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Article

‘Virtuous’ and ‘Vicious’ Circles? Adults’ Participation in Different Types of Training in the UK and Its Association with Wages

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Abstract
The relationship between education, skills and labour market outcomes is becoming an increasingly pressing issue in many countries. In the UK, recent changes in education and skills funding structures and the ongoing consequences of the 2008 recession may have affected participation in training. ‘Virtuous’ and ‘vicious’ circles of learning may exist, whereby access to training is associated with social advantage, and training begets more training. We explore workers’ participation in different types of training and how this is associated with wages using the UK Household Longitudinal Study. Our exploratory findings suggest that those working in lower-level occupations may not only be less likely to undertake training in general, but also less likely to have done types of training associated with wage increases (e.g., to meet occupational standards), and more likely to have done training associated with no or negative changes in wages (e.g., health and safety) compared to those working in higher-level occupations. We suggest that further research is needed to unpack the ‘black box’ of training and its impacts upon different groups of people. We discuss the implications of our findings to help break the ‘vicious’ circles.

Keywords
adult skills; learning; social class; types of training; wages

Issue
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1. Introduction

The relationship between education, skills and labour market outcomes is becoming an increasingly pressing issue in many countries, in the context of changes in the occupational structure, skills demand and education provision. In the UK, recent changes in the education and skills funding structures and the broader consequences of the 2008 recession may have affected participation in training. In particular, some concern has been raised about the volume of training provided (Green, Felstead, Gallie, Inanc, & Jewson, 2016; Jewson, Felstead, & Green, 2015) and whether at-risk or socially disadvantaged groups’ access to training has changed (Felstead, Green, & Jewson, 2013; Lindsay, Canduela, & Raeside, 2013). In this article, we explore who participates in different types of training and how this is associated with wages, focusing on individuals from different socioeconomic backgrounds using data from the UK Household Longitudinal Study (UKHLS).

The contribution of this article is threefold. First, it focuses the analysis on adults aged 25–64, who tend to display different patterns of participation in training compared to younger adults. Second, it adds further evidence to existing findings that people working in lower-level occupations are less likely to undertake training in general compared to those working in higher-level occupations, by showing that they may also be less likely to have done types of training associated with wage in-

creases and more likely to have done types of training associated with no or negative changes in wages, highlighting the need for further research in this area. Third, it shows the importance of disaggregating the type of training accessed where possible, and suggests that better data about the type of and quality of training be collected to help improve such analyses. We make specific policy recommendations to help address the gap in adults' participation in training in the UK.

2. Background

2.1. The Situation of Training in the UK

The UK has been long-described as being stuck in a 'low-skill low-quality' equilibrium (Finegold & Soskice, 1988), a situation wherein a substantial proportion of the economy comprises low-quality jobs with low incentives for facilitating staff training and learning. It appears that the low-skill equilibrium problems are still ongoing (Green, 2016; Wilson & Hogarth, 2003). The UK also performs poorly in an international context. Public expenditure on training in Great Britain as a proportion of GDP was among the lowest of the G7 countries between 2004–2011, with only Japan at comparably low levels (Organisation for Economic Co-operation and Development [OECD], 2019). More recently, in 2015, the proportion of employees accessing training was lower in the UK than in the EU (30% versus 41%), and UK spend per training participant was just two thirds of the EU average (Eurostat, 2019). These measures do not explicitly capture the quality of training, however.

2.2. Who Participates in Training?

The wide-ranging literature on training suggests that, generally, younger people are more likely to undertake training than older people, although the proportion of younger adults accessing training may have decreased over time (Chen, Raeside, Egdell, & Graham, 2015). It is also well-established that better-qualified people tend to access more training than those with lower or no qualifications (e.g., Blanden, Buscha, Sturgis, & Urwin, 2008; Hoque, 2008; Johnson et al., 2009; Keep & James, 2010; Lindsay et al., 2013), that higher-wage workers are more likely to access training than lower-wage workers (Cheung & McKay, 2010), and that workers whose wages are likely to grow more quickly are more likely to undertake training than workers with slower wage growth (Pischke, 2001). There is some indication that working in professional and associate professional occupations is associated with higher participation in training than working in lower-level NS-SEC occupations (Felstead et al., 2013). Working part-time compared to full-time and working in the private sector compared to the public sector tends to be associated with lower participation in training (Arulampalam & Booth, 1998). The influence of individuals' social origins on participation in training may be mediated by educational attainment and occupation. Findings from the UK National Adult Skills Survey suggested that almost one in two people from the lowest social grades had not undertaken any learning since leaving school and were much less likely to participate in any training than those from more advantaged social grades (National Institute of Adult Continuing Education, 2015).

Although it is well-established that people with higher qualifications are more likely to access training than those with lower qualifications, explanations for this finding are unclear and are beyond the scope of this article. However, we note that these findings suggest that the existence of 'vicious' and 'virtuous' circles of participation in training is underpinned by social disadvantage. Individuals from lower socioeconomic backgrounds are less likely to obtain higher levels of qualifications and are also less likely to undertake training. In contrast, individuals from higher socioeconomic backgrounds are more likely to gain higher qualifications and to undertake training. It is also well-established that training leads to more training (e.g., "learning begets learning" and "skill begets skill" (Heckman, 2000, p. 50). In this article, we make use of the types of training variables available in the UKHLS data to disaggregate patterns of participation in different types of training and explore the association between different types of training and wages.

2.3. The Effect of Training on Wages

Classic human capital theory (Becker, 1962) distinguishes between general and specific training. General training is easily transferable, and all its benefits accrue to the worker. Specific training cannot be easily transferred to another firm, so the firm providing the training will reap all the returns. From this theoretical perspective, firms would finance specific (but not general) training and the wage gains to the worker would be greater from general training than from specific training (precisely because the worker reaps all the benefits to general training; see Arulampalam, Booth, & Elias, 1997). However, empirical findings do not tend to support the implications of the pure human capital view, as the majority of training provided by firms is general or has a general component (Loewenstein & Spletzer, 1999). More recent 'non-competitive' theories have argued that, in the presence of labour market imperfections, employers may be able to recoup costs of investing in general training (Acemoglu & Pischke, 1999; Bassanini, Booth, Brunello, De Paola, & Leuven, 2005). It is therefore complex to define which training is specific and which—general, although it has been argued that on-the-job training (e.g., induction, health and safety training) tends to be more specific than off-the-job training (e.g., Barron, Berger, & Black, 1999; Lynch, 1991, 1992).

The extensive empirical research on the effects of training on wages suggests that there is a broadly positive relationship, although the estimates vary depending on the type of modelling approach used and on the

type of population under study. For example, estimates range from 11% for men and 18% for women (Booth, 1991) to around 3.6% for men, and no significant effect for women (Blundell, Dearden, & Meghir, 1996; similar estimates of 4–5% for men in Vignoles, Galindo-Rueda, & Feinstein, 2004) and to negligible effects under a fixed-effects approach (Leuven & Oosterbeek, 2008). There may also be lags before the effects of training manifest on wages (Blanden, Buscha, Sturgis, & Urwin, 2012; Cheung & McKay, 2010).

Wage returns to training also vary by the type of training (e.g., Fialho, Quintini, & Vandeweyer, 2019). However, less information is available about the effects of different types of training on wages compared to the literature on the returns to training in general. Furthermore, not all sources of data permit analysis disaggregated by different types of training. Where such analysis has been possible, the results have been mixed. For example, accredited training (usually off-the-job) tends to be associated with wage gains while non-accredited training may not be (Booth & Bryan, 2002). Health and safety training could be associated with a decrease in pay (Cai & Waddoups, 2012), and induction and health and safety training may be provided for statutory reasons (Jones, Jones, Latreille, & Sloane, 2009). Gains from training tend to accrue to training courses at higher levels than at lower levels, and to academic over vocational qualifications at the same level (Blanden et al., 2008; Evans, Schoon, & Weale, 2013; McIntosh & Morris, 2016).

2.4. The Selection Problem

One of the central problems of empirical research on the effect of training on wages is the selection problem that makes it is difficult to recover true causal estimates. The selection problem arises because individuals' typically unobservable characteristics, such as innate ability or motivation, may influence undertaking both training and wages. In the absence of any corrections for the selection problem, estimated coefficients of the effect of training on wages are likely to be biased.

Several approaches are typically used to tackle the selection problem if a randomised experimental setup is not possible. For example, instrumental variables or selection models may be used to address selection bias (e.g., Fialho et al., 2019), but valid instruments may not be available in the data. If panel data are available, fixed-effects estimation can be used to account for typically unobserved measures by using the individuals as their own controls (e.g., Blanden et al., 2012, 2008), assuming that unobservables are time-invariant and have time-invariant effects on the outcome (Angrist & Pischke, 2008). However, fixed effects models may be problematic if there is relatively little variation within individuals over time, leading to excessively large standard errors (Dearden, Reed, & Van Reenen, 2006). Furthermore, as fixed-effects models tend to amplify measurement errors in variables, this may cause downward bias in the training variable, leading to smaller estimates compared to random-effects models (Angrist & Pischke, 2008). Another approach, also subject to data availability, uses a specially constructed comparison group that identifies those who wanted to undertake training but, for some reason, did not do so (Görlitz, 2011; Leuven & Oosterbeek, 2008). However, this approach tends to reduce the sample size and decrease the power of the analysis. In this article, we exploit the panel nature of the UKHLS and adopt a loose form of the Leuven and Oosterbeek (2008) approach to model the association between training and wages.

