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ORIGINAL ARTICLE OPEN ACCESS

The Relative Importance of the Establishment in the Determination of Job Quality

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ABSTRACT

Using linked employer-employee data from the British Workplace Employment Relations Survey, we examine how much of the variation in job quality is accounted for by establishment-level variation and the relative importance of the establishment compared with occupation and employee characteristics. We do so for pay, six dimensions of non-pay job quality and overall job quality. We show that the establishment is the dominant explanatory factor for non-pay job quality and as important as occupation in accounting for pay. Where you work accounts for between 38% and 76% of the explained variance in job quality, depending on the dimension. We also find that establishments which are 'good' on one dimension of non-pay job quality are 'good' on others. When we relate the estimated establishment effects (after allowing for the effects of occupation and of employee characteristics) to observed establishment characteristics, we find that non-pay job quality is greater in small establishments.

JEL Classification: J31, J32, M50

1 | Introduction

The aim of this article is to investigate the importance of the establishment in accounting for variations in job quality in several dimensions. Around the turn of this century, the International Labour Organization proposed the policy objective of 'decent work' for all, and this became the driving vision for much of its work in subsequent years, culminating in the adoption of the decent work objective by the United Nations as part of one of its sustainable development goals (SDGs) for 2030 (ILO 1999). Part of that concept concerns the characteristics of jobs that contribute to meeting workers' needs from their jobs—that is, job quality. The OECD (2003) and some national governments promoted the mantra of 'more and better jobs', and similar sentiments were espoused by the presidency of the Lisbon European Council in 2000.¹ Scholarly interest within several fields in the problem of job quality has also greatly increased during this century, to the extent that the number of papers on this topic has mushroomed.²

Conceptual progress has been made, and, though authors' classifications vary somewhat depending on their available data, several dimensions of job quality have been identified and are widely used in analyses: earnings, prospects (including security), working time quality, autonomy and skill,³ work intensity, the social environment and the physical environment (Leschke and Watt 2008; Eurofound 2012, 2021; Burchell et al. 2014; Chen and Mehdi 2019; Berg et al. 2023; Bolliger et al. 2022; Choi et al. 2020; Riva et al. 2022). Much evidence has also been amassed showing the strength of the association of each of these dimensions of job quality, sometimes in combination, with health and wellbeing (Green 2025). Taken together, the evidence now suggests that varying job quality is associated with a substantial proportion of the variation in general wellbeing across populations (Drobnič et al. 2010; Eurofound 2019; Green et al. 2024). This conclusion heightens the value to both scholars and policymakers of understanding the determinants of job quality.

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Job quality has typically been attributed to supra-organizational factors such as technological change, the supply of skills and macro-social trends. However, with respect to earnings and benefits, an additional focus has been on firms as autonomous agents, able to adopt differentiated strategies and pay wages that diverge from those paid by competitors to workers in the same occupations with the same skills (Abowd et al. 1999). Such interfirm wage differentiation has for long been interpreted as resulting from limitations to competition, including pervasive anti-competitive practices, a psychological resistance to change in differentials and, more recently to the presence of dynamic monopsony in labour markets (e.g., Lester 1952, Manning 2003). The evidence continues to support the view that establishment practices (both observed and unobserved) have an impact on wages beyond any identifiable influences from workers' skills and other characteristics and beyond the impact of the occupation to which employees are classified (Barth et al. 2016). The firm or establishment level is shown to be important for the understanding of wage inequality in several countries (OECD 2021).

Much less is known, however, about the importance of the firm in accounting for other dimensions of job quality. These other dimensions could be connected to pay, because they are in part jointly determined by labour market conditions and other common factors; they may also be loosely linked if higher wages are paid to compensate for poor job quality in another dimension. Nevertheless, non-pay dimensions need not be closely correlated with wages; in practice the correlations can be distinctly low (Green 2025). Thus, it cannot be presumed that the importance of establishments for non-pay dimensions of job quality is the same as it is for pay.

We contribute to the literature on the importance of the establishment, focusing our enquiry on its potential influence over several dimensions of job quality that are directly measured using survey methods. The context for our study is Britain, where average real pay has largely stagnated since before the Great Recession of 2008. We deploy matched establishment-employee data from the British Workplace Employment Relations Survey (WERS) (Department for Trade and Industry 2014; Department for Business Innovation and Skills 2015) to construct indices of job quality dimensions and composite indices of overall job quality and of non-pay job quality covering several dimensions. We deploy statistical methods to estimate for the first time the relative importance of establishments, compared with occupations and skills, for accounting for each dimension of job quality. The establishment component is captured by unique establishment identifiers contained in the data which identify which establishment each employee works in. The relative importance indicators are then compared between dimensions. The potential significance of these indicators is that, if large, they would suggest that establishment-level policies—for example, for firms to implement a package of high-involvement working practices or for government to impose regulatory controls that constrain certain practices found in low-job-quality establishments—could be a viable means to positively influence job quality. In further analyses we then proceed to relate the residual establishment premia (the fixed effects from our estimating equations) to the size of the establishment and to several other observed establishment characteristics, as suggested in theory and by previous studies of wages.

2 | Theoretical Frameworks and Literature Review

2.1 | Why Establishment-Level Variation in Job Quality Can Persist

There is a long-standing literature spanning economics, industrial relations and organizational sociology on the role of firms and their managers in wage-setting in the context of imperfect labour markets (e.g., Lester 1952, Manning 2003, Osterman 2006, Batt et al. 2010). Firms are presumed to have some leeway to choose a wage strategy, such as those exemplified in the banner distinctions between 'high road' and 'low road' firms (Osterman 2018). This presumption has been supported in recent years by a growing body of evidence showing the importance of firm-specific wage premia in accounting for wage variation, over and above the effects of occupations and of sorting according to employees' skills and other characteristics (Abowd et al. 1999; Barth et al. 2016; Song et al. 2019; Schaefer and Singleton 2020; Avent-Holt et al. 2020). The importance of firms in determining job quality differs across countries. For example, it is higher in nations with decentralized bargaining systems, dualized industrial relations, and limited voluntary mobility, but lower in countries dominated by very large firms (OECD 2021).

Overall across 20 OECD countries, firm-specific wage premia account for approximately one half of rising overall inequality between the mid-1990s and the mid-2010s. Firm-specific factors have also been found to play an important role in accounting for ethnic and gender discrimination on wages: employers and managers who design jobs and their rewards have a variable propensity to discriminate or, conversely, to treat all employees fairly (Forth et al. 2023).

Theories of the determination of non-pay dimensions of job quality have often been framed in terms of macro-socio-economic factors, such as the growth of the 'knowledge economy' or, simply, economic growth, precariousness, the changing bargaining power and political power resources of labour, and the prevailing forms of technological and organizational change (such as skill-biased and effort-biased) along with global or domestic outsourcing (e.g., Kalleberg 2011, 2018; Howell and Kalleberg 2019; Green et al. 2022; Green 2025). Nation-specific institutions are seen to frame the prevalence of collective bargaining, the level at which it takes place, and the processes of occupational skill formation, which help to determine autonomy and skills requirements (Bryson et al. 2021). In some analyses, these institutions are thought to cluster in certain country groups or 'employment régimes' (corporatist, Nordic, liberal market, etc.) (Gallie 2007, 2009; Doellgast et al. 2009; Holman 2013; Frege and Godard 2014). These high-level determinants of job quality are then interwoven, in sociological accounts, with occupational social class as a potential key stratification category (Le Grand and Tahlin 2017; Mustosmäki et al. 2017; Warren and Lyonette 2018; Gallie 2013, 2019; Williams et al. 2020).

Yet, for reasons similar to those adduced for the importance of firms in determining wages, firms and establishments are also important for the determination of non-pay job quality, in that they may have a degree of freedom to adopt a range of levels for each dimension. They face partial constraints from

above, through legal and regulatory requirements, such as those requiring adherence to safety practices; such regulations do not, however, constrain managers fully. Managers are also limited by what the labour market will bear, in that high or low levels in any dimension of job quality are likely to affect the number of people offering to work for the firm and also potentially their behaviour in post (whether they deliver high or low discretionary effort). Yet market constraints are also loose, because there is far from perfect information about the levels available in competing firms. Thus, firms can follow a range of labour reward and control strategies that are different from those of competitors, without expecting high levels of inward or outward mobility. Kelly et al. (2023) provide a wide-ranging evidence review of how each of several employer practices may affect worker mobility, including via increases in job quality.

