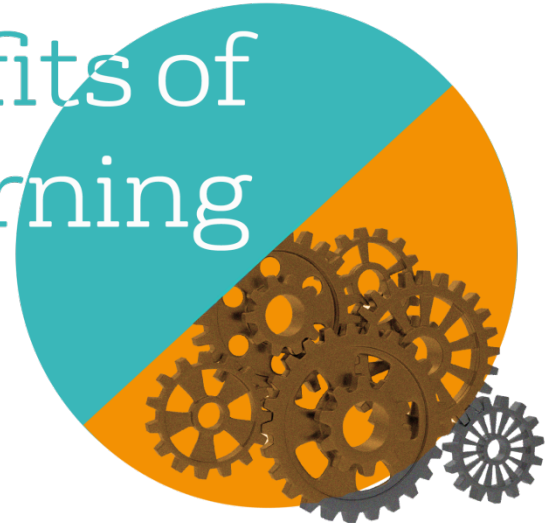




Wellbeing benefits of job-related learning



Analysing data from *Understanding Society: the UK Household Longitudinal Survey* (UKHLS)



About the What Works Centre for Wellbeing

We are an independent organisation set up to produce robust, relevant and accessible evidence on wellbeing. We work with individuals, communities, businesses and government, to enable them to use this evidence make decisions and take action to improve wellbeing.

The Centre is supported by the ESRC and partners to produce evidence on wellbeing in four areas: work and learning; culture and sport; community; and cross-cutting capabilities in definitions, evaluation, determinants and effects.

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Wellbeing benefits of job-related training: are we all gaining?

Job-related training improves the wellbeing of workers...

- As we would expect, job-related training aims to help workers do their job better (or indeed, find a new job which suits them better) – which in turn increases job satisfaction. This increase in job satisfaction improves people's overall satisfaction with life [*Note that there are no increases in life satisfaction over and above the increases in job satisfaction.*]
- **How much do we gain?** It's an increase, but not a huge one. The increase in job satisfaction caused by job-related training is comparable to the increase gained from a 1% increase in hourly wages.

...but there are differences across regions and groups.

- **This wellbeing increase is greater in London's most deprived areas compared to the less deprived areas.**

In these deprived areas, the difference in job satisfaction for those who take part in job-related training compared to those who do not is much greater than the UK average. In fact, it's equivalent to differences between sectors. For example, the additional wellbeing associated with being in the health and social services sector compared to the accommodation and food sector in London [*note that this incorporates other factors and is the difference only due to different sectors*].
- **Job-related training may not be meeting the needs of older workers.** Younger workers are more likely to gain wellbeing benefits from job-related training than older workers.
- **Job-related training delivers wellbeing benefits for both men and women compared with those that receive no job-related training, but there are gender differences.** Longer training periods only deliver wellbeing benefits for men, and generate almost no wellbeing gain for women. This deserves further scrutiny. Why does training with longer duration fail to improve job satisfaction for women? What is it about longer workplace training which means it is less helpful for increasing women's job satisfaction?

This research shows us where the differences are, but doesn't give us all the underlying reasons. Further work could unpick what is causing these differences, including opportunities for promotion, regional differences in industry, and skill profile. Further work could look at the patterns for different ethnic groups, as well as people with long-term illness or disabled people.

2. Background

We know from organisational level studies that training to improve the skills and capabilities of workers makes an important contribution to enhanced firm performance (Huselid, 1995; Huselid, Jackson and Schuler, 1997; Michie and Sheehan-Quinn, 2001; Tregaskis, Daniels, Glover, Butler and Meyer, 2013; Camps and Luna-Arocas, 2012). The impact of training on wellbeing is less well scrutinised at an organisational level.

There has been growing evidence of the importance of economic and social governance arrangements below the national level in setting the foundations of comparative advantage (e.g. Hall and Soskice, 2001; Kristensen and Morgan 2007; Almond, Ferner and Tregaskis, 2014; Rutherford, and Holmes, (2008). Skills policy and economic growth strategies are areas which are particularly sensitive to local context (Phelps, Valler and Wood, 2005) and where implementation of national policy may play out in different ways. But again this is an area in relation to wellbeing that has received little attention.

Looking at studies of individual learners, adult learning has been found to be associated with a range of societal, and individual benefits (Dolan, Fujiwara and Metcalfe, 2012).

We know from previous research that participation in learning beyond school age is low: 40% of adults had not participated in learning since leaving school (NIACE, 2015). Those that do participate do so initially for work-related reasons. There appear to be some variations in learning participation across the UK nations, with 48% participation in Scotland, 42% in England, and 38% in Wales and Northern Ireland (although the data for Northern Ireland is small and should be treated with caution). Levels of participation are important because they signal the value that learners perceive they will gain from their emotional, time or financial investment.