2.5. Research Questions

Our research questions are motivated by the relative gap in the literature on the participation in and wage returns to different types of training compared to training more broadly defined, and what implications this might have for different groups of people, in particular those who are typically less likely to undertake training. We are also keen to compare estimates from different model specifications. Our main questions are: What is the association between different types of training and wages? How does this relate to the different patterns of participation in these types of training?

3. Data and Methods

3.1. Data

We use data from the UKHLS, a survey which follows a sample of the UK population since 2009 and incorporates the British Household Panel Study (BHPS, a smaller longitudinal study that started in 1991). The UKHLS contains over 40,000 households, with around 50,000 individual interviews with adults aged 16+. The UKHLS waves 1–7 used in this study roughly correspond to the period 2009–2016. Among a wealth of information, the UKHLS contains data on participation in training, including type of training, measures of social class, wages, and other personal and job-related characteristics.

Analysis is conducted on adults aged 25–64; we exclude younger adults because they are more likely to engage in full-time education, while older and retired people are less likely to engage in training and their socioeconomic background is harder to capture (socioeconomic background is typically underpinned by occupations). We also restrict the sample to adults in employment (excluding self-employed) in wave 1 who were not unemployed in any other wave, following Blanden et al. (2008), partly because job-related training questions apply to respondents who are in work, and partly to exclude any mandatory training programs that people claiming unemployment benefit may have to undertake. We do not have information about who financed the training, but we restrict our analysis to look at training provided by an employer only, and not at training pro-

vided by the government, educational establishment, or other provider. There were almost 12,900 cases fitting this restriction at wave 2, with the number decreasing in each wave until around 8,000 observations at wave 7. Apprentices were treated as employed, but in any case, their number was very small (see Table A2 in the Annex for summary statistics).

3.2. Definitions

3.2.1. Training

We define training as whether individuals have undertaken any employer-provided job-related training or education in the last twelve months, as asked by the question:

> Since we last interviewed you on [last interview date], have you done any [other] training schemes or courses, even if they are not finished yet? Please include any part-time or evening courses, training provided by an employer, day release schemes, and government training schemes. (trainany, asked in wave 2 onwards)

That our sample of analysis is limited to 25–64-year-old adults in employment suggests that most responses to this question will likely involve training rather than education. A small number of people in part-time education may still be included in our sample.

The UKHLS also collects information on the three longest training schemes that the respondent has done since the last survey wave. For each of the three training periods, the UKHLS asks respondents to give the reason(s) why they did this training: to get started in the job (induction), to develop skills in the current job, to maintain professional status/meet occupational standards, to prepare for a job one might do in the future, to help get a promotion, health and safety training, and training for hobbies or leisure. For the purposes of this article, we treat responses to these questions as accurate, but responses could contain measurement error (for a short discussion, see Booth & Bryan, 2002, p. 7). We discuss the implications of possible measurement error for our analysis later in the article. We created indicator variables to capture the reasons for doing training for all training periods. In this article, we focus on training period 1 only.

3.2.2. Wages

We use the gross monthly income in respondents' main job (paygu_dv) to generate log hourly earnings, following the standard approaches in the literature (see Table A1 in the Annex). We do not deflate the earnings to account for inflation, although we do include year dummies to pick up the time effect, which would include inflation.

3.2.3. Socioeconomic Background

We use two measures of respondents' socioeconomic background based on the National Statistics Socio-Economic Classification (NS-SEC). The NS-SEC categorises people into social classes based on their occupation and labour relations (Office for National Statistics, 2010). In this article, we use the three-group NS-SEC for (1) whether respondents work in the managerial and professional occupations, intermediate occupations, or routine and manual occupations, and (2) for respondents' parents' occupations at respondent age 14.

3.3. Modelling and Measurement

We undertook analysis in three stages. First, we created simple descriptive statistics for an overview of the data. Second, we modelled what characteristics affected the decisions to undertake employer-provided training, broadly following the approach in Blanden et al. (2008) for the BHPS. Third, we conducted an exploratory analysis of whether undertaking employer-provided training was associated with wages and whether this varied by type of training, restricting the sample to those who wanted to undertake training only, loosely based on the Leuven and Oosterbeek (2008) approach. We do not have information about why participants could not undertake training, only whether they wanted to do so. Around half of the respondents in our unrestricted sample wanted to undertake training, and around 30% of respondents participated in at least some employer-provided training in the last 12 months. When the sample was restricted only to those who wanted to undertake training, around 40% participated in training (see Table A3 in the Annex).

Throughout the analysis, we paid special attention to socioeconomic background. We ran the regressions for men and women separately. We used cluster-robust standard errors to allow for individual responses to be correlated across time (Longhi & Nandi, 2015). As we use data from a range of waves, all our analyses were conducted on unweighted data. For the implications of using unweighted data in analysis, see the UKHLS user guide (Knies, 2017, p. 74). All analysis was conducted using Stata 15 SE software. We do not attempt to model women's decision to work in this article (see Section 5.1 for a discussion of the limitations).

3.3.1. Who is Likely to Invest in Training?

To see what characteristics affected whether people did any job-related employer-provided training, the following models were set up, broadly following the specifications used in other literature (Blanden et al., 2008; Gloster et al., 2015). These models were not restricted to those who wanted to do training.

$$\text{Train}_{it} = \alpha + \boldsymbol{SES_{it}\beta_1} + \boldsymbol{X_{it}\beta_2} + \beta_3\text{Year}_{it} + \varepsilon_{it} \quad (1)$$

The subscript *it* refers to an observation belonging to individual *i* in year *t*. *Train* is whether a respondent did any training, or whether they did training of a particular type. ***SES*** is a vector of socioeconomic background, including respondents' current NS-SEC and parental NS-SEC group at respondent age 14 (both measured using 3-group NS-SEC). ***X*** is a vector of individual and job-related characteristics, including sex, age, age squared, non-white ethnic group, poor health, married, own home (mortgage or outright), household income, number of dependent children under 16, country of residence, highest qualification at wave 1, permanent job, part-time job, private sector, high job satisfaction, and small workplace. The *Year* variable is the UKHLS survey wave (note that in UKHLS interviews in a wave are carried out over two years, meaning that the first wave took place over 2009–2011, and waves do not directly correspond with calendar years). The error term is denoted by ε. Models were run under pooled probit specifications and we report the marginal effects. We also ran pooled linear probability (ordinary least squares, OLS) and panel probit random effects models to test robustness.

3.3.2. What Associations Are There between Training and Wages?

To explore whether participation in employer-provided training was associated with wages, we set up the following general regression models using naïve pooled OLS, random-effects (RE) and fixed-effects (FE) specifications, restricted to those who wanted to do training. We included RE approaches partly to compare with FE results, and partly to look at the association of time-invariant variables with the outcome. However, our RE specifications will likely be biased because of omitted variables in our model (see Section 5.1). While a decrease in effect sizes from RE to FE may suggest that RE selection bias is high, if the small FE effect remains significant, it could still be because FE was not able to remove all bias from the estimation. Furthermore, the issues around FE attenuation bias and measurement error discussed earlier may complicate the interpretation of results.

We run models for doing any training and for the reasons for doing training. A priori, we expect training overall to be positively associated with wages, and for the effects to be smaller under fixed-effects specifications compared to random effects and pooled OLS. We also expect undertaking training for more general skill development reasons (e.g., to maintain professional status/meet occupational standards and to help get a promotion) to be positively associated with wages. In contrast, we expect statutory, more specific, on-the-job types of training (health and safety, induction, developing skills in current job) to have smaller or no effect on wages. However, it is unclear a priori whether training to maintain professional status/meet occupational standards or to develop skills in the current job are more specific or general types of training.

The wage equation for all specifications is in the form below, following the standard Mincerian approach:

$$\begin{aligned}\text{LnHrEarn}_{it} = {} & \alpha + \gamma \text{Train}_{it} + \boldsymbol{SES_{it}\beta_1} + \boldsymbol{X_{it}\beta_2} \\ & + \beta_3 \text{Year}_{it} + \varepsilon_{it}\end{aligned} \quad (2)$$

The vectors ***SES*** and ***X*** are defined as above, although we drop time-invariant controls (parental NS-SEC, highest qualification at wave 1 and ethnicity) from the fixed effects specification. We also test model sensitivity by including and excluding controls potentially co-determined with the decision to undertake training, such as part-time job and public sector job.

We looked into setting up a Heckman model to attempt to account for selection into training, following reviewer suggestions. However, it was not possible to find a suitable selection exclusion criterion in the data that would be associated with the decision to train but not with wages, and we do not present our Heckman results here.

3.4. Descriptive Statistics

Around one third of adults in the analysis sample participated in employer-provided training in the last 12 months across waves 2–7. Adults, especially women, who were working in higher NS-SEC occupations were more likely to participate in training than those working in routine and manual NS-SEC occupations (Figure 1), consistent with other findings in the literature (women's training may be driven by the higher proportion of women than men working in the public sector, which also tends to provide more training than the private sector; see, e.g., Sousounis, 2009).

Respondents' most frequently mentioned reason for doing training was to improve skills in their current job (mentioned by two thirds of respondents; see Table A2 in the Annex). Around one in four respondents did health and safety training, and the proportion was higher for those working in routine and manual NS-SEC compared to respondents from other NS-SEC categories. For all other types of training except induction, a lower proportion of respondents working in routine and manual NS-SEC occupations undertook the training compared to those working in higher NS-SEC occupations.