We expect that information about the non-pay dimensions of firms competing in the labour market is likely to be much less complete than what is known about wages. It is harder and more costly for job-seekers to learn about working conditions such as job autonomy or the extent of social support, or even the working time quality and the required pace of work in alternative jobs, than it is to obtain information about their posted wages, which are relatively easy to discover. Making the conventional assumption that incomplete information about alternative job offers generates frictions by raising the perceived costs of mobility, we hypothesize, therefore, that the amount of variation in job quality between establishments that can be sustained is greater for non-pay job quality than for wages. Establishments will thus be relatively more important in accounting for variation in non-pay dimensions than in accounting for variation in pay.

2.2 | Potential Observable Sources of Establishment-Level Variation in Job Quality

We expect that a substantive part of the variation in establishment job quality premiums is associated with factors that are typically not measured by observable indicators taken from surveys—such as managers' idiosyncrasies. Nevertheless, we also expect that some of the conditional cross-establishment variation in job quality will be related to observable characteristics, consistent with the existing, if relatively scarce, research on establishment-level determinants of non-pay job quality, as well as with the more extensive theory and evidence on pay. Establishment and organization size, for example, have long been known to be positively associated with pay (e.g., Mayhew 1976), something that has been variously attributed (Green et al. 1996) to monopsonistic wage setting, unobserved worker skills, rent-sharing in a non-competitive market, or compensating wage differentials (and indeed later studies show that some non-pecuniary job quality dimensions tend to be better in small establishments, which can facilitate a better social environment and deploy fewer bureaucratic controls (e.g., Storey et al. 2010; Bryson et al. 2021; Green and Lee 2024). Another substantive literature points to the importance of ownership and governance structures for job quality (e.g., Hoque et al. 2023). Thus, foreign-owned firms tend to be more productive (and hence pay higher wages) than domestic firms to overcome the costs inherent in operating abroad (Conyon et al. 2002); family-owned firms offer greater job security than

non-family firms but offset this by paying lower wages (Bassanini et al. 2013). Publicly owned organizations are often characterized as exemplifying good employment practice but may nevertheless suffer from bureaucratic procedures and macro-driven fiscal squeezes which militate against job quality (Bach and Kessler 2021). Publicly owned organizations also typically operate in a less competitive product market environment—another significant factor that may affect both pay and non-pecuniary job quality (Bach and Kessler 2021). Studies also look for a positive effect of product quality and of establishment age on job quality (Tatiana Gorjup et al. 2009).

This variation in job quality in similar jobs and occupations need not necessarily be the consequence of deliberative management strategy. Job quality can vary because, say, middle managers are variably supportive of those they oversee. Supervisors also have idiosyncrasies which, for some, result in them becoming 'bad bosses' (Artz et al. 2020), which senior managers fail to control. Thus, a further source of variation is in managerial quality and HR skills (Levine and Toffel 2010).⁴ As illustration, Arrighetti et al. (2022) find that in Italian firms where managerial skills have been enhanced, employers facing demand fluctuations tend to deploy existing staff more flexibly and make less use of non-standard jobs with low job quality. Poor skills may lead senior managers to fail to promote or recruit effectively (leading to skills mismatch) or neglect to provide adequate training for the middle managers who will be directly affecting the job quality of many employees in the establishment. In short, firm-level factors, such as the quality of senior leadership and of its human resource management, are likely to affect the job quality of all the firm's workers. Establishment-level variation in job quality is also a consequence of establishment-level variation in the participation opportunities, collective voice and bargaining position of its workers (e.g., Piasna et al. 2013, Hunter 2000, Gonzalez 2010). If a similar voice is available to all workers of particular occupations across establishments, as happens in more centralized bargaining systems, then there will be more uniformity; by contrast, where there is decentralized bargaining and where workers in some companies have acquired more voice than those in others, and that voice is used to affect working conditions, the consequence is more variation across establishments (Avent-Holt et al. 2020). Finally, previous studies also find pay variation across industries for similar workers, something that has been attributed to efficiency wages (Krueger and Summers 1988), and regional pay variation owing to variation in the cost of living (Dumond et al. 1999) or, in a federal context, in response to variations in public policy (Haley-Lock and Ewert 2011).

2.3 | Seeking Evidence on the Relative Importance of Establishments

Unlike with wages, research hitherto on the relative importance of establishments in accounting for the variation in non-pay elements of job quality has been scarce. The research on establishment-level wage variation relies on the presence of matched employer-employee datasets, the proliferation of which has enabled the above-cited studies. Yet, these datasets are typically compiled from administrative sources which record few, if any, elements of non-pay job quality. One exception concerns health insurance, retirement and leave benefits: Ouimet and

Tate (2023) find that these characteristics vary much less within firms and much more between firms than wages. Sometimes, administrative employer-employee data also include hours of work, which is relevant as the avoidance of very long hours working is an important element of working time quality having strong negative associations with physical health. For other elements of working time quality (such as hours flexibility) and for other dimensions of job quality, administrative data normally provides no information. Some insights can be obtained from commercial crowdsourced datasets, such as those available from commercial data (e.g., from Glassdoor or Indeed), which record employees' mentions and evaluations of several job characteristics alongside firm identifiers: Sockin (2022) uses these types of data to show that firm-specific pay is positively correlated with employee ratings of about two thirds of the 'amenities' that receive mentions. Nevertheless, these data have their own limitations as they are not generated via random probability sampling and—being based on unstructured text—do not tend to have systematic coverage of a coherent set of job quality dimensions.

To examine the role of establishments, we therefore present evidence from one of the few non-administrative datasets suitable for addressing this issue. The British WERSs collected data in both 2004 and 2011 from employees on variables pertaining to their earnings, prospects, working time quality, autonomy and involvement, work intensity and the social environment. Although some of these dimensions of job quality are not captured with as comprehensive array of items as is available, for example, in the European Working Conditions Surveys, the data are sufficient to record substantial variation within each of these dimensions. The only dimension of job quality, out of the seven listed in the introduction, that is not covered by any items is the physical environment of work, so this dimension is absent from our analysis. With that exception, we can construct composite indices of job quality for each dimension. By combining these, we are also able to construct an overall index of job quality and an index of non-pay job quality comprising all dimensions except pay. These indices then enable an examination of four questions that arise from the discussion in this section:

- How much of the variation in overall job quality is accounted for by establishment-level variation?
- What is the relative importance of establishment compared with occupation and with employee sorting according to their skills and other characteristics?
- Splitting the index, how does the relative importance of the establishment vary across the dimensions of job quality? Specifically, is establishment-level variation less important with respect to pay than with respect to non-pay elements of job quality?
- Are the conditional correlations between establishment-level job quality and establishment-level characteristics (capturing size, sector, ownership, governance, gender of management, managerial skills, voice, product market competition, establishment age, industry and region) consistent with theoretical expectations and previous findings?

3 | Data and Methods

3.1 | Dataset

The 2004 and 2011 WERS are based on variable probability samples of establishments drawn from the United Kingdom's official business register. When appropriately weighted, they provide nationally representative data on employees in establishments in Britain with five or more employees, covering all sectors of the economy except agriculture and mining (Kersley et al. 2006; Van Wanrooy et al. 2013). Our analysis exploits two elements of these surveys. The first is the management interview, conducted face-to-face with the most senior establishment manager responsible for employee relations. In 2004, interviews were conducted in 2295 establishments with a response rate of 64%, whereas in 2011, 2680 interviews were conducted with a response rate of 46%. The workplace sample for the 2011 survey comprised all responding workplaces from 2004 plus a refreshment sample designed to make the 2011 survey cross-sectionally representative; some 989 workplaces yielded observations in both years.

The second element is the survey of employees, undertaken in the subset of these establishments where management permitted it (76% of all establishments in 2004; 72% in 2011). Self-completion questionnaires were distributed to a simple random sample of 25 employees in these establishments (or to all employees in establishments with 5–24 employees). In 2004, 22,451 usable questionnaires were returned. This represents a response rate of 61% in participating establishments and a yield of 46% from all employees who would have received a questionnaire had all establishments consented to distribution. In 2011, 21,981 questionnaires were returned, with a response rate of 54% and a yield of 39%.