Analyses of the 1958 cohort studies demonstrated men aged 33-42 were more likely than women to gain life satisfaction from participation in academic or work-related training (Feinstein et al 2003). An extension of these analysis to 42-50 year olds found life satisfactions gains for those participating in learning, but they also found that life satisfaction gains were greater for those in employment compared to those who were not economically active (Duckworth and Cara, 2012).

However, questions remain about whether job-related training is meeting what learners' value and thus delivering to the training needs of a diverse workforce and across different localities (where the focus of policy or organisational priorities may differ).

The analysis here aims to address some of these contextual gaps in our understanding by examining the relationship between job-related training and wellbeing and how this relationship is impacted by gender, age and region of residence. We ask the following questions:

- Are adult learners gaining wellbeing benefits from job-related training?
- Are the wellbeing gains greater for some groups compared to others?
- Are the wellbeing gains from training the same for adult learners across the four nations of the UK?

3. Methods

Data and Sample

The analysis draws on the data from *Understanding Society: the UK Household Longitudinal Survey (UKHLS) 2010-14* to estimate the effect of job-related training on wellbeing. In this survey, the same individuals are interviewed every year, except when they cannot be contacted or located, or do not wish to participate. The analysis focuses on individuals in employment. As the training questions were included from the second wave onwards we use data from those interviews only which covers the period, 2010-2014. We restrict the main sample to white majority 20-69 year olds who were born in the UK and were in paid employment at the time of the interviews. By “white majority” we mean those who report their ethnic group to be “White – British/ English/ Scottish/ Welsh/ Northern Irish” (and commonly referred to as white British). After dropping cases that have missing values for the variables used in the analysis, the sample size reduces to 49,028 person-wave observations. In the specification where we also included area level deprivation which is only available for England, the sample size reduces to 36,960. Additional analysis was conducted which included all ethnic groups living in England and the sample size was, 45,924 person-wave observations. For reasons discussed later we did not include all ethnic groups in the main analyses.

Analysis

We estimated these models using pooled ordinary least squares (OLS). As treating 7-point job and life satisfaction scales as cardinal or ordinal does not make much difference, we are using OLS to estimate these models instead of ordered logit (Ferrer-i-Carbonell and Frijters 2004). As there may be more than one observation per person, we estimated standard errors correctly by clustering on individuals.

If those participating in job-related training are different from those who do not, then the difference in job satisfaction between participants and non-participants may not be due to the training they have received but due to these inherent individual differences. So, to estimate the effect of training on wellbeing, we introduced controls in the wellbeing models to take account of these individual differences or characteristics. Our controls included age, sex, current marital status, number of own children in the household, highest education qualification, health and long term illness or disability, household income, living in an urban area versus non-urban area, job characteristics (earning, hours of work, occupation and industry). However, we recognise that not all individual differences or characteristics are measured. In other words, these are not observable from the point of view of the analyst. One limitation of this estimation method is that, if such unobserved factors are correlated with training and wellbeing, then causality cannot be established. For example, if individuals who are highly motivated are more likely to take up training and because of their high levels of motivation are also likely to perform well in their jobs and have high levels of job

satisfaction, then if we cannot measure motivation, then we cannot say conclusively whether the higher job satisfaction associated with training is due to training or the unobserved motivation levels. We used two methods to address the issues arising from unobserved individual differences, which would allow us to identify a causal relationship between job-related training and wellbeing. First we controlled for personality traits to account for this unobserved heterogeneity (Ferrer-i-Carbonell and Frijters 2004, Diener and Lucas 1999). Second, we estimated the model using the fixed effects (FE) method. The efficacy of the FE method is based on the assumption that all unobserved heterogeneity is time invariant and that there is sufficient within person variation in training participation over time in the sample. However, if a variable does not change over time, such as sex, then its effect cannot be estimated using the FE method. If a variable changes very little over time, such as locational characteristics (e.g., region of residence, whether living in an urban area), then its effect cannot be estimated very precisely. Therefore if a large number of the variables are inherently stable over time the FE method is limited and can make it difficult to detect change even when it may be present in real terms. While the first method, personality control (PC), does not have this drawback, it can only account for that part of the unobserved heterogeneity captured by personality traits. Using the second method allows us to account for other unobserved heterogeneity, for example life experiences or emotional responses to training experiences. Therefore both methods have limitations, but if used in combination it allows us to draw more robust conclusions regarding causation. We will report the results based on the first approach and mention the second approach when results differ.

We considered two measures of wellbeing – job satisfaction and life satisfaction. As job satisfaction is expected to affect life satisfaction, we first estimate models of job satisfaction and then estimate models of life satisfaction where we control for job satisfaction to measure any *additional* effect of training on life satisfaction, that is, other than that occurring via job satisfaction.