4. Results

4.1. Who Participates in Employer-Provided Training?

Table 1 shows how working in intermediate and routine NS-SEC occupations affects the probability of participating in employer-provided training (overall and in different types) compared to working in the professional NS-SEC occupations, for women and men separately. The full results (Table A4 in the Annex) show the different associations between other job-related characteristics and reasons for training. The pooled probit model results

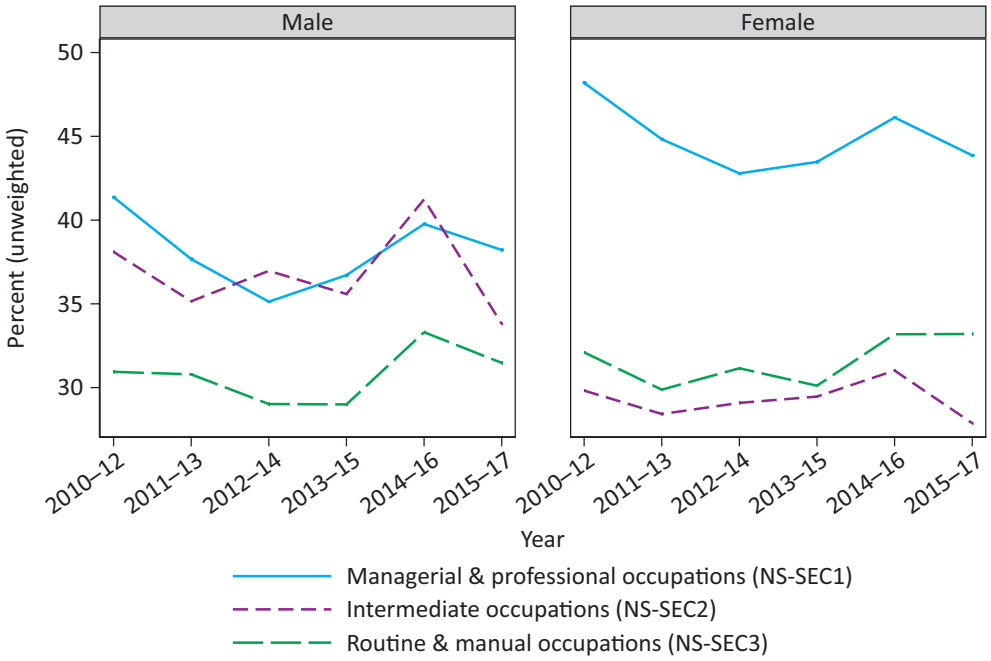

Figure 1. Participation in employer-provided training in last 12 months, by sex and own NS-SEC. Source: UKHLS waves 2–7, unweighted.

were broadly similar to those of the panel probit and pooled linear probability models.

Women working in intermediate NS-SEC occupations were less likely to have done employer-provided training in the last 12 months compared to women working in the professional occupations. However, there was no significant effect of current NS-SEC on the probability of doing employer-provided training for men.

Heterogeneous patterns emerged when we looked at the probability of undertaking different types of training (also Table 1). Women and men working in routine NS-SEC occupations were more likely to have done health and safety training than those working in managerial and professional occupations, keeping all other variables constant. Men in routine occupations were less likely to undertake training to improve skills in their current job compared to men working in the professional occupations, but there was no significant difference for women. Furthermore, women from intermediate and routine NS-SEC occupations were less likely to engage in training to maintain professional status or to meet occupational standards compared to those working in managerial and professional NS-SEC occupations, but there was no significant difference for men. Women from intermediate and routine NS-SEC and men from routine NS-SEC occupations were also less likely to do training for promotion-related reasons compared to those working in professional NS-SEC occupations.

These findings are broadly consistent with those reported in the literature. Overall, the findings suggest that men and women working in intermediate and routine NS-SEC occupations are less likely to undertake training that leads to generic skill development, and more likely to undertake training provided for statutory reasons, notably health and safety training, than those who work in professional NS-SEC occupations.

4.2. What Is the Association between Training and Wages?

We now turn to the key question of whether different types of training had different associations with wages. We attempt to address the selection problem by restricting our sample to those who wanted to undertake training. Selected results are presented here, see Table A5 in the Annex for the full RE results.

Table 2 shows how participation in employer-provided training (overall) was associated with wages, for those who wanted to do work-related training only. The results are shown for men and women separately, and compare OLS, RE and FE approaches. Participation in training in the last 12 months was associated with a moderate increase in men's wages across all three approaches, under no lags. As anticipated, the OLS model gave the highest coefficient (2.5% increase), and the FE model—the lowest (1% increase). There was also some indication of a positive effect on men's wages when the training variable was lagged by 1 period (OLS, RE), and by 3 periods (OLS only). However, there was only limited support for an association between training and women's wages, with a significant positive effect in lag 3 (OLS) or in lag 2 (RE). There were no significant effects of participation in training on wages in the FE model for women.

In Table 3, we show how participation in different types of employer-provided training was associated with wages. For space considerations, we only present the fixed- and random-effects models (including lags), although we also looked at pooled OLS. The results were

Table 1. Association between personal characteristics and doing training in the last 12 months (overall and by main reason for training).

	Training in last 12 months	Help you get started in your job	Improve skills in current job	Maintain prof status/meet occ standards	Prepare for job might do in future	Help get promotion	Health and safety training	Hobbies/leisure
	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)
Women								
Higher managerial and professional (ref.)								
Intermediate	−0.094***	0.011	0.006	−0.113***	0.003	−0.031***	0.020	0.010
	(0.010)	(0.007)	(0.016)	(0.019)	(0.013)	(0.009)	(0.016)	(0.006)
Routine	−0.018	0.009	0.026	−0.067***	−0.007	−0.024**	0.090***	0.000
	(0.011)	(0.006)	(0.014)	(0.017)	(0.013)	(0.009)	(0.016)	(0.005)
Other personal characteristics controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other job-related controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	**26,342**	8,647	8,647	8,648	8,647	8,647	8,647	8,461
Men								
Higher managerial and professional (ref.)								
Intermediate	0.005	0.009	−0.009	−0.015	0.042*	−0.018	0.027	−0.003
	(0.014)	(0.009)	(0.020)	(0.023)	(0.021)	(0.013)	(0.022)	(0.007)
Routine	0.004	0.009	−0.096***	0.028	−0.016	−0.023*	0.118***	−0.008
	(0.011)	(0.007)	(0.017)	(0.019)	(0.015)	(0.010)	(0.018)	(0.006)
Other personal characteristics controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other job-related controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	**20,893**	6,710	6,710	6,711	6,710	6,710	6,712	6,710

Note: Average marginal effects, based on pooled probit model specifications. Standard errors in parentheses. See Table A4 in the Annex for full model results.

Table 2. Association between doing training in the last 12 months and wages, various lags.

	Women					Men				
	No lags	**L1**	**L2**	**L3**	**L4**	**No lags**	**L1**	**L2**	**L3**	**L4**
OLS Had employer-provided training in last 12 months										
Coefficient	0.006	0.003	0.011	0.025*	0.018	0.025***	0.030***	0.017	0.025*	0.015
SE	(0.007)	(0.008)	(0.009)	(0.011)	(0.014)	(0.007)	(0.008)	(0.010)	(0.011)	(0.014)
N	13,080	9,567	6,875	4,750	2,828	10,650	7,707	5,545	3,847	2,298
Random Effects Had employer-provided training in last 12 months										
AME	0.006	0.001	0.012*	0.007	0.001	0.012*	0.019***	0.000	0.006	0.014
SE	(0.005)	(0.005)	(0.006)	(0.008)	(0.011)	(0.005)	(0.005)	(0.006)	(0.008)	(0.011)
N	13,080	9,567	6,875	4,750	2,828	10,650	7,707	5,545	3,847	2,298
Fixed effects Had employer-provided training in last 12 months										
AME	0.007	−0.004	0.009	−0.006	−0.016	0.010*	0.009	−0.009	−0.011	−0.005
SE	(0.005)	(0.005)	(0.006)	(0.009)	(0.013)	(0.005)	(0.005)	(0.007)	(0.009)	(0.012)
N	15,021	10,821	7,957	5,596	3,422	12,375	8,826	6,461	4,555	2,774
Other personal characteristics controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Other job-related controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: Selected results, UKHLS waves 2–7, unweighted. Pooled OLS and panel linear regressions, random- and fixed-effects specifications, training lagged by 0, 1, 2, 3 and 4 years. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 3. Association between doing training in the last 12 months by reason for doing training and wages.