The survey dataset includes unique establishment identifiers (derived from the business register) which link the management interview data from each workplace to the questionnaire responses from its employees. Workplace-level weights to account for the workplace's probability of selection from the sampling frame, adjusted to account for any observable workplace non-response biases and then post-stratified so that the profile of the weighted sample of workplaces matches the profile of the population by workplace size and industry sector. Employee-level weights account for non-response biases in the workplace's decision to participate in the employee survey (estimated using a non-response model which includes workplace demographic characteristics and factors observed from the workplace survey, such as the quality of management-employee relations). The employee sample is also post-stratified to the population of all employees by gender.

To maximize our sample size and thus the explanatory power of our estimates, we pool the 2 years of data while including a year dummy to control for possible conditional shifts between waves. This yields 44,432 employee observations, deriving from a total of 3056 workplaces, 600 of which are observed in both years. Among these 44,432 employee observations, we have data on our job quality indices, employee characteristics and occupation for 39,309 employees. We further restrict the sample to those workplaces, which generate at least two employee observations

each year, to be able to separate the influence of employee and workplace characteristics on job quality via the estimation of workplace fixed effects. This leaves an estimation sample of 39,150 employees across 2919 workplaces, with 560 of these workplaces being observed in both years. Unique establishment identifiers make it possible to account for the non-independence of these panel workplace records in variance estimation when pooling across years. The 13,246 employee responses that derive from panel workplaces (7113 in 2004 and 6133 in 2011) are anonymous and so must be treated as independent from one another across time in variance estimation; this necessarily also obviates the estimation of worker fixed effects.

3.2 | Measuring Job Quality

We measure an employee's job quality using multiple items from the WERS Survey of Employees Questionnaire. Although the items covered in the employee survey are wide ranging and sufficient to capture most of the elements of job quality suggested in earlier literature, they do not include the quality of the physical environment. They do, however, include multiple items covering autonomy (including involvement) and skill development and utilization. Although earlier analyses combined these in one index, on the basis of sociological theory suggesting close links between the two, recent literature has evinced some decoupling of the trends in these two elements and found that in some countries (including Britain) worker autonomy declined even while skill requirements continued to rise (Gallie et al. 2018; Henseke et al. 2018). We therefore decided to enter these two sub-dimensions—autonomy and skill—separately in our analysis. We thus construct sub-indices measuring seven dimensions of job quality: earnings, prospects, working time quality, autonomy, skill development and utilization, work intensity and the quality of the social environment. For all these dimensions, the strength of their association with health and wellbeing, shown in a substantive, still-growing literature (reviewed in Green 2025), reflects the foundational assumption that job quality contributes to satisfying human needs from work. Except for earnings, each of the sub-indices is compiled from multiple items; a full list of items and coding frameworks is shown in Table 1.

We then construct an overall index of job quality, and an index of non-pecuniary job quality, from these sub-indices. Each index and sub-index is constructed as an additive scale, using standardized values of the individual items (mean 0 and variance 1). The index itself is also standardized prior to analysis. In cases where one or more components of an index or sub-index have a missing value, the index is computed from the remaining available items. On each index, higher values indicate better job quality.

Figure 1 shows kernel density plots for each of the job quality dimensions, as well as for the aggregated indices. As is familiar from many other sources, the earnings dimension is positively skewed, showing a long upper tail of high-paying jobs. Moreover, somewhat positively skewed is the distribution of the skill development and utilization indicator and work intensity. In contrast, all other dimensions are negatively skewed, as is the aggregated non-pay job quality. This observation is consistent with evidence from across Europe showing especially low wellbeing in bad jobs

at the low end of the multidimensional job quality spectrum (Green and Lee 2024).

Intraclass correlation coefficients (ICCs) showing the similarity of each element of job quality across employees within each establishment are presented in Table S3. The ICCs range from +0.38 in the case of earnings to +0.11 in the case of work intensity. These suggest a degree of persistence by establishments in their job quality over time.

3.3 | Validating the Job Quality Index

Given that the concept of job quality refers to job characteristics that normally contribute to meeting workers' needs from work, we review the validity of our aggregate job quality indices by examining their correlations with employee-level measures of job satisfaction and well-being.

Job satisfaction is measured using an additive index which sums the employee's evaluations (on a five-point scale from 'Very satisfied' to 'Very dissatisfied') across eight items common to the 2004 and 2011 employee questionnaires. These items are the following: the sense of achievement they get from their work; the scope for using their own initiative; the amount of influence they have over their job; the training they receive; the amount of pay they receive; their job security; the work itself; and the amount of involvement they have in decision-making at the establishment. Well-being is measured using an additive three-item index (adapted from Warr 2007) which sums the employee's evaluations (on a five-point scale ranging from 'All the time' to 'Never') of the extent to which, over the past few weeks, their job has made them feel: tense; worried; and uneasy.

Table 2 shows that employees in higher quality jobs are more satisfied and have higher well-being than employees in lower quality jobs.⁵ The correlations between the aggregate indices of overall job quality and non-pay job quality and job satisfaction are particularly strong. Also notable are the positive but relatively low correlation coefficients between earnings and other dimensions, implying that it would be misleading to treat earnings on its own as a proxy for overall job quality.⁶

4 | Estimating the Relative Importance of the Establishment for Job Quality

4.1 | Analytical Methods

We use the method of ordinary least squares to regress each measure of job quality on a vector of independent variables comprising employee demographic characteristics; a vector of occupations; a year dummy; and a set of establishment identifiers. The specification is as follows:

$$Y_{ij} = b_0 + b_1 \text{Dem}_{ij} + b_2 \text{Occ}_{ij} + b_3 \text{Year}_{ij} + b_4 \text{Est}_j + \varepsilon_{ij} \quad (1)$$

where Y_{ij} is a measure of job quality (either the overall index or one of its components) for the job of employee i in establishment j . Dem_{ij} is a vector of demographic characteristics for employee i in establishment j comprising: gender, ethnicity, disability status,

TABLE 1 | Components of the job quality indices.

Component of job quality	Source question text	Source question scale/coding
Earnings		
Natural log of real, usual gross weekly earnings (banded) divided by usual weekly hours (continuous)	How much do you get paid for your job here, before tax and other deductions are taken out?/How many hours do you usually work in your job each week, including overtime or extra hours?	£/hour, deflated using consumer price index and winsorized at 1st and 99th percentile
Prospects		
Perceived job security	Do you agree or disagree with the following statements about your job? ... I feel my job is secure in this establishment	Strongly agree (5) to Strongly disagree (1)
Contract type	Which of the phrases below best describes your job here?	Permanent (1), Temporary—with no agreed end date (0), Temporary—with an agreed end date (0)
Working time quality		
Avoidance of long weekly working hours	How many hours do you usually work in your job each week, including overtime or extra hours?	Less than 48 h (1), 48+ hours (0)
Working time flexibility	In general, how much influence do you have over the following? ... The time you start or finish your working day	A lot (4) to None (1)
Availability of flexible working arrangements	In the last 12 months, have you made use of any of the following arrangements, and if not, are they available to you if you needed them? ... Flexi-time; The chance to reduce your working hours; Working the same number of hours per week across fewer days; Working at or from home in normal working hours; Working only during school term times; Paid leave to care for dependents in an emergency	I have used this arrangement (1), Available to me but I do not use (1), Not available to me (0)
Managers' approach to non-work responsibilities	Now thinking about the managers at this establishment, to what extent do you agree or disagree with the following? ... Managers here understand about employees having to meet responsibilities outside work	Strongly agree (5) to Strongly disagree (1)
Autonomy and involvement		
Task discretion	In general, how much influence do you have over the following? ... The tasks you do in your job; The pace at which you work; How you do your work; The order in which you carry out tasks	A lot (4) to None (1)
Employee involvement	Overall, how good would you say managers at this establishment are at ... Seeking the views of employees or employee representatives; Responding to suggestions from employees or employee representatives; Allowing employees or employee representatives to influence final decisions	Very good (5) to Very poor (1)

(Continues)

TABLE 1 | (Continued)