We hypothesise that the training effect on wellbeing will not be the same across gender, age and region of residence. To test these hypotheses we estimated the differences in the training effect on wellbeing by age, sex and region of residence. In estimating regional differences in the wellbeing gains from training, we consider broad regional differences at the level of government office region as well as finer sub-divisions within these regions based on levels of deprivation.

We know that the age, sex and regional composition of employees across all ethnic groups is not the same. As ethnic minorities may additionally face discrimination at the work place which can have an additional impact on job satisfaction as well as training opportunities, and as we cannot measure discrimination at the work place adequately in these data, we decided to focus on the white majority group. However, with this disclaimer about the interpretation of the training variable for a sample of ethnic minorities, we estimated additional models where we included the all ethnic group sample members. As 95% of ethnic minorities live in England, we restricted this sample to residents of England only in

order to prevent confounding of regional effects in representation of ethnic groups. This resulted in a sample size of 45,924 person-wave observations.

Measures

Wellbeing is measured using job satisfaction and life satisfaction as indicators. Both are measured on a 7 point scale ranging from completely dissatisfied (1) to completely satisfied (7).

Job-related training was measured in two ways:

- a) We use questions that ask if individuals have participated in training in the past year, the purpose of which was:
 - To help you get started in your job
 - To improve your skills in your current job
 - To maintain professional status and/or meet occupational standards
 - To prepare you for a job you might do in the future
 - To help you get a promotion
- b) We examine the impact of how many hours training the learner has accumulated in the past 12 months, measured in terms of hours ranging from no training, 1-17 hours training, 18-42 hours training and more than 42 hours training.

The analysis also included:

Moderators: age, gender, region of residence/area level deprivation.

Controls: current marital status, number of own children in household, highest education qualification, health and long-term illness or disability, household income, living in an urban area, job characteristics (earnings, hours of work, occupation and industry).

The measures, data and statistical techniques are discussed in detail in the methods section of the technical report, which can be provided on request from the What Works Centre for Wellbeing.

4. Findings

Wellbeing outcomes and how they vary

We begin by examining the factors that influence workers' wellbeing. We find that for the sample, the average job and life satisfaction is 5.24 and 5.18 respectively (on this 1-7 point scale) and the measure of variation in these measures within the sample - the standard deviation - is 1.4 for both.

Job satisfaction

The results show that those who receive job-related training report higher levels of job satisfaction, by 0.05 points in the PC model and 0.07 in the FE model. This increase is comparable to the increase in job satisfaction gained from a 1% increase in hourly wages. It is around one third the increase in job satisfaction experienced by someone whose health improves from good/fair to very good/excellent as per the PC model (or half as per the FE model).

We find that women, those who are younger, and those who live in Northern Ireland report higher levels of job satisfaction. Those who live in urban areas and have poorer health report lower levels of job satisfaction as expected. Although having a long term illness or disability or higher levels of equalised household income does not matter. Consistent with previous results we find that those with degree or higher educational qualification report lower levels of job satisfaction than those with lower levels of education. This could reflect a higher level of expectation regarding job satisfaction by this group. As expected we find that those with higher levels of wages, fewer than 16 working hours and in managerial or professional occupations (as compared to the other occupations) report higher levels of job satisfaction. But in the FE models, we find that increasing working hours increases job satisfaction. This reflects that those who work less than 16 hours have better job satisfaction levels than those who work 16+ hours due to differences in their personal characteristics that are unknown to us. But when we exclude the effect of these characteristics, the net effect of increasing working hours from less than 16 to higher increases employee job satisfaction possibly reflecting that they are now working in more stable and better quality jobs.

Those with higher levels of conscientiousness, extraversion and agreeableness report higher levels of job satisfaction while those with higher levels of openness to experience and neuroticism report lower levels of job satisfaction. Those with higher levels of neuroticism (or lower levels of emotional stability) could find the workplace very stressful and hence report lower levels of job satisfaction. And those with higher levels of openness may find the workplace too constraining thus lowering their job satisfaction, or derive their satisfaction from activities outside of the workplace thus making job satisfaction a less relevant measure.

Note on reading tables and figures

The marginal effect (ME) of a variable measures the effect of that variable on job/life satisfaction, other things remaining the same. In the analyses in this report, the values of all other variables are held at the sample mean values. So, if the marginal effect is zero then it means that the variable has no effect on job/life satisfaction. If the marginal effect is not zero then it means that the variable does have an effect on job/life satisfaction. For example, as the ME of the variable Female in the job satisfaction model estimated is 0.11 it means that if there are two “average” individuals, that is, their characteristics are the sample averages, one of whom is a man and the other a woman, then the woman would report job satisfaction that is higher than the man by 0.11 points.

