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Occupational status and life satisfaction in the UK: The miserable middle? ☆

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ABSTRACT

We use British panel data to explore the link between occupational status and life satisfaction. We find puzzling evidence for men of a U-shaped relationship in cross-section data: employees in medium-status occupations report lower life satisfaction scores than those of employees in either low- or high-status occupations. This puzzle disappears in panel data: the satisfaction of any man rises as he moves up the status ladder. The culprit seems to be immobility: the miserable middle is caused by men who have always been in medium-status occupations. There is overall little evidence of a link between occupational status and life satisfaction for women, although this relationship for higher-educated women does look more like that for men.

1. Introduction

Success on the labour market is a defining dimension of an individual's identity (Arthur et al., 2008) and has been associated with a multitude of positive outcomes. Previous work has shown, for example, that success at work has a positive impact on individual well-being, including via health (Russo et al., 2014), longevity (Kern et al., 2014) and overall happiness (Pan and Zhou, 2013). In this context, various definitions of labour-market success have been proposed. For example, Byrne et al. (2008) equate this success with the accumulation of financial wealth, arguing that higher income increases longevity as it improves access to quality health care. Others have instead focussed on job satisfaction (Linz and Semykina, 2012) and occupational status (Zhan, 2015).

In practice, the relative importance of the financial and non-financial aspects of jobs is not easy to ascertain, as many of the latter are very difficult to measure in a systematic way. Both financial and non-financial aspects likely play a role in

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individuals' occupational choices (see Williams et al., 2020). As such, individuals may well face a trade-off between well-paid and prestigious occupations (as in the theory of compensating differentials on the labour market).

We here explore the association between occupational status, income and life satisfaction in 12 waves of British Household Panel Survey (BHPS) data. Following the OECD Guidelines on measuring well-being (OECD, 2013), we take the self-reported life-satisfaction scores in the BHPS as a reliable and valid proxy of individuals' overall quality of life. Previous work on labour-market success and life satisfaction has mainly focused on income and subjective measures of success, rather than appealing to the type of external occupational-status scales that we will use here. The majority of the work that has analysed these occupational scales has considered them as the dependent variable to be modelled (Klein, 2016). We on the contrary include an individual's occupational status score as an explanatory variable, and ask whether, conditional on income, high-status occupations contribute to a satisfying life. There has been very little large-scale empirical work on this question.

We expect status to bring higher subjective well-being, conditional on income. But this expectation is not supported in cross-section analysis, where we find rather that it is middle-status men who have the lowest life satisfaction. We have panel data, and can thus also look at how the life satisfaction of individuals changes as they change occupational status. Panel estimation does produce the expected result of a monotonic relationship between occupational status and life satisfaction.

Occupational mobility then seems to be key. For those who are on the move, occupationally, higher-status occupations bring greater life satisfaction. The situation for stayers, those who remain in the same occupational category over the life of our sample, is different. For movers, the worst occupations are the lowest-status ones; for stayers, it is rather occupations in the middle of the status distribution. Our results are thus partly in line with the Silver Medal literature (Medvec et al., 1995), but we underline that Silver Medallists are happier than Bronze Medallists when they have experienced mobility between the two. The miserable middle is made up of medium-status men who are never (in our data) seen in high- or low-status jobs. The relationship between occupational status and life satisfaction is in general weaker for women, although that for higher-educated women is more similar to that found for men.

The remainder of the paper is organised as follows. Section 2 briefly discusses some of the existing literature on occupational status and subjective well-being, and Section 3 presents the BHPS data and our main measures. Section 4 then turns to the regression results in first pooled and then panel data, before considering heterogeneity in the relationship between status and life satisfaction, and some alternative specifications. Last, Section 5 concludes.

2. Occupational status and life satisfaction

In the world of work, there is a considerable literature on occupational status, and we expect the unconditional correlation between this status and worker well-being to be positive. Part of an occupation's status likely comes from its income, but we can also expect status to raise well-being in its own right, as relative position is valued (see the survey in Clark et al., 2008). In this context, status can be considered in the same light as honours and awards (see Frey and Gallus, 2017). Status is valued by workers, and, given their income, high-status workers should be more committed to their work, be more productive and quit less. Status is then favourable for firms, although it may well of course be costly for the firm to provide (and if it is partly considered as rank, then is in only limited supply within the firm: not all workers can be top-ranked).

There has been an enormous amount of research on labour income and subjective well-being. A smaller literature has explored the well-being benefits from greater occupational status, holding any effect of income constant. It has been shown, for example, that the pursuit of a high-status occupation helps individuals to gain social approval and engage with others of similarly-high socioeconomic status (Mani and Mullin, 2004; Rege, 2008), which increases job satisfaction and leads to higher life satisfaction.

An early contribution along these lines is Weaver (1977), who looks at 1974 General Social Survey (GSS) data in the US to ask how an occupational-prestige scale contributes to the relationship between occupation and job satisfaction. Fujishiro et al. (2010) also analyse GSS data, using information from the 2002 and 2006 waves to show that occupational prestige is associated with better self-rated health, even conditional on job strain, workplace social support and job satisfaction. With respect to life satisfaction, Clark and D'Angelo (2016) consider the relationship between occupational status and life satisfaction in BHPS data, focusing on the comparison of the respondent's own status to that of their parents.[1]

Zhou et al. (2021) appeal to the same BHPS data that we use here, and evaluate the relationship between subjective well-being and own occupational mobility over time. While their broad question is similar to ours, the approach is different. They take job satisfaction as the dependent variable, and split occupations up into three hierarchical groups using the 1-digit Standard Occupational Classification. Their panel analysis reveals a short-lived upward tick in job satisfaction upon increasing status, and a much-larger and longer-lived fall in job satisfaction after a loss of status. We will consider a much finer-grained measure of occupational status, at the three-digit occupational level, and take life satisfaction as the well-being variable.[2] We will also contrast the panel and cross-section results, and underline how different the results are for men and women.

[1] This is a cross-section analysis, as parental occupational status (as measured when the respondent was aged 14) is of course fixed over time (and so drops out of panel estimations).

[2] In the BHPS data we use, around two-thirds of observations fall into the lowest group of the three that Zhou et al. (2021) analyse, limiting the potential for occupational mobility over time.

There are a number of lacunae in the existing research. One of the major ones is the cross-sectional nature of much of the empirical analysis, so that the correlation between occupational status and some measure of well-being is ascertained by comparing the outcomes of different people (who may of course differ in any number of unobserved dimensions that will confound the estimated relationship). Second, almost all of the existing work has considered that there is a monotonic relationship between status and the outcome in question, including subjective well-being. However, the attainment of a higher-status occupation does come at a cost. While status brings rewards in terms of many job aspects, including income, job security and overall job satisfaction, it can damage employees' mental health (Johnston and Lee, 2013). Equally, high-status occupations are often associated with shift work, longer hours and increased work-life conflict (Moen et al., 2013). As Dierdorff and Morgeson (2007) note, the rewards in higher-status roles depend on performance, which is often linked to the successful maintenance of social networks. However, the construction and preservation of such social networks can aggravate work-life conflict. Finally, higher-status roles usually require people-management and responsibility for others in a team, which can be stressful and have detrimental spillover effects on other life domains (Dierdorff and Ellington, 2008). As such, it seems important to consider well-being over all life domains, which is what is arguably captured by our life-satisfaction measure.

The relationship between occupational status and life satisfaction may well then not be linear. It is possible, for example, that employees in medium-status occupations experience lower life satisfaction compared not only to those in high-status occupations but also to those in low-status occupations. There is some evidence of lower job satisfaction in intermediate occupations in cross-section UK Skills and Employment Survey data in Figure 4.1 of Williams et al. (2020). This pattern would be consistent with the Silver Medallist hypothesis (Medvec et al., 1995), whereby relatively-high achievers are dissatisfied because they are not the most successful. Medvec et al. (1995) propose that Silver Medallists compare themselves to Gold Medal winners, whereas the Bronze Medallists consider the alternative of not getting a medal at all. In terms of occupational status, those in the middle might be frustrated because they thought that they would be promoted to the top status positions, but were not. On the contrary, those towards the bottom of the status distribution never had this (frustrated) hope; they consider themselves fortunate to be in employment. This concept of dashed expectations has been used by Schwandt (2016) as a potential explanation of the U-shaped relationship between subjective well-being and age. In German SOEP data, the cumulated forecast errors (the gap between how satisfied individuals expect to be in five years' time and how satisfied they turn out to be when interviewed five years later) are largest for those around 50 years old.

We contribute to this literature by considering non-linear relationships between occupational status and life satisfaction in long-running panel data. Panel data allow us to map out the association between occupational status and life satisfaction within the same individual (as they change status), and so avoid the problem of unobserved individual heterogeneity. We will below show that the key characteristics of occupational status are both its level and the degree of status immobility. Second, we will not introduce status as a cardinal variable but rather as a set of dummies, and allow the data to decide whether the relationship is monotonic. We will also consider regressions both with and without income, allowing us to separate the dimensions of financial and non-pecuniary rewards from work. Last, we underline the differences in the relationship between occupational status and subjective well-being for men and women.

We will carry out our empirical investigation into the relationship between occupational status and subjective well-being by estimating versions of the following equation:

$$LS_{it} = \underline{\beta}'\underline{X}_{it} + \sum_{k} \psi_k Occ_{itk} + \gamma Inwage_{it} + \varphi_i + \lambda_t + \varepsilon_{it} \quad (1)$$

In this equation, LS_{it} is the life satisfaction reported by individual i at time t. The $\underline{X}_{it}$ are a set of control variables that may confound the relationship between occupational status and life satisfaction, including age, education and other variables (the full list appears in Section 3 below). Occupational status itself will, in our main specifications, appear as a set of Occ_{itk} dummies, for membership of the k^{th} occupational-status group. As we are using panel data, individual i may change her occupational status from one year to another.