Component of job quality	Source question text	Source question scale/coding
Skill development and utilization		
Training received	Apart from health and safety training, how much training have you had during the last 12 months, either paid for or organized by your employer?	10 days or more (10), 5–9 days (7), 2–4 days (3), 1 day (1), Less than 1 day (0.5), None (0)
Managers' approach to skill development	Now thinking about the managers at this establishment, to what extent do you agree or disagree with the following? ... Managers here encourage people to develop their skills	Strongly agree (5) to Strongly disagree (1)
Skill match	How well do the work skills you personally have match the skills you need to do your present job?	Much lower (0), A bit lower (0), About the same (1), A bit higher (0), Much higher (0)
Work intensity (reversed)		
Ease of job demands	Do you agree or disagree with the following statements about your job? ... My job requires that I work very hard	Strongly disagree (5) to Strongly agree (1)
Pace of job demands	Do you agree or disagree with the following statements about your job? ... I never seem to have enough time to get my work done	Strongly disagree (5) to Strongly agree (1)
Social environment		
Trust and fair treatment	Now thinking about the managers at this establishment, to what extent do you agree or disagree with the following? ... Can be relied upon to keep their promises; are sincere in attempting to understand employees' views; deal with employees honestly; treat people fairly	Strongly agree (5) to Strongly disagree (1)
Climate of employment relations	In general, how would you describe relations between managers and employees here?	Very good (5) to Very poor (1)
Composite indices		
Non-pecuniary job quality		
All non-pecuniary sub-indices	Prospects, working time quality, autonomy and involvement, skill development and utilization, work intensity (reversed), social environment	
All-items job quality		
All sub-items	As above plus earnings	

age, highest educational qualification (eight dummies); and highest vocational or professional qualification (nine dummies). Occ_{ij} is a vector of occupational categories for employee i in establishment j , measured at the four-digit level of the UK Standard Occupational Classification (2000), together with a dummy variable indicating whether the employee supervises other employees. $Year_{ij}$ is a dummy variable indicating whether employee i in establishment j was observed in 2004 or 2011.⁷ Est_j is a vector of unique establishment identifiers (IDs) derived from the UK business register.

The coefficients b_4 capture the between-establishment variance in average job quality.⁸ The coefficients b_1 , b_2 and b_3 then capture the average within-establishment variance in job quality according to employee characteristics, occupation codes and by year.⁹

Our analyses use the establishment-level and employee-level weights that are provided with the survey data to correct for the use of variable probabilities of selection within the WERS sample design, and any observable non-response bias (see Forth

TABLE 2 | Pairwise correlations between job quality components, job satisfaction and well-being.

	Earnings	Prospects	Working time quality	Autonomy and involvement	Skill	Work intensity (reversed)	Social environment	Non-pecuniary job quality	All-items job quality	Job satisfaction	Well-being
Earnings	1.00										
Prospects	<i>0.02</i>	1.00									
Working time quality	0.17	0.06	1.00								
Autonomy and involvement	0.12	0.20	0.46	1.00							
Skill	0.11	0.14	0.30	0.40	1.00						
Work intensity (reversed)	-0.15	-0.06	0.04	<u>0.02</u>	-0.04	1.00					
Social environment	0.01	0.19	0.45	0.66	0.48	0.09	1.00				
Non-pecuniary job quality	0.08	0.42	0.65	0.77	0.64	0.29	0.81	1.00			
All-items job quality	0.34	0.40	0.66	0.76	0.63	0.23	0.76	0.96	1.00		
Job satisfaction	0.10	0.33	0.39	0.70	0.50	0.02	0.67	0.73	0.71	1.00	
Well-being	-0.13	0.12	0.16	0.24	0.11	0.38	0.32	0.37	0.32	0.36	1.00

Note: The measures of job satisfaction and well-being are described in the text. Pairwise correlations are computed on the pooled sample of employees from 2004 to 2011, weighted. Number of observations for all cells = 39,819, except: penultimate row (job satisfaction) = 37,758; and final row (well-being) = 39,316. Key to statistical significance: bold type = $p < 0.01$; underlined = $p < 0.05$; italics = $p < 0.10$; normal type = not statistically significant ($p \geq 0.10$).

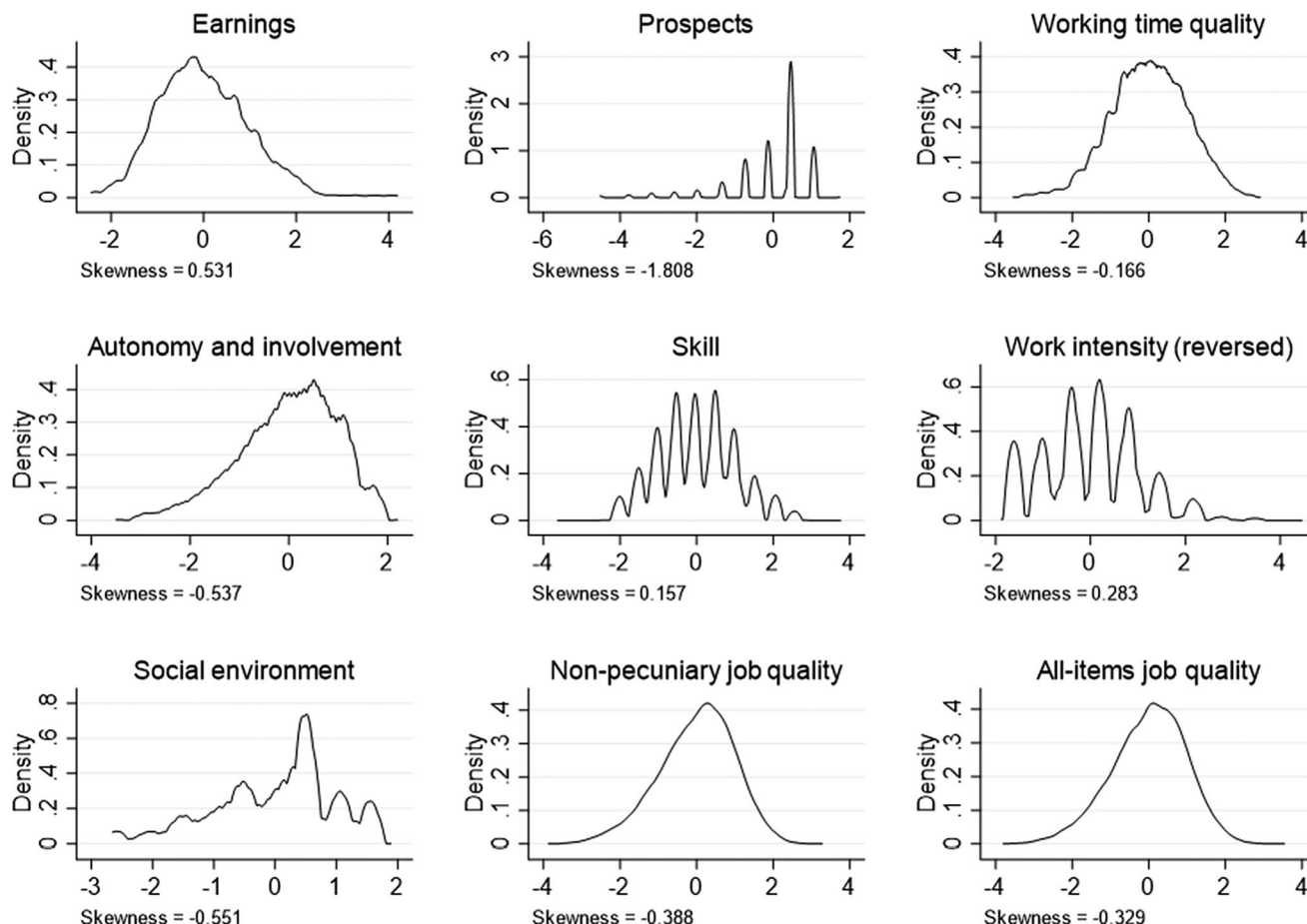


FIGURE 1 | Kernel density plot of job quality indices (pooled years). Generated from the pooled sample of employees from 2004 to 2011, weighted. Number of observations = 39,150.

and Freeth 2014). Standard errors account for the clustering of employee observations within establishments.

We identify the total share of the variance in Y_{ij} that is explained by these covariates (the R^2 from the model). We also run F tests of the overall significance of each set of predictors and establish whether, in each case, the specified set of predictors makes a statistically significant contribution to model fit.

We then use dominance analysis to identify the contribution each predictor (or set of predictors) makes towards explaining variance in our dependent variable, both by itself and in combination with other predictor variables (Budescu 1993). For each set of predictors, we compute a general dominance statistic, which is the arithmetic average of this set of predictor's marginal contributions to model fit across all possible subset models. To arrive at a single value for the general dominance statistic, we calculate the incremental improvement in model fit that is obtained by adding the set of predictors to every possible combination of the other predictors in the model, ranging from a model with no other predictors to one including all of them. These values are first averaged within each 'order' of the model (the number of other predictors already in the model) to produce conditional dominance statistics. The general dominance statistic is then computed as the average of these conditional values across all orders. This results in an additive decomposition of the model

fit statistic (in our case, the adjusted- R^2) into the individual components attributable to each set of predictors, effectively partitioning the total explained variance among the individual variables.

