requests (MM = 0.55). In contrast, less specific or more generic statements—for example, vague well-being commitments or generalised leadership claims—had smaller effects. Overall, teachers responded most positively to clear, tangible offers that addressed workload, well-being, and flexibility in practical terms.

However, many of the most attractive job attributes identified in the preference experiments come with significant implementation costs—so substantial, in fact, that in many cases schools would achieve better recruitment outcomes by directing the same funds into higher salaries. That said, a small number of attributes stood out as both cost-effective and impactful. These included ancillary healthcare offers (including time off for appointments), a clear commitment to accommodating flexible working, and on-site childcare with subsidies—the latter being relatively expensive but offering good value due to its limited uptake. In addition, some lower-cost attributes—such as statements about cutting workload or promoting a collaborative, supportive leadership culture—are not decisive on their own but represent strong value for money and are likely to enhance a school's appeal when included in job adverts. Notably, a softer commitment to flexible working ('will be accommodated where possible') proved more cost-effective than a stronger guarantee, as it was nearly as appealing but far cheaper to deliver. While not transformative individually, these lower-cost measures can make a meaningful difference when bundled together. Other strategies that may already be fairly widespread—such as blocked PPA time and timetable co-planning—are also worth emphasising more explicitly, as they may already be deliverable within existing structures yet remain highly valued by teachers.

Subgroup analysis revealed that phase differences between primary and secondary teachers are particularly important when interpreting preferences and considering implementation. While both phases value increased PPA time, primary teachers showed a stronger preference for blocked PPA that can be taken off-site and for collaborative planning

opportunities. In contrast, secondary teachers placed greater emphasis on the total quantity of PPA time, with less concern about how or when it is scheduled. These differences matter not only for designing appealing roles but also because the costs and feasibility of implementation vary significantly by phase—with some strategies, such as blocked off-site PPA, being more practical and affordable in the primary setting. These findings are of particular significance given that the cost and logistical implications of implementing these approaches may vary considerably between phases.

In research question 2, we explored the perspectives of headteachers through a paired conjoint experiment, survey responses and focus groups, focusing on how they implement job attributes in practice and their views on feasibility, cost, and policy. The experiments show headteachers strongly support government policies to fund increased PPA time and smaller class sizes, with less support for funding to cap working hours and little to no support for funding to facilitate PPA blocking. Headteachers were generally enthusiastic about offering improved working conditions, particularly where they had seen benefits for recruitment, retention, and morale. However, they also emphasised the practical and financial constraints involved—especially for high-cost changes such as enhanced PPA time or reduced class sizes. Many reported needing to balance teacher preferences for flexibility with timetabling realities and highlighted that successful implementation often depends on careful planning, skilled support staff, and organisational stability.

In research question 3, we used a novel approach—asking teachers under what conditions they would apply to specific named schools—to quantify the salary uplift required to attract applicants to disadvantaged schools. Teachers were generally reluctant to move, requiring a median salary increase of £6,250 (13%) to consider applying elsewhere. This reluctance was amplified for high-FSM schools, with an estimated additional requirement of £115 per FSM % point—equating to a £4,485 premium to move from a low- to high-FSM school. The effect was especially pronounced in secondary schools, where the required uplift was more than three times higher than in primary. These figures suggest that, despite receiving additional funding, many disadvantaged secondary schools are still unable to offer job packages competitive enough to attract equivalent applicant pools—helping to explain persistent recruitment difficulties and higher turnover.

This study builds on and extends the existing literature on teacher recruitment by providing large-scale experimental evidence on the relative importance of job attributes as presented in adverts. Prior studies have highlighted the role of salary and working conditions but often focused narrowly on financial incentives or specific job attributes. Our findings confirm the primacy of salary but add new insight by quantifying the relative appeal of non-salary attributes—especially those related to workload and well-being—within realistic trade-offs. Unlike much previous work, our research directly compares stated teacher preferences with school-level feasibility and headteacher priorities, revealing important tensions between desirability and deliverability. Moreover, our novel design in research question 3 offers a fresh way to understand the barriers to staffing disadvantaged schools—providing rare evidence on the scale of financial incentive needed to equalise recruitment appeal across contexts and the particular salience of this issue at secondary level.