	Women					Men				
	No lags	**L1**	**L2**	**L3**	**L4**	**No lags**	**L1**	**L2**	**L3**	**L4**
Help you get started in your job (RE)	0.010	−0.014	−0.060*	−0.031	0.005	−0.015	−0.032	0.048	0.008	−0.061
	(0.017)	(0.021)	(0.029)	(0.033)	(0.037)	(0.017)	(0.024)	(0.032)	(0.034)	(0.057)
Improve skills in current job (RE)	0.003	0.004	0.010	−0.016	0.038	0.005	0.002	0.014	−0.017	0.012
	(0.008)	(0.014)	(0.015)	(0.018)	(0.026)	(0.009)	(0.013)	(0.018)	(0.023)	(0.029)
Maintain prof status/meet occ standards (RE)	0.004	0.014	0.011	0.041**	0.054*	0.005	0.006	0.004	0.004	0.004
	(0.007)	(0.011)	(0.012)	(0.015)	(0.024)	(0.008)	(0.011)	(0.014)	(0.016)	(0.027)
Prepare for job might do in future (RE)	−0.001	0.004	0.016	0.001	0.015	0.004	−0.020	−0.019	0.004	−0.048
	(0.008)	(0.012)	(0.014)	(0.022)	(0.028)	(0.009)	(0.013)	(0.015)	(0.018)	(0.029)
Help you get a promotion (RE)	−0.002	−0.030	0.001	0.012	0.021	−0.011	−0.029	−0.004	−0.020	0.026
	(0.011)	(0.016)	(0.017)	(0.025)	(0.031)	(0.012)	(0.018)	(0.016)	(0.023)	(0.032)
Health and safety training (RE)	−0.018*	−0.049***	−0.033*	−0.024	−0.038	−0.020*	−0.020	0.019	−0.031	0.011
	(0.008)	(0.011)	(0.015)	(0.018)	(0.027)	(0.009)	(0.012)	(0.015)	(0.018)	(0.028)
For hobbies or leisure (RE)	−0.000	−0.001	0.002	0.000	0.035	0.037	0.012	0.025	0.032	−0.071
	(0.021)	(0.023)	(0.026)	(0.051)	(0.048)	(0.023)	(0.029)	(0.027)	(0.031)	(0.071)
N (RE)	5,488	2,612	1,759	1,199	744	4,342	1,947	1,245	864	511
Help you get started in your job (FE)	0.015	0.007	−0.024	0.032	0.058	−0.009	−0.027	0.061	0.010	−0.164**
	(0.017)	(0.021)	(0.030)	(0.039)	(0.057)	(0.017)	(0.025)	(0.039)	(0.035)	(0.055)
Improve skills in current job (FE)	0.004	−0.010	0.008	−0.050*	0.038	0.002	0.012	0.012	−0.045	0.007
	(0.008)	(0.015)	(0.016)	(0.023)	(0.031)	(0.009)	(0.014)	(0.021)	(0.030)	(0.045)
Maintain prof status/meet occ standards (FE)	−0.012	−0.018	−0.015	0.020	−0.035	0.010	0.006	0.008	0.009	−0.041
	(0.008)	(0.013)	(0.014)	(0.020)	(0.032)	(0.008)	(0.012)	(0.017)	(0.018)	(0.036)
Prepare for job might do in future (FE)	−0.014	0.003	0.026	−0.006	0.006	0.006	−0.016	−0.022	0.029	0.030
	(0.009)	(0.013)	(0.016)	(0.031)	(0.039)	(0.010)	(0.014)	(0.016)	(0.019)	(0.042)
Help you get a promotion (FE)	0.009	−0.005	0.004	−0.008	0.032	−0.003	−0.015	0.010	−0.013	−0.022
	(0.011)	(0.017)	(0.020)	(0.031)	(0.047)	(0.012)	(0.020)	(0.015)	(0.026)	(0.038)
Health and safety training (FE)	−0.002	−0.017	0.003	−0.017	0.002	−0.019*	−0.003	0.011	−0.025	0.014
	(0.008)	(0.012)	(0.016)	(0.022)	(0.044)	(0.009)	(0.013)	(0.018)	(0.019)	(0.039)
For hobbies or leisure (FE)	−0.010	0.012	0.009	0.051	0.076	0.013	0.000	0.004	0.050	0.196**
	(0.023)	(0.023)	(0.031)	(0.069)	(0.062)	(0.025)	(0.033)	(0.039)	(0.041)	(0.070)
N (FE)	6,252	2,955	2,033	1,399	864	4,964	2,220	1,420	998	599

Notes: Selected results, UKHLS waves 2–7, unweighted. Random- and fixed-effects, lagged by 0, 1, 2, 3 and 4 years. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

almost entirely not significant with a few exceptions. Participation in health and safety training was negatively and significantly associated with women's wages under RE with 0, 1 and 2 lags only, and not significant for RE lags 3 and 4, and not at all under FE. Participation in health and safety training was also negatively and significantly associated with men's wages under no lags in the RE and FE models and was not significant otherwise. Participation in induction training was negatively and significantly associated with women's wages under RE in lag 2, and for men's wages under FE in lag 4 only. Last, participation in training to maintain professional status/meet occupational standards was positively and significantly associated with women's wages under RE in lags 3 and 4. Unexpectedly, under FE in lag 3, there was a negative association between this kind of training and women's wages. Participation in this type of training was not significant under either RE or FE for men's wages.

In general, the FE models gave the smallest coefficients and the least significant results, as expected. This difference in significance may be due to the overly large standard errors in the FE models, as discussed earlier. It may also be the case that restricting the sample to those who wanted to undertake training only also considerably restricted the sample size and the power of the analysis. In particular, the rather large coefficients on induction training lagged by 4 years for men should be interpreted with caution, as they may be affected by the smaller number of available observations and by the relatively low incidence of induction-related training. Furthermore, FE and RE models do not tend to agree on which coefficients are significant, so we cannot use the combination of models to provide additional support for the strength of association between the variables.

To test the robustness of the models, we compared these results with those of the unrestricted sample (i.e., those who undertook employer-provided training irrespective of whether they wanted to do work-related training), but do not present these results here. The results were not affected in a substantial way. Participation in health and safety training was still associated with a decrease in wages for women under RE (in lags 0, 1 and 2) and for men (but in lag 3 instead of lag 0 under both FE and RE). However, participation in training to maintain professional status/meet occupational standards was no longer significant for women. Participation in induction training was also no longer significantly associated with wages for women under RE in lag 2. The unexpected negative association between participation in training to maintain professional status or occupational standards and women's wages under FE in lag 3 was also no longer significant in the unrestricted sample.

5. Conclusions

In this article, we explored workers' participation in different types of employer-provided training and its association with wages, using the UKHLS. We found that the probability of participating in training varied by respondents' own NS-SEC, highest qualifications, and other personal and job-related characteristics. Working in intermediate or manual occupations was negatively associated with the probability of undertaking some types of training, such as for maintaining professional status or meeting occupational standards (for women) or improving skills in current job (for men), but was positively associated with undertaking other kinds of training, such as induction and health and safety training. These exploratory findings support the arguments in the literature about the persistent inequalities in work-related training (Hoque, 2008; Lindsay et al., 2013). While we found little evidence of a direct social origin (parental background) effect on participation in training, there may be indirect channels through which social origins can affect this (e.g., Causa & Johansson, 2010) that are beyond the scope of this article and remain an issue for further research.

Looking at the association between employer-provided training in general and wages, and restricting the analysis to those who wanted to undertake training, we found mixed evidence for a small, positive effect for men and to a lesser extent for women, depending on the specifications and lags used. For men, the association between training and wages was either not significant, or small (e.g., 1.0% increase under FE, no lags; 1.2%–1.9% increase under RE, lags 0 and 1; and 2.5%–3.0% increase under OLS, lags 0, 1 and 3). For women, there were far fewer significant effects, with only a 1.2% increase under RE lag 2, and a 2.5% increase under OLS lag 3, the remaining associations were not significant.

We found tentative evidence of different associations between different types of training and wages, especially when lagged by several years, supporting insight from other work suggesting that the gains to training may take time to materialise (Blanden et al., 2012). When the sample was restricted to those who wanted to do training, we found that participation in training to maintain professional status or occupational standards was positively associated with women's wages under RE in lags 3 and 4 (and, oddly, negatively associated with wages under FE lag 3). However, participation in this type of training was no longer significant for the unrestricted sample. Assuming that training to maintain professional status or occupational standards is more general than specific, our findings are in line with the expectation that general training should raise wages by more than specific training.

We also found evidence of a negative association between health and safety training and wages for women, and to a lesser extent for men. For women, the findings held under RE lags 0, 1 and 2, and for men—under RE and FE, no lags. The RE results were similar in the unrestricted sample as well (for men, RE lag 3 became significant rather than lag 0). Cai and Waddoups (2012) also found a negative association between health and safety training and wages. It could be the case that health and safety training is unrelated to skill development and tends to be provided for statutory reasons (Jones et al., 2009). It may

also be the case that such training tends to be prevalent in low-paid types of jobs, which may explain the negative association between this type of training and wages—this remains an issue for further research.

Our findings seem to tentatively support the view that general skills training (e.g. to maintain occupational standards) is associated with higher wage returns than is specific skills training (health and safety, induction training; see, e.g., Arulampalam et al., 1997; Jones, Kalmi, & Kauhanen, 2011). However, a large part of our associations between different types of wages and training, especially under FE, were not significant. Overall, we consider that there is tentative evidence pointing towards a slight and positive association between wages and training, and skill-related training in particular, and that adults working in routine and manual occupations are less likely to participate in such training activities.

5.1. Limitations and Future Research

We emphasise that the relationships between training and wages reported here are only associations, and that we do not fully isolate the 'true' causal effect of training on wages. There are several issues that complicate our results and make it difficult to isolate the causal effect, and we remain cautious about these findings for the reasons discussed below.

First, although we made partial attempts to account for selection into training by restricting our sample to those who wanted to undertake training, we have not fully addressed the selection problem. We have not modelled women's selection into work, so our estimates for women's wages may be biased. Future research could jointly model selection into work and into training, and extending this to panel data. Furthermore, we have not addressed other concerns, such as potential reverse causality (that higher wages may lead to a higher propensity to take up training) or omitted variable bias (e.g., who financed the training), which remain issues for further research.

Second, some of our control variables may be excessive, potentially co-determined with the training decision. We tested the sensitivity of our results and exclude permanent job and part-time job controls, individually and then jointly from the regression specification. However, there were no substantial differences to either the magnitude, direction or significance of estimates of key regressors. We decided to leave the job-related controls in, following similar regression specifications in the exploratory literature (e.g., Sousounis, 2009), as the analysis in this article focuses on the different associations in the data, rather than on the estimation of 'true' causal effects.