The method of dominance analysis sits within a broader set of approaches for relative importance analysis, which includes relative weights analysis. Tonidandel and LeBreton (2011) provide a non-technical introduction to such methods. The advantage of these methods is that they allow for more accurate variance partitioning than other common approaches to determining variable importance, such as the inspection of standardized regression coefficients (which may not appropriately partition variance when predictors are correlated) or inspection of changes in the adjusted R^2 (which is sensitive to the ordering in which variables are entered into the regression) (see Johnson and LeBreton 2004).

Further detail on the computation of the general dominance statistic is set out in Section S1.

4.2 | Findings

Table 3 presents a first descriptive indication of the importance of the establishment in accounting for job quality. It shows the variance in job quality dimensions that is explained solely by the

TABLE 3 | Fit statistics for accounting for job quality dimensions: Establishments only.

	Establishment identifiers only
Earnings	0.421
Prospects	0.139
Working time quality	0.264
Autonomy and involvement	0.158
Skill	0.140
Work intensity (reversed)	0.118
Social environment	0.225
<i>Composite indices</i>	
Non-pecuniary job quality	0.197
All-items job quality	0.213

Note: Estimated on the pooled sample of employees from 2004 to 2011, weighted. Number of observations = 39,150. Fit statistic: adjusted- R^2 .

vector of establishment identifiers Est_j . Each row represents a different job quality metric. Depending on the metric, between 12% and 26% of non-pecuniary job quality and 42% of earnings variance are accounted for. However, it can be expected that some of the establishment's contribution simply reflects the effects of the employees' characteristics and their occupations, which themselves vary among establishments.

Table 4 presents the results from the dominance analysis, carried out as described above. The total share of the variance in Y_{ij} that is explained by our four sets of covariates (the overall adjusted R^2 from the model) is presented in Column 2. The table presents the results of nine job quality regressions using the pooled employee data for 2004 and 2011. Each row presents results for a different job quality measure. The first seven rows present the results for the seven separate job quality domains described in Table 1. The last two rows present results for the two composite indices for non-pecuniary and all job quality respectively. The model set out in Equation (1) explains between 18% and 31% of non-pecuniary job quality, whereas it accounts for nearly two-thirds (62%) of earnings variance. Thus, the model leaves more of non-pecuniary job quality unexplained. Nevertheless, it accounts for a larger percentage of the variance in non-pecuniary job quality than studies which are solely reliant on data provided by workers (e.g., Naswall and de Witte 2003).¹⁰

Employee characteristics, occupation and establishment identifiers are each jointly statistically significant in all nine models. Only the year dummy distinguishing 2004 from 2011 observations is not significant in all cases. Table S1 presents F tests for the joint statistical significance of the four groupings of variables.¹¹

In Columns 3–6 of Table 4, we partition the total explained variance (the adjusted R^2 shown in Column 2) into the portions explained by the four sets of regressors (employee characteristics, occupation, year and establishment ID), using the method of dominance analysis described above. The final column shows the variance in the dependent variable that remains unaccounted for by the model. Figure 2 then presents standardized values in which

the unexplained variance is ignored and the explained variance is partitioned across the four sets of variables entering the model.

Figure 2 shows that, in eight of the nine job quality models, the dominant explanatory factor is the set of establishment indicators. The exception is earnings, where occupation accounts for a slightly higher percentage of the variance. The establishment indicators account for between 38% and 76% of the explained variance in job quality, depending on the metric used. The second most dominant factor is within-establishment occupational structure, accounting for between 20% and 43% of the explained variance in job quality. Differences in worker characteristics within establishment also matter, though they play a relatively small role in accounting for the explained variance in job quality, apart from in the case of earnings, where they account for 22% of the explained variance.

The fact that the establishment indicators are least dominant in the case of earnings is consistent with the proposition that the visibility of wages to job seekers and incumbent workers who may 'shop' between jobs to maximize earnings, constrains employers in terms of variability in the wages they offer. Even here, the establishment indicators remain important, accounting for almost two-fifths of the explained variance—similar to the variance explained by four-digit occupation and supervisory status within establishment.

If we turn to the overall index for non-pecuniary job quality, 71% of the explained variance is attributable to the establishment that the employee works in, with the bulk of the remainder linked to the employee's occupation. A mere 4% of the explained variance in non-pecuniary job quality is associated with within-establishment worker traits.¹²

The full models underpinning this dominance analysis are presented in Table S5. They present detailed information on the factors associated with job quality variance within the establishment. For instance, the first row shows that, compared with similar women in the same establishment, men have higher pay but lower non-pecuniary job quality, driven by lower working time quality, less job autonomy and poorer prospects.¹³ The age profile of job quality in the establishment is also interesting: Although earnings rise with age before tailing off later in life—the classic hump-shape observed in much of the literature—non-pecuniary job quality follows a U-shape.

5 | Estimating the Establishment Characteristics That Account for Establishment-Level Variance in Job Quality

Having identified the high relative importance of establishment, a natural extension is to investigate the extent to which these establishment coefficients vary in a manner consistent with earlier studies.

To identify those establishment characteristics that explain establishment-level variance in job quality, we return to the OLS regression in Equation (1). We recover the coefficients b_4 on the establishment identifier vector (Est_j), which are the establishment indicators of job quality in each dimension that are not

TABLE 4 | General dominance statistics.

	Adj-R^2: Full model	$D_{Dem_{ij}}$	$D_{Occ_{ij}}$	$D_{Year_{ij}}$	$D_{Est_{ij}}$	Unexplained
Earnings	0.624	0.140	0.246	0.001	0.237	0.376
Prospects	0.181	0.010	0.045	0.001	0.125	0.819
Working time quality	0.313	0.024	0.092	0.004	0.193	0.687
Autonomy and involvement	0.229	0.006	0.094	0.001	0.128	0.771
Skill	0.184	0.013	0.060	0.000	0.111	0.816
Work intensity (reversed)	0.208	0.025	0.088	0.002	0.092	0.792
Social environment	0.252	0.009	0.051	0.000	0.192	0.748
<i>Composite indices</i>						
Non-pecuniary job quality	0.233	0.010	0.057	0.000	0.166	0.767
All-items job quality	0.269	0.011	0.089	0.000	0.169	0.731

Note: Estimated on the pooled sample of employees from 2004 to 2011, weighted. Number of observations = 39,150.