As we do not use census data, but data based on a sub-set of the population (the sample), it is possible that the estimated marginal effect is non-zero (by chance) even though the true value is zero. So, to be able to say whether the estimated marginal effect implies that the true parameter is different from zero, we perform statistical tests. When we say that the estimated marginal effect is statistically significant at X% level of significance, what we mean is that the chances of rejecting the hypothesis that the ME is zero when it is in fact zero is X%. So, if the ME of being female, 0.11, is statistically significant at the 1% level, we can say that the chances of the estimated difference in job satisfaction between men and women being non-zero (0.11) when its true value is zero is only 1%. In other words we can be confident that result found can be generalised to the population. The acceptable level of significance varies by disciplines and organisations. In this report, we consider three levels of significance – 1%, 5% and 10%. In the discussion of results, when we say that variable X has no effect on job satisfaction, it could either mean that the estimated ME is zero and statistically significant OR that the estimated ME is non-zero but it is not statistically significant even at the 10% level of significance. But note that in the latter case, what we mean is that we cannot say with an acceptable level of confidence that there is a non-zero effect.

Job-related training and wellbeing outcomes: are there gender differences?

There are no gender differences when we examine those who received job-related training on how this impacts on their job satisfaction. The job satisfaction gains from training for men and women are 0.08 and 0.03 but the difference is not statistically significant even at the 10% level of significance. However, we find that there is a gender difference in the job satisfaction gains for those who accumulate 42+ hours of training in the past 12 months: women gain less than men. Men gain 0.10 points of job satisfaction if they receive training while women only 0.01 points (see Figure 1). This difference is the same in both PC and FE models but it is statistically significant at the 10% level of significance in the PC model but not in the FE model. As we have discussed earlier, if there are few changes in the hours of training, then this effect will be estimated less precisely in the FE model.

Figure 1: Change in job satisfaction from job-related training (42+ hours of training in past 12 months) by gender



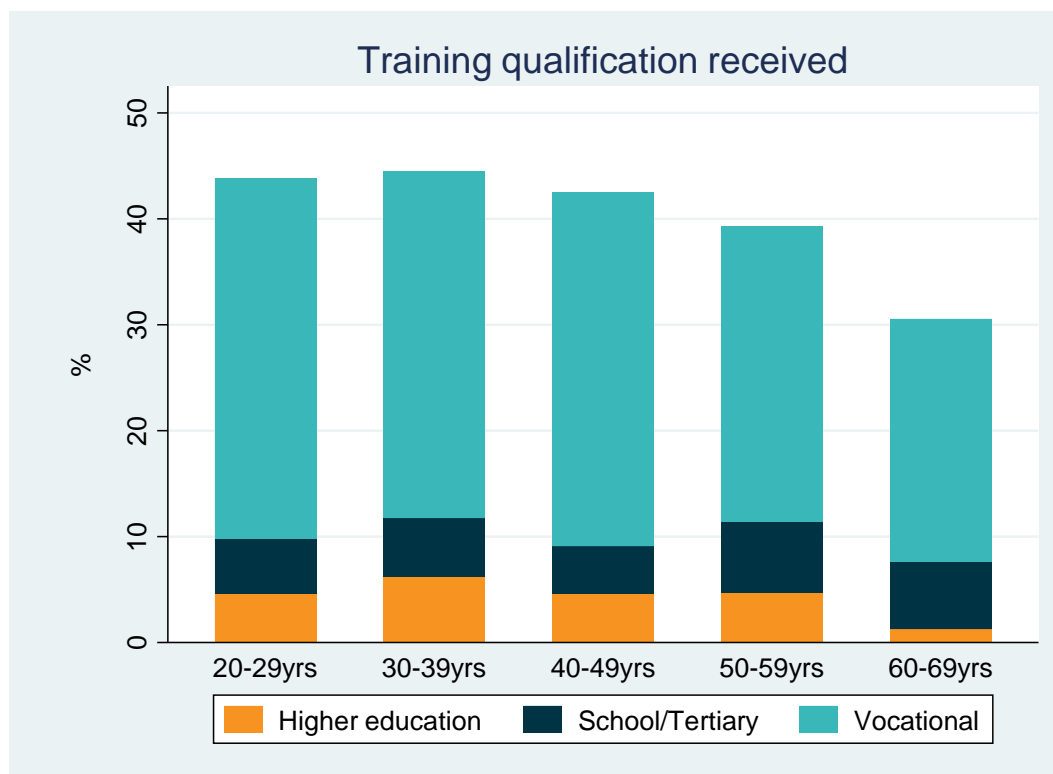
Job-related training and wellbeing outcomes: are there age differences?