5.2. Contributions

The aim of this article was to explore how undertaking different types of training in the UK was associated with wages for adults aged 25–64. The article makes three main contributions to the literature. First, by focusing on adults aged 25–64, this study looks at the training patterns of people who are in work, in contrast to other research that includes younger adults who tend to have a higher incidence of training. Second, our exploratory analysis highlights that aggregated measures of training can hide important variation in the data. People working in lower-level occupations may not only be less likely to access training in general, but also less likely to undertake training associated with higher wages (e.g., training to maintain occupational standards) and more likely to undertake training associated with lower wages (e.g., health and safety and induction training). Our analysis makes a case for further research on the disaggregated effects of training for specific subgroups. Third, we suggest that more detailed statistics are needed to investigate these issues further, e.g., by introducing questions about different types of training in large-scale national surveys.

That adults in lower-quality jobs and with lower qualifications, who may have more to gain from training or learning, tend to miss out on training relative to their more advantaged peers in better jobs has been widely discussed in other research. Our findings suggest that adults working in lower-level NS-SEC occupations who do access training may face further obstacles, by being more likely to participate in statutory types of training that appear to be negatively associated with wages, and less likely to participate in skill-developing types of training that may have a more positive association with wages. Why this is the case remains a question for further research. It may be that routine and manual NS-SEC occupations are less likely to offer training opportunities other than statutory training compared to intermediate and professional occupations. Ongoing inequalities in access to beneficial training can further perpetuate virtuous circles of learning for more advantaged people and vicious circles for more disadvantaged people. Firms should consider how they could provide better training opportunities targeting workers in lower-level occupations and encourage them to take up that training. To help address this, policymakers could encourage firms to adopt employability skills frameworks, e.g., following the Taylor Review suggestions (Taylor, Marsh, Nicol, & Broadbent, 2017). Firms could also aim to collect better data to monitor whether groups of employees systematically lack training and development opportunities and help ensure that access to beneficial training is available to those who need it most.

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Conflict of Interests

The authors declare no conflict of interests.

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Annex

Table A1. Key variables for analysis.

Variable	Information and notes
wanttrain_du (derived from jblkchb)	Whether wanted to undertake work-related training. This variable was created by taking the **jblkchb** variable (present in waves b, d, and f of UKHLS), recoding it to 1 (if respondent wanted to undertake work-related training) and 0 if not, and using the data from the previous wave to fill in missing observations for waves c, e and g.
Emptrain_du (derived from trainany and trwho1)	Whether did any training in the last 12 months that was provided by an employer. Yes = 1, No (including training by other providers and no training) = 0. The UKHLS asked all respondents in the main adult survey who were interviewed at a prior wave, if they have done 'any training schemes or courses', including schemes still in progress, and including 'part-time or evening courses, training provided by an employer, day release schemes, and government training schemes' (**trainany**). It also asked who provided the training in spells 1–3 (we use spell 1 only, **trwho1**).
trainpurp11–trainpurp73	Variables asking for reason for undertaking training in training spells 1–3. Reasons include: Help you get started in your job, Improve skills in current job, Maintain professional status/meet occupational standards, Prepare for job might do in future, Help you get a promotion, Health and safety training, For hobbies or leisure. We created variables **trpurp1–7** that take the value 1 when that purpose for training was mentioned by the respondent for any training spell, and 0 otherwise. In our analysis we use the purpose for training for training period 1 (longest period of training in last 12 months).
lnhrpay (derived from paygu_dv)	Gross monthly income in main job (derived). This variable was trimmed at the top and bottom 1% of the distribution to minimise outliers, and recoded into an hourly wage. This was done by dividing the trimmed **paygu_dv** by the number of weeks in a month (4.35), and dividing again by a variable for number of hours typically worked in a week, itself created from usual hours (**jbhrs**) plus overtime (**jbot)**. This variable was trimmed as well, to drop all observations above 100 hours a week, and all observations below 7 hours a week. The log of the hourly wage was used as the variable of interest in the regression analysis, **lnhrpay**.

Table A2. UKHLS waves 1–7 summary statistics.

	Overall			Women			Men		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
Whether had any employer-provided training in last 12 months	61,074	0.301	0.459	34,663	0.300	0.458	26,411	0.303	0.459
Help you get started in your job	22,405	0.051	0.219	12,946	0.052	0.222	9,459	0.049	0.216
Improve skills in current job	22,409	0.673	0.469	12,947	0.680	0.467	9,462	0.663	0.473
Maintain prof status/meet occ standards	22,409	0.516	0.500	12,948	0.521	0.500	9,461	0.509	0.500
Prepare for job might do in future	22,405	0.232	0.422	12,946	0.224	0.417	9,459	0.243	0.429
Help you get a promotion	22,405	0.097	0.296	12,946	0.092	0.289	9,459	0.103	0.304
Health and safety training	22,408	0.256	0.437	12,946	0.242	0.428	9,462	0.275	0.447
For hobbies or leisure	22,407	0.074	0.262	12,947	0.079	0.270	9,460	0.067	0.250
Log of usual gross pay per hour: current job	76,574	2.421	0.474	42,633	2.335	0.455	33,941	2.529	0.475
Higher managerial occupations	84,094	0.158	0.365	45,427	0.201	0.401	38,667	0.109	0.311
Intermediate occupations	84,094	0.353	0.478	45,427	0.326	0.469	38,667	0.385	0.487
Routine and manual occupations	89,614	45.046	9.997	49,133	45.214	9.952	40,481	44.842	10.048
Age	89,531	0.770	0.421	49,074	0.728	0.445	40,457	0.820	0.384
Whether married	89,527	0.265	0.441	49,087	0.276	0.447	40,440	0.251	0.434
Long-standing health problems	89,592	0.842	0.365	49,122	0.837	0.369	40,470	0.847	0.360
England	89,592	0.043	0.203	49,122	0.046	0.209	40,470	0.040	0.196
Wales	89,592	0.074	0.262	49,122	0.074	0.262	40,470	0.075	0.263
Scotland	89,592	0.041	0.198	49,122	0.043	0.203	40,470	0.038	0.192
Northern Ireland	89,614	0.706	0.986	49,133	0.657	0.934	40,481	0.765	1.043
No. of dep. children under 16 (continuous)	89,232	0.773	0.419	48,924	0.768	0.422	40,308	0.778	0.416
Own house outright/with mortgage	89,614	4397.931	2619.325	49,133	4279.149	2631.894	40,481	4542.099	2596.733
Gross household income in month before interview	84,679	0.958	0.200	45,684	0.953	0.211	38,995	0.964	0.186
Current job is permanent	79,280	0.595	0.491	44,170	0.498	0.500	35,110	0.717	0.451
Work in private sector company	79,699	0.226	0.418	44,337	0.352	0.478	35,362	0.069	0.254
Work part-time	80,106	0.771	0.420	44,563	0.785	0.411	35,543	0.754	0.431
Satisfied with current job	79,511	0.432	0.495	43,866	0.465	0.499	35,645	0.392	0.488
Fewer than 50 employees	63,774	0.518	0.500	35,841	0.510	0.500	27,933	0.528	0.499
Whether wanted work-related training	89,614	0.548	0.498	49,133	1.000	0.000	40,481	0.000	0.000
Female	87,938	0.162	0.369	48,799	0.151	0.358	39,139	0.176	0.381
Non-white ethnic group	89,521	0.323	0.468	49,099	0.315	0.465	40,422	0.333	0.471
Degree/above as highest qualification at W1	89,521	0.142	0.349	49,099	0.161	0.368	40,422	0.118	0.322
Other higher qualification	89,521	0.189	0.391	49,099	0.176	0.380	40,422	0.205	0.404
A level etc	89,521	0.205	0.403	49,099	0.219	0.413	40,422	0.188	0.390

Table A2. (Cont.) UKHLS waves 1–7 summary statistics.

	Overall			Women			Men		
	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.	Obs	Mean	Std. Dev.
GCSE etc	89,521	0.079	0.270	49,099	0.071	0.256	40,422	0.090	0.286
Other qual	89,521	0.062	0.242	49,099	0.059	0.235	40,422	0.067	0.250
No qual	76,071	0.373	0.484	42,465	0.366	0.482	33,606	0.381	0.486
Parent—Higher managerial occupations	76,071	0.262	0.440	42,465	0.265	0.441	33,606	0.257	0.437
Parent—Intermediate occupations	76,071	0.366	0.482	42,465	0.368	0.482	33,606	0.362	0.481
Parent—Routine and manual occupations	89,614	0.230	0.421	49,133	0.221	0.415	40,481	0.240	0.427
Wave 1	89,614	0.167	0.373	49,133	0.167	0.373	40,481	0.167	0.373
Wave 2	89,614	0.145	0.352	49,133	0.147	0.354	40,481	0.142	0.349
Wave 3	89,614	0.133	0.339	49,133	0.134	0.341	40,481	0.131	0.337
Wave 4	89,614	0.122	0.327	49,133	0.123	0.329	40,481	0.120	0.325
Wave 5	89,614	0.106	0.307	49,133	0.107	0.310	40,481	0.103	0.304
Wave 6	89,614	0.099	0.299	49,133	0.101	0.301	40,481	0.097	0.296
Wave 7	61,074	0.301	0.459	34,663	0.300	0.458	26,411	0.303	0.459

Note: Data are unweighted and pooled across UKHLS waves 1–7, and are not limited to employer-provided training in this table.

Table A3. Individual characteristics by participation in employer-provided training, unrestricted and restricted samples.

