

## Training and progression in the labour market

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Training is about improving knowledge and skills, which may serve as a key route towards employment advancement and job retention in the labour market. At the individual level, training may bring benefits in terms of skill improvement as well as higher job satisfaction. Training may also benefit employers and organisations if their employees become more skilled, more effective and efficient in performing their tasks, which may subsequently lead to higher productivity and company profits.

Most of the past literature has focused on wage progression, taking hourly wage rates as the main (and often the only) dependent variable to analyse. This remains a key focus of this report, and we provide new estimates of the wage gain to training. Advancement can also refer to career progression such as promotion or moving into a higher paid job. It may also be an important part of moving into work, and remaining there, and may affect reported levels of job satisfaction.

### Key definitions

The aim of this study is to explore the connections between skills/training and retention and advancement in employment. In this report we define the principal key terms in the following way:

- Wage progression: the increase in hourly wages (if any) associated with having had training.
- Retention: any links between training and remaining in paid employment.

- Advancement: discrete changes in employment associated with training, such as changes in job satisfaction or moving into paid work from unemployment or inactivity. This may also cover career progression, such as promotion.

### Objectives

Our main objective is to uncover the link between training and changes in employment characteristics – especially wages. Specifically, we ask:

- Who undertakes training and how does progression, retention and advancement differ between and within key groups?
- What are the benefits deriving from government-funded and privately-funded training and lifelong learning?
- Can training improve low-skilled workers' in-work progression?
- Can we identify the relationship between undertaking training on the one hand and gaining, retaining and advancing in employment on the other?
- Can we identify the impact of retention and advancement on investment in training?

This report concerns the training that people receive whilst in work, or in anticipation of working in the future, and the effects it has on people's careers. This is training received after the end of education (in most cases). There is a great variety of activities that count as training, and in the statistical analysis we consider how far different kinds of training are associated with different outcomes (hourly wages, in particular).

Overall, analysis of this set of outcomes requires longitudinal data to examine the consequences of undergoing training of various kinds. Longitudinal data provides the ability to track earnings progression over time, work histories, and to measure levels of, and changes in, education, skill, and training.

## Data and methods

We draw on three datasets for this study: the quarterly Labour Force Surveys (LFS) 1994 to 2008; the Families and Children Study (FACS); and the British Household Panel Survey (BHPS). A range of descriptive statistics were employed to chart the trends over time. Binary logistic regression, ordinary least square (OLS) linear regression, and fixed effects models were used to estimate the effects of training over and above those accounted for by individual traits. These are the most appropriate econometric tools to use, as pointed out by the small number of previous articles in the literature.

## Key findings

The findings from our cross-sectional descriptive analysis of the LFS 2008 suggest that training was most commonly received by younger people, women, public sector employees (especially those in local government, health or the armed forces) and workers in non-profits organisations. We also find that workers in large organisations and those with higher qualifications were also more likely to have received training. Training also seems to be more prevalent among higher earners (those in the top quintile of earners) and those relatively new to the job, which is linked to the provision of induction.

## Trends in training 1994-2008

The proportion of workers aged 16-69 in training rose from about 20 per cent in 1994 to around 28 per cent in 2003. This trend has been flat or on the decline since then, and particularly from 2005 onwards. Both the LFS and BHPS show this downward trend in the last few years. Training is also seasonal to some extent, with a lower proportion of the workforce in the third

quarter (reflecting, perhaps, less training over the summer months). This recent downward trend is found among virtually all groups. An important exception is older workers, aged 50 or above, who continue to enjoy increasing rates of training provision.

## Changes in wages and training, longitudinal description

Hourly wage rates grew by 4.4 per cent between the 2006 and 2007 BHPS interviews, for those respondents working at both waves of interviews. They grew by five per cent where a respondent had received some training, and by four per cent otherwise. The rate of growth was higher where training was received, irrespective of the level of wages in 2006. The highest increases in hourly earnings between 2006 and 2007 were achieved by young people, those aged between 16 and 34, and especially those at the younger half of this range.

For most age groups, except those under age 20, the rate of wage increase was raised if they had undergone a period of training.

Those who received training, compared to those who had not, showed greater variability in job satisfaction. That is, where a person had received training, they were both more likely to report an increase in job satisfaction, and more likely to report decreased job satisfaction. By contrast, there was greater stability in the reported levels of job satisfaction among those who did not receive training.

## Changes in wages and training, longitudinal modelling 1998-2007

We examine the link between higher wages and having undertaken a spell of training in the recent past. This is based on data that tracks people over time. We first use models that control for a wide range of different background information. We then turn to look at statistical models that control for the unmeasured characteristics of people.

In standard linear regression models, the wage gain (measured by an increase in hourly earnings) to training (where received in the past

year) were four per cent for men, and closer to two per cent for women. Modelling the median returns to training by quantile regression, rather than looking at the mean returns to training using the standard approach, produced quite similar results. When we do not control for differences in individual traits (age, marital status, occupation) the increases in wages associated with past training appear to be much larger. This implies that what might appear to be the effect of training on wages is often largely due to differences in individual traits. Hence, it is important to control for these differences to isolate the specific effect of training on wage progression.

The current 'state of the art' within econometrics recommends the application of fixed-effect models to investigate the effect of training on wage returns. The purpose of these models is essentially to use individuals as their own control group in looking at changes in earnings and training. This provides a better estimate of the contribution of training to wage growth, as it controls for unobserved characteristics of individuals.

The estimated effect of training on wages is much reduced in these fixed-effects models. Training is then associated with an increase in wages of about 0.5 per cent, measured over the period from 1998-2007. However, where the training received was explicitly employer-funded or employer-provided, the size of gain was closer to two per cent.

If we adopt the recent suggestion in the econometric literature of restricting the comparison group to only those who anticipated receiving training, the effects of training on wage progression can become statistically insignificant. This is a less tried and tested approach than the above statistical models.

Training does, however, seem to be strongly linked to labour market transitions – that is, undergoing a period of training seems to increase the rate of returning to work, and decreases the likelihood of job exit.

While a short period of training may not transform people's chances of job advancement

or increased pay, or radically increase their productivity, employers would be unlikely to pay for training if there was not at least some gain to the skills, motivation or retention of employees. The report does find a small effect on wages of undergoing training, and also increases in the rate of retention and moving into paid work. However, the incidence of training appears to be falling (which may be reflecting higher unemployment), except among older workers.

## Strengths and limitations of the study

One of the difficulties in comparing findings across studies is the different measures and definitions used. They can be different even within the same study such as this one. We rely on existing data sets to provide detailed information on the duration, nature and type of training. The degree of detail available in these data sets is also different.

However, we believe we have utilised the broadest and richest definition of training from nationally representative data sets. This is a significant step forward compared to existing research.

The full report of these research findings is published by the Department for Work and Pensions (ISBN 978 1 84712 806 5. Research Report 680. August 2010).

You can download the full report free from: <http://research.dwp.gov.uk/asd/asd5/rrs-index.asp>

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