We find some age differences in the wellbeing gains for workers of different age groups. When we examine those who receive any job-related training we find that the job satisfaction gains from receiving training for 20-29 year olds and 30-39 year olds is 0.15 and 0.09 while it is almost zero for the older age groups, that is, 0.03, 0 and -0.01, for 40-49, 50-59 and 60-69 year olds respectively (See Figure 2, left panel). The pattern is similar in the FE model, but the size of estimated gains is different for some age groups and the difference in the training effect between 20-29 year olds and 40-59 year olds is not statistically significant (See Figure 2, right panel). Thus taking the results of the 2 analyses we can say with confidence that job satisfaction gains from training are higher for younger workers, and particularly those under 39 years.

Figure 2: Changes in job satisfaction from job-related training by age groups

Figure 3 shows the proportions of those receiving a qualification from the job-related training by age group. Here we see that overall the majority of the job-related training is not qualification based. But where job-related training does lead to a qualification this is more likely to be the case for younger ages i.e. those under 40 years of age. It might be argued that first, qualification-based training provides greater quality training because by its nature it introduces knowledge content that goes beyond the specific needs of any given job to incorporate subject area and technical principles that can be applied to the generic as well as the specific context. Second, qualification provision is regulated through professionalization and regulatory standards. This means the pedagogic principles underpinning educational or qualification programs are scrutinized in terms of their quality to build a range of learning capabilities (e.g. self-efficacy, confidence, critical thinking, team working, communication) which more narrow job-related training may not, or many be more variable in delivering (see our systematic review on job-related training for further evidence which suggests poor implementation of job-related training can diminish wellbeing returns for learners). Third, that qualification programmes provide a tangible recognizable and portable outcome for the learner which can be traded on the employment market and give the learner a sense of job security and/or some degree of control over progression in the form of either increased wages, or more interesting work experiences, or geographical movement. For older workers by contrast their engagement in any form of job-related training is less and the training that is undertaken is less likely to be qualification-bearing. We also know that one of the pressures on non-qualification based job-related training experienced by employees is the lack of time they can devote to the learning experience due to work demands (see our systematic review on job-related training), which in turn can diminish the wellbeing returns that job-related training can deliver.

Figure 3: Percentage of those receiving job-related training leading to a qualification by age group (weighted estimates)

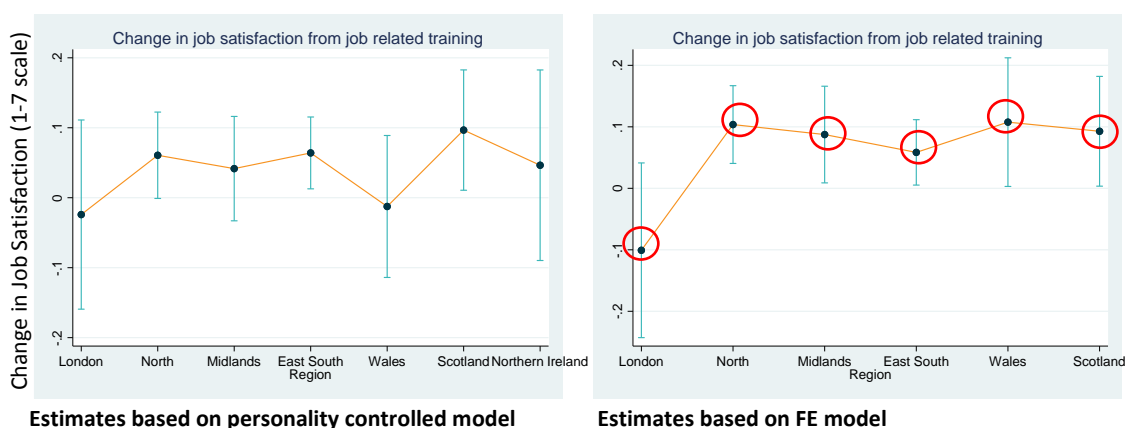


Job-related training and wellbeing outcomes: are there differences across the UK?

Regional differences are found with respect to the duration of training hours, but not on the simpler measure of receiving training.