Some, but not all, of the specifications we estimate will include the log of the individual's wage. The comparison of the estimated coefficients on occupational status (ψ_k) with and without log wages will reveal the extent to which the correlation between life satisfaction and occupational status reflects that higher-status jobs (often) pay better. The φ_i are individual fixed effects. Our initial analyses will not include these, so that we will treat the BHPS panel data as a repeated cross-section: the estimation of the occupational-status coefficients will partly rely on the comparison of different people in different occupations. In the panel estimations we will control for the φ_i: in this case, the estimated occupational-status coefficients will not reflect any "between" comparisons of different individuals, but only the "within" comparisons of the same individual in different occupations over time. Last, the λ_t are wave fixed effects. We will estimate Eq. (1) separately for men and women.

The following section describes the data that we will use in our analyses.

3. Data and key variables

The empirical analysis we carry out uses data from the British Household Panel Survey (BHPS). This is a longitudinal survey, which started in 1991 with an initial sample of 10,300 individuals in around 5000 households in 250 postcode area sectors across the UK. The BHPS ended in 2008. Our key dependent variable is life satisfaction, which did not appear in the

Table 1
The distribution of life satisfaction for full-time BHPS workers.

	Men		Women	
Life satisfaction	*Count*	*%*	*Count*	*%*
Not satisfied at all	118	0.4	187	0.5
2	487	1.5	588	1.7
3	1714	5.1	1923	5.4
Neutral	4495	13.5	5255	14.8
5	11,922	35.7	11,501	32.4
6	11,952	35.8	12,346	34.8
Completely satisfied	2723	8.2	3647	10.3
Total	33,411	100	35,447	100
Average life satisfaction	*5.23*		*5.23*	
Standard deviation: overall; between; within	*1.08; 0.96; 0.69*		*1.14; 0.99; 0.73*	

survey questionnaire until 1996 (and was also absent in 2001): our empirical analysis thus covers 12 waves of data, from 1996 to 2008 (bar 2001). The survey response rate in Wave One was 88.9 percent, dropping slightly to 87.3 percent by Wave Ten and 84.2 percent by Wave Eighteen (Taylor et al., 2010), so that there is some evidence of sample attrition.[3]

The core BHPS questionnaire covers a broad range of topics, such as income, socio-economic values, labour-market behaviour, education, household composition and demographics. Some of these socio-demographic characteristics will be used as control variables to help explain individual diversity in respondents' evaluations of their overall quality of life (Clark et al., 2018; Senik, 2014).

As we focus on occupational status, our analysis sample is restricted to those in paid employment (and therefore excludes the self-employed): we thus only consider the status associated with the current job (and not that from any past employment). The analysis sample includes 6591 full-time men and 7073 full-time women, with respectively 33,411 and 35,447 individual-year observations (as individuals are observed multiple times in this panel data).[4]

The two key variables in our analysis are life satisfaction and occupational status.[5] Respondents in the BHPS are asked to report their '*satisfaction with your life overall*' on an ordinal scale from 1 to 7, where 1 corresponds to '*not satisfied at all*' and 7 to '*completely satisfied*'. This single-item life satisfaction scale has been validated and used extensively in the literature (Diener et al., 2013). Our focus on life satisfaction enables us to consider the implications of occupation in all domains of life, including for example work-life balance, that may be less likely to appear were we to focus on job satisfaction only.

Table 1 shows the distribution of life-satisfaction responses by gender in our sample of full-time employees. Just over 10 percent of female employees are completely satisfied with their lives, but only a little over 8 percent of male employees. The median satisfaction score is five for both genders and the mode is six. The average life satisfaction score is identical for men and women.

Our main right-hand side variable is occupational status, as measured by the CAMSIS score (Cambridge Social Interaction and Stratification Scale). The CAMSIS scale measures occupational status for the respondent's most-recent job, although we will only consider those who are currently employed.[6] The CAMSIS scales differ for men and women.

CAMSIS information is supplied directly at the three-digit level as part of the BHPS dataset. The scale is continuous, taking values from 0 to 100, with higher values reflecting higher occupational and socioeconomic status. CAMSIS was first introduced by Stewart et al. (1973), and later amended by Prandy and Lambert (2003) to be consistent with the 1990 Standard Occupational Classification (SOC).

The CAMSIS status classification has been used to address a variety of research questions across countries. Kilpi-Jakonen et al. (2015) review many of the country studies that have used CAMSIS to analyse adult education, upward mobility, and social inequality, amongst other topics. Jarman et al. (2012) appeal to the CAMSIS scale to explore gender occupational segregation across 15 industrialised countries. Lekfuangfu and Odermatt (2022) consider the relationship between highest adult occupational status by age 55 and aspirations at age 16 in British birth-cohort data. While some work has used alternative rankings, there is considerable similarity in these status rankings across different cultural settings. For further discussion of the measurement of occupational status, see Zhou (2005).

The CAMSIS scores assigned to each 3-digit occupation in the BHPS do not change over time, and refer to the amended 2003 version. In our analysis sample, we have repeated observations on workers and the CAMSIS score is at the individual x wave level. An individual who does not change 3-digit occupation will therefore have the same CAMSIS score in each of her observations; the scores of an individual who does change occupation will differ over time.

It is important to note that CAMSIS is a measure of absolute rank, and not relative rank (see Bilancini and Boncinelli, 2008). It is thus possible for one individual to rise in rank over time (by moving to a higher-ranked CAMSIS oc-

[3] We investigate the potential role of this attrition in the regression results in Section 4.4.

[4] Restricting the sample to full-time workers (over 25 hours per week) makes no difference to the nature of our results: as such, they do not reflect, for example, students who switch from catering work to professional positions after graduation.

[5] The definitions of all of the variables used in our analyses and their means (separately by sex) appear in Appendix Table A1.

[6] The CAMSIS scale refers to the individual's main job. A little under 10% of our person-year observations refer to individuals with a second job. All of our results are robust to dropping those with second jobs.

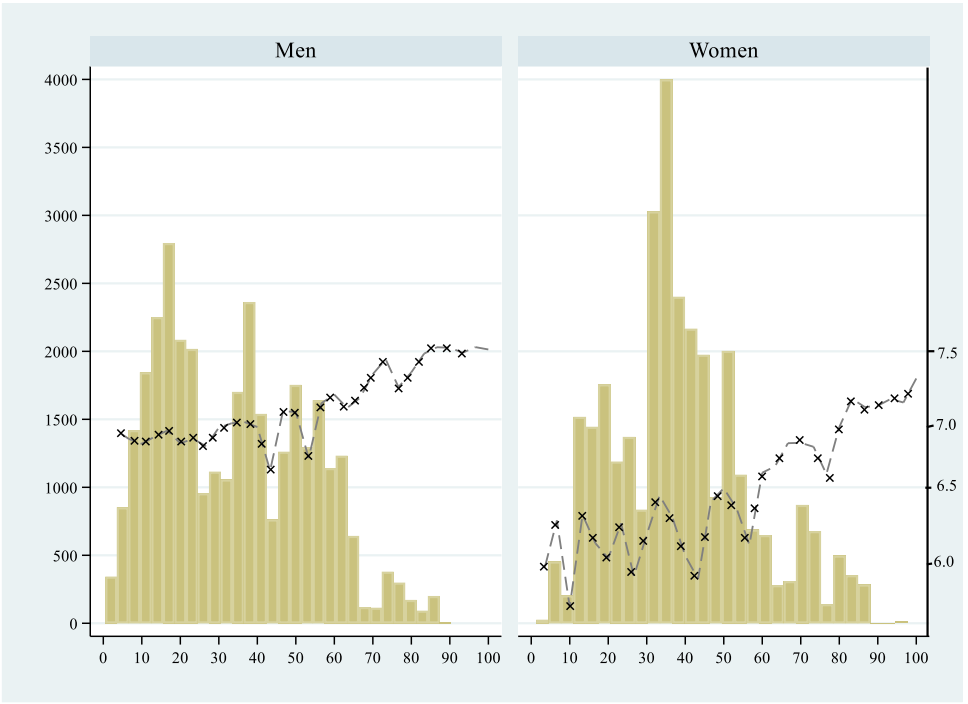

Fig. 1. The Distribution of Occupational Status by Gender
Notes: The mean (Standard Deviation) of the CAMSIS score for Men is 34.0 (19.2); the analogous figures for Women are 39.0 (17.8); The x's indicate the log of the mean wage for each of the 30 occupational-status bin categories, the scale of which appears on the right-hand side axis. The observations are at the individual* wave level, covering 6591 individuals observed for 5.1 waves each on average for men (for a total of 33,411 observations), with analogous figures of 7073, 5.0 and 35,447 for women.

cupation) without another individual necessarily having to move down the ranking to compensate. Relative rank measures, such as the percentile in the income distribution, do instead impose this compensation condition and are thus zero-sum measures. We prefer to use absolute-rank measures in our empirical analysis: we will analyse panel data, and do not want an individual to change their occupational-status rank without actually changing occupations.[7]

The (long) full list of occupations and their associated CAMSIS scores appears in Online Appendix Tables OA1*a* for men and OA1*b* for women. The three most-common occupations for men are (in order) Drivers of road goods vehicles, Storekeepers & warehousemen, and Metal working production & maintenance; the analogous groups for women are Sales assistants, Clerks (not elsewhere classified), and Nurses. The two Online Appendix tables make clear that the CAMSIS scores for identical occupations are not the same for men and women. As such, we cannot compare the mean occupational-status values by sex, nor can we estimate pooled regressions across the sexes. All of our empirical analysis below is therefore carried out separately for men and women.