For schools—particularly those serving disadvantaged communities—this research underscores the importance of retention. Recruiting new teachers is challenging: most are reluctant to move without a significant salary incentive, and the job attributes that do attract interest are often expensive to provide. While culture, pupil behaviour, and leadership are all known to shape teachers' perceptions of a school, our findings show that these qualities are difficult to communicate credibly through job adverts alone.

For policymakers, this research highlights that there are no low-cost solutions to making teaching roles more attractive. While teachers clearly value improved working conditions, the attributes that matter most—such as greater protected PPA time or smaller class sizes—come with significant costs. Our findings also suggest that setting national rules around working practices, particularly PPA arrangements, risks unintended consequences, as primary and secondary schools differ both in what teachers' value and in what is practical to implement. Crucially, in secondary schools with high levels of disadvantage, a substantial salary premium may be required simply to attract a comparable pool of applicants. This points to the need for greater flexibility in the teacher pay framework, allowing for more responsive local salary setting, and associated funding reform to ensure that the most disadvantaged schools are not structurally disadvantaged in the recruitment market.

Limitations and lessons learned

Internal validity

This study was designed with a strong emphasis on internal validity. The use of fully randomised paired conjoint experiments, consistent attribute rotation, randomisation of profile order, and balance checks across experimental conditions all help ensure that observed preferences are attributable to the job attributes themselves rather than artefacts of survey design. Salary is a salient attribute in job decision-making and was therefore, included in every deck to support interpretability and comparability across experiments. However, we recognise this inclusion may have inadvertently signalled its relative importance to respondents. Our design does not fully allow us to estimate the average marginal effect of salary relative to all other job attributes in a unified model. Instead, the effects of salary are context-dependent, estimated within the specific attribute sets included in each deck. To partially address this limitation, we included a final robustness experiment that combines the most influential attributes from the earlier experiments into a single design. This allowed us to more directly explore the trade-offs between salary and other highly valued job features. While this does not fully resolve the challenge of estimating global preference structures, it offers additional insight into how respondents prioritise key attributes when considered simultaneously.

While the paired conjoint approach offers stronger internal validity—requiring respondents to make trade-offs between competing job attributes and more closely mirroring real-world decisions—it can be more challenging for teachers to complete. Future work could consider combining conjoint experiments with simpler pairwise comparisons, direct rating, or ranking tasks to explore how expressed preferences align with trade-off-based decisions.

Ecological validity

While this study was designed to maximise internal validity, there are several limitations in relation to external or ecological validity. First, the conjoint tasks simulate job adverts, but real-world recruitment decisions involve more complex information, informal networks, and subjective impressions, that is, factors that cannot be fully captured in an experimental setting. These considerations are explored in further detail in Appendix B. Second, headteachers' willingness or ability to offer certain job attributes in practice is constrained by funding, staffing, and national employment frameworks, meaning that not all attributes preferred by teachers can realistically be included in contracts or adverts. Third, teacher decision-making is influenced not only by job attributes but also by local reputations and perceptions of schools. Our approach of naming local schools helped surface this, but we cannot fully account for the informal or historical factors that shape these perceptions. Fourth, we acknowledge that the absence of negative attribute levels may limit the interpretation of our findings in terms of policy constraints. Future research could include scenarios with trade-offs where improvements in certain attributes are explicitly linked to reductions in others to reflect the complexities of policy decision-making in practice. Finally, while job adverts may set the tone, they are only one part of a wider recruitment process that includes school visits, interviews, and word-of-mouth—limiting the extent to which preferences expressed in a hypothetical advert can predict actual application behaviour.