	Unrestricted						Restricted to those who wanted to train only					
	No employer-provided training			Employer-provided training			No employer-provided training			Employer-provided training		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Log of usual gross pay per hour: current job	36,752	2.410	0.477	17,672	2.511	0.447	16,539	2.430	0.458	11,499	2.511	0.438
Higher managerial occupations	38,386	0.456	0.498	18,183	0.568	0.495	17,064	0.492	0.500	11,776	0.579	0.494
Intermediate occupations	38,386	0.171	0.376	18,183	0.133	0.340	17,064	0.171	0.376	11,776	0.131	0.337
Routine and manual occupations	38,386	0.373	0.484	18,183	0.299	0.458	17,064	0.338	0.473	11,776	0.290	0.454
Age	42,674	46.237	9.969	18,400	45.217	9.214	17,919	43.211	8.990	11,884	43.754	8.824
Whether married	42,628	0.767	0.423	18,376	0.780	0.415	17,895	0.760	0.427	11,867	0.770	0.421
Long-standing health problems	42,650	0.270	0.444	18,390	0.270	0.444	17,906	0.252	0.434	11,876	0.261	0.439
England	42,662	0.829	0.376	18,392	0.857	0.350	17,913	0.845	0.362	11,877	0.859	0.348
Wales	42,662	0.046	0.209	18,392	0.040	0.196	17,913	0.046	0.210	11,877	0.041	0.199
Scotland	42,662	0.078	0.268	18,392	0.070	0.255	17,913	0.070	0.256	11,877	0.070	0.255
Northern Ireland	42,662	0.047	0.212	18,392	0.033	0.179	17,913	0.038	0.192	11,877	0.030	0.170
No. of dep. children under 16 (continuous)	42,674	0.686	0.980	18,400	0.714	0.968	17,919	0.833	1.026	11,884	0.783	0.984
Own house outright/with mortgage	42,474	0.777	0.416	18,323	0.795	0.404	17,833	0.751	0.433	11,834	0.776	0.417
Gross household income in month before interview	42,674	4,292.190	2,647.983	18,400	4,793.988	2,554.871	17,919	4,375.620	2,478.720	11,884	4,771.945	2,469.201
Current job is permanent	38,618	0.962	0.190	18,261	0.967	0.180	17,153	0.960	0.196	11,828	0.966	0.181
Work in private sector company	38,155	0.649	0.477	18,119	0.487	0.500	16,990	0.612	0.487	11,749	0.480	0.500
Work part-time	38,359	0.247	0.431	18,146	0.171	0.376	17,060	0.199	0.399	11,765	0.155	0.362
Satisfied with current job	38,587	0.765	0.424	18,264	0.790	0.407	17,138	0.763	0.426	11,832	0.806	0.395
Fewer than 50 employees	37,834	0.440	0.496	17,940	0.389	0.488	16,873	0.404	0.491	11,625	0.380	0.485
Whether wanted work-related training	40,333	0.444	0.497	18,062	0.658	0.474						
Female	42,674	0.568	0.495	18,400	0.565	0.496	17,919	0.551	0.497	11,884	0.558	0.497
Non-white ethnic group	42,645	0.154	0.361	18,379	0.143	0.350	17,907	0.207	0.405	11,873	0.170	0.376
Degree/above as highest qualification at W1	42,645	0.300	0.458	18,384	0.365	0.481	17,912	0.348	0.476	11,874	0.386	0.487
Other higher qualification	42,645	0.128	0.334	18,384	0.181	0.385	17,912	0.147	0.354	11,874	0.184	0.388
A level etc	42,645	0.190	0.392	18,384	0.195	0.396	17,912	0.195	0.396	11,874	0.197	0.398
GCSE etc	42,645	0.222	0.416	18,384	0.175	0.380	17,912	0.205	0.404	11,874	0.162	0.369
Other qual	42,645	0.087	0.282	18,384	0.057	0.232	17,912	0.072	0.258	11,874	0.050	0.217
No qual	42,645	0.072	0.259	18,384	0.028	0.164	17,912	0.034	0.181	11,874	0.020	0.142

Table A3. (Cont.) Individual characteristics by participation in employer-provided training, unrestricted and restricted samples.

	Unrestricted						Restricted to those who wanted to train only					
	No employer-provided training			Employer-provided training			No employer-provided training			Employer-provided training		
	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD
Parent—Higher managerial occupations	36,472	0.362	0.480	15,988	0.393	0.488	15,320	0.396	0.489	10,405	0.404	0.491
Parent—Intermediate occupations	36,472	0.262	0.440	15,988	0.257	0.437	15,320	0.267	0.442	10,405	0.256	0.437
Parent—Routine and manual occupations	36,472	0.376	0.484	15,988	0.350	0.477	15,320	0.337	0.473	10,405	0.340	0.474
Wave 1	42,674	0.000	0.000	18,400	0.000	0.000	17,919	0.000	0.000	11,884	0.000	0.000
Wave 2	42,674	0.205	0.403	18,400	0.226	0.419	17,919	0.209	0.407	11,884	0.231	0.421
Wave 3	42,674	0.188	0.391	18,400	0.184	0.388	17,919	0.188	0.390	11,884	0.175	0.380
Wave 4	42,674	0.176	0.381	18,400	0.163	0.369	17,919	0.173	0.378	11,884	0.167	0.373
Wave 5	42,674	0.162	0.368	18,400	0.153	0.360	17,919	0.163	0.370	11,884	0.154	0.361
Wave 6	42,674	0.136	0.343	18,400	0.145	0.352	17,919	0.132	0.339	11,884	0.144	0.351
Wave 7	42,674	0.133	0.339	18,400	0.129	0.335	17,919	0.135	0.341	11,884	0.129	0.335

Note: Data are unweighted and pooled across UKHLS waves 1–7.

Table A4. Regression results, probability of participation in training in last 12 months, overall and by reason for training, men and women, pooled logit.

	Women	**Women—reasons for training**					**Men**	**Men—reasons for training**				
	Training in last 12 months	Help get started in job	Improve skills in current job	Maintain prof status/ meet occ stds	Help get a promotion	Health and safety training	Training in last 12 months	Help get started in job	Improve skills in current job	Maintain prof status/ meet occ stds	Help get a promotion	Health and safety training
	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)
Higher managerial and professional (ref.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Intermediate	−0.094*** (0.010)	0.011 (0.007)	0.006 (0.016)	−0.113*** (0.019)	−0.031*** (0.009)	0.020 (0.016)	0.005 (0.014)	0.009 (0.009)	−0.009 (0.020)	−0.015 (0.023)	−0.018 (0.013)	0.027 (0.022)
Routine	−0.018 (0.011)	0.009 (0.006)	0.026 (0.014)	−0.067*** (0.017)	−0.024** (0.009)	0.090*** (0.016)	0.004 (0.011)	0.009 (0.007)	−0.096*** (0.017)	0.028 (0.019)	−0.023* (0.010)	0.118*** (0.018)
Age (continuous)	0.000 (0.000)	−0.001*** (0.000)	−0.003*** (0.001)	0.004*** (0.001)	−0.003*** (0.000)	0.004*** (0.001)	−0.002*** (0.001)	−0.002*** (0.000)	−0.004*** (0.001)	0.004*** (0.001)	−0.006*** (0.001)	0.003*** (0.001)
Married/civil partnership/ cohabiting	−0.007 (0.010)	−0.002 (0.006)	−0.014 (0.013)	−0.025 (0.015)	0.006 (0.009)	0.021 (0.014)	0.043*** (0.012)	−0.001 (0.007)	−0.031 (0.019)	−0.021 (0.022)	−0.015 (0.013)	0.005 (0.021)
Longstanding health problems	0.021** (0.008)	0.010 (0.005)	0.005 (0.011)	0.038** (0.013)	−0.003 (0.007)	0.033** (0.012)	0.014 (0.009)	0.001 (0.006)	0.039** (0.014)	−0.002 (0.016)	0.000 (0.009)	0.031* (0.015)
England (ref.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Wales	−0.052** (0.018)	−0.010 (0.011)	0.010 (0.026)	−0.008 (0.031)	0.011 (0.018)	−0.069** (0.027)	−0.003 (0.022)	−0.028*** (0.008)	−0.024 (0.033)	0.007 (0.035)	0.033 (0.021)	−0.013 (0.032)
Scotland	−0.066*** (0.015)	−0.017* (0.008)	−0.006 (0.022)	0.001 (0.026)	−0.010 (0.014)	−0.036 (0.021)	−0.014 (0.017)	−0.003 (0.009)	0.016 (0.023)	0.005 (0.028)	0.008 (0.017)	0.010 (0.025)
Northern Ireland	−0.104*** (0.016)	−0.034*** (0.008)	−0.053 (0.032)	−0.034 (0.034)	−0.014 (0.016)	−0.046 (0.028)	−0.080*** (0.021)	−0.016 (0.013)	0.027 (0.032)	−0.005 (0.038)	0.020 (0.025)	0.069 (0.036)
No. of dep. children under 16 (continuous)	−0.001 (0.005)	−0.001 (0.003)	−0.002 (0.007)	−0.003 (0.008)	0.009* (0.004)	0.003 (0.007)	0.002 (0.005)	−0.005* (0.003)	0.002 (0.007)	0.006 (0.008)	−0.001 (0.005)	−0.002 (0.007)
Own house	−0.031** (0.010)	−0.002 (0.006)	0.011 (0.014)	−0.022 (0.016)	−0.021* (0.010)	−0.044** (0.015)	0.016 (0.012)	−0.018* (0.008)	0.005 (0.018)	−0.010 (0.019)	−0.004 (0.011)	−0.002 (0.018)
Household income (continuous)	0.000* (0.000)	−0.000** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	−0.000** (0.000)	0.000 (0.000)	−0.000 (0.000)	−0.000 (0.000)	0.000 (0.000)	−0.000 (0.000)	−0.000*** (0.000)
Permanent	0.037* (0.016)	−0.062*** (0.017)	−0.015 (0.025)	0.054 (0.029)	−0.014 (0.017)	0.010 (0.026)	0.037 (0.021)	−0.049* (0.022)	0.011 (0.037)	0.076 (0.042)	0.059*** (0.018)	0.005 (0.037)

Table A4. (Cont.) Regression results, probability of participation in training in last 12 months, overall and by reason for training, men and women, pooled logit.