Fig. 1 shows the frequency distribution of the original CAMSIS score for men and women, presented in 30 equally-spaced bins. The CAMSIS distribution differs for men and women, with that for the latter being more concentrated at a certain number of status scores, while the scores for men are more evenly spread-out over the distribution.[8]

We will consider the impact of occupational status on subjective well-being both with and without controlling for labour income (as part of the effect of occupational status on life satisfaction may reflect higher wages). Fig. 1 shows that status and labour income, represented by the black *X* for each occupational-status bin, are indeed positively correlated. This correlation is however noticeably non-monotonic, suggesting that CAMSIS and labour income are not synonyms for each other.

We estimate all of our regressions separately for men and women, and not only for the CAMSIS-measurement reasons noted above. There is consensus amongst social scientists that the notion of occupational status is gender-specific (Buser et al., 2014). Women's overall average labour-market attachment is somewhat weaker, mostly due to motherhood (Gangl and Ziefle, 2009). It has also been suggested that women's greater risk-aversion may lead them to be found in lower-status jobs on the labour market (Charness and Gneezy, 2012), which has been proposed as a potential explanation of the gender pay gap (Niederle and Vesterlund, 2007). Other work has identified discrimination, barriers in access to certain oc-

[7] Changes in rank without a change in one's own situation can occur with relative-rank measures, as when an individual moves out of the Top 10% of the income distribution not because their own income has changed but rather because the incomes of other people have risen.

[8] It could be argued that the status of occupations changes over time. We have only a relatively-short time period (1996-2008); we find no evidence of any sharp change in the size of the estimated status coefficients when we look at two short sub-periods (1996-2002, and 2003-08).

Table 2
Average CAMSIS occupational status score by sex.

	Men	Women
Bottom 40%	17.2 [0.5, 31.4]	21.1 [1.3, 30.8]
Middle 40%	42.2 [31.5, 53.0]	40.5 [30.9, 52.3]
Top 20%	62.3 [53.1, 90.3]	67.3 [52.4, 97.9]

Note: The observations are at the individual* wave level, covering 6591 individuals observed for 5.1 waves each on average for men (for a total of 33,411 observations), with analogous figures of 7073, 5.0 and 35,447 for women. The numbers in the square brackets refer to the minimum and maximum CAMSIS scores within each group.

cupations and glass ceilings as obstacles preventing women from advancing to higher-status roles (Blair and Chung, 2019; Christofides et al., 2013; Lommerud et al., 2015).

In general, gender differences in the factors influencing life satisfaction have been well-documented (Della Giusta et al., 2011). Women and men may put different weights on market work and family life, and have different priorities regarding the potential trade-offs between these two domains. The choice between a satisfying work life and a satisfying family life depends on how much income or status women are willing to give up in order to gain an improved work-life balance. It has also been suggested that women may have different work orientations than men, placing less emphasis on monetary rewards and more on nonpecuniary rewards (Hauret and Williams, 2017; Kleinjans et al., 2017; Zou, 2015). In the analysis of job values in three waves of International Social Survey Programme data (from 1989, 1997 and 2005) in Clark (2010), although the overall distribution of job values is quite similar by sex, women did assign somewhat lower values to income, promotion opportunities and autonomy than did men, and higher values to jobs that are useful and help others in society.[9]

Our regression analyses control for a number of other variables that may otherwise confound the relationship between life satisfaction and occupational status, in the $\underline{X}_{it}$ in Eq. (1). Notably amongst these, we introduce a set of age-category dummies, as life satisfaction is commonly-thought to be U-shaped in age (see Blanchflower, 2021; Blanchflower and Oswald, 2008; Clark, 2019, amongst many others). We also control for marital status. Marriage may reinforce the positive influence of occupational status on life satisfaction, as marital partners share both cultural values and economic resources. It is well-known that there is assortative mating in marriage markets, whereby individuals with similar characteristics tend to marry each other (Pencavel, 1998): occupation is one such matching characteristic, and perhaps even more so than education or socio-economic status (Lee Badgett and Folbre, 2003).

We in addition control for the number of children, who increase the demands on parents and so create work-life conflict. Any occupation in which time demands are high, such as professional or managerial occupations, aggravates work-life conflicts (Grzywacz et al., 2002). This conflict reduces well-being at both work and home, and so diminishes life satisfaction in general.[10] We last include firm-size, job sector (Private sector, Public sector, etc.), region and wave dummies.[11] With respect to the former, it is generally thought that workers in larger firms enjoy better working conditions (and earn higher wages: see Oi and Idson 1999). The wave dummies capture potential business-cycle effects on life satisfaction and also account for inflation.

4. Regression results

Our regression analyses evaluate the shape of the relationship between life satisfaction and occupational status. Our initial specifications include a quadratic in the CAMSIS score defined above; we then turn to dummy variables for various quantiles of the CAMSIS distribution. We originally looked at five quintile CAMSIS dummies separately by sex, grouping together the first 20% of the male individual *x* year CAMSIS observations in our dataset, then the next 20% of male observations, and so on. As these quintiles are calculated over every observation in our dataset, the cut-offs from one quintile to the next do not change over time. As noted in Section 3 above, this produces occupational-status score variables that can only change for an individual if she changes occupation, which is arguably a desirable feature.

The estimated coefficients for the first and second of these quintiles turned out to be very similar (for both sexes), as indeed were those on the third and fourth quintiles. We have thus combined these categories to produce three quantiles of the status distribution: the first 40%, the next 40%, and the top 20% (which we call Low, Middle and Top, for shorthand).[12] Table 2 shows the average CAMSIS score in these three quantiles, separately by sex. The average score for the first 40% is

[9] Different values and expectations by sex may explain Clark's (1997) finding of a job-satisfaction premium for women in the early 1990s despite having lower earnings and less favourbale working conditions than men. Green et al. (2018) argue that this job-satisfaction premium has disappeared over time, as men and women came to have increasingly-similar expectations and experiences.

[10] Although they do not focus on occupational-status changes, Chadi and Hetschko (2021) find that changing jobs can be detrimental for life satisfaction and family life, especially when job mobility is involuntary.

[11] We do not control for industry dummies. Their inclusion does not however change any of our main results.

[12] All of our results continue to hold when carrying out the analysis using the five quintiles, instead the recoded group of three.

Table 3
Occupational status and life satisfaction- pooled sample (men).

	Ordered probit			Ordered probit			Ordinary least squares		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Occupational status (quadratic)									
CAMSIS /100	−0.484*	−0.341+	−0.446*						
	(0.192)	(0.195)	(0.195)						
(CAMSIS)^2 /1000	0.064**	0.054*	0.045+						
	(0.024)	(0.025)	(0.025)						
Occupational status (percentiles)									
Bottom 40% (omitted category)				–	–	–	–	–	–
Middle 40%				−0.061**	−0.030	−0.069**	−0.035	−0.008	−0.053*
				(0.022)	(0.022)	(0.023)	(0.022)	(0.023)	(0.023)
Top 20%				0.019	0.054+	−0.030	0.050+	0.080**	−0.018
				(0.026)	(0.028)	(0.028)	(0.027)	(0.027)	(0.028)
Ln(wage)			0.159**			0.156**			0.179**
			(0.023)			(0.023)			(0.022)
Other controls	***No***	***Yes***	***Yes***	***No***	***Yes***	***Yes***	***No***	***Yes***	***Yes***
R^2							0.0032	0.024	0.028
Pseudo-R^2	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001			
Wald χ^2	6.88	379.16	417.04	13.71	386.06	423.61			
Prob > χ^2	0.03	0.00	0.00	0.00	0.00	0.00			
Log pseudolikelihood	−48,222.5	−47,782.7	−47,718.2	−48,216.3	−47,778.2	−47,715.1	−49,877.8	−49,458.4	−49,376.7
Number of clusters	6591	6591	6591	6591	6591	6591	6591	6591	6591
Number of observations	33,411	33,411	33,411	33,411	33,411	33,411	33,411	33,411	33,411

Notes:.
+ $p < 0.1$.
* $p < 0.05$.
** $p < 0.01$. Clustered standard errors at the individual level appear in parentheses. The other controls include age group, marital status, children, hours of work, firm size, job sector, region and wave.

around 20 on the 0–100 scale, and that for the next 40% just over 40. Last, the top 20% have significantly higher scores of around 65. There is thus substantial variation in the numerical CAMSIS score across these status quantiles.

4.1. Life satisfaction and occupational status: pooled results

The regression analysis of life satisfaction and occupational status starts with pooled data for men in Table 3, introducing occupational status as a quadratic variable. We here treat every line of data as an independent observation, and do not take into account that the same person may well appear in a number of different BHPS waves (although we do cluster the standard errors at the individual level). The first three columns of Table 3 show ordered-probit estimates (McKelvey and Zavoina, 1975) of the 1–7 life-satisfaction score, with the key explanatory variables being occupational status (divided by 100) and its square (divided by 1000). In the first column there are no other controls, whereas column 2 adds standard socio-demographic variables and column 3 the log of the wage (from Fig. 1, the relationship between life satisfaction and status might be partly mediated by occupational earnings).[13]

The cross-section relationship between life satisfaction and occupational status for men in the first three columns of Table 3 is not monotonic, neither in the raw data, nor with demographic controls, nor holding income constant: all three columns rather suggest a U-shaped relationship. In column 1, this reaches a minimum for a status score of 38, while the addition of the various controls produces life-satisfaction minima at CAMSIS scores of 32 and 49 in columns 2 and 3.