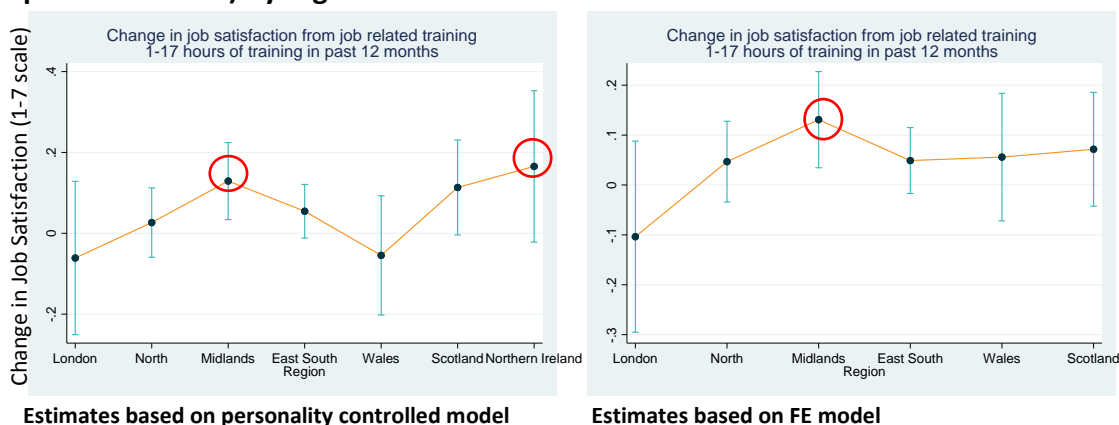
We do not find any statistically significant differences in job satisfaction gains after receiving training across regions. The estimated gains range from -0.02 for London to 0.10 for Scotland but these differences are not statistically significant (see Figure 4). The patterns are similar in the FE models but the precision of estimates as reflected by their statistical significance is not the same. As no one moved from or into Northern Ireland in our sample, the training effect for Northern Ireland could not be estimated in the FE model.

Figure 4: Change in job satisfaction from job-related training by regions



We find regional differences when we examine the hours of training. Specifically, we find that, among those who accumulate fewer hours (specifically, 1-17 hours of training), those living in the Midlands and Northern Ireland gain more than those living in London by around 0.19 and 0.23 points respectively. Specifically, London residents lose -0.06 points of job satisfaction upon receiving 1-17 hours of job-related training in the past 12 months although this is not statistically significant, while residents of the Midlands and Northern Ireland gain 0.13 and 0.17 points respectively which are statistically significant (see Figure 5, highlighted by red circles). In other words, although we cannot say that there is any effect of training on job satisfaction for employees living in London, we can say that there is a higher positive effect (or gain) from training for employees living in Midlands and Northern Ireland.

Figure 5: Change in job satisfaction from job-related training (1-17 hours of training in past 12 months) by regions

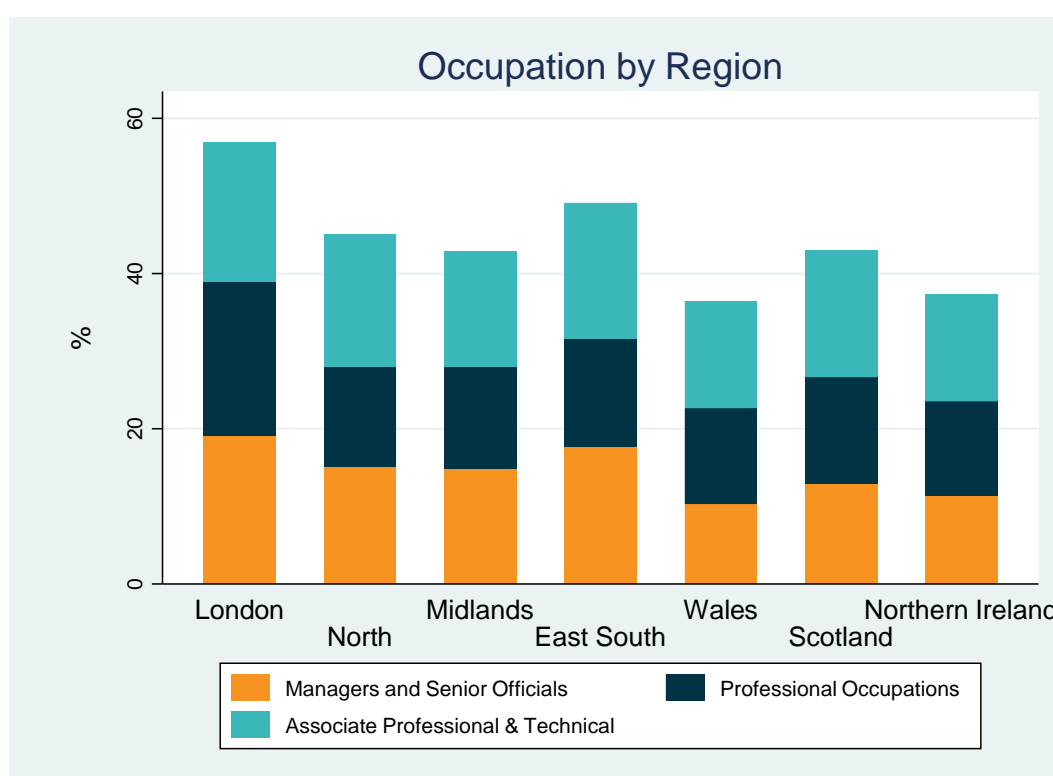


We find that for London, those living in the most deprived areas report a significant job satisfaction gain of 0.38 points *more* than that of those living in the least deprived areas (0.32 vs -0.06).