	Women	**Women—reasons for training**					**Men**	**Men—reasons for training**				
	Training in last 12 months	Help get started in job	Improve skills in current job	Maintain prof status/ meet occ stds	Help get a promotion	Health and safety training	Training in last 12 months	Help get started in job	Improve skills in current job	Maintain prof status/ meet occ stds	Help get a promotion	Health and safety training
	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)
Job is in private sector	−0.155*** (0.008)	0.016** (0.005)	−0.032** (0.011)	−0.059*** (0.013)	0.001 (0.007)	−0.020 (0.011)	−0.105*** (0.010)	−0.002 (0.006)	0.003 (0.014)	−0.099*** (0.016)	−0.019* (0.009)	0.018 (0.014)
Job is part-time	−0.074*** (0.008)	0.002 (0.006)	−0.020 (0.013)	0.024 (0.015)	−0.061*** (0.007)	0.035** (0.013)	−0.100*** (0.017)	0.003 (0.014)	0.006 (0.034)	0.030 (0.037)	−0.004 (0.023)	−0.045 (0.032)
Satisfied with job	0.028*** (0.008)	0.015** (0.005)	0.040** (0.013)	0.005 (0.014)	0.024*** (0.007)	0.016 (0.012)	0.039*** (0.008)	0.005 (0.006)	0.029* (0.014)	0.010 (0.016)	0.012 (0.009)	0.005 (0.014)
Workplace has < 50 employees	0.012 (0.008)	−0.009 (0.005)	0.005 (0.011)	0.010 (0.013)	−0.019** (0.007)	0.031** (0.011)	−0.038*** (0.009)	0.002 (0.005)	−0.034* (0.014)	0.044** (0.015)	−0.043*** (0.008)	0.023 (0.014)
Non-white ethnic group	−0.016 (0.012)	0.013 (0.007)	−0.000 (0.016)	0.002 (0.017)	−0.002 (0.010)	0.009 (0.017)	−0.041** (0.013)	0.023* (0.009)	0.003 (0.020)	−0.012 (0.022)	0.029* (0.013)	0.020 (0.021)
Highest qualification: Degree or equivalent (ref.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Other higher qualification	0.062*** (0.013)	0.012 (0.006)	−0.006 (0.015)	0.030 (0.018)	0.011 (0.010)	0.049** (0.016)	0.033* (0.016)	0.006 (0.008)	−0.013 (0.021)	0.012 (0.024)	−0.015 (0.012)	0.104*** (0.023)
A level etc	−0.003 (0.012)	0.007 (0.007)	0.002 (0.017)	−0.061** (0.020)	0.019 (0.011)	0.047** (0.018)	0.008 (0.014)	0.022** (0.008)	−0.030 (0.019)	0.007 (0.022)	−0.002 (0.012)	0.058** (0.020)
GCSE etc	−0.039** (0.013)	0.006 (0.007)	0.006 (0.018)	−0.082*** (0.021)	0.005 (0.011)	0.055** (0.019)	−0.045** (0.014)	−0.005 (0.008)	−0.023 (0.022)	−0.052* (0.025)	−0.001 (0.014)	0.047* (0.022)
Other qual	−0.101*** (0.018)	0.028* (0.014)	−0.008 (0.028)	−0.101** (0.034)	0.015 (0.018)	0.051 (0.029)	−0.041* (0.019)	−0.006 (0.010)	−0.026 (0.029)	−0.063 (0.033)	−0.008 (0.020)	0.119*** (0.032)
No qual	−0.170*** (0.018)	0.000 (0.015)	−0.053 (0.039)	−0.203*** (0.041)	−0.012 (0.024)	0.092* (0.042)	−0.135*** (0.022)	0.022 (0.021)	0.006 (0.040)	−0.099 (0.051)	−0.015 (0.030)	0.063 (0.044)
Parent—Higher managerial and professional (ref.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)	0.000 (.)
Parent—Intermediate occupations	0.005 (0.010)	−0.004 (0.006)	−0.004 (0.014)	0.012 (0.016)	−0.005 (0.009)	−0.003 (0.014)	0.002 (0.011)	0.011 (0.007)	−0.003 (0.017)	0.005 (0.019)	−0.004 (0.010)	−0.000 (0.018)
Parent—Routine and manual occupations	0.009 (0.010)	−0.009 (0.006)	−0.018 (0.013)	0.015 (0.015)	−0.004 (0.009)	0.008 (0.014)	0.020 (0.011)	0.004 (0.006)	−0.012 (0.016)	0.026 (0.018)	0.008 (0.010)	0.030 (0.017)

Table A4. (Cont.) Regression results, probability of participation in training in last 12 months, overall and by reason for training, men and women, pooled logit.

	Women	**Women—reasons for training**					**Men**	**Men—reasons for training**				
	Training in last 12 months	Help get started in job	Improve skills in current job	Maintain prof status/ meet occ stds	Help get a promotion	Health and safety training	Training in last 12 months	Help get started in job	Improve skills in current job	Maintain prof status/ meet occ stds	Help get a promotion	Health and safety training
	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)	AME (SE)
2010	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
2011	−0.023**	−0.010	0.013	0.041**	0.013	0.022	−0.026**	0.006	0.047**	0.026	0.011	0.009
	(0.007)	(0.006)	(0.014)	(0.015)	(0.009)	(0.013)	(0.008)	(0.007)	(0.016)	(0.017)	(0.010)	(0.015)
2012	−0.033***	−0.007	−0.002	0.033*	−0.007	0.025	−0.043***	−0.003	0.009	0.038*	0.012	0.011
	(0.008)	(0.007)	(0.014)	(0.016)	(0.009)	(0.014)	(0.009)	(0.007)	(0.017)	(0.019)	(0.011)	(0.016)
2013	−0.034***	−0.008	0.003	0.044*	−0.002	0.031*	−0.028**	0.006	0.014	0.031	0.004	0.021
	(0.008)	(0.007)	(0.015)	(0.017)	(0.010)	(0.015)	(0.010)	(0.008)	(0.018)	(0.019)	(0.011)	(0.017)
2014	−0.009	0.007	−0.030	0.040*	−0.002	0.036*	−0.000	0.003	0.033	−0.008	0.013	0.018
	(0.009)	(0.008)	(0.016)	(0.018)	(0.010)	(0.016)	(0.011)	(0.008)	(0.018)	(0.020)	(0.012)	(0.018)
2015	−0.019*	0.003	−0.033	0.023	0.001	0.026	−0.009	0.004	−0.012	0.031	0.002	0.001
	(0.010)	(0.008)	(0.017)	(0.019)	(0.010)	(0.017)	(0.011)	(0.009)	(0.020)	(0.021)	(0.012)	(0.019)
N	26,342	8647	8647	8648	8647	8647	20893	6710	6710	6711	6710	6712

Notes: Full results, UKHLS waves 2–7, unweighted pooled logistic regression, average marginal effects (dy/dx(*)), standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Year is the first year of the fieldwork carried out in that UKHLS wave. Training done to prepare for a job one might do in the future and training for hobbies and leisure not shown owing to space considerations.

Table A5. Regression results, association between different reasons for participation in training and wages (log of hourly earnings), random effects.