Lessons for further paired conjoined experiments

This study offers lessons for future paired conjoint experiments, particularly those delivered via mobile devices. As these types of experiments are still relatively uncommon on mobile platforms, our work makes a novel contribution to the literature. Mobile delivery presents both opportunities and constraints: participants tend to answer quickly; and the smaller screen size may influence engagement compared to desktop-based surveys. The use of stacked profiles, while suitable for mobile devices, limits the number of attributes that can be shown and necessitates concise, accessible wording. Future studies could benefit from further validation work—such as cross-checking results with simpler pairwise comparisons or direct rating tasks—to understand how mobile respondents process trade-offs and to ensure findings are robust across formats. Our study also highlights the importance of cognitively pretesting attributes and statements, an area that has at times been poorly documented in previous education-focused experiments of this type, despite more extensive treatment in medical literature.

Future research and publications

Attractiveness of job attributes

This study has been successful in identifying, at a high level, which job attributes are both credible to include in job adverts and genuinely valued by teachers. However, for some attributes, a more detailed understanding of *how* they are implemented and *what exactly* teachers value is now needed. This is particularly true for arrangements relating to job flexibility and the blocking of PPA time.[3] Many schools are currently experimenting with different models in these areas, but there is limited systematic evidence on what has been tried, what it costs, and what organisational implications arise. A useful next step for research would be to map this variation using a combination of qualitative and quantitative data collection approaches, capturing both the design and delivery of these arrangements and their perceived (and actual) impact on staff recruitment, retention, and workload.

Given current policy initiatives to integrate early years provision into primary schools, there may be an opportunity to examine whether this has influenced school selection among teachers, particularly those with young families. In our experiments, two attributes known to be important to teachers—workload and pupil behaviour—did not emerge as highly valued. To better understand, which specific workload and school behaviour policies are most valued by teachers, and most effective in improving working conditions, alternative research approaches will be required.

Job application and interview process

Our research highlights that while teachers place high value on working conditions—particularly workload, pupil behaviour, and leadership culture—these aspects are difficult to convey credibly through job adverts alone. Participants in focus groups particularly highlighted the importance of school visits and interviews when making judgements about a job's 'soft' attributes. Future research could explore how schools might more effectively signal their working environment to prospective applicants, whether through open days, staff testimonials, videos, or the use of standardised information on workload expectations and support structures. For example, our paired conjoint experiments could be adapted to scenarios where teachers are asked to choose between options based on what they observe during a school visit or interview. More broadly, there is very limited research on how teachers search for jobs, how they interpret and respond to different recruitment messages, and how they experience the interview process. Understanding what influences teacher decision-making during recruitment—from initial interest to final offer acceptance—would help schools and policymakers design more effective, transparent, and equitable hiring practices.

Attractiveness of teaching at disadvantaged schools

Our approach in research question 3 of asking teachers what salary increment they would require to apply to a named, real-life local school represents a novel way to understand the job choices teachers are willing to make. It offers an alternative to abstract hypothetical scenarios by anchoring decisions in a local context. Future research could build on this approach to explore other job-related behaviours, for example, by asking teachers to name a school they would most like to work at and explain why, or to consider a list of nearby schools and identify the conditions under which they would consider applying. Our data suggest that teachers often have limited knowledge of other schools in their area, which differs from real-world job searches where they might actively seek out information. Addressing this gap through richer information provision, or by integrating qualitative methods, could help uncover how teachers form impressions of local schools and what might shift their willingness to move. Additionally, asking about a wider range of scenarios such as upward career moves could help future studies capture a fuller picture of teacher mobility and aspiration.

Planned publications

The research team plans to publish a series of academic articles to disseminate the findings from this study. A technical paper will present the full results of research question 1 conjoint experiments, focusing on methodological detail and

[3] Work in this area is currently at the end of the scoping phase at the Education Endowment Foundation. See: https://educationendowmentfoundation.org.uk/projects-and-evaluation/projects/teacher-choices-ppa

preference estimation. A second paper will take a broader education policy perspective, combining the findings from research questions 1 and 2 with the cost analysis to assess the value for money of different job attributes. Finally, a third policy-focused paper will explore the novel approach used in research question 3 to understand how teachers respond to the prospect of applying to local schools with varying levels of disadvantage, and the implications for teacher mobility and recruitment policy.