The next three columns carry out a similar analysis, replacing the quadratic specification of occupational status by the three quantiles described above. The estimated equations here correspond to different versions of Eq. (1), with $k = 3$ Occupation dummies. In column (4), there are no $\underline{X}_{it}$ or log wage variables, column (5) then adds the $\underline{X}_{it}$'s and column (6) both $\underline{X}_{it}$ and log wage. As these are pooled cross-section regressions, there is no φ_i in any of the regressions in Table 3 (or their equivalents in Table 4 for women).

The estimated life-satisfaction coefficient for those in the "Middle 40%" group (*i.e.* those between the 40th and 80th percentile of the status distribution) is consistently negative, and is significantly below that for low status (the Bottom 40%) in two out of the three specifications. The last three columns of Table 3 refer to OLS estimation of life satisfaction, where the same broad conclusions apply. In none of columns (4) through (9), with the three status dummies, is middle status found to be associated with higher life satisfaction than low status.

[13] If occupational status and income are positively correlated (we like status because it means higher income), then controlling for income should reduce the estimated coefficient on occupational status. If, on the contrary, there is a trade-off between the two (as in Frank, 1985), then controlling for income will increase the estimated occupational-status coefficient. In our data, status and average wages, at the occupational level, are positively correlated in the raw data, with correlation coefficients of 0.68 for men and 0.75 for women. Correspondingly, the estimated status coefficients in Tables 3 and 4 are systematically more negative once we control for labour income: compare columns 5 to 6, and 8 to 9.

Table 4
Occupational status and life satisfaction - pooled sample (women).

	Ordered probit			Ordered probit			Ordinary least squares		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Occupational status (Quadratic)									
CAMSIS /100	−0.052	0.123	0.013						
	(0.224)	(0.223)	(0.225)						
(CAMSIS)^2 /1000	0.009	−0.007	−0.007						
	(0.024)	(0.023)	(0.023)						
Occupational status (Percentiles)									
Bottom 40% (Omitted category)				–	–	–	–	–	–
Middle 40%				0.018	0.031	0.014	0.042^{+}	0.052*	0.029
				(0.023)	(0.023)	(0.023)	(0.025)	(0.024)	(0.025)
Top 20%				0.025	0.049^{+}	−0.001	0.062*	0.080**	0.016
				(0.027)	(0.028)	(0.030)	(0.030)	(0.030)	(0.032)
Ln(wage)			0.087**			0.079**			0.101**
			(0.021)			(0.021)			(0.022)
Other controls	***No***	***Yes***	***Yes***	***No***	***Yes***	***Yes***	***No***	***Yes***	***Yes***
R^2							0.0004	0.029	0.030
Pseudo-R^2	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001			
Wald χ^2	0.38	403.97	426.94	0.92	406.92	426.70			
Prob > χ^2	0.83	0.00	0.00	0.63	0.00	0.00			
Log pseudolikelihood	−53,286.2	−52,742.6	−52,722.1	−53,285.3	−52,740.0	−52,722.4	−55,041.8	−54,506.3	−54,481.4
Number of clusters	7073	7073	7073	7073	7073	7073	7073	7073	7073
Number of observations	35,447	35,447	35,447	35,447	35,447	35,447	35,447	35,447	35,447

Notes:.
$^{+}$ $p < 0.1$.
* $p < 0.05$.
** $p < 0.01$. Clustered standard errors at the individual level appear in parentheses. Other controls as in Table 3.

Table 4 presents the analogous pooled results for women. These are different from those for men, in that there is very little evidence for a U-shaped relationship between life satisfaction and occupational status. In columns 1–3, the level and quadratic status terms are insignificant, and in columns 4–9, the estimated coefficient on the "Middle 40%" is always positive (but only significantly so at the five per cent level in one out of the six columns), while the estimated coefficient on the "Top 20%" in columns 4–9 is almost always positive, and is significant at the five per cent level in two out of the six specifications. In general, occupational status seems to be "better-behaved" for women, in that its correlation with life satisfaction is more positive, or at least not negative, in a way that might be expected.[14]

The evidence from this analysis of the pooled BHPS data thus poses a puzzle, at least for men: Why are middle-status men less satisfied than low-status men? There are broadly two possible explanations. The first relates to the kind of job, so that middle-status jobs come with some unobserved job characteristics C_{itk} (where $k = 2$ for middle-status jobs) that are worse than lower-status jobs. This C_{itk} would be an omitted variable in Eq. (1). To explain the pattern of estimated status coefficients in Table 3, the rise in status from low- to middle-status jobs would have to be insufficient to compensate for the worsening characteristics, producing lower life satisfaction. On the contrary, the rise in status from middle- to high-status jobs more than compensates for any change in job characteristics, leading to higher life satisfaction. And in addition, this unobserved job-characteristic pattern applies only for men, not for women.

The second explanation refers to the kind of individuals who are found at different levels of occupational status. Relatively-happy people may care little about status, while more-frustrated types may end up in mid-status positions. In Eq. (1), this refers to the individual fixed effect, φ_i: as this is excluded in the pooled cross-section regressions in Tables 3 and 4 these are then mis-specified.

We evaluate this second explanation by estimating the panel version of Eq. (1), where φ_i does appear. The estimated status coefficients in the panel analysis rely on individuals who change their occupational status between the three groups in Table 2 over time.[15]

4.2. Life satisfaction and occupational status: panel results

Table 5 below shows the transition matrix between our three occupational-status categories. While the majority of individuals who are in one status category at time t remain in this same category one year later at $t + 1$ (those in the diagonal

[14] The estimated coefficients on the other control variables are both similar for men and women and very standard. We show these separately for the pooled and panel specifications in Appendix Table A2. Life satisfaction is positively correlated with marriage, U-shaped in age, and negatively correlated with separation and children.

[15] Panel estimation requires "within-person" variation in status; without this variation the individual's occupational status is multicollinear with their individual fixed effect, and we cannot analyse the status-life satisfaction relationship for this individual by appealing to within-person changes.

Table 5
Occupational-status transitions matrix by gender.

Men *t/t + 1*	*Bottom 40%*	*Middle 40%*	*Top 20%*	*TOTAL*
Bottom 40%	**9676** **(89.8)**	914 (8.5)	180 (1.7)	10,770 (100)
Middle 40%	751 (10.2)	**5801** **(78.9)**	805 (10.9)	7357 (100)
Top 20%	132 (3.0)	671 (15.2)	**3608** **(81.8)**	4411 (100)
Women *t/t + 1*	*Bottom 40%*	*Middle 40%*	*Top 20%*	*TOTAL*
Bottom 40%	**6303** **(84.4)**	984 (13.2)	180 (2.4)	7467 (100)
Middle 40%	771 (6.7)	**9963** **(86.5)**	782 (6.8)	11,516 (100)
Top 20%	113 (2.5)	657 (14.3)	**3831** **(83.3)**	4601 (100)

Note: The figures in parentheses are the row percentages.

Table 6
Occupational status and life satisfaction – panel estimation (men).

	Fixed effects linear regression (1)	Fixed effects linear regression (2)	Fixed effects linear regression (3)	BUC estimator (4)	BUC estimator (5)	BUC estimator (6)
Occupational status (Percentiles)						
Bottom 40% (Omitted category)	–	–	–	–	–	–
Middle 40%	0.042*	0.058**	0.054**	0.111*	0.161**	0.150**
	(0.018)	(0.018)	(0.018)	(0.054)	(0.055)	(0.055)
Top 20%	0.078**	0.100**	0.090**	0.222**	0.294**	0.265**
	(0.024)	(0.024)	(0.024)	(0.072)	(0.072)	(0.073)
Wald test [Middle 40% = Top 20%]	*P = 0.066*	*P = 0.041*	*P = 0.070*	*P = 0.058*	*P = 0.033*	*P = 0.056*
Ln(wage)			0.111**			0.297**
			(0.018)			(0.058)
Other controls	***No***	***Yes***	***Yes***	***No***	***Yes***	***Yes***
R^2	0.0001	0.0045	0.0049			
Pseudo-R^2				0.00	0.01	0.01
Wald χ^2				9.54	208.28	234.86
Prob > χ^2	0.00	0.00	0.00	0.01	0.00	0.00
Log pseudolikelihood	−34,884.1	−34,720.5	−34,697.8	−20,802.9	−20,596.4	−20,568.8
Number of clusters	6591	6591	6591	4400	4400	4400
Number of observations	33,411	33,411	33,411	55,086	55,086	55,086

Notes:.
+ $p < 0.1$.
* $p < 0.05$.
** $p < 0.01$. Clustered standard errors at the individual level appear in parentheses. Other controls as in Table 3.

cells, in bold), there are considerable numbers of individuals for whom status changes. Unsurprising, only few of these switch directly between the top and bottom status categories (in the top-right and bottom-left cells), but many change from Low to Middle (and slightly fewer from Middle to Low) or between Middle and Top. It is these changers who identify the estimated occupational-status coefficients in the panel regression.[16] Overall, around 15% of both men and women change their occupational-status category from one year to the next, and 37% of men and 34% of women changed their status category at least once in the years for which we observe them in the panel data from 1996 to 2008.

Table 6 shows the panel results from men. The first three columns of this table refer to fixed-effect linear regressions, and the last three to the results from the Blow Up and Cluster estimator of Baetschmann et al. (2015).[17] In the latter, separate regressions are run per individual for all of the possible cut-offs that can distinguish between low and high life satisfaction (there are five ways of splitting up a 1–7 scale, with cut-offs at 2, 3, 4, 5 or 6), with the regression results then being clustered at the individual level. Note that the number of observations is thus mechanically much higher in BUC estimation,

[16] In general, the within variation in the continuous occupational-status variable is about half of the figure for the between variation, again suggesting that individuals experience substantial variation in status over time. This within-variation figure is the same for men and women.