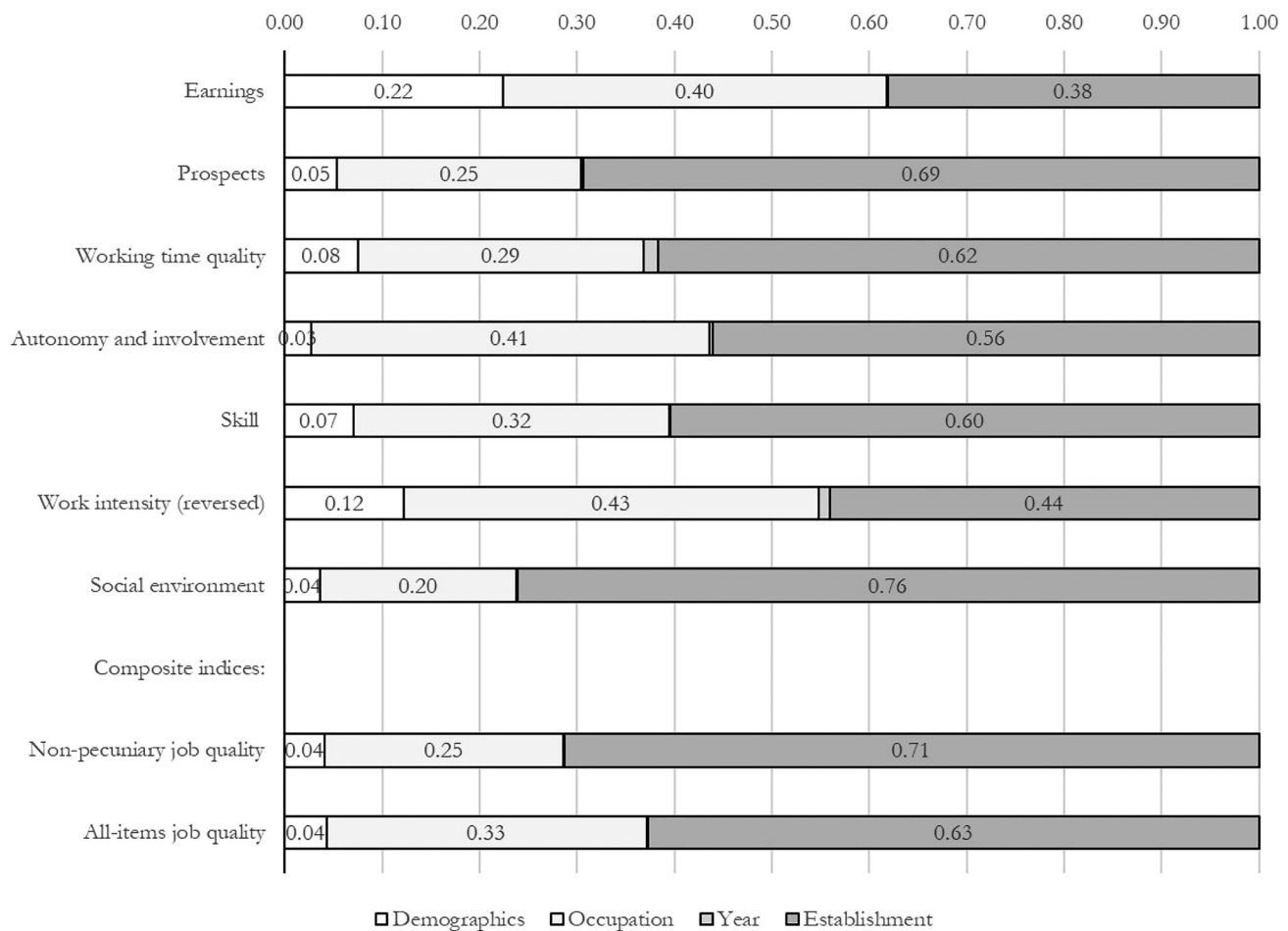


FIGURE 2 | Share of explained variance attributable to each set of covariates. Values express the dominance statistics shown in Columns 3–6 of Table 4 as a proportion of the adjusted- R^2 for the full model (Column 2 of Table 4).

accounted for by a job's occupational classification or by the skills and other characteristics of workers. Table 5 shows how these establishment components of job quality are related to each other. Strikingly, most of the non-pay indicators (an exception is work

intensity) are quite strongly positively correlated with each other, suggesting that where jobs in an establishment are good (bad) in one non-pay dimension, it increases the likelihood that they are good (bad) in another. However, the correlation coefficients

TABLE 5 | Pairwise correlations between establishment-specific components of job quality.

	Earnings	Prospects	Working time quality	Autonomy and involvement	Skill	Work intensity (reversed)	Social environment	Non-pecuniary job quality	All-items job quality
Earnings	1.00								
Prospects	-0.02	1.00							
Working time quality	0.02	0.04	1.00						
Autonomy and involvement	0.05	0.20	0.55	1.00					
Skill	<u>0.08</u>	0.17	0.38	0.43	1.00				
Work intensity (reversed)	-0.02	0.01	0.22	0.20	-0.02	1.00			
Social environment	-0.02	0.19	0.58	0.78	0.50	0.21	1.00		
Non-pecuniary job quality	0.02	0.40	0.72	0.83	0.64	0.41	0.86	1.00	
All-items job quality	0.25	0.38	0.71	0.81	0.63	0.39	0.83	0.97	1.00

Note: Pairwise correlations are computed on the pooled (2004 + 2011) sample of 3479 establishment $\times$ years from 2919 establishments, weighted. Key to statistical significance: bold type = $p < 0.01$; underlined = $p < 0.05$; italics = $p < 0.10$; normal type = not statistically significant ($p \geq 0.10$).

between the establishment-specific components of non-pay job quality and earnings are small and non-significant, which is not *prima facie* consistent with Rosen's (1986) compensating wage differentials story in which employers pay higher wages to compensate workers for poor non-pecuniary job quality.

To what extent can the variations in residual job quality be accounted for by observed establishment factors? To investigate, we undertake a regression analysis at establishment level in which we regress those parameters on a set of establishment characteristics Z_j ¹⁴:

$$\text{Est}_j = c_0 + c_1 Z_j + \mu_j \quad (2)$$

We focus on structural characteristics of the workplace and aspects of workplace governance. We avoid management practices that are directly related to our outcomes of interest (e.g., the extent of training provision) because they become tautological. Missing values on workplace characteristics reduce the estimation sample to 34,983 employees across 3065 establishment years from 2613 workplaces. We generate standard errors via bootstrapping (100 replications) due to the estimated nature of the dependent variables. Results are shown in Table 6. The models account for around 18% of the variance in the establishment component of non-pecuniary job quality and 29% of the variance in the establishment component of earnings.

The model contains two variables capturing organizational size—the size of the establishment and a dummy variable capturing whether the establishment is part of a multi-site organization. In common with the literature on wage determination, earnings (in this case, the unobserved establishment component of earnings) are positively correlated with establishment size. However, in stark contrast, the smallest establishments (those with fewer than 10 employees) have the highest non-pecuniary job quality. Perhaps surprisingly, having accounted for establishment size, the establishment components of both non-pecuniary job quality and earnings are negatively correlated with employment in a multi-site organization.

Industry plays a significant role in accounting for variance in the unobserved establishment component of earnings, consistent with the industry wage differentials that are well-established in the literature (Krueger and Summers 1988). It also plays a role in explaining the unobserved establishment component of non-pecuniary job quality, with transport and communication and public administration exhibiting poorer job quality than the reference category, manufacturing.

There is significant regional variance in the unexplained establishment component in earnings, with establishments in London and the South-East among those with the highest earnings, consistent with regional variation in the cost of living, which is highest in these parts of Britain. However, the unexplained establishment component of non-pecuniary job quality is highest in Wales.

Trade union recognition for bargaining purposes is strongly positively correlated with the unexplained variance in establishment earnings, a finding consistent with the literature on the union wage premium (Forth and Millward 2002). However, unioniza-

tion is also associated with poorer non-pecuniary job quality compared to non-union establishments. Union recognition is linked to poorer job prospects and a poorer social environment, the latter being reminiscent of the literature identifying a negative union effect on the climate of employment relations (Bryson and Wilkinson 2001). It is also linked to lower job discretion, a finding consistent with earlier research using the Skills and Employment Survey 2012 (Bryson and Green 2015).

6 | Discussion

Using nationally representative, linked employer-employee data for Britain, we decompose earnings and various aspects of non-pecuniary job quality into four components—the establishment an employee works in, the occupation the employee undertakes, employee characteristics and the year of the survey. Recent literature has pointed to the importance of 'where you work' in explaining variance in earnings, but this is the first study to examine directly the role of the establishment in accounting for variance in non-pecuniary job quality, using validated indicators of a reasonably full set of job quality dimensions lacking only one dimension.

We find that, as we hypothesized, the establishment is more important in explaining variance in non-pecuniary job quality than it is in explaining variance in pay—it accounts for around two-fifths of the explained variance in earnings, but around 70% of the explained variance in non-pecuniary job quality. This difference is, perhaps, unsurprising, because employers may be constrained in their ability to adjust wages by competition for talent in the labour market. We have suggested that this difference arises because the posting of wages is more common, and easier to convey, than information on the relative position of an establishment in the provision of non-pecuniary job quality. Our finding is consistent with the findings of Ouimet and Tate (2023) for the United States but applies here to a very much broader range of non-pay job quality dimensions.

It is often assumed that the chief factor accounting for variance in job quality is the occupation one performs. We have shown this is not the case. Across the seven dimensions of job quality in our data, the establishment an employee works in accounts for by far the largest share of the explained variance in job quality in five of them (prospects; working time quality; autonomy and involvement; skill; social environment); the greatest share is for the social environment (76%). When it comes to earnings and work intensity, the share of variance explained by the establishment and an employee's occupation is similar—establishment and occupation each account for roughly two-fifths of the explained variance in both. Employee characteristics play a fairly minor role, except in the case of earnings variance, where they account for 22% of the explained variance.