The industry and occupational profile across the regions varies markedly. London has by far the greatest proportion of managerial and professional jobs (Figure 6), associated with

features of higher job quality, and the least unskilled manufacturing or elementary jobs and also a lower proportion of skilled trades, sales/customer service, administration & secretarial jobs (see Annex). London is also dominant in particular industries including Professional services, Finance & Insurance, and Information & Communications. When we consider the occupational and industry profile across the regions alongside the deprivation data for London it would suggest that the inequalities across London are particularly marked in terms of occupations associated with job quality (including higher wages), allowing us to see more clearly where job-related training is particularly beneficial i.e. amongst those less likely to be in high quality and high paying jobs.

Figure 6 Percentage of Managerial, Profession and Associate Professional Technical Occupations by Region (weighted estimates)



Job-related training and wellbeing outcomes: are there differences across ethnic groups?

We find that there is no statistically significant difference in the effect of training on job satisfaction between white majority and most ethnic minority employees, the exception is black Caribbean employees. Their job satisfaction gain from training is significantly lower than that experienced by white majority employees by 0.17 points on the job satisfaction scale (this is 0.20 in the FE model). In the FE model, the difference in job satisfaction gain

from training between white majority and black African employees is also statistically significant, *higher* for black African employees by 0.16 points.

Life satisfaction

Job satisfaction and life satisfaction tend to track together – a one point increase in job satisfaction translates into a 0.17 change in life satisfaction. Training has no additional direct impact on life satisfaction beyond the impacts through improved job satisfaction. Although there are some regional differences. When London residents receive job-related training it reduces their life satisfaction by 0.14 units. This life satisfaction loss is much less for residents of other regions (-0.01 to -0.06) and only statistically significant for the East and South and the North. This London effect disappears in the FE estimates, it is lower in magnitude (-0.09) and not statistically significant. The training effect for other regions are also not statistically significant and range from 0.01 to -0.06. These regional results would suggest that there are some types of workers who are more likely to take up training and also have lower life satisfaction.

For example, taking the case of the London region, among workers living in London, the life satisfaction of those who take up training is lower than those who don't. But this is not due to the act of undertaking training but rather due to individual differences between those who take up training and those who don't take up training. One explanation may be that workers living in London have higher expectations of work and life opportunities arising from social comparisons and the relative economic wealth and occupational profile of jobs in London. However, when expectations are not met it lowers life satisfaction and those individuals turn to training to improve their life opportunities.

5. Discussion and recommendations

Those who participate in job-related training report higher levels of job satisfaction. But the analysis here builds on previous studies by exploring whether the wellbeing gains remain the same across different groups and locations of workers. Further, the analysis included the personality characteristics of the learners, which is one means of taking account of unobserved motivation levels which may explain higher wellbeing. In so doing, the results strengthen the robustness of our evidence of the causation between job-related training and wellbeing outcomes. Taken together these findings would suggest that job-related training that enables workers to acquire skills, knowledge or capabilities to progress in their working life translates into a greater sense of job satisfaction and life satisfaction. At the same time the variations by gender, age and location indicate the wellbeing returns from job-related training is variable which raises implications for workers, employers and policy actors.

Workers

The results show that there are wellbeing benefits that workers as adult learners can gain from both their participation in job-related training but also from ongoing engagement that increases the individual's exposure to learning. The introduction of the training levy provides learners with more opportunities to seek accredited learning opportunities, particularly for those within small and medium firms where resources may have been more limited. But at the same time individuals should seek out learning opportunities from professional bodies, unions, communities of practice as these too can provide, beneficial learning opportunities. For older workers and women job-related training appears not to be as effective in delivering wellbeing returns and here partnerships between providers, commissioners and learners may be particularly helpful in addressing this gap. It also suggests that women and older workers many need to be more discerning in their choices and be more demanding of the provision available to drive the necessary changes to ensure job-related training is tailored to your needs.

Employers

The results indicate that there are gender differences, and that older workers are not always gaining the same wellbeing outcomes from work related learning opportunities. Given the diversity of the labour market and increasing diversity trend then there are important lesson for employers. Considering how the skills, knowledge and experience of the whole workforce can best be used and developed will be critical for sustainable business performance. Engaging more workers in learning in some form throughout their working life has benefits for the organisation. Recognising the diversity of learners and thus their different needs, and expectations is one way in which job-related learning could become more inclusive. But also capturing and proactively using the diversity of employees by developing employees as coaches, trainers, mentors or learning and productivity champions could complement traditional learning routes.