[17] This can be implemented via the *feologit* command in Stata.

Table 7
Occupational status and life satisfaction– panel estimation (women).

	Fixed effects linear regression (1)	Fixed effects linear regression (2)	Fixed effects linear regression (3)	BUC estimator (4)	BUC estimator (5)	BUC estimator (6)
Occupational status (Percentiles)						
Bottom 40% (Omitted category)	–	–	–	–	–	–
Middle 40%	0.032^{+}	0.039*	0.037*	0.079	0.098^{+}	0.093^{+}
	(0.018)	(0.019)	(0.019)	(0.051)	(0.052)	(0.052)
Top 20%	0.031	0.051*	0.044^{+}	0.076	0.133^{+}	0.116
	(0.025)	(0.026)	(0.026)	(0.070)	(0.071)	(0.071)
Wald test [Middle 40% = Top 20%]	*P = 0.947*	*P = 0.566*	*P = 0.716*	*P = 0.965*	*P = 0.540*	*P = 0.692*
Ln(wage)			0.044*			0.113*
			(0.018)			(0.051)
Other controls	***No***	***Yes***	***Yes***	***No***	***Yes***	***Yes***
R^2	0.0003	0.0018	0.0019			
Pseudo-R^2				0.00	0.01	0.01
Wald χ^2				2.38	182.08	189.50
Prob > χ^2	0.21	0.00	0.00	0.30	0.00	0.00
Log pseudolikelihood	−39,375.6	−39,249.5	−39,245.8	−23,885.4	−23,717.8	−23,712.5
Number of clusters	7073	7073	7073	4851	4851	4851
Number of observations	35,447	35,447	35,447	63,120	63,120	63,120

Notes:.
$^{+}$ $p < 0.1$.
* $p < 0.05$;** $p < 0.01$. Clustered standard errors at the individual level appear in parentheses. Other controls as in Table 3.

as there are multiple (1,0) splits per observation in the original sample. The Wald test statistic, reported just under the estimated status coefficients, tests whether the top-status group has higher life satisfaction than the middle-status group.

In striking contrast to Table 3, the occupational-status coefficients in all specifications are well-behaved, and in particular the life satisfaction of medium-status men is significantly higher than that of lower-status men in all of the regressions. Equally, the life satisfaction of top-status men is significantly higher than that of medium-status men. The gap between low- and high-status men, at just under 0.1 of a life-satisfaction point, corresponds to just under 15% of the within standard deviation in Table 1; the analogous figure for the gap between medium- and high-status men is just over half of this figure.[18]

The corresponding results for women appear in Table 7. As in the pooled results in Table 4, the relationship between occupational status and life satisfaction looks a little weaker for women (although the gap to the estimated coefficients for men in Table 6 is not significant). Medium-status women are more satisfied than lower-status women in almost all of these panel regressions, but in no case is there a significant difference between medium and high occupational status. The relationship between occupational status and life satisfaction is therefore different for men and women. We did experiment a little by looking at the groups of women who have higher labour-force participation (first those with no children, and then single women), but we found very little change from the pattern of estimated coefficients for all women in Table 7.

The challenge is then to understand why (for men) the pooled relationship between occupational status and life satisfaction is U-shaped while the panel relationship is markedly positive. In the panel results, when an individual's status score rises from one category to another, their life satisfaction increases. This finding is not consistent with our first potential explanation of the pooled-data U-shape above, that middle-status jobs are (for unobservable reasons) less satisfying than lower-status jobs. The answer to the puzzle of the U-shape in the pooled data then seems to be the kind of individuals who are seen in the different status jobs.

We can make some progress here by re-estimating our cross-section regressions (in Tables 3 and 4) using only information on movers: those who change status at least once. These are the individuals who identify the panel results in Tables 6 and 7. As noted above, these movers represent 37% of men and 34% of women. Strikingly, re-estimating Tables 3 and 4 using only data on movers produces the same occupational-status patterns as in the panel analysis: life satisfaction rises with occupational status for men, and there is little relation between the two for women.

Contrasting these results to those in Tables 3 and 4 for the whole sample underlines that the problem of the miserable middle does not so much depend on the inclusion of individual fixed effects φ_i in Eq. (1), but rather stems from the omitted variable of occupational immobility. A middle-status individual *i* is more satisfied than a lower-status individual *j* when individual *i* has been or will be occupationally-mobile; on the contrary, a middle-status individual *i* who is occupationally-immobile is less satisfied than a lower-status individual *j*. Silver Medallists who have never won another type of medal are frustrated; Silver Medallists who have experienced other positions on the rostrum realise the value of what they have achieved.

[18] We can benchmark the status coefficients using those on the other control variables listed in Appendix Table A2. In the linear FE regression for men, high status (at 0.090) is equivalent to about half of the well-known age U-shape (between ages 18-20 and 41-50); it is as large as large as married compared to single, and as the effect of doubling wage (which is 0.111*ln(2) = 0.111*0.7 = 0.078). The same conclusions hold in the BUC regression.

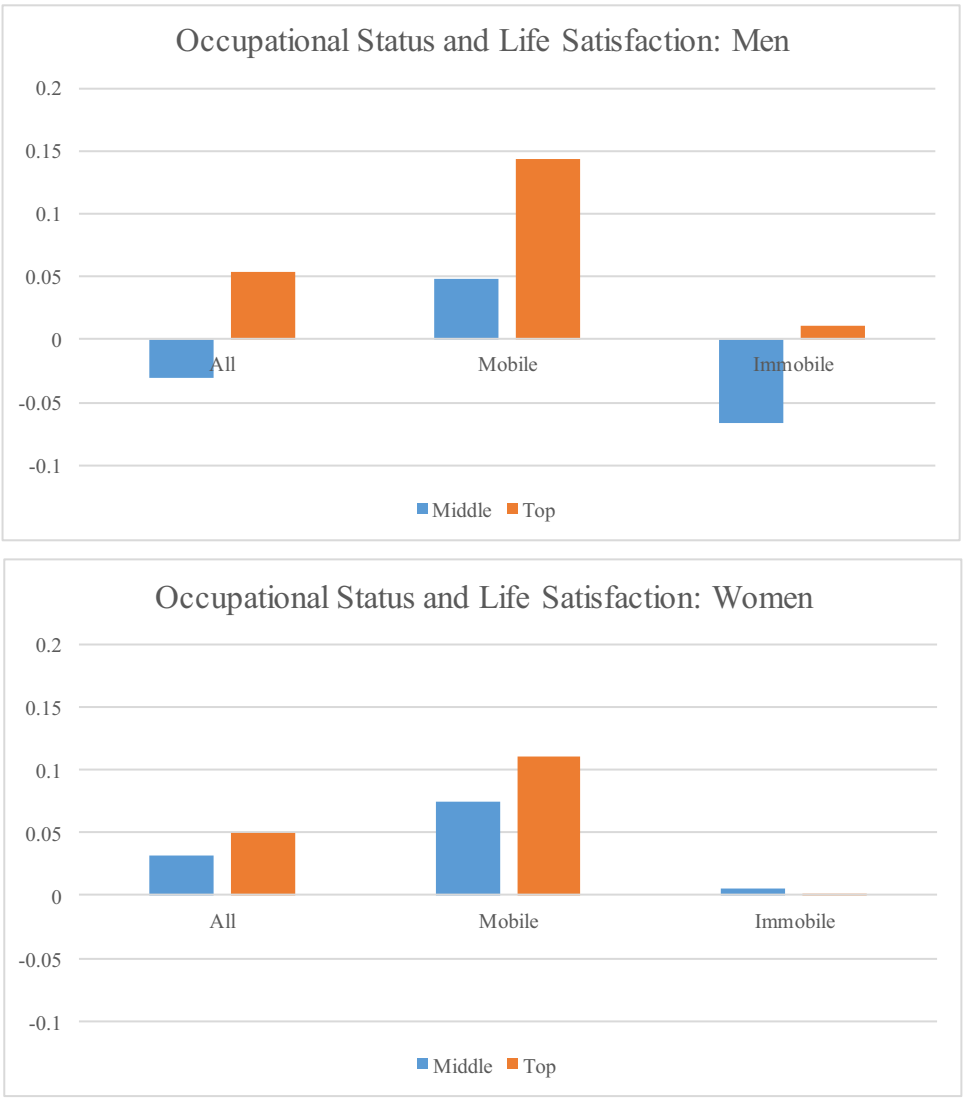

Fig. 2. Occupational Status and Life Satisfaction - Mobile *vs.* Immobile
Note: These figures illustrate the estimated coefficients from cross-section ordered-probit regressions of life satisfaction on occupational status, with the controls as in column 5 of Tables 3 and 4.

These results are illustrated in Fig. 2. All of the estimated coefficients come from cross-section regressions, where we control for individual demographics but not for the wage.[19] The left-hand side depicts the benchmark estimates from column 5 of Tables 3 and 4. Life satisfaction is U-shaped in status for men, and rises (insignificantly) for women. The middle panel in Fig. 2 then refers to the occupationally-mobile: those who are observed to change occupational status at least once in our sample. Here, life satisfaction rises in status for both sexes. We therefore find no evidence of dissociation (Zhao et al., 2017), where social mobility of any kind reduces life satisfaction: rather there is a clear hierarchy in occupational status for the mobile. Last, the right-hand panel refers to the two-thirds of men and women who are always observed (in our data) to be in the same occupational group. There is no relationship between life satisfaction and occupational status for immobile women, but life satisfaction is notably U-shaped in status for immobile men. While any kind of immobility might be bad, it is in particular immobility in middle-status occupations that is less-satisfying than immobility in high- or low-status occupations.