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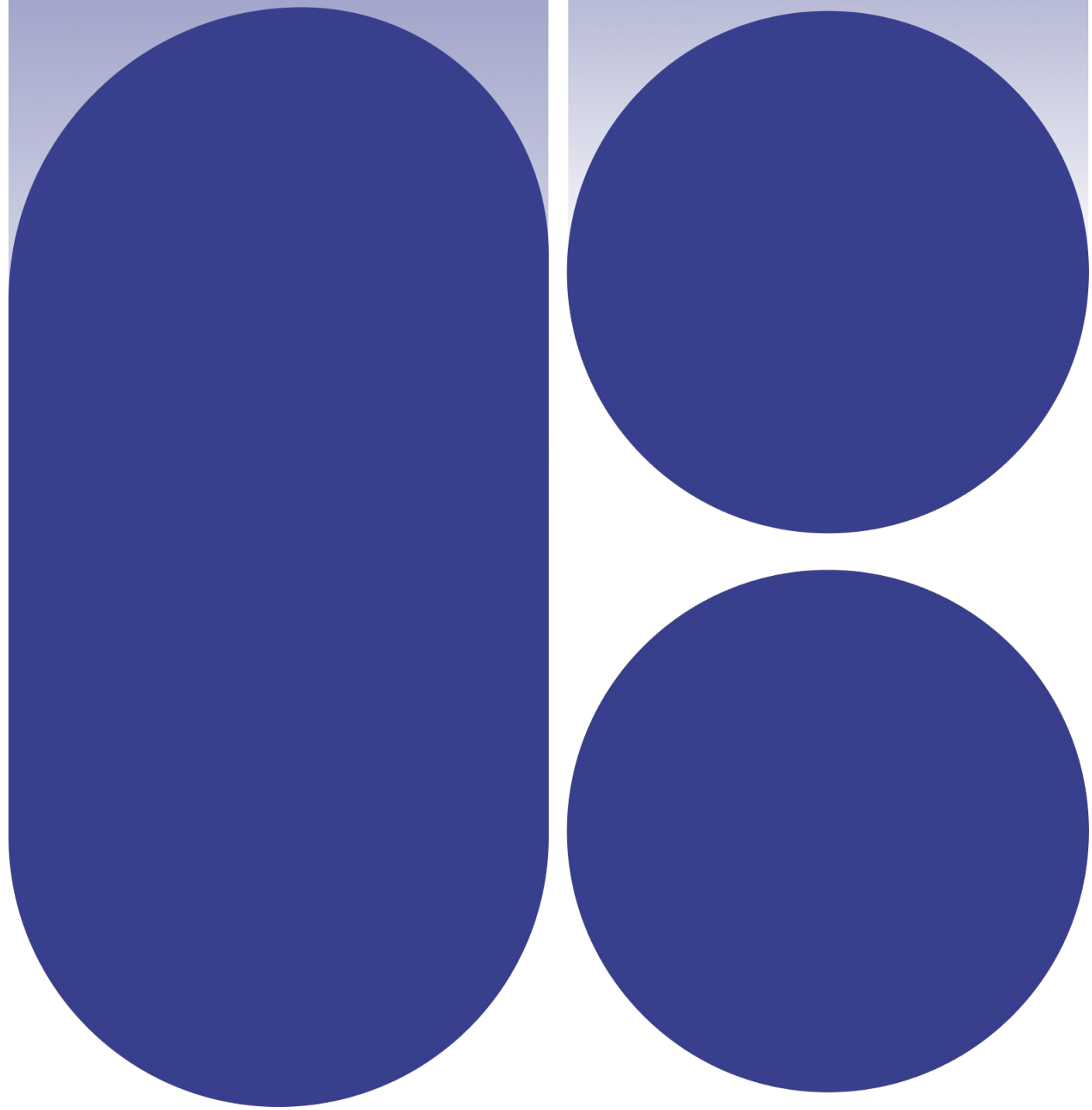
Further appendices

Please see the technical appendices report published separately on the project page.



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