National policy/practice

The results show that job-related training has benefits for wellbeing when adult learners engage. Increasing learning engagement, particularly for older workers, could be a key lever in enabling individuals to cope with changes and adapt to technological change and changes in working practices. At the same time how learning is funded to enable access, and how learning is delivered and its content will be important not only to how accessible it is but how attractive or worthwhile learners understand it to be.

6. Next steps for research

How could researchers take this forward, what other datasets and questions come next?

Future analysis that considers the wellbeing benefits of learning for those not in work and for people on long-term sick leave or disabled people would be useful. In addition, it would be useful to consider adults who have yet to experience work as compared to those that have experienced work in the past to consider if there are specific wellbeing gains that may be achieved through learning.

Databases that allow a more comprehensive set of wellbeing outcomes for learners to be captured would be useful. At the same time further conceptual and empirical analysis that enables the different types of wellbeing outcomes from learning to be compared across age groups may provide further insight into the question of whether learner values or expectations change due to age or other contextual factors or not.

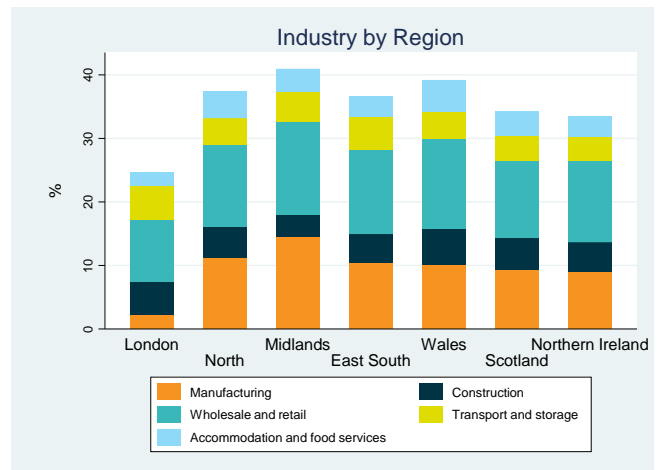
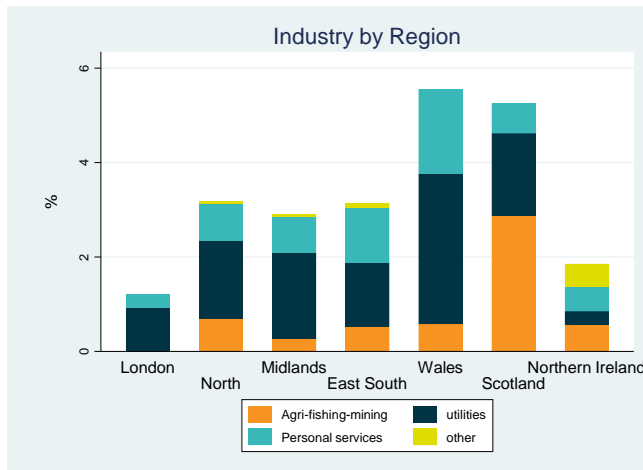
The gender differences in wellbeing gains from the duration of training warrants further scrutiny, with explanations associated with under-employment or flexibility of progression opportunities being explored. Further, the work here was unable to explore, in much detail, wellbeing for learners from different ethnic communities. Such analyses may again shed light on the different ways in which job-related training can translate into wellbeing benefits or in deed why it may fail to do so for some.

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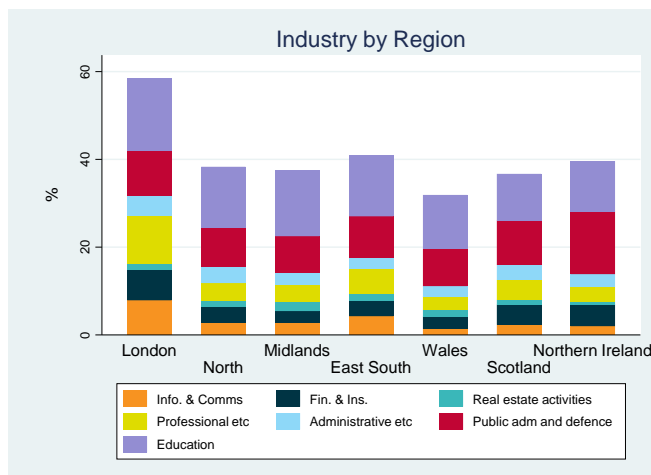
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Annex: Industry by



Region



Data source: Understanding Society, Waves 2-5 (2010-2014)

Sample: Aged 20-69 years, ethnic group is white – British/English/Scottish/Welsh/Northern Irish, born in UK, in paid employment

Weighted estimates