[19] The pattern of results illustrated in Figure 2 is the same when we hold wages constant.

Table 8
Heterogeneity in the effect of occupational status on life satisfaction – (men).

	All	Age <40	Age ≥40	Education A-level or above	Education Less than A-level	Private sector	Public sector
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CROSS SECTION (Ordered Probit)							
Occupational status (Percentiles)							
Middle 40%	−0.069**	−0.030	−0.114**	−0.017	−0.090*	−0.075**	−0.063
	(0.023)	(0.026)	(0.037)	(0.029)	(0.035)	(0.024)	(0.053)
Top 20%	−0.030	0.009	−0.066	0.015	−0.011	−0.018	−0.071
	(0.028)	(0.036)	(0.043)	(0.034)	(0.064)	(0.032)	(0.061)
Ln(wage)	0.156**	0.236**	0.087*	0.221**	0.105**	0.170**	0.110*
	(0.023)	(0.027)	(0.034)	(0.029)	(0.035)	(0.025)	(0.051)
PANEL (BUC Estimator)							
Occupational Status (Percentiles)							
Middle 40%	0.150**	0.166*	0.212*	0.167*	0.125	0.214**	−0.145
	(0.055)	(0.071)	(0.097)	(0.070)	(0.096)	(0.061)	(0.141)
Top 20%	0.265**	0.385**	0.287*	0.267**	0.312*	0.381**	−0.181
	(0.073)	(0.101)	(0.120)	(0.086)	(0.155)	(0.084)	(0.162)
Ln(wage)	0.297**	0.374**	0.300**	0.312**	0.314**	0.312**	0.281+
	(0.058)	(0.078)	(0.102)	(0.075)	(0.106)	(0.065)	(0.158)
Number of observations	*33,411*	*18,378*	*15,033*	*21,839*	*11,572*	*26,251*	*7160*

Notes:.
+ $p < 0.1$.
* $p < 0.05$.
** $p < 0.01$; Adjusted standard errors in parentheses; Other controls as in Table 3.

Table 9
Heterogeneity in the effect of occupational status on life satisfaction – (women).

	All	Age <40	Age ≥40	Education A-level or above	Education less than A-level	Private sector	Public sector
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
CROSS SECTION (Ordered Probit)							
Occupational status (Percentiles)							
Middle 40%	0.014	0.039	−0.019	0.022	0.030	0.022	−0.036
	(0.023)	(0.028)	(0.035)	(0.033)	(0.031)	(0.027)	(0.044)
Top 20%	−0.001	0.051	−0.060	0.001	0.060	0.017	−0.037
	(0.030)	(0.037)	(0.045)	(0.039)	(0.054)	(0.036)	(0.050)
Ln(wage)	0.079**	0.088**	0.084**	0.132**	0.040	0.125**	0.050
	(0.021)	(0.026)	(0.030)	(0.027)	(0.033)	(0.025)	(0.033)
PANEL (BUC Estimator)							
Occupational status (Percentiles)							
Middle 40%	0.093+	0.124+	0.088	0.144+	0.093	0.108+	0.077
	(0.052)	(0.070)	(0.084)	(0.074)	(0.079)	(0.064)	(0.118)
Top 20%	0.116	0.087	0.152	0.164+	0.018	0.000	0.224
	(0.071)	(0.098)	(0.114)	(0.092)	(0.128)	(0.093)	(0.141)
Ln(wage)	0.113*	0.142*	0.130	0.178*	0.044	0.118+	0.083
	(0.051)	(0.071)	(0.080)	(0.069)	(0.084)	(0.069)	(0.096)
Number of observations	*35,447*	*18,754*	*16,693*	*21,637*	*13,810*	*20,298*	*15,149*

Notes:.
+ $p < 0.1$.
* $p < 0.05$.
** $p < 0.01$; Adjusted standard errors in parentheses; Other controls as in Table 3.

4.3. Heterogeneity

The results above refer to all men and then all women. We may wonder whether the life satisfaction of certain groups of workers is differently related to occupational status: this is investigated in Tables 8 and 9 for men and women respectively. We consider three types of heterogeneity: age, education and public *vs.* private sector jobs.[20]

[20] We did not introduce education as a control variable in the main regressions above as it is naturally correlated with status (there are fewer people with degrees in low-status jobs, for example). It is not clear that education explains the "miserable middle" in the cross-sectional analysis, as the relationship between education and life satisfaction in the BHPS is not U-shaped (see Chapter 3 of Clark *et al.* 2018, for a survey of the correlation between education and life satisfaction). Having education as a control in the panel estimates makes little difference, as relatively few adults change their level of education over time. In Tables 8 and 9 we can, however, investigate a moderating effect of education on the relationship between occupational status and life satisfaction.

The top panel of these tables shows the cross-section results from ordered-probit analysis, controlling for the level of wages. The first column in Tables 8 and 9 reproduces (for comparison purposes) the results for the full sample, from column (6) of Tables 3 and 4.

The top panel of Table 8 shows that the "miserable middle" is found for older men and those with lower education in the cross-section (although the difference between the status coefficients by education is not significant at conventional levels); the estimated coefficients for the public and private sectors are identical. The age result continues to hold when splitting the sample at age 45 or age 50, and does not seem to be consistent with changing aspirations as individuals age (and therefore does not match the result in Schwandt, 2006, of a maximum cumulated aspirations gap at age 50). For women, as was the case in the whole sample (reproduced in column 1), status is insignificant in every group. It is last worth noting that income attracts a larger estimated coefficient for the higher-educated and workers in the private sector, and for younger men.

The estimated panel coefficients then appear in the bottom half of each table. Those for men in Table 8 are remarkably consistent across the different columns, with higher status bringing greater life satisfaction. The only exceptions are the insignificant status coefficients in the public sector. The estimated income coefficient is positive and significant for all groups. In Table 9, the panel status coefficients are mostly insignificant for women, and the estimated income coefficient is insignificant for three of the six heterogeneity groups. It is notable that both the status and income coefficients are significant for better-educated women, and are more similar to those for men.[21]

The contrast between the pooled and panel results (in terms of the estimated coefficient on middle occupational status) is then found for most groups of men, but neither for all women nor for any of the different groups of women analysed in Table 9.

4.4. Robustness checks and alternative specifications

We here consider a number of robustness checks and alternative readings of our main results above.

The first of these refers to measurement error in our main CAMSIS variable. We have highlighted the difference in the cross-section results between men and women. However, the occupational-status variable is different across genders (see the Online Appendix), and both CAMSIS scores are likely measured with error and are thus subject to attenuation. In this context, we might wonder whether the weaker status correlation for women reflects greater measurement error for them. We cannot exclude this possibility, which might perhaps reflect women's historical lower labour-force participation. It is, however, worth underlining that the cross-section status coefficients for women in Table 4 are not only insignificant, they are also of the opposite sign to those for men in Table 4. In addition, the male-female difference in results is smaller in the panel analysis (which continues to use different scales by sex).

A second measurement-error point relates to reported occupational changes. The BHPS introduced dependent interviewing towards the end of its existence, in 2006: for some variables individuals were supplied with the information that they provided at the previous wave. This is the case for occupation. Perales (2014) calculates occupational-mobility rates in the BHPS before and after the introduction of dependent interviewing in 2006. He finds a fall in occupational mobility, suggesting some measurement error in occupational changes. This measurement error would attenuate the (positive) estimated coefficients in the panel regressions for men, which we contrast with the negative coefficients in their pooled regressions (and as such cannot explain the difference in signs).

A related point is that the CAMSIS revision that we use dates from 2003. Our data covers the 1996–2008 period, and if occupational status changes over time within the 3-digit occupation cells then the score will be less accurate the further away we are from 2003. As a test, we shrunk the analysis period to 1998–2006, so that observations are closer to the revision date. It is worth noting that if there is attenuation bias, then the 'true' status coefficients will be larger than those in our main analysis above. This year restriction does not affect our conclusions, with coefficients that are if anything larger in absolute terms than those in Tables 3 and 4.

Occupational status is assigned at the 3-digit level in the BHPS data. It is therefore possible to introduce (more-aggregated) occupation dummies. If the main source of CAMSIS variation is between major occupations, then it could be that it is the characteristics of these occupations, rather than status itself, that explains our findings (although we do control for a number of observable characteristics, such as firm size and job sector, in this respect). To pick up all of the characteristics that vary across major occupations, we have introduced one-digit occupation dummies into both our pooled and panel estimations: see Tables B1-B4 in Online Appendix B. These one-digit occupation dummies do not change our main results. As such, the variation in status even within 1-digit occupations continues to affect life satisfaction (in our data, there is about as much variation in CAMSIS between 1-digit occupations as there is within 1-digit occupations).

It is equally possible to introduce 2-digit occupation dummies into the analysis: doing so does render the status coefficients insignificant (at least when we introduce other controls as well). The status variation that is important for life satisfaction then seems to be between occupations at the 2-digit level (and in our data, less than 10% of the variation in CAMSIS is within 2-digit occupations).