We show for the first time that the establishment-specific components to the dimensions of non-pecuniary job quality are, for the most part, highly positively correlated, indicating that establishments which offer good job quality in one dimension are likely to be good also in other dimensions, conditional on occupation and demographic controls. Conversely, those establishments that tend to offer 'poor' job quality in one non-pecuniary job

TABLE 6 | Characteristics associated with the establishment-specific component of job quality.

	Earnings		Prospects		Working time quality		Autonomy and involvement		Skill		Work intensity (reversed)		Social environment		Non-pecuniary job quality		All-items job quality	
	b/se		b/se		b/se		b/se		b/se		b/se		b/se		b/se		b/se	
Establishment size (ref. 5–9 employees)																		
10–19	0.069** [0.033]		–0.016 [0.041]		–0.179*** [0.045]		–0.192*** [0.037]		–0.095*** [0.035]		–0.089** [0.038]		–0.281*** [0.043]		–0.239*** [0.043]		–0.205*** [0.043]	
20–49	0.113*** [0.036]		0.005 [0.041]		–0.136*** [0.036]		–0.183*** [0.043]		–0.057* [0.034]		–0.074* [0.045]		–0.296*** [0.042]		–0.208*** [0.042]		–0.165*** [0.043]	
50+	0.126*** [0.033]		0.041 [0.045]		–0.137*** [0.034]		–0.245*** [0.044]		–0.101*** [0.035]		–0.036 [0.043]		–0.380*** [0.045]		–0.241*** [0.041]		–0.192*** [0.041]	
Part of a larger organization	–0.101** [0.040]		–0.071* [0.041]		–0.177*** [0.049]		–0.145*** [0.041]		–0.059 [0.037]		–0.119*** [0.043]		–0.179*** [0.043]		–0.210*** [0.043]		–0.223*** [0.043]	
Private sector	–0.143** [0.059]		0.124* [0.068]		–0.126* [0.071]		0.008 [0.073]		–0.062 [0.055]		0.076 [0.079]		–0.045 [0.080]		–0.007 [0.075]		–0.044 [0.075]	
Foreign-owned, 51%+	0.117* [0.062]		0.041 [0.059]		–0.161** [0.076]		–0.112* [0.063]		0.061 [0.071]		0.007 [0.069]		–0.149* [0.087]		–0.088 [0.078]		–0.052 [0.073]	
Family ownership (ref. not family-owned)																		
Family-owned and managed	–0.043 [0.045]		0.082* [0.044]		–0.088 [0.057]		0.015 [0.053]		–0.091* [0.051]		0.023 [0.049]		–0.001 [0.059]		–0.017 [0.061]		–0.027 [0.063]	
Family-owned, not family-managed	–0.070 [0.045]		0.028 [0.063]		–0.110** [0.053]		–0.057 [0.053]		–0.041 [0.061]		0.036 [0.064]		–0.067 [0.068]		–0.059 [0.060]		–0.074 [0.058]	
Female managers as a proportion of all managerial employees	–0.172*** [0.042]		0.009 [0.044]		0.073 [0.049]		–0.036 [0.051]		0.025 [0.044]		–0.074 [0.050]		–0.002 [0.053]		–0.001 [0.049]		–0.047 [0.048]	
ER manager has HR qualification	0.020 [0.028]		–0.021 [0.029]		–0.026 [0.029]		–0.065** [0.031]		0.000 [0.031]		–0.013 [0.035]		–0.020 [0.034]		–0.041 [0.032]		–0.033 [0.031]	
Trade union recognized	0.122*** [0.039]		–0.141** [0.057]		–0.046 [0.042]		–0.181*** [0.049]		–0.030 [0.042]		–0.041 [0.044]		–0.195*** [0.052]		–0.178*** [0.048]		–0.134*** [0.046]	

(Continues)

TABLE 6 | (Continued)

	Earnings	Prospects	Working time quality	Autonomy and involvement	Skill	Work intensity (reversed)	Social environment	Non-pecuniary job quality	All-items job quality
High product market competition	0.023 [0.044]	0.000 [0.048]	0.053 [0.039]	-0.015 [0.048]	0.006 [0.040]	-0.026 [0.040]	-0.022 [0.049]	-0.001 [0.046]	0.005 [0.047]
Demand highly sensitive to price	-0.059 [0.038]	-0.071* [0.039]	-0.043 [0.044]	-0.047 [0.040]	-0.083** [0.041]	0.021 [0.036]	-0.077 [0.051]	-0.085* [0.046]	-0.094** [0.046]
Demand highly sensitive to quality	-0.092** [0.045]	-0.069* [0.039]	-0.014 [0.050]	-0.040 [0.040]	-0.023 [0.038]	-0.001 [0.042]	0.008 [0.050]	-0.039 [0.046]	-0.061 [0.046]
Establishment less than 5 years old	-0.005 [0.060]	-0.107* [0.064]	-0.012 [0.071]	-0.022 [0.064]	-0.104 [0.065]	0.019 [0.064]	-0.083 [0.068]	-0.087 [0.080]	-0.082 [0.079]
Industry (SIC07) section (ref. D: Manufacturing)									
E: Electricity, gas and water	0.461*** [0.083]	-0.169* [0.093]	0.162 [0.102]	-0.051 [0.088]	0.129 [0.100]	0.139 [0.091]	-0.143 [0.134]	0.019 [0.103]	0.138 [0.101]
F: Construction	-0.120 [0.106]	0.054 [0.093]	0.110 [0.107]	-0.085 [0.081]	0.178* [0.103]	-0.090 [0.116]	0.048 [0.078]	0.060 [0.088]	0.025 [0.093]
G: Wholesale and retail	-0.183*** [0.063]	0.081 [0.066]	0.022 [0.073]	-0.103* [0.062]	-0.018 [0.058]	0.088 [0.070]	0.004 [0.080]	0.021 [0.075]	-0.029 [0.078]
H: Hotels and restaurants	-0.481*** [0.073]	-0.162* [0.095]	0.164* [0.093]	-0.184** [0.088]	-0.102 [0.081]	0.170* [0.092]	-0.061 [0.116]	-0.049 [0.101]	-0.172* [0.098]
I: Transport and communication	0.019 [0.080]	0.009 [0.075]	-0.391*** [0.109]	-0.300*** [0.093]	-0.008 [0.092]	0.021 [0.092]	-0.212 [0.140]	-0.247** [0.117]	-0.226** [0.114]
J: Financial services	0.122 [0.075]	0.058 [0.088]	-0.154 [0.096]	-0.274*** [0.100]	0.201** [0.099]	-0.180 [0.111]	-0.042 [0.104]	-0.110 [0.111]	-0.071 [0.103]
K: Other business services	0.115* [0.069]	-0.031 [0.077]	0.008 [0.088]	-0.210*** [0.065]	0.048 [0.064]	0.049 [0.079]	-0.070 [0.087]	-0.058 [0.081]	-0.024 [0.084]
L: Public administration	-0.151* [0.090]	-0.332** [0.144]	0.276** [0.108]	-0.331*** [0.091]	-0.052 [0.106]	0.143 [0.108]	-0.339*** [0.107]	-0.178* [0.105]	-0.206* [0.107]

(Continues)

TABLE 6 | (Continued)