	Women					Men				
	No lags	**L1**	**L2**	**L3**	**L4**	**No lags**	**L1**	**L2**	**L3**	**L4**
Help you get started in your job	0.010	−0.014	−0.060*	−0.031	0.005	−0.015	−0.032	0.048	0.008	−0.061
	(0.017)	(0.021)	(0.029)	(0.033)	(0.037)	(0.017)	(0.024)	(0.032)	(0.034)	(0.057)
Improve skills in current job	0.003	0.004	0.010	−0.016	0.038	0.005	0.002	0.014	−0.017	0.012
	(0.008)	(0.014)	(0.015)	(0.018)	(0.026)	(0.009)	(0.013)	(0.018)	(0.023)	(0.029)
Maintain prof status/meet occ standards	0.004	0.014	0.011	0.041**	0.054*	0.005	0.006	0.004	0.004	0.004
	(0.007)	(0.011)	(0.012)	(0.015)	(0.024)	(0.008)	(0.011)	(0.014)	(0.016)	(0.027)
Prepare for job might do in future	−0.001	0.004	0.016	0.001	0.015	0.004	−0.020	−0.019	0.004	−0.048
	(0.008)	(0.012)	(0.014)	(0.022)	(0.028)	(0.009)	(0.013)	(0.015)	(0.018)	(0.029)
Help you get a promotion	−0.002	−0.030	0.001	0.012	0.021	−0.011	−0.029	−0.004	−0.020	0.026
	(0.011)	(0.016)	(0.017)	(0.025)	(0.031)	(0.012)	(0.018)	(0.016)	(0.023)	(0.032)
Health and safety training	−0.018*	−0.049***	−0.033*	−0.024	−0.038	−0.020*	−0.020	0.019	−0.031	0.011
	(0.008)	(0.011)	(0.015)	(0.018)	(0.027)	(0.009)	(0.012)	(0.015)	(0.018)	(0.028)
For hobbies or leisure	−0.000	−0.001	0.002	0.000	0.035	0.037	0.012	0.025	0.032	−0.071
	(0.021)	(0.023)	(0.026)	(0.051)	(0.048)	(0.023)	(0.029)	(0.027)	(0.031)	(0.071)
Higher managerial and professional (ref.)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Intermediate	−0.160***	−0.167***	−0.183***	−0.181***	−0.179***	−0.037	−0.023	−0.002	0.031	−0.064
	(0.016)	(0.022)	(0.026)	(0.032)	(0.042)	(0.019)	(0.031)	(0.037)	(0.042)	(0.054)
Routine	−0.288***	−0.304***	−0.328***	−0.330***	−0.259***	−0.177***	−0.191***	−0.175***	−0.154***	−0.168***
	(0.016)	(0.022)	(0.025)	(0.029)	(0.039)	(0.017)	(0.023)	(0.025)	(0.031)	(0.041)
Age (continuous)	0.028***	0.026**	0.023*	0.007	−0.006	0.031***	0.030***	0.044***	0.038*	0.031
	(0.006)	(0.009)	(0.011)	(0.011)	(0.016)	(0.006)	(0.009)	(0.013)	(0.015)	(0.020)
Age squared	−0.000***	−0.000**	−0.000*	−0.000	0.000	−0.000***	−0.000**	−0.000**	−0.000*	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married/civil partnership/cohabiting	−0.072***	−0.082***	−0.094***	−0.110***	−0.098**	−0.115***	−0.139***	−0.153***	−0.128***	−0.211***
	(0.014)	(0.019)	(0.022)	(0.026)	(0.033)	(0.019)	(0.025)	(0.031)	(0.035)	(0.047)
Longstanding health problems	0.001	0.006	0.044**	0.056**	0.068**	−0.006	−0.011	−0.023	0.003	−0.002
	(0.009)	(0.012)	(0.015)	(0.020)	(0.024)	(0.011)	(0.016)	(0.018)	(0.023)	(0.031)
England (ref.)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Wales	0.000	−0.010	0.034	−0.013	0.017	−0.099***	−0.098*	−0.094*	−0.101	−0.081
	(0.031)	(0.039)	(0.039)	(0.053)	(0.066)	(0.030)	(0.042)	(0.047)	(0.066)	(0.062)
Scotland	0.013	0.053	0.041	0.048	0.106	−0.049*	−0.036	−0.014	0.021	−0.036
	(0.019)	(0.028)	(0.033)	(0.036)	(0.056)	(0.024)	(0.034)	(0.045)	(0.046)	(0.056)

Table A5. (Cont.) Regression results, association between different reasons for participation in training and wages (log of hourly earnings), random effects.

	Women					Men				
	No lags	**L1**	**L2**	**L3**	**L4**	**No lags**	**L1**	**L2**	**L3**	**L4**
Northern Ireland	0.043	0.011	0.099*	0.020	0.134	−0.079*	−0.091*	−0.108*	−0.032	0.018
	(0.027)	(0.042)	(0.050)	(0.081)	(0.087)	(0.035)	(0.042)	(0.050)	(0.060)	(0.130)
No. of dep. children under 16 (continuous)	−0.006	−0.010	−0.006	0.015	0.031	0.030***	0.042***	0.043***	0.030**	0.055**
	(0.006)	(0.010)	(0.012)	(0.013)	(0.018)	(0.006)	(0.009)	(0.011)	(0.011)	(0.018)
Own house	0.047***	0.040	0.036	0.036	0.057	0.086***	0.067**	0.078*	0.037	0.037
	(0.014)	(0.020)	(0.022)	(0.029)	(0.041)	(0.017)	(0.024)	(0.031)	(0.030)	(0.038)
Household income (continuous)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Permanent	0.063*	0.084	0.109*	0.056	0.100	0.054	0.065	0.070	0.101	0.077
	(0.028)	(0.043)	(0.049)	(0.087)	(0.116)	(0.031)	(0.047)	(0.057)	(0.075)	(0.078)
Job is in private sector	−0.049***	−0.044**	−0.034*	−0.010	−0.027	0.024	0.040*	0.067***	0.039	0.056
	(0.011)	(0.015)	(0.017)	(0.021)	(0.027)	(0.012)	(0.016)	(0.019)	(0.024)	(0.031)
Job is part-time	0.052***	0.043*	0.059*	0.030	0.026	0.074	0.081	0.009	0.023	−0.076
	(0.014)	(0.021)	(0.026)	(0.031)	(0.047)	(0.052)	(0.064)	(0.066)	(0.092)	(0.093)
Satisfied with job	0.009	−0.004	0.006	0.010	0.028	0.011	0.033*	0.039*	0.024	0.003
	(0.009)	(0.013)	(0.018)	(0.023)	(0.037)	(0.009)	(0.015)	(0.017)	(0.018)	(0.033)
Workplace has < 50 employees	−0.072***	−0.070***	−0.083***	−0.079***	−0.074**	−0.074***	−0.057**	−0.078***	−0.110***	−0.094*
	(0.012)	(0.017)	(0.019)	(0.021)	(0.028)	(0.014)	(0.020)	(0.024)	(0.028)	(0.037)
Non-white ethnic group	0.027	0.048*	−0.006	−0.002	0.021	−0.100***	−0.121***	−0.132***	−0.096*	−0.114**
	(0.017)	(0.024)	(0.026)	(0.027)	(0.035)	(0.019)	(0.027)	(0.033)	(0.038)	(0.043)
Highest qualification: Degree or equivalent (ref.)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)
Other higher qualification	−0.134***	−0.111***	−0.096***	−0.092***	−0.111**	−0.086***	−0.072*	−0.099**	−0.056	−0.101*
	(0.016)	(0.021)	(0.025)	(0.027)	(0.035)	(0.021)	(0.028)	(0.033)	(0.041)	(0.048)
A level etc	−0.211***	−0.180***	−0.181***	−0.152***	−0.193***	−0.144***	−0.125***	−0.160***	−0.110**	−0.129**
	(0.017)	(0.023)	(0.026)	(0.030)	(0.041)	(0.020)	(0.027)	(0.032)	(0.035)	(0.046)
GCSE etc	−0.271***	−0.224***	−0.221***	−0.156***	−0.192***	−0.180***	−0.143***	−0.220***	−0.183***	−0.199**
	(0.019)	(0.027)	(0.032)	(0.036)	(0.049)	(0.023)	(0.031)	(0.043)	(0.051)	(0.064)
Other qual	−0.278***	−0.230***	−0.188***	−0.123**	−0.190***	−0.226***	−0.219***	−0.245***	−0.230***	−0.258***
	(0.029)	(0.043)	(0.041)	(0.047)	(0.051)	(0.028)	(0.038)	(0.045)	(0.063)	(0.066)
No qual	−0.272***	−0.201**	−0.206**	−0.067	−0.225*	−0.225***	−0.151	−0.159	−0.109	−0.187
	(0.042)	(0.062)	(0.063)	(0.101)	(0.106)	(0.050)	(0.081)	(0.120)	(0.118)	(0.156)
Parent—Higher managerial and professional (ref.)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)	(.)

Table A5. (Cont.) Regression results, association between different reasons for participation in training and wages (log of hourly earnings), random effects.

	Women					Men				
	No lags	**L1**	**L2**	**L3**	**L4**	**No lags**	**L1**	**L2**	**L3**	**L4**
Parent—Intermediate occupations	−0.006	0.010	−0.022	−0.018	−0.036	−0.010	−0.011	−0.020	−0.021	−0.020
	(0.014)	(0.020)	(0.023)	(0.026)	(0.032)	(0.016)	(0.022)	(0.027)	(0.031)	(0.039)
Parent—Routine and manual occupations	−0.024	−0.020	−0.043*	−0.037	−0.023	−0.046**	−0.053*	−0.030	−0.035	−0.006
	(0.014)	(0.019)	(0.021)	(0.023)	(0.031)	(0.016)	(0.022)	(0.027)	(0.031)	(0.038)
2010	0.000					0.000				
	(.)					(.)				
2011	0.023**	0.000				0.002	0.000			
	(0.009)	(.)				(0.008)	(.)			
2012	0.019*	−0.018	0.000			0.007	0.016	0.000		
	(0.009)	(0.012)	(.)			(0.010)	(0.013)	(.)		
2013	0.043***	0.008	0.036**	0.000		0.010	0.017	−0.002	0.000	
	(0.010)	(0.014)	(0.013)	(.)		(0.011)	(0.015)	(0.014)	(.)	
2014	0.055***	0.018	0.053***	0.007	0.000	0.031**	0.040*	0.019	0.015	0.000
	(0.011)	(0.015)	(0.013)	(0.016)	(.)	(0.012)	(0.016)	(0.016)	(0.016)	(.)
2015	0.091***	0.064***	0.088***	0.070***	0.046*	0.055***	0.060***	0.039*	0.055***	0.043*
	(0.012)	(0.017)	(0.016)	(0.017)	(0.018)	(0.012)	(0.016)	(0.017)	(0.015)	(0.019)
Constant	1.781***	1.847***	1.885***	2.250***	2.397***	1.647***	1.646***	1.323***	1.488***	1.677***
	(0.129)	(0.210)	(0.255)	(0.272)	(0.372)	(0.134)	(0.199)	(0.279)	(0.336)	(0.436)
N	5,488	2,612	1,759	1,199	744	4,342	1,947	1,245	864	511

Notes: Full results, UKHLS waves 2–7, unweighted panel linear regression, random effects only, lagged by 0, 1, 2, 3 and 4 years. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.