The analysis above clusters standard errors at the individual level. An alternative is to cluster at the 3-digit occupation level. If we do so, the Middle Status coefficient for men in Table 3 changes from −0.069 (0.023) to −0.050 (0.030), where

[21] In the analysis of job satisfaction in the BHPS in Clark (1997), one of the groups of women whose job satisfaction looked like men's was women with higher education.

the latter is significant at the 10% level: see the first row of columns 1 and 3 of Table B5 in Online Appendix B. This lower significance relative to Table 3 is partly due to the (one-quarter) smaller point estimate, and partly to the (one-third) higher standard error. Our main point, that Middle status is not better than Low status (and indeed seems to be worse), continues to hold. Clustering at the 3-digit occupational level also does not change the pattern of our mobile *vs.* immobile results in Fig. 2 (results available on request). Last, it is possible to cluster at both the individual and 3-digit occupation level (although not for the BUC estimator): the results when we do so (in the last two columns of Table B5) continue to produce negative estimated coefficients for middle status for men in pooled regressions, but positive estimated coefficients in panel regressions.

The differences in occupational status across observations in our panel data are both within and between. With respect to the former, there is a potential role for adaptation whereby recent (voluntary) movers may benefit from a honeymoon effect in a new job. Our transition matrix in Table 5 actually suggests that most within-individual mobility in our data is towards the middle-status category: as such, honeymoon effects would bias upwards the estimated Middle coefficients in Tables 3 and 4. To investigate more formally, we test two specifications that include information on job tenure. We first add a quadratic in job tenure to the list of controls in Eq. (1). Second, in case there is a very-specific honeymoon effect of new jobs (as in Chadi and Hetschko, 2016), we add both the tenure quadratic and a dummy variable for having changed job within the past year. The estimated status coefficients in these new regressions, for both the pooled and panel specifications, are very similar to those in our main tables above (see Table B6 in Online Appendix B).

We last turn to the role of attrition. The BHPS sample we use is not balanced, and it could be that lower- or higher-status individuals are more likely to drop out of the sample over time, making it increasingly unrepresentative. We can first estimate a simple logit model of the probability that an individual drop out of the sample at time $t + 1$ as a function of their characteristics at time t, including their occupational status. We estimate this regression including individual fixed effects. The analysis covers all of our waves of BHPS data apart from Wave 11 (when life satisfaction was not measured) and Wave 18 (the last wave, where we cannot know about attrition at $t + 1$). The results in Appendix Table B7 reveal no relationship between status and the probability of attrition.

We formally test whether our main results are affected by attrition. We do so by splitting the sample up into two groups: observations on individuals who are present at both t and $t + 1$ and those who answer at t but attrit at $t + 1$. We then re-estimate both pooled regressions (the Ordered Probit specification in column 6 of Tables 3 and 4) and panel regressions (the BUC specification in column 6 of Tables 6 and 7). The results in Appendix Table B8 show that, in the cross-section in the top half, the estimated coefficients for stayers are virtually identical to those in Tables 3 and 4; the same holds for the panel estimations in the bottom half of Appendix Table B10. Our main estimation results concerning occupational status and life satisfaction are then not driven by some specific characteristics of those who will drop out of the sample next period.

While we have tried to isolate the effect of occupational status on life satisfaction, by controlling for confounders and introducing fixed effects, we cannot rule out other interpretations. There is a possibility of reverse causality, where more satisfied people are more likely to be promoted. For this to explain the cross-section results for men, it would have to be concentrated in middle-status occupations (leaving behind a selected stock of less-satisfied workers) rather than being found for low-status occupations as well. The analysis of subjective well-being as a predictor of job mobility with a moderating effect of status would be of use in this respect.

We also cannot be sure that we have identified all of the confounders, even with individual fixed effects. There could be a time-varying variable that is correlated (in the same direction) with both life satisfaction and occupation. For example, a (time-varying) supportive environment could both increase life satisfaction and give individuals the courage to make an upward step. We do not pretend to have definitively shown how occupational status and life satisfaction are related, and more-detailed data and a greater understanding of the endogeneity of occupational mobility will undoubtedly help to provide a clearer picture.

5. Discussion and conclusion

Our results have supplied one answer to the question of whether labour-market success paves the path to a happier life. This success can be defined in many ways, and we have here focused on occupational status (with and without controlling for labour income), as measured by the CAMSIS scale.

Occupational status is not the same thing as income, as there is (at least for men) a significant relationship between status and life satisfaction conditional on labour income;[22] this status relationship is far weaker for women. Contrary to almost all of the existing literature, we allow for this occupational-status relationship to be non-monotonic, considering the correlation between life satisfaction and low-, medium- and high occupational-status jobs. In the cross-section (for men) this relationship does indeed turn out to be non-monotonic: medium-status men are less satisfied than are either those with low- or high-status jobs.

This finding might be thought to be in line with aspirations and frustration, as in the Silver-Medal effect (Medvec et al., 1995), where the dominant counterfactual for Silver Medallists is the Gold Medal, whereas that of the Bronze Medallist is

[22] We have contrasted current occupational status and current income. But might status be valuable because it leads to higher future income? We check by adding the individual's future average income between the years $t + 1$ and $t + 3$ to evaluate any mediation effect. The inclusion of future income turns out to make very little difference to the estimated status coefficients (see Table B9 in Online Appendix B).

no medal at all. In our context, individuals who move from low- to middle-status jobs may be frustrated not to have made the move up to high-status jobs. On the contrary, men who have always been low status do not experience this kind of frustration.

The data that we analyse is panel, and a number of individuals change from jobs with one occupational status to another over time. This allows us to address the Silver-Medal effect: Are men who rise from low to middle status less satisfied (as in the cross-section)? The panel estimation results tell a different story: following the same individual over time, those who move up the occupational-status ladder report higher levels of life satisfaction. Rather than frustration, moving up the status ladder produces satisfaction.

The panel and cross-section results are therefore contradictory. One interpretation of the perhaps surprising cross-section finding is that middle-status jobs have more unobserved unattractive features than do low-status or high-status jobs, and so are genuinely less attractive. But our panel findings of a positive relationship between life satisfaction and status run contrary to this argument. Another possibility is that there is something about individuals in medium-status jobs, rather than the characteristics of the jobs themselves: the men who end up in middle-status jobs may well be “unhappy types”. We check this by splitting the sample up into individuals who never change occupational status group and those who do change, and re-estimating cross-section regressions. The results are clear-cut: medium-status men who are (status-) mobile are more satisfied than low-status men; immobile medium-status men are less satisfied than low-status men.

The miserable middle does not then reflect the experience of men who move through medium-status jobs, but rather the experience of men who never leave them. Immobility in the middle is worse than immobility in low- or high-status jobs. This might be thought of as a dynamic version of the Silver-Medal hypothesis: these men have the Silver occupational medal, and even over time will never have any other type.

Following on from the heterogeneity analysis in Section 4.3, it is of interest to reflect on why some workers are observed to be immobile. Two possible barriers to job movements are family commitments and labour-market conditions. We have investigated the role of these barriers by first estimating separate regressions for male parents and male non-parents, finding only a very slight difference between the two, and no difference in the male cross-section status coefficients according to home-ownership. On the contrary, there does seem to be a role for labour-market health, with the miserable middle for men only being found in high-unemployment regions (see Table B10 in Online Appendix B).[23] As such, the immobility that seems to lie behind our main results suggest that labour-market health may play a role in producing this specific type of immobility.

It is worth underlining the differences we find in the labour market between men and women. There is first a positive relationship between earnings and life satisfaction for both sexes, but one that is larger in size for men than for women. At the same time, there is little association between occupational status and life satisfaction for women, while that for men is U-shaped in the cross-section and positive in panel data. In the panel results, men gain more from both status and labour income than do women. This is consistent with men being more comparison-sensitive than women in the labour market, and with the notion of labour-market success being affected by social norms. Fortin (2005) notes that, across most OECD countries, these norms reinforce women’s role as homemakers and men’s role as breadwinners, corresponding to the observed patterns in labour-force participation. In this context, the stronger correlation between occupational status and life satisfaction for men may be unsurprising. There is however heterogeneity in this sex difference, and higher-educated women look more like men in terms of the relationship between occupational status and life satisfaction. With the sharp rise in women’s education (which now exceeds that of men),[24] occupational status may be poised to play an increasingly important role in the subjective well-being of all workers.

Declarations of Competing Interest

None.

Data Availability

Data will be made available on request.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.jebo.2022.10.045.

[23] We consider the average 1996-2008 unemployment rates in the 12 standard regions of the UK, and define low-unemployment regions as those with an average of under 5%. This covers the South-West (4.2%), South-East (4.2%) and East (4.5%). The next-lowest unemployment rate is for the East Midlands, at 5.1%. Our results do not change if we include the East Midlands in the low-unemployment category. There is subsequently a large jump in the unemployment rate to the North-West (with a figure of 5.9%).

[24] In Table A1.2 of the OECD’s 2020 *Education at a Glance*, the percentage of men in the UK with tertiary education rose from 43 to 49 per cent between 2008 and 2018; the analogous figures for women were 47 and 55 per cent.

Appendix A

Table A1
Variable definitions and their means.