	Earnings	Prospects	Working time quality	Autonomy and involvement	Skill	Work intensity (reversed)	Social environment	Non-pecuniary job quality	All-items job quality
M: Education	-0.368*** [0.081]	0.016 [0.083]	0.160* [0.086]	0.057 [0.070]	0.111 [0.082]	0.017 [0.094]	0.180*** [0.088]	0.152* [0.087]	0.045 [0.088]
N: Health	-0.148*** [0.075]	0.005 [0.078]	0.127 [0.082]	-0.046 [0.075]	0.209*** [0.069]	0.075 [0.087]	-0.098 [0.085]	0.076 [0.083]	0.033 [0.085]
O: Other community services	-0.169*** [0.085]	-0.071 [0.078]	0.161 [0.099]	-0.107 [0.090]	0.078 [0.081]	0.144 [0.090]	-0.059 [0.107]	0.041 [0.097]	-0.006 [0.098]
Region (ref. rest of England)									
London	0.446*** [0.055]	-0.035 [0.063]	-0.096* [0.055]	-0.011 [0.052]	-0.119*** [0.050]	-0.017 [0.061]	-0.123*** [0.061]	-0.113*** [0.054]	0.012 [0.053]
South-East	0.251*** [0.052]	0.028 [0.053]	-0.051 [0.060]	0.034 [0.055]	-0.005 [0.059]	0.192*** [0.053]	-0.002 [0.070]	0.055 [0.065]	0.117* [0.064]
East of England	0.099 [0.064]	-0.012 [0.060]	-0.150*** [0.071]	-0.083 [0.058]	-0.053 [0.061]	0.021 [0.069]	-0.197*** [0.068]	-0.133*** [0.059]	-0.098 [0.064]
Scotland	0.102** [0.047]	0.015 [0.065]	-0.031 [0.065]	0.043 [0.050]	-0.006 [0.053]	0.084 [0.062]	-0.013 [0.055]	0.026 [0.055]	0.051 [0.051]
Wales	-0.037 [0.050]	-0.045 [0.072]	0.034 [0.074]	0.220*** [0.073]	0.194*** [0.063]	-0.006 [0.066]	0.195*** [0.078]	0.166*** [0.077]	0.145*** [0.071]
Year = 2011	-0.077*** [0.030]	0.079*** [0.028]	-0.082*** [0.033]	0.011 [0.034]	0.099*** [0.031]	0.024 [0.034]	-0.015 [0.037]	0.033 [0.036]	0.010 [0.036]
Constant	0.118 [0.094]	0.049 [0.096]	0.404*** [0.112]	0.586*** [0.094]	0.118 [0.090]	0.021 [0.103]	0.709*** [0.112]	0.529*** [0.105]	0.526*** [0.110]
R ²	0.289	0.106	0.159	0.177	0.104	0.086	0.190	0.178	0.150
N establishment-years	3078	3078	3078	3078	3078	3078	3078	3078	3078
N establishments	2624	2624	2624	2624	2624	2624	2624	2624	2624

Notes: Estimated on the pooled (2004 + 2011) sample of establishments, weighted. Bootstrapped standard errors (b/se) (100 replications).

* $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

quality domain also offer poor job quality across the board. In contrast, the correlations between the conditional establishment-specific components of non-pay job quality and earnings are found to be statistically insignificant. This finding contrasts with that of Sockin (2022), who reports that higher paying firms in the US offer workers better quality amenities than low-paying firms, though without controls for occupation and education.

In seeking to account for the establishment-specific component of job quality by regressing it against establishment characteristics, we find that most (80%–90%) of the establishment-specific component cannot be accounted for by the observed establishment traits in our data. Nevertheless, some clear patterns emerge, and these are broadly consistent with earlier studies. The most notable additional contribution from this analysis is that small establishments (those with 5–9 employees) afford greater non-pecuniary job quality than all larger establishments. This finding is consistent with those of Bryson et al. (2021), Green and Lee (2024) and Ouyang and Batt (2026), all of whom have found that large establishments (though with variable thresholds) bring lower non-pecuniary job quality in one or more dimensions. Our results show that the small establishment does relatively well in respect of *every* non-pay dimension except for Prospects. At the same time, the residual establishment component of earnings increases as expected with establishment size.

There are limitations to our study. First, the analysis is purely correlational, seeking to estimate the share of variance in job quality accounted for by demographic, job and establishment characteristics. We are unable to make any causal inferences based on our analyses. Nor can we prove that employees can find better job quality just by moving between employers. Nevertheless, our findings are based on one of very few datasets that give wide-ranging information on job quality *and* include workplace/firm IDs. We have lacked data on the physical environment, whereas other dimensions could be enriched, such as the social environment (where we have not been able to include (reverse) indicators of workplace abuse). Yet most datasets based on administrative data that do have firm IDs observe at most only a very narrow set of non-wage job quality elements. Other datasets that give a broader view of the job and include firm IDs are occupation-specific or unrepresentative for other reasons, often focused only on large firms, and afford only indirect and incomplete measures of job quality dimensions. We suggest that our correlational analysis, using near-comprehensive, direct measures, is nevertheless strongly indicative of the importance of the establishment. A second limitation is that we may understate the importance of worker characteristics in accounting for variance in job quality because we rely on a relatively small number of observed traits. It is possible that unobserved fixed traits of individuals could make a significant contribution, but this would only be possible to establish with longitudinal data on individuals. A third limitation is that we are reliant on worker self-reports to measure job quality on non-pecuniary dimensions. Some of the variance in job quality may reflect across-worker unobserved differences in how to rate jobs with similar job quality. This is likely most problematic when the dependent variable is also subjective, as in the case of reports regarding work intensity, for instance. A final limitation is that the data needed to undertake these analyses are rarely found together in a single dataset. We

have therefore had to rely on data collected in 2011. We hope this lack of more recent data will be addressed in future.

Notwithstanding these limitations, the study has potentially important practical implications for employer policies and regulations. It suggests that, notwithstanding competition in product and labour markets, employers have some room for manoeuvre in terms of the quality of the jobs they offer. In this sense, we are confirming what is often implicit in the normative literature regarding the effects of job quality on worker wellbeing, namely, the assumption that employers and individual managers have partial autonomy with respect to job design (Grote and Guest 2017; Guest et al. 2022). Our findings also have implications for future research on job quality, which has tended to focus on variance across occupations or nations. Greater attention could usefully be directed at furthering knowledge of the role of employers and the establishment in affecting job quality and at understanding the leeway afforded to managers in varying contexts. Although our study focuses on Britain, it could be expected that similar conclusions may apply and could be uncovered in other countries, even if the between-establishment variation is also likely to be conditioned by nation-specific institutions. It has already become apparent that the establishment has played an important role in driving growing wage inequality in countries like the United States and Germany. It is possible that the establishment may play a similar, or perhaps even more central role, in explaining inequalities in non-pecuniary job quality.

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Ethics Statement

The authors have nothing to report.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data for the British Workplace Employment Relations Survey can be downloaded for free from the UK Data Archive. For information regarding the computer programs used for this study, please contact the second author at John.Forth@city.ac.uk.

Endnotes

¹www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/00100-r1.en0.htm

- ² A Web of Science search on 'job quality' over all fields revealed the number of publications rose from just a few per year at the start of the century to an average of 110 per year over 2020–2023. Searches on specific dimensions of job quality—such as job security—reveal a similar exponential expansion of scholarly interest.
- ³ The 'autonomy and skill' dimension is referred to as 'skills and discretion' in some studies.
- ⁴ This point is similar to that of Roberts and Shaw (2022, 29) in their discussion of the effect of management practices on productivity and the role of middle management.
- ⁵ Recall that we reverse code Work Intensity is such that a higher score means lower work intensity, so lower work intensity is associated with higher well-being and, to a lesser extent, job satisfaction.
- ⁶ Note the negative correlation between well-being and earnings. This has been observed previously with these data by Bryson et al. (2012), who suggest this may be linked to the stress and anxiety generated by the responsibilities linked to well-paid jobs.
- ⁷ It is possible to have within-establishment variation by year because some establishments are observed in both 2004 and 2011. Thus, the year dummy is not collinear with the establishment identifiers.
- ⁸ We constrain the establishment residual to be the same over the pooled years. However, we reran the model on separate years and checked the correlation in the establishment residuals across years. These are presented in Figure S1 as scatterplots where the x-axes depict the 2004 values of the establishment residuals and the y-axes the 2011 values. For all nine job quality metrics, the establishment residuals are positively and significantly correlated across years. Our interpretation is that establishments which in 2004 were 'good'/'bad' employers (from the employees' perspective) were more likely than not to have remained 'good'/'bad' in 2011. The correlations range from 0.63 for earnings to 0.16 for skill development and utilization.
- ⁹ Table S2 shows the density of employee observations across occupations and workplaces in the pooled data.
- ¹⁰ Unfortunately, many studies of the determinants of job quality do not report the explained variance.
- ¹¹ Results are similar for estimates run on separate years available from the authors on request.
- ¹² The general dominance statistics are similar when we compare 2004 and 2011 separately (Tables S4 and S5).
- ¹³ The coefficients on the gender dummy in Table S5 show within-establishment gender differences in job quality. The coefficients are all larger if we exclude the establishment identifiers from the model. This indicates that gender segregation across workplaces also contributes to aggregate gender inequality in working conditions.
- ¹⁴ In doing so, we follow others who have previously used this method, for example, Black and Lynch (2001), who used it to establish the role of establishment practices and information technology on productivity.

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Supporting Information

Additional supporting information can be found online in the Supporting Information section.

Supporting File 1: bjir70068-sup-0001-SuppMat.docx