Variable name	Definitions	Men	Women	*t-statistic for equality*
Life satisfaction	Categorical variable, 1=Not satisfied at all, 7=Completely satisfied	5.23	5.23	*n.s*
Occupational status – Men	Cambridge Social Interaction and Stratification Scale (CAMSIS) - Men	34.07	–	
Occupational status – Women	Cambridge Social Interaction and Stratification Scale (CAMSIS) – Women	–	39.45	
Ln(wage)	Logarithm of usual weekly gross earnings	7.37	6.78	$p < 0.05$
Age Group				
Age 18–20*	1=Age 18 to 20; 0=otherwise	–	–	
Age 21–30*	1=Age 21 to 30; 0=otherwise	0.243	0.229	$p < 0.05$
Age 31–40* (Omitted category)	1=Age 31 to 40; 0=otherwise	0.276	0.275	$p < 0.05$
Age 41–50*	1=Age 41 to 50; 0=otherwise	0.235	0.252	$p < 0.05$
Age 51–60*	1=Age 51 to 60; 0=otherwise	0.156	0.168	$p < 0.05$
Age 61–65*	1=Age 61 to 65; 0=otherwise	0.031	0.022	$p < 0.05$
Marital Status				
Married*	1=married, 0=otherwise	0.558	0.549	$p < 0.05$
Separated*	1=separated, 0=otherwise	0.018	0.025	$p < 0.05$
Divorced*	1=divorced, 0=otherwise	0.068	0.112	$p < 0.05$
Widowed*	1=widowed, 0=otherwise	0.006	0.019	$p < 0.05$
Never married* (Omitted) category)	1=single, 0=otherwise	–	–	
Children	Number of own children in the household	0.626	0.623	*n.s*
Work hours	Usual hours of work per week	39.25	30.02	$p < 0.05$
Firm Size				
Firm size 1–49* (Omitted) category)	1 = 1–49 employees, 0=otherwise	–	–	
Firm size 50–99*	1 = 50–99 employees, 0=otherwise	0.131	0.123	$p < 0.05$
Firm size 100–199*	1 = 100–199 employees, 0=otherwise	0.112	0.091	$p < 0.05$
Firm size 200–499*	1 = 200–499 employees, 0=otherwise	0.148	0.103	$p < 0.05$
Firm size 500–999*	1 = 500–999 employees, 0=otherwise	0.074	0.055	$p < 0.05$
Firm size >1000*	1= >1000 employees, 0=otherwise	0.106	0.108	*n.s*
Job Sector				
Private sector*	1=Private firm/company, 0=otherwise	0.786	0.573	$p < 0.05$
Public sector*	1=Civil service/government, 0=otherwise	0.043	0.04	$p < 0.05$
Local government*	1=Local government, 0=otherwise	0.095	0.203	$p < 0.05$
NHS/higher education*	1=National Health Service or Higher Education, 0=otherwise	0.035	0.121	$p < 0.05$
Nationalised industry*	1=Nationalised industry, 0=otherwise	0.008	0.002	$p < 0.05$
Nonprofit*	1=Non-profit organisation, 0=otherwise	0.02	0.049	$p < 0.05$
Other* (Omitted category)	1=Other, 0=otherwise	–	–	
Region				
Inner London* (Omitted category)	1= Inner London, 0=otherwise	–	–	
Outer London*	1= Outer London, 0=otherwise	0.044	0.047	$p < 0.05$
Rest of South East*	1= Rest of South East, 0=otherwise	0.151	0.153	*n.s*
South West*	1= South West, 0=otherwise	0.074	0.068	$p < 0.05$
East Anglia*	1= East Anglia, 0=otherwise	0.032	0.03	*n.s*
East Midlands*	1= East Midlands, 0=otherwise	0.071	0.066	$p < 0.05$
West Midlands Conurbation*	1= West Midlands Conurbation, 0=otherwise	0.024	0.022	*n.s*
Rest of West Midlands*	1= Rest of West Midlands, 0=otherwise	0.045	0.042	$p < 0.05$
Greater Manchester*	1= Greater Manchester, 0=otherwise	0.031	0.033	*n.s*
Merseyside*	1= Merseyside, 0=otherwise	0.016	0.015	*n.s*
Rest of North West*	1= Rest of North West, 0=otherwise	0.036	0.035	*n.s*
South Yorkshire*	1= South Yorkshire, 0=otherwise	0.022	0.021	*n.s*
West Yorkshire*	1= West Yorkshire, 0=otherwise	0.024	0.025	*n.s*
Rest of Yorkshire*	1= Rest of Yorkshire, 0=otherwise	0.026	0.024	*n.s*
Tyne & Wear*	1= Tyne & Wear, 0=otherwise	0.015	0.016	*n.s*
Rest of North*	1= Rest of North, 0=otherwise	0.033	0.03	$p < 0.05$
Wales*	1= Wales, 0=otherwise	0.149	0.153	*n.s*
Scotland*	1= Scotland, 0=otherwise	0.183	0.194	$p < 0.05$
Northern Ireland*	1= Northern Ireland, 0=otherwise	0.005	0.005	*n.s*

Note:.
* Denotes a dummy variable.

Table A2
The estimated coefficients on the other control variables in the pooled and panel specifications.

	Ordered probit		Fixed-effects regression		BUC estimator	
	Men	Women	Men	Women	Men	Women
Occupational status (Percentiles)						
Middle 40%	−0.069**	0.014	0.054**	0.037*	0.150**	0.093+
	(0.023)	(0.023)	(0.018)	(0.019)	(0.055)	(0.052)
Top 20%	−0.030	−0.001	0.090**	0.044+	0.265**	0.116
	(0.028)	(0.030)	(0.024)	(0.026)	(0.073)	(0.071)
Ln(wage)	0.156**	0.079**	0.111**	0.044*	0.297**	0.113*
	(0.023)	(0.021)	(0.018)	(0.018)	(0.058)	(0.051)
Age group						
Age 18–20	0.495**	0.183**	0.230**	0.035	0.595**	0.074
	(0.049)	(0.044)	(0.045)	(0.048)	(0.139)	(0.128)
Age 21–30	0.152**	0.140**	0.025	0.017	0.056	0.042
	(0.028)	(0.026)	(0.025)	(0.026)	(0.076)	(0.072)
Age 41–50	−0.040	−0.114**	−0.007	−0.073**	−0.016	−0.186**
	(0.025)	(0.024)	(0.023)	(0.024)	(0.072)	(0.070)
Age 51–60	0.178**	−0.023	0.068+	−0.009	0.196	−0.018
	(0.036)	(0.035)	(0.039)	(0.041)	(0.122)	(0.115)
Age 61–65	0.345**	0.217**	0.160**	0.114+	0.465*	0.319+
	(0.057)	(0.074)	(0.060)	(0.066)	(0.186)	(0.190)
Marital status						
Married	0.159**	0.258**	0.069*	0.067*	0.194*	0.175*
	(0.032)	(0.030)	(0.028)	(0.030)	(0.090)	(0.087)
Separated	−0.207**	−0.221**	−0.186**	−0.112*	−0.402*	−0.213
	(0.064)	(0.058)	(0.051)	(0.049)	(0.166)	(0.140)
Divorced	−0.013	−0.064	0.049	0.118**	0.151	0.306*
	(0.049)	(0.042)	(0.044)	(0.044)	(0.144)	(0.123)
Widowed	−0.117	−0.082	−0.313*	−0.195*	−0.619+	−0.366
	(0.162)	(0.087)	(0.124)	(0.086)	(0.373)	(0.253)
Children	−0.025*	−0.058**	−0.002	−0.032**	−0.008	−0.088**
	(0.012)	(0.013)	(0.010)	(0.012)	(0.033)	(0.034)
Work hours	−0.001	−0.006**	−0.003**	−0.003*	−0.008**	−0.006*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)
Firm size						
Firm size 50–99	−0.049+	−0.020	−0.022	−0.001	−0.069	−0.005
	(0.027)	(0.026)	(0.019)	(0.020)	(0.057)	(0.055)
Firm size 100–199	−0.071*	−0.059*	−0.034	0.001	−0.103	−0.002
	(0.028)	(0.029)	(0.021)	(0.023)	(0.063)	(0.063)
Firm size 200–499	−0.084**	−0.044	−0.033	0.013	−0.099	0.026
	(0.027)	(0.029)	(0.020)	(0.023)	(0.062)	(0.065)
Firm size 500–999	−0.046	−0.027	0.034	0.057*	0.084	0.142+
	(0.036)	(0.036)	(0.026)	(0.029)	(0.076)	(0.079)
Firm size >1000	−0.001	−0.070*	0.057*	0.015	0.156*	0.032
	(0.034)	(0.032)	(0.025)	(0.027)	(0.076)	(0.075)
Job sector						
Private sector	−0.186*	−0.148+	−0.107	−0.063	−0.300	−0.132
	(0.083)	(0.079)	(0.072)	(0.058)	(0.240)	(0.139)
Public sector	−0.210*	−0.209*	−0.111	−0.100	−0.331	−0.233
	(0.093)	(0.091)	(0.079)	(0.072)	(0.260)	(0.184)
Local government	−0.134	−0.092	−0.116	−0.049	−0.342	−0.108
	(0.088)	(0.082)	(0.077)	(0.061)	(0.251)	(0.152)
NHS/higher education	−0.150	−0.136	−0.026	−0.035	−0.076	−0.061
	(0.096)	(0.084)	(0.085)	(0.064)	(0.279)	(0.159)
Nationalised industry	−0.356**	0.009	−0.083	0.161	−0.250	0.451
	(0.129)	(0.178)	(0.094)	(0.130)	(0.290)	(0.354)
Nonprofit	−0.161+	−0.161+	0.007	0.009	−0.005	0.037
	(0.096)	(0.086)	(0.084)	(0.064)	(0.255)	(0.160)
R^2			0.0049	0.0019		
Pseudo-R^2	0.01	0.01			0.01	0.01
Wald χ^2	423.03	426.70			234.86	189.50
Prob > χ^2	0.00	0.00	0.00	0.00	0.00	0.00
Log pseudolikelihood	−47,715.3	−52,722.4	−34,697.8	−39,245.8	−20,568.8	−23,712.5
Number of clusters	6591	7073	6591	7073	4400	4851
Number of observations	33,411	35,447	33,411	35,447	55,086	63,120

Notes:.
+ $p < 0.1$;.
* $p < 0.05$;.
** $p < 0.01$. Clustered standard errors at the individual level appear in parentheses. All estimations include region and wave dummies.

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